



RESEARCH PROGRAM ON
Forests, Trees and
Agroforestry

Conserving Rosewood genetic resources for resilient livelihoods in the Mekong

Training of Farmer Seed Suppliers on Tree Seeds and Seedlings Marketing

Kampong Thom, Cambodia, 8 – 9 January 2020



Compiled by So Thea and Sreng Syneath, January 2020

Introduction

A training course was organized in Cambodia on the “Marketing of Tree Seeds and Seedlings” for community-based seed suppliers. The training was held from 8 to 9 January 2020 at two respective places, Lov Kim Seng Centre, Kampong Thom town, and O Soam CF, Kampong Thom province. The overall objective is to increase the supply of quality seeds of the three Indochina *Dalbergia* species *D. cochinchinensis*, *D. oliveri*, and *D. cultrata* and improve income from sale of seeds and seedlings with prime focus on collectors. The training followed a ‘standard’ business model of improving profit by reducing production cost, increase production, increase potential income by product (here seed and seedling) quality and improve market demand by diversifying distribution and marketing network.

The training workshop was delivered by Dr So Thea, Deputy Director of Institute of Forest and Wildlife Research and Development (IRD), who has 20 years of experience in tree seed management/technology in Cambodia and more than 25 years of experience working with and training local communities. He was assisted by Mr Sreng Syneath, and Mr Sing Kosal, IRD’s staff members, who have been trained in the previous training of trainers on the same subject delivered by Mr Lars Schmidt, University of Copenhagen.

The *Conserving Rosewood genetic resources* project will promote the collection and selling of tree seeds and seedlings of three *Dalbergia* rosewood species, *Dalbergia cochinchinensis*, *D. oliveri*, and *D. cultrate*, as a means to generate income for rural communities. The project is funded by the UK Darwin Initiative and runs from July 2018 to March 2021.



General view of the training session (left). Dr So Thea, trainer, is delivering lecture (right).

Program: It was a two-day program with the first day starting with the introduction to tree seeds and seed quality before going into the business of tree seeds and seedlings, which include business modeling, customer psychology, market chain, and marketing and value addition. In day 2 participants were divided into two groups for doing group discussions. The detailed programs in English and Khmer are shown in Annex 1.

Participants:

There were totally 25 participants (seven women) from five communities as below:

No	Name of community	Province	No. of participants	Note
1	O Soam CF	Kampong Thom	12	Project site 1
2	Kampeng and O Srao CF	Pursat	6	Project site 2
3	Por CF	Kampong Chhnang	2	CF active in selling seeds of <i>Dalbergia oliveri</i>
4	Sang Rukhavorn CF	Uttar Mean Chey	2	CF with seed sources of other tree species
5	Leap Kuy CF	Kampong Speu	1	CF with a good stand of <i>Dalbergia cochinchinensis</i>
6		Stoeung Treng	1	CF with seed sources other tree species

The list of participants is shown in Annex 2.

Lecture notes

Lecture notes were translated from Lars's lecture notes with some modifications/simplifications to make sure that local communities fully understand them. Also some photos were added such as in the case how to make seeds/seedlings more attractive. All lecture notes in Khmer are shown in Annex 3.

Day 1 Lecture

Dr So Thea, National Project Coordinator, Cambodia, welcomed participants to the workshop. He informed the objective and program of the workshop. Participants introduced themselves. Lars Schmidt noted that the participants come from different organizations and backgrounds, and their diverse experience can be capitalized on during the training and development of business strategies for *Dalbergia* seed and seedlings.

Session 1 Introduction to tree seeds and limitation in seed collection

Dr So Thea Introduced groups of forest tree seeds. There are three groups of seeds based on duration of seed storage. As each group has different handling requirement, therefore understanding the groups of tree seeds will allow seed suppliers to handle them accordingly (during processing, storage and transportation) accordingly. These groups are as follows:

- Seeds with hard coat which can be stored for up to five years under room condition. The species in this group include *Dalbergia cochinchinensis*, *D. oliveri*, *D. cultrate*, *Sindora cochinchinensis*, *Afzelia xylocarpa*.
- Seeds from the fleshy fruits such as *Parinari anamensis*, *Irvingia malayana*. Seeds from this group can be stored for up to three months in the fridge with minimal decrease in viability.
- Seeds from the Dipterocarp family such as *Dipterocarpus alatus*, *D. intricatus*, *D. obtusifolius*, *Anisoptera costata*, and *Hopea odorata* cannot be stored for long time. Their viability last for about one week or up to two weeks. Seeds must be collected as soon as possible after ripening and sent to the nursery immediately for sowing.

Dr So Thea also explained the limitations in seed production: biological barriers and socio-economic and technical barriers, and seed maturity. Biological barriers include flower differentiation, pollination, fertilization and fruit and seed development. Socio-economic barriers include seed source access, seed collection access.

- If the trees belong to someone, it is fair that the owner gets some compensation. Collectors must agree with tree owners on the collection method, e.g. is pruning allowed and if yes how much can be pruned. This must be agreed beforehand to avoid conflict.
- Knowing the indicators of seed maturity is important. Mature seed germinates well and seedlings are vigorous. Pre-mature seeds or over-mature seed do not germinate well, which results in waste of time and resources.

Session 2 Quality parameters for seeds and seedlings:

A good quality seed is a seed that can germinate and grow into a good quality tree. However, seed quality is not visible. The key is to use good collection practices as follows:

Collect seed from:	Do not collect seed from:
Genetic quality	
<ul style="list-style-type: none"> • Good looking trees • Healthy trees • Several seed trees • Group of trees where there is a good cross of pollination 	<ul style="list-style-type: none"> • inferior looking trees • diseased trees • few neighboring trees • isolated trees with very long distance to other trees
Physiological quality	
<ul style="list-style-type: none"> • Full maturity • Healthy seed • Seeds without insects • Large seed 	<ul style="list-style-type: none"> • Exposure to high temperature • Mechanical damage • High moisture environment

Good collection practices can be developed into a business argument: *Our seeds have been collected from the best seed sources and best seed trees to assure the best inherited quality.* Physiological quality treatment (right storage, testing etc.) can also be formulated as a business argument: *Our seeds have been treated in an optimal way to ensure high germination percentage, and tested for high germination. Our seedlings have been propagated from the best sources and managed for optimal vigour.*

For seedling, the quality parameters include the growth performance, and seedlings that propagated from good quality seeds. Quality parameters for seedling are largely the same as for seed.

Session 3: Business modeling

A general business strategy is to think about how to sell more”; how to get a better price; and how to reduce the production costs. Seed selling is a small business, but very important. Seed is not expensive, but it is valuable. It is relatively easy to provide a good product for a good price, the aim of successful business plans.

Checklist of how could we make everybody happy in the Dalbergia seeds and seedling market:

Producer	Customer
<ul style="list-style-type: none">• Low collection and processing costs• Low marketing and distribution costs• High demand for seed sand seedlings• Good price	<ul style="list-style-type: none">• Good quality• Easy to find supplier• Reliable supply (available when needed)• Good product information• Good price

A business is considered success when the producers and customers are happy: a deal was made with a good price for a good product.



General views of the training session

Session 4: Customer psychology:

Important aspects:

- Product should be available in amounts close to the exact amount that the buyer wants
- Nice wrapping is associated with nice product. Normally, customers tend to think that if the wrapping is nice the content is also nice.
- Wrapping keeps the product separate from other products and protects the products

Quality assurance and pricing:

- Documentation (species name, region)
- Wrapping in inviting cover (a good product deserves a good wrapping).

- Don't over-price. We pay for what we get and don't want to be over-priced for undocumented quality (a seed or plant does not get any better because it has a label or document attached to it, but the customer wants quality guarantee)
- Build trust. Tree seed is a long term trust, -there is little chance to complain. Customers pay for trust and honesty, that can be built up steadily

Provide customer with the following guidelines and instructions when they buy Dalbergia seeds and seedlings. For seeds, tell them about pre-treatment method, germination percentage, and when to planting out. For seedlings, tell about hardening method before planting, planting site, planting technique and maintenance (watering and weeding).

Session 5: Market chain assessment and development:

Characteristics of market chains:

- Market chains consists of multiple actors, from producers to middle-men, traders, processors, wholesalers, retailers and consumers.
- There is tendency in all trade chains that all actors get more specialized, especially the longer the chains are and the more actors are involved
- Everyone in the chain must be paid for their inputs (activities) in the chain, starting from the seed source owner
- At every step, there is a risk of loss during the activity, and the cost of it must be added to the value of the activity. E.g. the seed tree owners have no/little risk, while the nursery producers have a high risk of unsold material, mortality etc, which must be reflected in the price of the seedlings at that step
- The price at the last step in the chain is based on customer's willingness to pay (price-controlled items are an exception), and can vary considerably

Session 6: Marketing and value addition:

The important question in the seed business is how to reach new customers. Potential buyers are out there somewhere. They don't know us, and we don't know them, therefore we have to build the bridge.

- Advertising forms: Pamphlets, posters, direct addressing potential buyers, internet advertising, group telegram, and Facebook.
- Design inviting/appealing package. Design attention leaflet describing, for example, germination/nursing procedure with simple guide. If a product is promised, it should be able to be delivered.

How to add value to seeds and seedlings?

- Reputation of the suppliers
- Senses of community

- Timeliness
- Customization
- Good design of the package
- Ease of use (because there is an attached, simple instruction)

Session 7: Customer service:

When selling seeds and seedlings there should be attached information/guideline to the seed bags/packages. Guidelines should make the customer happy, especially for small quantities sold to non-professional seed/seedling users. What the customers need to know are as follows:

Seeds	Seedling
Viability	Planting sites
Storability until sowing	Hardening off
Pretreatment method	Soil preparation
Germination medium	Planting mode
Germination time	Watering
Prickling out	Weeding



General views of the training session

Day 2: Group discussion

Day 2 of the workshop was organized at O Soam CF nursery station (Kampong Thom province). Participants were divided into two groups to discuss challenges in seed collection, advertisement, cost reduction, increase profitability, and designing of seed package. A farmer demonstration on seedling production was also part of Day 2 session.



General views of the group discussion

Group discussion 1: Limitations in Seed collection

Dr So Thea reminded that there are two factors limiting seed production: biological barriers and socio-economic and technical barriers. Biological barriers include flower differentiation, pollination, fertilization and fruit development, and seed maturity. Socio-economic barriers include seed source access, seed collection access. If the trees belong to someone, it is fair that the owner gets some compensation. This also serves as an incentive for the owners to maintain the trees.

If seeds are collected from private land owners, collectors must agree with tree owners on the collection method, e.g. is pruning allowed and if yes how much can be pruned. This must be agreed beforehand to avoid conflict. Participants identified nine biological and technical issues facing seed collection in Cambodia and possible solutions as bellows:

Challenges	Possible solution
Too high seed trees with straight boles	Invest in seed harvesting equipment
Lack of tree climbers	Find tree climbers and provide training to him
Not many seed trees available in the CF	Establish seed sources
Seeds are infested by insects	Collect seeds as soon as they fully right, do not come late
Lack of budget for buying seeds	Find donors; generate money from seed/seedling sales
Seed trees are located in remote areas	Find contact person in the area and train him on seed collection
Do not know seed collection season	Observing the flower and fruit phenology
Tree ants resided in the seed trees	Use insect spray
Wild animals (poisonous snakes) in the tree seed areas	Use appropriate prevention boots and equipment

Group discussion 2: Advertisement

Communities identified five types of advertisement as shown in the table below. Based on the group discussion, Facebook is the most effective type of advertisement in Cambodia as it reaches more people with less cost compared to the other types. Note that TV was not the option selected by participants because it is too expensive; also homepage was not identified as many participants do not know it.

Type of advertisement	Target group	How much does it reach the target group compared to the other (%)	Cost (% compared among the five types)
Billboard	General public	15	50
Radio	People in rural areas (farmers), elderly people, drivers and passengers	15	5
Facebook	General public	50	10
Leaflets	People attending meetings/workshops	10	10
Exhibition	General public	10	25

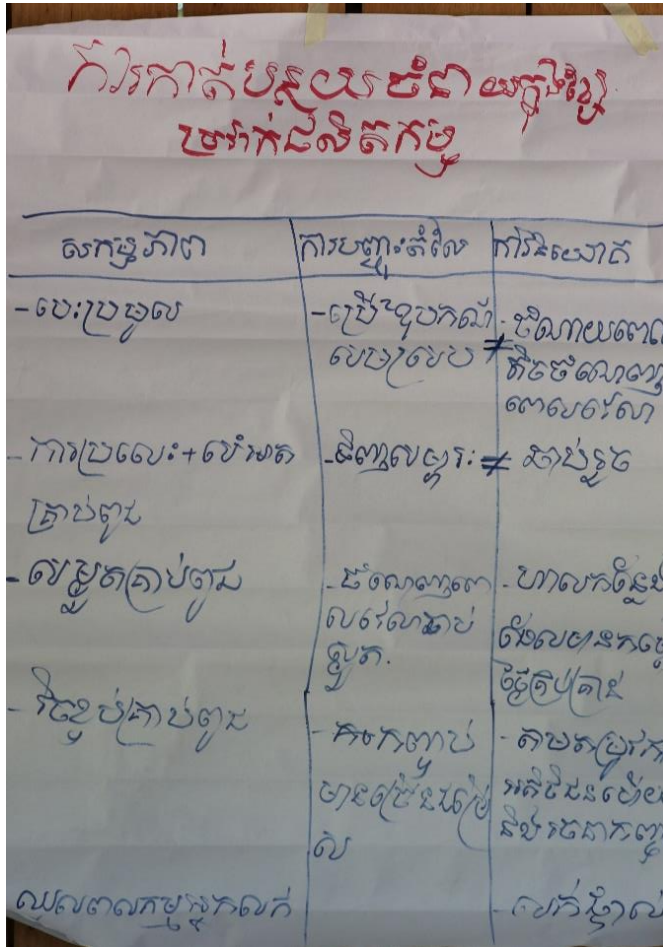


ប្រភេទ (Type)	គ្របដណ្តប់ (Reach)	តម្លៃ (Cost)
ផ្សព្វផ្សាយ (Advertisement)	សាធារណៈជន (15%) (General public)	50%
វីដេអូ (Video)	អ្នកត្រឡប់មកផ្ទះ (15%) (People returning home)	5%
Facebook	បណ្តាញសង្គម (50%) (Social network)	10%
វិទ្យុ (Radio)	ការចូលរួមប្រជុំ (10%) (Meeting participation)	10%
គេហទំព័រ (Homepage)		
តារាងផ្សព្វផ្សាយ (Advertisement board)	បណ្តាញសង្គម (10%) (Social network)	25%

Result of group discussion on types of advertisement

Group discussion 3: Cost reduction in production chain

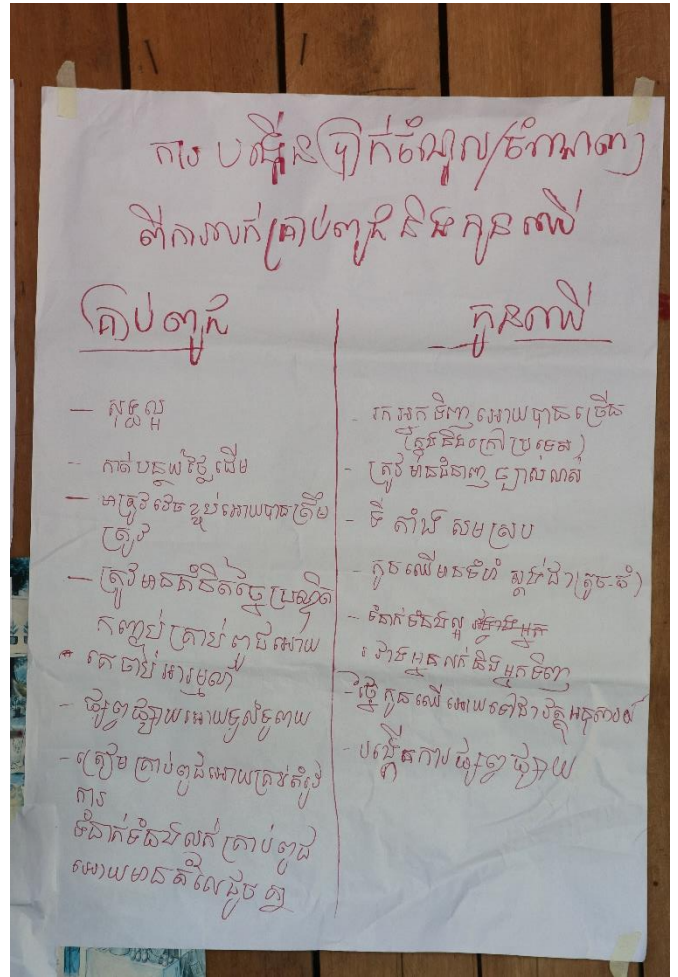
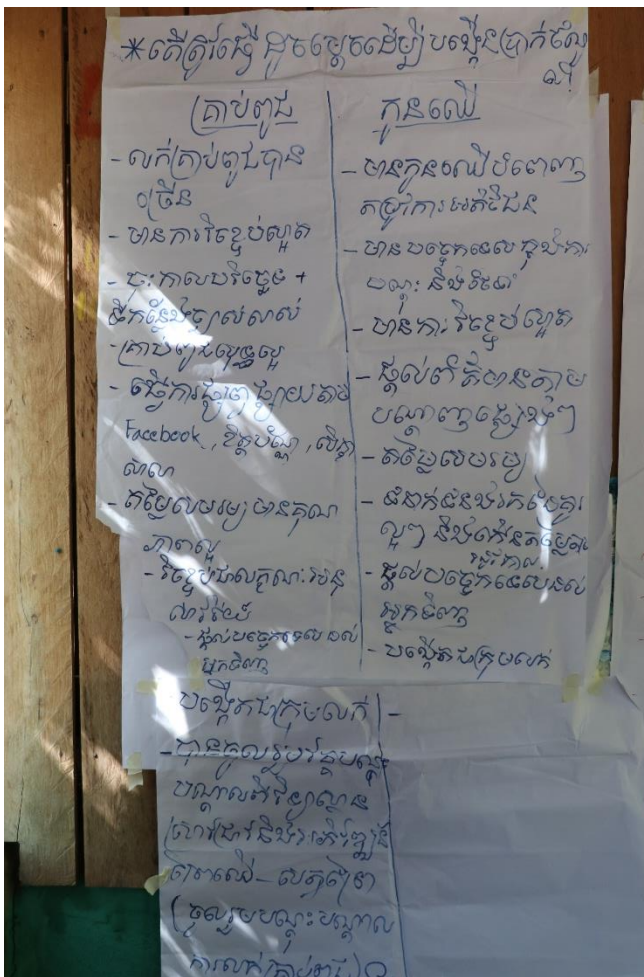
Activity	Investment
Seed collection	Seed collection tool/equipment
Seed extraction	Seed extraction equipment (for <i>Pterocarpus macrocarpus</i>)
Seed drying	
Seed packaging	Pack seeds in different sizes of packages allowing choices
Seed sale	Contact seed users directly (no need to go through middlemen)



Group discussion 4: How to increase profitability from seed and seedling sales?

Participants were divided into two groups for discussion. They did separate seed from seedling, but the summary below combines the two together.

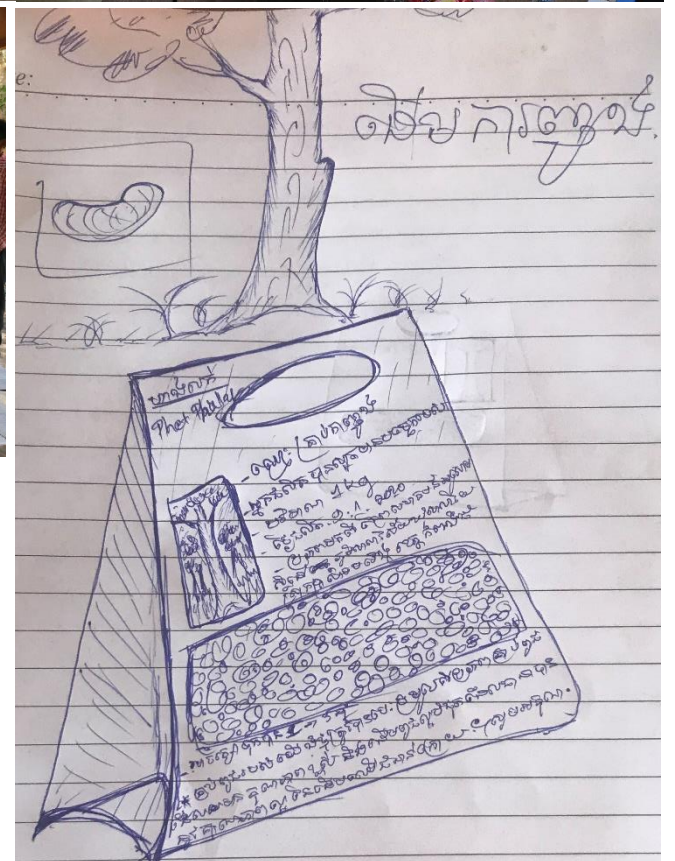
- Sell only good seeds (high purity seeds) and seedlings
- Make attractive seed packages
- Advertisement through Facebook, leaflet, workshop
- Reasonable price
- Pack seeds and seedlings for souvenir gifts
- Provide technical information to attract the buyers
- Create group of seed suppliers with good coordination to ensure the same price for the same species
- Ensure that seeds and seedlings are available on demand, whenever they are needed (apply appropriate seed storage practice)
- Always try to find new buyers
- Attend training courses to build capacity



Results from the group discussion on market chain and improvement strategy to increasing sales.

Group discussion 5: Designing of seed bags/packages

All participants were asked to design seed a package. The exercise was to remind participants that they have to provide information/instruction to seed users on an attractive package. After about an hour, 23 designs were collected and displayed for evaluation. Three senior community members were assigned to evaluate the designs based on the attractiveness and the texts/information on the seed bags. A young man from O Soam CF came up with the best design.



Photos showing participants designing seed bags (top left); committee members selecting the best design (top right); the winner receiving a box of lunch from the committee members (bottom left) and his design (bottom right).

Group discussion 6: Farmer demonstration on seedling production

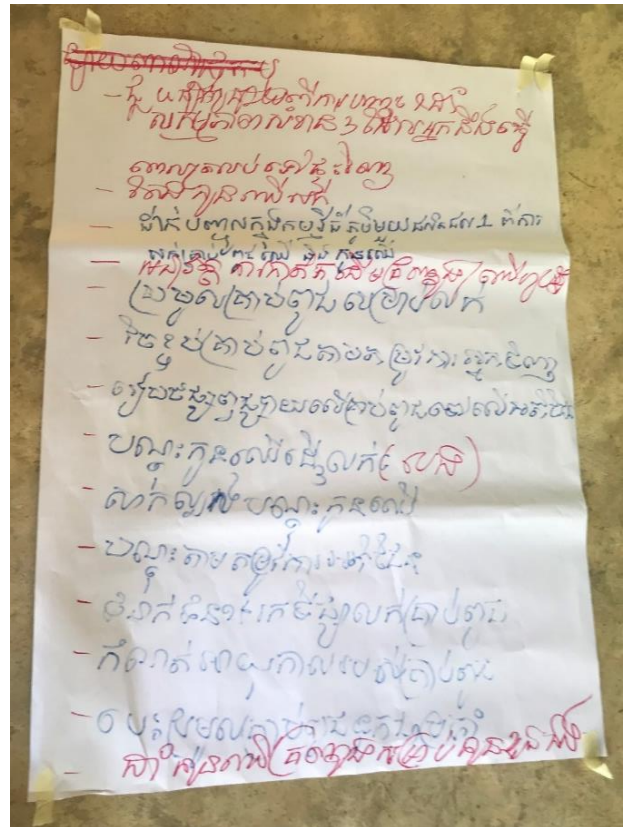
Mr Suth Sok Em, a successful seed and seedling supplier from Pursat province, demonstrated methods of seed pretreatment, seedling production and grafting to other participants who have no experience in seedling production. Participants were very interested in grafting technique as the method is applicable with fruit trees.



Group discussion 7: What are the first thing/activity you are going to do upon returning home?

For assessment of participant’s understanding of the lectures, they were asked to identify one thing/activity they would like to do after returning home. The summary of the discussions are shown below:

- Integrate the seed and seedling sale activities in Put the activity into the government policy: “one village one product”
- Collection of seeds for sale and ensure seeds are available whenever needed
- Start packaging seeds to meet different need f seed users/buyers
- Producing seedlings for sale
- Make advertisement
- Provide information to buyers, at least for the dates of seed collection and expire
- Planting Dalbergia seedlings for own benefits
- Implementing the grafting technique for fruit trees
- Create a new product: make seeds and seedlings as souvenir gifts.



Closing

Dr So Thea thanked participants for their active participation. He also thanked Darwin Initiative for providing the financial support that made the training possible. He reminded participants to use the knowledge to improve seed and seedling sales.



Mr Preab Samol from Uttar Meanchey province, participant representative thanked the training organizer and Darwin initiative for providing the opportunity to him and his colleagues to attend the training course.



Training of Farmer Seed Suppliers on Tree Seeds and Seedlings Marketing
8 – 9 January 2020

Day/Time	Subject	Trainer/facilitator
Day 1: 8 January		
8:00 - 8:30	Registration	Mr Sing Kosal
8:30 – 8:40	Introduction to the training course	Dr So Thea
8:40 – 9:00	Introduction of participants	Mr Sreng Syneath
9:00 – 10:00	<ul style="list-style-type: none"> • Tree seeds • Quality parameter for seeds and seedlings 	Dr So Thea
10:00 – 10:15	Documenting quality	Dr So Thea
10:15 – 10:40	Coffee break	Mr Sing Kosal
10:40 – 12:00	Business modeling	Dr So Thea
12:00 – 13:30	Lunch	Mr Sing Kosal
13:30 – 14:00	Customer psychology	Dr So Thea
14:00 – 14:30	Market chain	Dr So Thea
14:30 – 14:50	Coffee break	Mr Sing Kosal
14:50 – 15:50	Market and value addition	Dr So Thea
15:50 – 16:00	Recap Day 1	Dr So Thea
Day 2: 9 January		
8:30 – 8:45	Introduction to Day 2	Dr So Thea
8:45 – 9:20	Exercise: Limitation in seed collection	Dr So Thea
9:20 – 10:20	Exercise: Cost reduction in market chain	Mr Sreng Syneath
10:20 – 10:40	Coffee break	Mr Sing Kosal
10:40 – 11:10	Exercise: Benefits and challenges in marketing	Mr Sreng Syneath
11:10 – 12:00	Exercise: Increasing profitability from seed and	Mr Sreng Syneath
12:00 – 13:30	Lunch	Mr Sing Kosal
13:30 – 14:10	Exercise: Designing seed bags/packages	Mr Sreng Syneath
14:10 – 14:30	Coffee break	Mr Sing Kosal
14:30 – 15:30	Farmer's demonstration: Seedling production	Mr Suth Sok Em
15:30 – 15:50	Closing	Dr So Thea

ថ្ងៃ/ពេលវេលា	ប្រធានបទ	វាក្ខន្ធ/អ្នកសម្របសម្រួល
ថ្ងៃទី១: ៨ មករា		
8:00 - 8:30	ចុះឈ្មោះ	លោក ស៊ីង កុសល
8:30 - 8:40	សេចក្តីផ្តើម	បណ្ឌិត សូ ធា
8:40 - 9:00	ការណែនាំខ្លួន	លោក ស្រែង ស៊ីនាថ
9:00 - 10:00	<ul style="list-style-type: none"> គ្រាប់ពូជឈើ គុណភាពនៃគ្រាប់ពូជ និងកូនឈើ seedlings 	បណ្ឌិត សូ ធា
10:00 - 10:15	ការកត់ត្រា	បណ្ឌិត សូ ធា
10:15 - 10:40	សម្រាកអាហារសម្រន់	លោក ស៊ីង កុសល
10:40 - 12:00	គំរូអាជីវកម្ម	បណ្ឌិត សូ ធា
12:00 - 13:30	អាហារថ្ងៃត្រង់	លោក ស៊ីង កុសល
13:30 - 14:00	ការគិតរបស់អភិវឌ្ឍន៍	បណ្ឌិត សូ ធា
14:00 - 14:30	ខ្សែច្រវាក់ផលិតកម្ម	បណ្ឌិត សូ ធា
14:30 - 14:50	សម្រាកអាហារសម្រន់	លោក ស៊ីង កុសល
14:50 - 15:50	ទិដ្ឋភាពនិងកម្រិតប្រើប្រាស់	បណ្ឌិត សូ ធា
15:50 - 16:00	សរុបថ្ងៃទី១	
ថ្ងៃទី២: ៩ មករា		
8:30 - 8:45	ការចាប់ផ្តើមថ្ងៃទី២	បណ្ឌិត សូ ធា
8:45 - 9:20	លំហាត់: បញ្ហាប្រឈមក្នុងការបេះប្រមូលគ្រាប់ពូជឈើ	បណ្ឌិត សូ ធា
9:20 - 10:20	លំហាត់: ការកាត់បន្ថយចំណាយនៅក្នុងខ្សែច្រវាក់ផលិតកម្ម	លោក ស្រែង ស៊ីនាថ
10:20 - 10:40	សម្រាកអាហារសម្រន់	លោក ស៊ីង កុសល
10:40 - 11:10	លំហាត់: ផលប្រយោជន៍និងបញ្ហាប្រឈមក្នុងការផ្សព្វផ្សាយផលិតផល	លោក ស្រែង ស៊ីនាថ
11:10 - 12:00	លំហាត់: ការបង្កើនប្រាក់ចំណូលពីការលក់គ្រាប់ពូជ និងកូនឈើ	លោក ស្រែង ស៊ីនាថ
12:00 - 13:30	អាហារថ្ងៃត្រង់	លោក ស៊ីង កុសល
13:30 - 14:10	លំហាត់: ការធ្វើDesignកញ្ចប់គ្រាប់ពូជ	លោក ស្រែង ស៊ីនាថ
14:10 - 14:30	សម្រាកអាហារសម្រន់	លោក ស៊ីង កុសល
14:30 - 15:30	ការចែករំលែកបទពិសោធន៍នៃការបណ្តុះកូនឈើ	លោក ស៊ុក សុខ អែម
15:30 - 15:50	សរុប និងបិទកម្មវិធី	បណ្ឌិត សូ ធា

Annex 2 List of participants attending training course on marketing of tree seeds and seedlings

No	Name	Role	Telephone
Organizer team			
1.	Dr. So Thea	Deputy Director of Institute of Forest and Wildlife Research and Development	
2.	Mr. Sreng Syneath	Deputy chief of Forest development and Botanical Research Centre (IRD)	
3.	Mr. Sing Kosal	Staff of IRD	
Community Forestry			
4.	Mr. Sut Ton	Chief of O Srao community forestry	០៩៧៦៣២៦៩៦៣
5.	Mr. Hai Hong	Deputy Chief of O Srao community forestry	០៩៧៩៦៧៧៨៨៩
6.	Mr. Sut Sok Em	Member of O Srao community forestry	
7.	Ms. Vong Chantha	Deputy Chief of Kampeng community forestry	០៧៧៥៨៨៦៨០
8.	Mr. Man Camnan	Deputy chief of Kampeng community forestry	០៩៧៣២៣២៦០៤
9.	Mr. Chhin Sarun	Member of Kampeng community forestry member	០៣១៣៣៤៥៥៥៣៣
10.	Mr. Hut chert	Chief of Chheuteal Breus community forestry	០៩៧២០៩១៤៨៩
11.	Mr. Ouk Khnim	Chief of Leab Kuy community forestry	
12.	Mr. Preap Sam ol	Committee member of Sang Rokhavon community forestry	
13.	Mr. Chi Herl	Committee member of Sang Rokhavon community forestry	
14.	Mr. Sorn Sopheap	Accountant of O Soam community forestry	
15.	Ms. Att Srey Mom	Committee member of O Soam community forestry	
16.	Mr. Kong Att	Committee member of O Soam community forestry	
17.	Mr. Sav nov	Committee member of O Soam community forestry	
18.	Ms. Pheav samphors	Committee member of O Soam community forestry	
19.	Mr. Dy Aeu	Committee member of O Soam community forestry	
20.	Mr. Kong Aii	Member of O Soam community forestry	
21.	Mr. Sun Dy	Committee member of O Soam community forestry	
22.	Sorn Yeang	Committee member of O Soam community forestry	
23.	Mr. Peng phally	Committee member of O Soam community forestry	
24.	Mr. Am Tol	Committee member of O Soam community forestry	
25.	Ms. Pok sreyyung	Committee member of O Soam community forestry	
26.	Mr. Born Samboo	Chief of Por Chhork Chhomrok Rithisen	
27.	Mr. Bith Sarith	Chief of Tekdos Sras bomprerng Community Forestry	០៧១៥៥៥៧៧៦១

