KALRO
Kenya Agricultural & Livestock Research Organization

MESPT
MICRO ENTERPRISES SUPPORT PROGRAMME TRUST

MINISTRY OF FOREIGN AFFAIRS OF DENMARK
Danida

Coconut Value Chain Trainers' Guide

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Disclaimer

This guide is for advisory use only. Users should verify details that relate to their agro-climatic zones from their area agricultural extension officers. It is also advised that this trainers' guide should be used in conjunction with the respective value chain manual and other relevant resource materials.

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FOREWORD

The Micro Enterprises Support Programme Trust (MESPT) is a local development organization founded in 2002 through a partnership between the Government of Kenya (GoK), the European Union (EU), and later, the Royal Danish Government. MESPT's main goal is to eradicate poverty by supporting the growth of micro-enterprises, including agricultural production, agribusiness, and afro-processing. This support aims to foster social, economic, and environmentally sustainable growth by increasing access to financial and business development services, creating jobs, and promoting sustainable micro-enterprises. Our vision is to build a more prosperous society, and our mission is to provide sustainable business development and financial services to smallholder farmers and agri-MSMEs in Kenya.

For over two decades, our team of professionals has been at the forefront of developing cost-effective and scalable solutions that promote financial inclusion and support the growth of sustainable agribusinesses. We accomplish this by providing tailored financial solutions that meet the specific needs of various agricultural value chains, delivered through a wholesale lending model to financial service providers such as SACCOs, MFIs, and Farmer Cooperatives. These providers, in turn, extend loans to smallholder farmers and micro agricultural enterprises.

Our approach emphasizes delivering integrated financial and business development services to smallholder farmers and MSMEs in Kenya, helping them access finance, boost agricultural productivity, improve afro-processing and connect to markets. Over the years, we have worked closely with county governments, development agencies, donors, and investors to strengthen business development capacities in the agricultural sector, using a unique tripartite model that connects farmers, SMEs, and financial institutions.

Coconut is among key value chains that have been supported by MESPT over the years through various interventions in order to enhance commercialization. MESPT appreciates the importance of documenting best practices for the value chain in facilitating effective delivery of training for farmers and Agri-preneurs. Therefore, MESPT has facilitated the development of this trainers' guide alongside the value chain manual and other resource materials through Green Employment in Agriculture Programme (GEAP) with support from DANIDA.

This guide is expected to enhance effectiveness in delivery of trainings on Good Agricultural Practices and commercialization of the value chain. I am optimistic that this guide will be helpful to partners in the the value chain including county governments. I am grateful to DANIDA for the continued support to MESPT programmes. I am also thankful to the value chain experts who spearheaded compilation of this guide.

Rebecca Amukhoye,

Chief Executive Officer, Micro-Enterprises Support Programme Trust

PREFACE

The Green Employment in Agriculture Programme (GEAP) is 5 years' programme (2021 to 2025) funded by DANIDA and implemented by Micro-Enterprises Support Programme Trust (MESPT). GEAP seeks to contribute directly to Kenya's Vision 2030 and to one of Denmark-Kenya Strategic Framework on accelerated decent employment creation in MSMEs and improved competitiveness of targeted value chains in agriculture which will contribute to transforming the economy towards a greener and more inclusive growth.

GEAP programme targets 40,000 smallholder farmers and has been implemented in 12 counties namely, Kilifi, Kwale, Nakuru, Nyandarua, Siaya, Kisii, Kakamega, Bungoma, Trans Nzoia, Uasin Gishu, Makueni and Machakos. The programme facilitates increased commercialization, decent employment, and green transformation through targeted interventions in seven selected agricultural value chains that include; Dairy, Export Vegetables, Indigenous Poultry, Cassava, Moringa, Pineapple, Mango, Banana, Avocado, Coconut and Aquaculture.

MESPT through GEAP has worked with the 12 County Governments Agriculture and Livestock technical staff, Kenya Agricultural and Livestock Research Organization (KALRO), MESPT technical staff and Private sector players to constitute a multidisciplinary team that developed resource materials tailored for extension service providers and smallholder farmers. The Coconut value chain manual and training guide are among the materials that were developed. The materials are to be used as an instructional guide for training on the implementation of good agricultural practices, value addition and marketing for the coconut value chain. Other cross cutting topics in the materials are climate adaptation practices and technologies, food safety and gender and social inclusion aspects. Relevance of the content is based on needs identified among value chain players, actors and aligned to GEAP project objectives. The training content is drawn from the coconut value chain manual and other relevant resource materials.

MESPT is grateful to the value chain experts and subject matter specialists who spearheaded the development and production of this training guide. It is our hope as MESPT that counties and other users will adopt and optimally use this resource for the coconut value chain development so as to increase productivity and profitability while ensuring focus on climate adaptation and sustainability.

Doreen Kinoti,

Programme Manager, Green Employment in Agriculture Programme

ACKNOWLEDGEMENTS

The Green Employment in Agriculture Programme (GEAP) participating counties (Kilifi, Kwale, Nakuru, Nyandarua, Siaya, Kisii, Kakamega, Bungoma, Trans Nzoia, Uasin Gishu, Makueni and Machakos) are acknowledged for providing resource persons in compilation of the document. The technical support and expertise provided by Kenya Agricultural and Livestock Research Organisation in development of the document is appreciated. Thanks to the Royal Danish Government's Danish International Development Agency (DANIDA) for facilitating the development of this resource material. Micro Enterprises Support Programme Trust (MESPT) is appreciated for co-ordinating the process of development and production of this document.

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LIST OF ABBREVIATIONS

AEZ	Agro-ecological zone
AFA	Agricultural Food Authority
APVC	Agriculture Product Value Chain
ASAL	Arid and Semi-Arid Land
CA	Conservation Agriculture
CIG	Common Interest Group
CSA	Climate Smart Agriculture
CTT	Core Team of Trainers
DANIDA	Danish International Development Agency
GAP	Good Agricultural Practices
GEAP	Green Employment in Agriculture Programme
ha	Hectare
IDM	Integrated Disease Management
INRM	Integrated Natural Resource Management
IPM	Integrated Pest Management
ISFM	Integrated Soil Fertility Management
IWM	Integrated Weed Management
KALRO	Kenya Agricultural and Livestock Research Organization
kg	Kilogram
LF	Lead Farmer
MESPT	Micro-Enterprises Support Programme Trust
SPs	Service providers
VMG	Vulnerable and Marginalized Group

SECTION I

This section consists of five sub-sections which include an overview of the Coconut value chain in Kenya, Green growth opportunities in the coconut sub-sector, Objectives of the training, Content of the Training and Facilitators Guidelines.

1.0 OVERVIEW OF THE COCONUT VALUE CHAIN IN KENYA

The coconut palm *(Cocos nucifera)* is one of the most important tree crops in Kenya. Coconut produces nuts throughout the year when climatic conditions are favorable. The palm is also regarded as the tree of life owing to its wide range of over 120 products for domestic and international markets. It was introduced to Kenya in the 16th Century by the Portuguese. Its cultivation spread rapidly and it became an industrial crop of considerable economic importance during the 20th Century. Today the coconut is mainly a small-scale farmer's crop. Over 70% of coastal farm households derive their livelihood either directly or indirectly from the coconut tree.

Majority of the coconut trees in Kenya are found in the Coastal Counties of Kwale, Mombasa, Kilifi, Tana River and Lamu. There is some production in Taita Taveta County as well. Other areas with potential for coconut production include Busia and Homa Bay in the Lake Victoria region and Tharaka Nithi in Eastern region. The total area under coconut farming in Kenya is estimated to be 80,000 ha.

The coconut palm is a multipurpose tree with all parts of the tree having important economic uses. The leaves are used in making baskets and roofing, immature nuts are used as juice, mature coconuts are useful for extraction of virgin coconut oil for cooking and copra oil used industrially for making soap, the husks produce coir fibre for making ropes, door mats and coco peat for agricultural use. Coconut shell is used for making ornamental handicrafts and the trunk is used for building, timber and firewood. Coconut palms are used for landscaping and can also be tapped for wine. Taking all products into consideration, the value of coconut sub sector in the farm level is estimated to be Kshs 3.2 billion annually with 60% of the value accounted for by palm wine, 24% by nuts and the balance accounted for by *makuti* (12%), brooms (3%) and other products like coco-wood and coir accounted for (1%).

The predominant variety produced in Kenya is East African Tall accounting for over 90% of the share of coconut grown locally. The other local variety is Dwarf coconut. The local coconut varieties can yield up to 100-150 per tree per year under good rainfall environment. In the drier areas, average yields are usually 75-100 nuts per tree per year. To improve productivity and profitability of the coconut value chain in Kenya, MESPT facilitated the introduction of high yielding fast maturing hybrid coconut variety Sampoorna from India into Kenya. By May 2022, harvesting of nuts from the first lot of hybrid coconut planted in farmers' fields in March 2019 had commenced in Kilifi County.

1.2 GREEN GROWTH OPPORTUNITIES IN THE COCONUT VALUE CHAIN

Coconut is an exceptionally suitable crop for upscaling green technologies and building resilience to climate change among the smallholder growers. It is a perennial crop which is resilient to severe or prolonged weather events, especially

dry seasons. Coconut shows good response to green technologies including organic manure, mulching and cover cropping which reduce extra chemical load. Coconut-based mixed cropping systems can also improve overall income per unit area of land while promoting environmental conservation.

Because of the large size of the endosperm inside the nut, Coconut seedling development is not very sensitive to external environmental weather fluctuations and thus ability to tolerate harsh weather conditions at this initiation level where other tree crops may require more intensive care at seedling stage and therefore higher investment costs in nursery facilities. Coconut nursery operation therefore offers business and employment opportunities for youth women and the Vulnerable and Marginalized groups (VMGs).

1.3 OVERALL OBJECTIVES OF THE TRAINING

The objective of this training is to equip farmer trainers with knowledge and skills necessary to increase productivity through adoption of Good Agricultural Practices (GAP) and principles. Specifically, the objectives of this training are to:

1. Provide farmers trainers with relevant attitude, knowledge and skills in Coconut farming as a business and market assessment techniques for market led production
2. Enhance farmer trainers' knowledge and skills in Coconut GAP, including on-farm Coconut variety selection, establishment and management of fields
3. Equip farmers trainers' with knowledge and skills in post-harvest and value addition of Coconut

1.4 ORGANIZATION OF THE TRAINING CONTENT

The training content is organized into eight modules**,** which are targeted and orientated to ensure the adoption and upscaling of best practices in the Coconut value chain for improved productivity and competitiveness in a market driven production system. The purpose of these modules is to enhance the knowledge and capacities of trainers in understanding and disseminating best practices in the coconut value chain to the intended beneficiaries, who are primarily farmers.

A summary of the modules is presented in **Table 1**.

Table 1: Summary of the eight training modules

No.	Module Name	Areas addressed	Expected Training Outcomes	*Duration
1.	Introduction	• Understanding the coconut tree • Suitable areas for coconut production in Kenya • Agro-climatic requirements for coconut production	• Better understanding of the coconut tree • Proper site selection for coconut production • Economic importance of coconut appreciated	2 hours 30 minutes

		• Economic importance of coconut		
2.	Planting Materials and Propagation	• Coconut varieties and variety selection • Coconut propagation • Coconut nursery management	• Awareness on improved Coconut varieties • Knowledge on production of quality coconut planting materials enhanced • Knowledge on coconut nursery management enhanced	3 hours 30 minutes
3.	Crop Management	• Land preparation • Planting • Care of young plants • Care of old trees • Good agronomic practices	• Improved understanding of suitable land preparation practices • Planting and spacing recommendations appreciated • Innovative climate smart agronomics practices for increased Coconut production appreciated	3 hours
4.	Integrated Soil and Water Management (ISWM) Practices for Coconut Production	• Coconut production and productivity	• Improved understanding and adoption of ISWM	4 hours 40 minutes
5.	Pests and Disease Management	• Coconut pests and how to control them • Weed management in coconut • Coconut diseases and how to control them	• Enhanced capacity to identify and control important coconut pests • Enhanced knowledge on weed management in coconut • Enhanced capacity to identify and control important coconut disease	6 hours
6.	Green Technologies and Mechanization	• Integrated soil and water management practices for Coconut production	• Soil, water and fertility management techniques availed • Option of organic coconut farming	6 hours 30 minutes

		• Organic coconut farming • Mechanization of coconut production • Mechanization of coconut harvesting	appreciated • Mechanized coconut production techniques appreciated • Mechanized coconut harvesting and de-husking options appreciated	
7.	Coconut Value Addition	• Maturity determination for various products • Coconut harvesting techniques • Post – harvest handling of coconut • Value – added coconut products	• Proper maturity determination to reduce losses in quantity and quality of coconut appreciated • Knowledge on proper harvesting techniques and storage facilities, hygiene and monitoring enhanced • Knowledge on production of various value – added coconut products enhanced	4 hours
8.	Coconut business and marketing	• Business opportunities in the Coconut value chain • Investment Profiling for the Coconut Value • Gross Margin Analysis	•Business opportunities in the coconut value chain explored •Investment options in coconut value chain profiled •Knowledge on gross margin analysis enhanced	3 hours 20 minutes
	Evaluation of the training	• Participants assessment of each training module	•Effectiveness of training established •Areas for improvement identified	30 minutes
Total Duration				**31 hours**

*Training duration is inclusive of relevant practical and demonstration sessions. This training duration does not include break hours of mid-morning, lunch and afternoon breaks.

1.5 PARTNERS AND THEIR ROLES

The partners envisioned in this training include:

a) **Core Trainers** - Master trainers drawn from KALRO, Universities, and Tertiary Institutions, State Department of Crop Development and Agricultural Research to facilitate initial Training and other stakeholders. They will also provide backstopping services for cascaded trainings.

b) **County Government –** The County Government will provide a team to be trained as ToTs. This will include County technical staff, Service providers (SPs), lead farmers and other experts who will further cascade the training to farmer groups and other value chain players.

c) **Lead Farmers** – These are early adopters or role models at the community level. They are supposed to allow their farms to be used as learning sites.

1.6 FACILITATORS GUIDELINES

1.6.1 Preparation of Training Materials

- The facilitators should familiarize themselves and internalize the guidelines provided in this manual prior to the training.
- The training materials should be available before the actual training dates.
- The stationery required should be available within the training venue before the training. These include name tags and writing materials
- Visual aids like field equipment and tools should also be arranged in time before the sessions start.
- Flip charts and good quality felt pens could be used interchangeably with projections.
- There should be adequate copies of participants' handouts (one per participant) to be distributed at the end of each session or as may be suitable.
- Copies of the modules can be distributed at the end of each module.

1.6.2 Preparation of Training Venue and Sites

The training venue will include the training room, field demonstration sites and market areas.

a) Training Room – Should have adequate space for participants seated in an arrangement that ensures unobstructed view of the front. A group of 20 to 30 participants is ideal. There should also be adequate desks and space for the trainers, their training materials and projector, flip charts holders.

b) Demonstration Site – Preferably should be within a walking distance.

c) Market Sites – these include retail outlets (kiosks, stalls, shops and supermarkets), whole sale and aggregation points and processing sites if any. The operators should be informed in advance about the visits. These should not be very far away, preferably less than 20 minutes' drive.

1.6.3 The Trainees

The trainees will be drawn from public and private sector based on their roles in the value chain. The trainer should act more of a facilitator than a lecturer.

1.6.4 Training Program

The training program proposed consists of the actual training modules and the corresponding days and time allocation **(Annex 1).**

1.6.5 Training Methods

The training methods proposed for each session are suitable for adult learners and appropriate for addressing knowledge, skills and attitudes of the participants. The choice of the methods has been informed by the competency issues being addressed, time available and experiences of the author of this manual. Depending on time available, the facilitator can modify these training methods but as a golden rule no presentation by the facilitator should take more than 30 minutes continuously; but should be separated by the other participatory training methods. Table 2 presents a list of available training methods.

Table 2: Description of Training methods

Training Method	Description of Method
Plenary presentations	Use of PowerPoint or flip charts and plenary discussions in situations where knowledge and opinion or consensus is required
Group exercises, buzz groups, visits and brainstorming sessions	To be considered where skills are an issue requiring sharing and trying
Role plays and problem-solving exercises	Plenary discussions have been considered as training methods where attitude is an issue
On-farm practical demonstration and exchange visits	To be considered where hands-on practical skills are acquired through practicals and demonstrations

1.6.6 Managing the Training Sessions

The logic of design and flow of each module is that the facilitator, paying attention to the proposed methods and session guidelines shall: (i) Introduce the module; (ii) Draw out the participant's expectations; (iii) Relate participants' expectations with module objectives or learning outcomes; (iv) Explore the concept and content, switching to different methods of delivery of the content (group exercise, brainstorming, excursions, plenary discussions) (v) Review the module at the end using participatory approaches like one participant reads one summary message and its application; and, (vi) Distribute the participants' handouts.

1.6.7 Evaluation of the Training

Half an hour has been allocated for planning for way forward and evaluation of the training on the last day of training. The individual trainees individually fill valuation forms. The evaluation forms are then collected and analyzed by the core facilitators.

Table 3: Sample Evaluation Form

1. Gender of respondent (Please tick): Male [ ] Female [ ]
2. Please provide feedback on the topics by filling the table below

Aspect / Module	**Rating (Tick only one per topic)**		
	Very Useful (3 marks)	**Useful (2 marks)**	**Of Limited Use (1 marks)**
1) Introduction			
2) Planting Materials and Propagation			
3) Crop Management			
4) Pests and Disease Management			
5) Integrated Soil and Water Management in Coconut Production			
6) Green Technologies and Mechanization			
7) Coconut Value Addition			
8) Business and marketing			

3. Were the training materials (PowerPoint, handouts) adequate? (Please tick) Yes [ ] No [ ]

Give reasons:

……

…… ……

4. How are you intending to apply what you have learnt from this training?

……..

……

5. Please suggest areas of improvement

……..

……...

1.6.8 Key references

Key references should be provided for each module plus a list of other relevant publications for reference.

Coconut reference material will consist of materials such as: Coconut production handbook/ manuals/ guides; Pamphlets/brochures and Factsheets on specific topics

SECTION II: TRAINING MODULES

This part presents the content of 8 modules of training namely: Introduction; Planting Materials and Propagation; Crop Management; Pests and Disease Management; Integrated Soil and Water Management in Coconut Production; Green Technologies and Mechanization; Coconut Value Addition; and Business and marketing.

Outline of the modules

Each of the 8 modules consisting of 4 parts. These parts are:

i) **Overview** – Context and background to training needs, knowledge and skills GAP being addressed
ii) **Module learning outcomes** – What trainees are expected to learn
iii) **Module summary** –sequence of sessions, training methods, materials and duration. The module duration indicated is an estimation of the recommended minimum length of time the trainee is exposed to the training content
iv) **Facilitators guideline** –detailed sessions, training methods, materials and session guides

MODULE 1: INTRODUCTION

1.1 Overview

Coconut is of tropical origin and well adapts to warm climates and grow best during summer. Most of the production is rainfall dependent. With the unpredictable rainfall patterns, prolonged droughts and increasing demand for food supply, the need for knowledge on the production niches and climatic conditions for Coconut production is therefore crucial for improved productivity and commercialization of the crop.

This module build skills of the trainees to understand the different suitable agro-climatic zones prescribing ideal altitudes, soils, temperature, and rainfall levels among other characteristics for Coconut production. While these agro-climatic factors are critical for growth and yield performance of Coconut, they also provide favorable conditions for pests, diseases, weeds and beneficial soil-borne microbes. It is therefore important for farmers to be trained on the suitable agro-ecological zones and innovative management practices for better Coconut performance and yields.

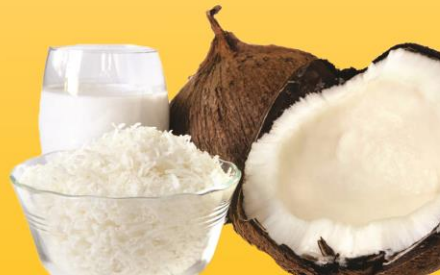
1.2 Module learning outcomes

The By the end of the module, the following outcomes should be achieved:

1. Importance of Coconut in Kenya's economy explained and appreciated
2. Knowledge of altitudes and soil types/characteristics for Coconut production enhanced
3. Climatic conditions (temperatures, rainfall and humidity) required for Coconut production understood and applied
4. Specific county agro-ecological zones for Coconut production. explained and understood

1.3 Module Summary

Module 1: Introduction			
Sessions	**Training methods**	**Training materials**	**Time**
1.3.1 Introductions and climate setting	• Preliminaries • Self-introduction • Setting Norms & rules • Plenary discussion • Group exercise	• Flips charts • Felt pens • Laptop • Projector	20 minutes
1.3.2 The coconut plant; Importance of Coconut in Kenya's economy	• Presentations • Plenary discussion	• Flips charts • Felt pens • Laptop • Projector • Participants' handouts	30 minutes
1.3.3 Coconut production ecological/climatic requirements for optimal yields	• Presentations • Plenary discussion	• Flips charts • Felt pens • Laptop • Participants' handouts • Projector	30 minutes
1.3.4 Coconut production Agro-ecological zones (AEZs)- average yields, and constraints in the target Counties	• Group exercise • Plenary Presentation • Plenary discussion	• Flips charts • Felt pens • Laptop • Projector	40 minutes
1.3.5 Gain practical knowledge on specific county AEZs for Coconut production	• Group exercise • Presentations • Plenary discussion • Video/photo show	• Flips charts • Felt pens • Laptop • Projector	20 minutes
1.3.6 Module review	• Discussions/conclusion and way forward	• Flip charts • Felt pens	10 minutes



		• Laptop	
Total			**2 hours 30 minutes**

1.4 Facilitator Guidelines

1.4.1 Introductions and climate setting	**Session guide**
(The facilitator welcomes trainees to the module and thereafter invites them to introduce themselves and state their expectations) **Levelling of expectations** The trainees to form groups (e.g. Sub-county based) and list their expectations, norms and rules. *The facilitator presents module objectives* **Objectives** By the end of the module, the trainee should be able to: • To define the importance of Coconut in Kenya's economy. • Indicate and describe altitudes and soil types/characteristics for Coconut production. • Describe climatic conditions (temperatures, rainfall and humidity) required for Coconut production. • Gain practical knowledge on specific county agro-ecological zones for Coconut production. • Understand and be able to apply innovative Coconut production and management technologies in the suitable counties.	• Summarize the facilitator/trainees involvement in Coconut value chains • PowerPoint presentation
1.4.2 Importance of Coconut in Kenya's economy	
Plenary Presentation • The Coconut plant • Coconut in Kenyan households • General Coconut production trends in Kenya • Coconut consumption and markets **Guided discussions by the Facilitator** Questions/answers/comments	• PowerPoint presentation • Participants' handouts • Plenary discussion
1.4.3 Coconut production ecological/climatic requirements	**Session guide**
Plenary Presentation • Altitude and Agro-ecological zones for Coconut production • Climatic conditions (Rainfall, Temperatures and humidity) • Soils (soil types, pH, general fertility for Coconut) **Facilitator's guided discussion** Questions/answers/comments	• PowerPoint presentation • Participants' handouts • Plenary discussion
1.4.4 Coconut production AEZs, average yields, and	**Session guide**

constraints in the target areas	
Plenary Presentation Facilitator guide in reviewing and discussing suitability map (County by County) **Group exercise** Trainees to bring out specific county or sub-county AEZs, land size, yields and constraints to Coconut production and present in the plenary: • Agro-ecological zones (AEZs) and % area suitable for Coconut • Average land/farm size under Coconut production in Kenya • Average yield of Coconut per unit farm area • Constraints to Coconut production • Opportunities to addressing the constraints **Discussions/presentations from the groups** Let the trainees/groups share the group exercise outcomes	• PowerPoint presentation • Group work • Open discussions with the guidance of the facilitator • Plenary discussion
1.4.5 Practical knowledge on specific county agro-ecological zones for Coconut production	**Session guide**
Plenary presentation • Facilitator guide trainees on the practical knowledge applicable to specific county agro-ecological zones for Coconut production **Plenary discussions and Video/photo show**	• PowerPoint presentation • Video/photo show • Plenary discussion • Plenary discussion
1.4.6 Module review	**Session guide**
(The facilitator leads the trainees in reviewing the module) Summary of the main points from the training • Objectives and expectations(review done on basis of the expectations listed earlier) • Trainees to recall the Coconut production ecological/climatic requirements, Coconut production AEZs average yields, and constraints in the target Counties • Trainees to indicate new sets of skills and knowledge acquired from the module. The results are recorded per county presented • Trainees to randomly identify the issues for the way forward. **Facilitator's guided discussion**	• The last participants' handouts/training materials • Summarize the main points of the module on a flip chart and display • Plenary discussion

MODULE 2: PLANTING MATERIALS AND PROPAGATION

2.1. Introduction

This module is designed for training and exposing trainees to coconut varieties, propagation and nursery management. This module also exposes trainees to the improved Coconut varieties recommended for diverse uses and targeted production environments.

Coconut varieties are classified as either tall or dwarf based on the height of production of the coconut palm tree. There are three varieties designated as East African tall, dwarf and hybrid. Coconut produces nuts that cover hard shells that when broken has a white flesh inside. Selecting the best Coconut variety is the most important decision made by a farmer. Planting a variety that is not suited for the available market and the particular production situation leads to lower profits or possibly crop failure. In addition to market acceptability, a variety must have acceptable yield, be adapted to the production area and have the highest level of preferred attributes. In order to optimize Coconut yields variety evaluation in the changing climate and farming environments is an important component for the selection of high yielding commercial varieties. The improved high yielding varieties are key to achievement of increased incomes as well as food and nutrition security. While introducing the improved varieties good agricultural practices will be mainstreamed in the process to ensure the technologies are environmentally sustainable and safe to consumers.

2.2. Module Learning Outcomes

By the end of the module, the following outcomes should be achieved:

1. Various improved Coconut varieties, their ecological areas of cultivation and their uses identified and compared
2. Coconut propagation and nursery management described

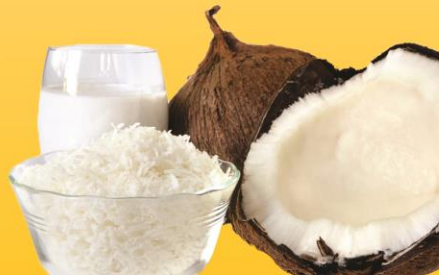
2.3 Module Summary

Module 2. Planting Materials and propagation			
Sessions	**Training Methods**	**Training Materials**	**Time**
2.3.1 Introduction, objectives and levelling of expectations 1.	• Groups to bring out expectations • Plenary presentation	• Module objectives • Marker pens • Flip charts • Projector • Laptop	20 minutes
2.3.2 Introduction to the various improved Coconut varieties, their ecological areas of cultivation and their attributes and uses.	• Group Exercises to identify local Coconut landraces and varieties • Plenary Presentations • Plenary discussion	• Flips charts • Felt pens • Laptop • Projector • Manila papers	30 minutes
2.3.3 Recommended varieties for specific	• Plenary Presentation	• Flips charts • Felt pens	20 minutes

regions	• Group exercise • Field demonstration	• Laptop • Projector • Manila paper	
2.3.4 Instructions on coconut propagation interpreted and applied	• Plenary Presentation • Group exercise • Plenary discussions • Practicals/demonstration	• Flips charts • Felt pens • Laptop • Projector • Manila papers • Propagation materials	1 hour 30 minutes
2.3.5 Certified seedling sources for Coconut identified and adopted. • Information on seeds and seedlings understood in preferred variety identified. **Group exercise** *Circulate samples of certified Coconut seedlings* *Identify key information on Coconut seedlings provided*	• Distribute Participants' handouts • Group exercise • Plenary discussion	• Demonstration of Seeds and seedling samples	30 minutes
2.3.6 Module review	• Participants' questions and comments • Facilitator's summary	• Participants' hand outs • Module review	20 minutes
TOTAL			**3 hours 30 minutes**

2.4 Facilitator's Guidelines

2.4.1 Introduction and Levelling Expectations	Session guide
The facilitator welcomes trainees to the module and introduces him/herself, stating profile and experience of working with farmers. **Trainees' introductions and expectations** The facilitator invites the trainees to state their expectations after brain storming in their respective county groups **Module Objectives** *The facilitator presents module's objectives.* By the end of the module, the trainee should be able to: 1. Describe and explain Coconut seed systems in Kenya. 2. Describe Coconut seedling production systems in public and private seedling nurseries 3. Explain the role of private nurseries, community and public nurseries in the production of quality Coconuts.	• Summarize trainees' Expectations on a flipchart • PowerPoint presentation
2.4.2 Introduction to Coconut and the various improved Coconut varieties and their uses	**Session guide**
(The facilitator describes the Coconut cropand guides the trainees in identifying the various Coconut improved varieties and their uses). **Group exercise and discussion** Ask trainees highlight and describe some of the Coconut varieties they know. **Plenary Presentation** • Improved Coconut varieties. • Categories of Coconut varieties and comparison of various hybrid varieties. *Show trainees the photographs of each variety and the full description and its uses.*	• Distribute participants' handouts • Group exercise • Plenary discussion
2.4.3 Recommended Coconut varieties for the target counties	**Session guide**
Plenary Presentation **Varieties for the target counties** • Coconut growing regions and the new regions which are being targeted for Coconut cultivation in Kenya. • Coconut varieties suited for each county • Climate conditions for target county (semi-arid, rain-fed and irrigated) **Group exercises** Trainees discuss and come up with Coconut varieties in their county	• Distribute participants' handouts. • PowerPoint presentation • Group exercise • Field demonstration



Field demonstration *(Identify farmers' fields with various Coconut varieties).* • Visit the Coconut plots with the trainees and assist them identify and study the various varieties. • After the field visit facilitate them to recall what they learned and discuss on any issue that may arise. (can also use Coconut fruit samples/pictures for the various varieties)	
2.4.4 .Instructions on seed package interpreted and applied	Session guide
Plenary Presentation • Certified seedling sources for Coconut identified and adopted. • Information on seeds and seedlings understood in preferred variety identified. *Circulate samples of certified Coconut seedlings* *Identify key information on Coconut seedlings provided*	• Distribute Participants' handouts • Group exercise • Plenary discussion

MODULE 3: CROP MANAGEMENT

3.1 Introduction

The low yields realized in Coconut production by farmers is as a result of non-adoption of the improved crop management practices developed by agricultural researchers. Some of the improved agronomic practices available for these farmers include, timely land preparation, use of recommended fertilizer types, correct plant spacing, knowledge of physiological maturity indices and how to improve on harvesting techniques to avoid losses

In order to optimize productivity of Coconut, farmers need to adopt specific agronomic packages, without which the yield potential of improved varieties cannot be achieved. In addition, the weather vagaries occasioned by climate change effects make it necessary to incorporate adaptation or mitigation measures which can enable Coconut farmers increase its productivity. In this respect, climate smart agronomic practices come to the fore. Therefore, there is need to equip farmer facilitators from the targeted counties with skills and knowledge that will enable them train farmers on innovative climate smart Coconut agronomic practices that include; seed selection techniques, and disease and pest management strategies for increased production.

3.2 Module learning outcomes

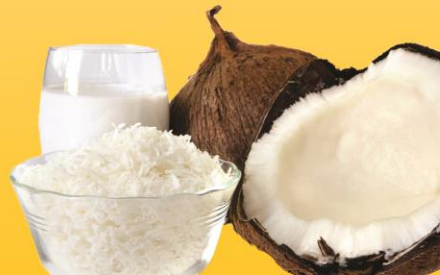
By the end of the module, the following should be achieved:

1. Agronomic practices for Coconut production described and explained.
2. Region specific agronomic practices for Coconut production optimization outlined.

3. Appropriate inputs and their correct application rates for Coconut production described.
4. Timing for operations or inputs application in Coconut production described and explained.

3.3 Module Summary

Module 3: Coconut agronomic practices			
Sessions	**Training methods**	**Training materials**	**Time**
3.3.1 Introductions and climate setting, objectives and expectations	• Self-introduction • Setting Norms & rules • Plenary Presentation • Plenary discussion • Group exercise	• Flips charts • Felt pens • Laptop • Projector	20 minutes
3.3.2 Agronomic practices for Coconut production	• Presentations • Group exercise (Groups tour nearby farm for layout demonstration) • Plenary discussions (From the farm visit)	• Flips charts • Felt pens • Laptop • Projector • Participants' handouts	1 hour
3.3.3. Site selection, Land Preparation, seed selection, planting, water requirement, pest management, weed management and crop rotation	• Practical exercise (groups tour nearby farm for layout demonstration) • Presentations	• Flips charts • Felt pens • Laptop • Projector • Participants' handouts	30 minutes
3.3.4 Appropriate inputs and their recommended application rates for optimum production of Coconut	• Presentations • Group exercise (trainees enlist inputs and application rates for different counties) • Plenary discussions (share group work results)	• Flips charts • Felt pens • Laptop • Projector • Participants' handouts	40 minutes
3.3.5 Module review and discussion	• Discussion/conclusion and way forward	• Flip charts • Felt pens • Laptop • Projector	30 minutes



Total			**3 hours**

3.4 Guidelines for Facilitators

Module 3: Agronomic Practices for Coconut	
3.4.1. Introductions, climate setting	**Session guide**
Preliminaries *The facilitator welcomes trainees to the module and thereafter invites them to introduce themselves and state their expectations* **Expectations** The trainees form groups (e.g., county based) and list expectations from the module *The facilitator presents the module objectives.* **Objectives** By the end of the training module, the trainee should be able to: • Explain and describe agronomic practices for Coconut production. • Describe appropriate inputs and their correct application rates for Coconut production. • Outline region specific Coconut production agronomic practices. • Specify the correct timing for all operations including application of inputs in Coconut production.	• Summarize the trainees expectations • PowerPoint presentations • Group exercise (listing and presenting expectations). • Expectations lists kept for later reviewing compliancy
3.4.2. Agronomic practices for Coconut production	
Plenary Presentation The facilitator presents critical factors on: • Factors for selecting Coconut production as an enterprise • Climate smart land preparation practices • Climate smart planting • Weed control • Pests and disease control • Cropping systems • Spacing (inter-and intra-row spacing) • Conservation agriculture principles/benefits **Practical exercise** Guided groups tours to model farms to observe various planting and management techniques **Plenary discussion** Questions/answers and comments	• PowerPoint Presentation • Plenary discussion • Distribute participants' handouts/training materials • Practical exercise

3.4.3. Appropriate inputs for the optimal production of Coconut and their correct/recommended application rates	**Session guide**
Group exercise • The facilitator guides trainees to list or/and present the required inputs for use in Coconut production • The trainees get into county groups to provide lists of Coconut inputs and their application rates as practiced by farmers. • The groups present their results in the plenary - opening up for questions, answers and discussion. **Plenary presentation and plenary discussion** **(**The recommended Coconut inputs (seed, seedlings, fertilizers, manures, among others), their application rates and appropriate time of application for optimal yields	• PowerPoint Presentation • Distribute participants' handouts • Groups exercise • Plenary discussion
3.4.3. Appropriate inputs for the optimal production of Coconut and their correct/recommended application rates	**Session guide**
Group exercise • The facilitator guides trainees to list or/and present the required inputs for use in Coconut production • The trainees get into county groups to provide lists of Coconut inputs and their application rates as practiced by farmers. • The groups present their results in the plenary - opening up for questions, answers and discussion. **Plenary presentation and plenary discussion** • The recommended Coconut inputs (seeds, seedlings, fertilizers, manures, among others.), their rates and their time of application for optimal yields	• PowerPoint Presentation • Distribute participants' handouts • Groups exercise • Plenary discussion
3.4.4. Module review	**Session guide**
(The facilitator leads the trainees in reviewing the module) Summary of the main points from the training • Objectives and expectations (review done on basis of the objectives and expectations listed earlier) • *Trainees to randomly indicate new sets of skills and knowledge learnt from the module. The results are recorded per county presented* • Randomly (average of 10 cases) trainees identify key issues for the way forward issues.	• Participants' handouts • Summarize the main points of the module on a flip chart and display

MODULE 4: INTEGRATED SOIL AND WATER MANAGEMENT PRACTICES FOR COCONUT PRODUCTION.

4.1 Introduction

Increasing pressure on soil and water resources and soil nutrients depletion has called into question, the changing strategies and approaches of soil fertility management and plant nutrition. Decline in soil fertility is the major constraint limiting the productivity of fruit crops. In addition climate change has accelerated the decline of the agricultural sector performance through limited and unpredictable moisture availability for the fruit and nut tree production.

Globally, following the idea of sustainable development, ISFM is a holistic approach which carries a variety of overlapping components including use of certified cultivars, inorganic and organic fertilizers, cropping systems that mitigate climatic and soil stress factors within the context of social and economic practicability. Integrated Soil Fertility Management (ISFM), through one of its component of conservation agriculture offers the best option for improving soil fertility in the advent of climate change adaptation and increased demand for food for the growing population.

It is worth noting that of the primary nutrients, potassium has been found to be the most important in coconut cultivation followed by nitrogen. There is need to integrate existing technologies of Integrated Natural Resource Management (INRM), Integrated Soil Fertility Management (ISFM), Integrated Water Management (IWM) and sustainable intensification practices in small holder production systems in addressing coconut nutrient requirements. The encouraged use of organic manure and green manures in coconut production is aimed reducing production costs incurred from costly commercial fertilizers. This module exposes public and private extension agents, service providers, lead farmers and facilitators to the integrated soil and water management practices for enhanced coconut production.

4.2 Module learning outcomes

By the end of the module, the following training outcomes should be achieved by the TOT facilitators:

1. Enhanced understanding on soil composition, the various physical, chemical and biological properties and what constitutes a healthy soil, including soil classification explained and appreciated
2. Gain knowledge in soil and plant tissue sampling for laboratory analysis, interpretation and utilization of results from accredited laboratories in Kenya
3. Understand soil health and Integrated Soil Fertility Management (ISFM) for climate resilient cropping systems
4. Gain knowledge in water harvesting technologies, soil and water management
5. Have ability to identify temporary or permanent decline of land productive capacity and use available management solutions to amend soil degradation

6. Identify and describe problematic soils and their management strategies

4.3 Module Summary

Module 4: Integrated soil and water management practices for Coconut production			
Sessions	**Training methods**	**Training materials**	**Duration**
4.3.1 Introduction, objectives and expectations	• Self-introduction • Plenary Presentation • Plenary discussion	• Flip charts • Marker pens • Projector for PowerPoint presentation • Laptop	20 minutes
4.3.2 Soil composition, properties and health	• Plenary Presentations • Plenary discussion	• Flip charts • Marker pens • Projector for PowerPoint presentation • Laptop • Participants' handouts	30 minutes
4.3.3 Soil and plant tissue sampling and analysis	• Plenary Presentations • Field demonstrations (Conduct soil and plant tissue sampling and analysis)	• Projector for PowerPoint presentation • Participants' handouts • Soil and plant tissue sampling tools	1 hour
4.3.4. Soil fertility and plant nutrition	• Plenary Presentation • Plenary discussion	• Flip charts • Marker pens • Projector for PowerPoint presentation • Laptop • Participants' handouts	30 minutes
4.3.5 Soil health and (ISFM) for climate resilient cropping systems	• Plenary Presentation • Plenary discussion	• Flip charts • Marker pens • PowerPoint presentation • Participants' handouts	30 minutes
4.3.6 Soil and water management and water harvesting technologies	• Plenary Presentation • Plenary discussion	• Flip charts • Marker pens • PowerPoint presentation • Participants'	30 minutes

		handouts	
4.3.7 Soil degradation and reclamation	• Presentations • Plenary discussion	• Flip charts • Marker pens • PowerPoint presentation • Participants' handouts	30 minutes
4.3.8 Problematic soils and their management	• Presentations • Plenary discussion	• Flip charts • Marker pens • PowerPoint presentation • Participants' handouts	30 minutes
4.3.9 Module review and discussion	• Discussion	• Flip charts	20 minutes
Total			**4 hours 40 minutes**

4.4 Facilitator's Guidelines

4.4.1. Introduction, Objectives and Expectations	**Session guide**
(The facilitator welcomes trainees to the module on sustainable water and soil fertility management practices for optimal production of Coconut in moisture stressed conditions. The trainees are then invited to introduce themselves and state their expectations) **Module Objectives** *(The facilitator presents modules objectives)* By the end of the module, the trainee should be able to: • Appreciate soil composition and what constitutes a healthy soil, including soil classification. • Describe soil and plant tissue sampling for laboratory analysis, interpretation and utilization of results from accredited laboratories in Kenya. • Explain soil health and Integrated Soil Fertility Management (ISFM) for climate resilient cropping systems. • Explain water harvesting technologies, soil and water management. • Identify temporary or permanent decline of land productive capacity and provide various solutions to soil degradation. • Identify and describe problematic soils and their management.	• Summarize trainees' "Expectations" and display. • PowerPoint presentation • Distribute participants' handouts on Module • Objectives and Training Program
4.4.2. Soil composition, properties and health	**Session guide**

(The facilitator presents on soil composition, properties and health) **Plenary presentation** **(**Soil composition, properties and health • Description of soil composition • Description of soil properties • Describe what soil health is all about **Plenary discussion** Let the trainees recall what they learnt and discuss any issues that may arise	• PowerPoint presentation • Participants' handouts • Plenary discussion
4.4.3. Soil and plant tissue sampling and analysis	**Session guide**
Plenary Presentation • Overview of the soil sampling methods • Soil analysis results and interpretation • Overview of soil analysis results using available examples • Soil sampling guidelines **Practical exercise and demonstration on soil sampling** • soil sampling methods	• PowerPoint presentation • Distribute participants' handouts • Practical exercise and demonstration
4.4.4. Soil fertility and plant nutrition	**Session guide**
Plenary Presentation • Potential role of different soil management techniques in addressing soil fertility challenges in Coconut smallholder farming systems • Integrated Soil Fertility Management techniques • Soil management guidelines **Plenary discussion** Let the trainees recall what they learnt and discuss any issues that may arise.	• PowerPoint presentation • Plenary discussion • Distribute participants' handouts
4.4.5 Soil health and (ISFM) for climate resilient cropping systems	**Session guide**

Plenary Presentation • Soil health • Introduce integrated soil fertility management (ISFM) • Soil health and ISFM for a climate resilient cropping system • Manure management, mulching, organic amendments and composting for increased use of organic manure for improving agricultural production • Conservation agriculture as a climate smart agriculture practice • Coconut as an agroforestry treeinclimate resilient cropping systems **Plenary discussion** Let the trainees recall what they learnt and discuss any issues that may arise.	• PowerPoint presentation • Distribute participants' handouts • Brochures, leaflets and manual
4.4.6 Soil and water management and water harvesting technologies	**Session guide**
Plenary Presentation • Principles of soil management for coconut production • Methods of tillage systems that conserve water in coconut farming • Principles of soil fertility management coconut farming • Methods of soil fertility management for increased coconut productivity **Plenary discussion** Let the trainees recall what they learnt and discuss any issues that may arise.	• PowerPoint presentation • Distribute participants' Handouts • Plenary discussion
4.4.7 Soil degradation and reclamation	**Session guide**
Plenary Presentation • Overview of soil degradation and reclamation. • Reclamation measures of degraded soil • Identification of the causes of soil degradation • Identification of reclamation measures of degraded soil **Plenary discussion** Let the trainees recall what they learnt and discuss any issues that may arise.	• PowerPoint presentation • Distribute participants' handouts • Plenary discussion
4.4.8 Problematic soils and their management	**Session guide**

Plenary presentation • Problematic soils and their management • Soils with unsuitable biological properties • Soils with unsuitable chemical properties • Soils with unsuitable physical properties **Plenary discussion** Let the trainees recall what they learnt and discuss any issues that may arise.	• PowerPoint presentation • Distribute participants' Handouts • Brochures, leaflets and manual
4.4.9. Module review	**Session guide**
The facilitator leads the trainees in reviewing the module) Summarize the main points of the training review the main points together with the trainees. Discuss with trainees about new things learnt from this Module. Let them identify some of the problems and any other issues arising from the module.	· The last participants' handouts · Summary of the main points from the module on a flip chart and display

MODULE 5: COCONUT CROP HEALTH - PESTS AND DISEASE MANAGEMENT

5.1 Introduction

Coconut production is often constrained by damage caused by a range of insects, diseases and weeds. Further, an acute shortage of knowledge among Coconut farmers on the recommended crop health management options gets farmers frustrated and most of them may abandon the crop if timely interventions are not prioritized. Pests such as scales and mealy bugs suck cellular sap from young tender plant tissues, rendering infested plants unable to manufacture food, translocate nutrients to various utilization locations of the plants and eliminate metabolic waste products and also serve as vectors to viral infections.

Rhinoceros beetle, termites, and mites, feed on the various parts of plants by chewing, and tunnelling. These create wounds for the entry of bacterial, fungal and viral phytopathogen, thus causing death leading to lowering crop yields. Phytopathogens cause plant diseases, which alter the sequence of metabolic activities such as respiration, photosynthesis, nutrient translocation, growth and development. Weeds present competition for growth and development resources needed by the Coconut crop i.e. moisture, nutrients, light and space. This has significantly reduced productivity and profitability of Coconut over time. This module is therefore meant to help trainees understand the ecology, impact and recommended management practices for diseases, pests and weeds to reduce production costs and improve Coconut yields.

5.2 Module Learning Outcomes

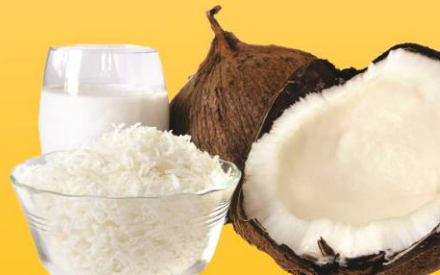
By the end of the module, the following outcomes should be achieved:

1. Major pests, diseases and weeds identified.
2. Integrated pest, disease and weed management in Coconut described and explained.

3. Knowledge on major diseases, their development, economic losses and their control.
4. Integrated Disease Management approaches and scouting for threshold determination.
5. Integrated weed management strategies for Coconut.
6. Safe use of agro-chemicals (pesticides, fungicides and herbicides) explained and appreciated.

5.3 Module Summary

Module 5: Crop Health			
Sessions	**Training methods**	**Training materials**	**Time**
5.3.1 Introduction, objectives and expectations	• Self-introductions • Group exercise • Plenary presentation • Plenary discussion	• Flips charts • Marker pens • Laptop • Projector	30 minutes
5.3.2 Major Coconut pests that cause economic losses and their control methods;	• Group work • Plenary presentation • Plenary discussion • Practical exercise	• Flips charts • Marker pens • Projector • Laptop • Participants' handouts	1 hour
5.3.3 Sustainable Integrated Pests Management practices and scouting for threshold determination in Coconut	• Plenary presentation • Plenary discussion	• Flip charts • Marker pens • Projector • Laptop • Participants' handouts	30 minutes
5.3.4 Major Coconut diseases that cause economic losses and conditions that favor their development including their control methods	• Group work • Plenary Presentation • Plenary discussion • Practicalsession	• Flip charts • Marker pens • Projector • Laptop • Participants' handouts	1 hour
5.3.5 Sustainable Integrated Management of Coconut diseases and scouting for threshold determination	• Presentations • Plenary discussion • Field demonstration	• Flip charts • Marker pens • Projector • Laptop • Participants' handouts	1 hour
5.3.6 Integrated weed management (Major weeds of Coconut)	• Plenary Presentation • Plenary discussion • Field demonstration	• Flip charts • Marker pens • Projector • Laptop	1 hour

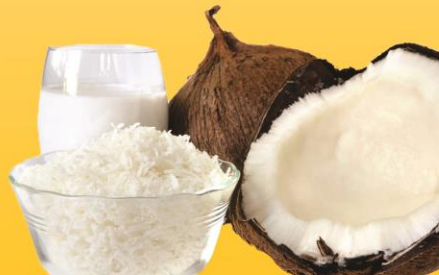


		• Participants' handouts	
5.3.7 Safe use of agro-chemicals and update source for registered agro-chemicals (PCPB registered products)	• Presentations • Practical exercise • Plenary discussion	• Projector • Laptop • Flip charts • Marker pens • Participants' handouts	30minutes
5.3.8 Module Review	• Discussion/ Recap of the module • Take away messages	• Flip charts • Marker pens • Participants' handouts	30 minutes
Total			**6 hours**

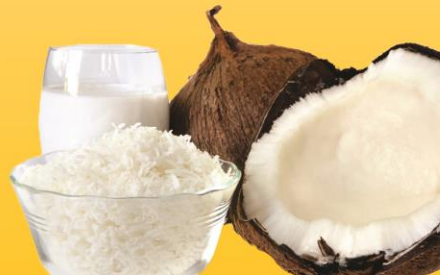
5.4 Facilitator's Guidelines

Module 5: Coconut Crop Health	
5.4.1 Introduction and levelling of expectations and objectives	**Session guide**
Introduction *(The facilitator welcomes trainees to the module and thereafter invitesthem to introduce themselves and state their expectations)* **Module Objectives** *(The facilitator presents modules objectives)* By the end of the module, the trainee should be able to: • Identify major pests, diseases and weeds. • Describe and explain integrated pest, disease and weed management inCoconut. • Explain safe use of agro-chemicals (pesticides, fungicides and herbicides).	• Summarize trainees' "Expectations" • PowerPoint presentation • Participants' handouts
5.4.2 Major Coconut pests that cause economic losses and their control methods; emerging/migratory pests	**Session guide**
(The facilitator makes a presentation on the common Coconut pests that are of economic importance) **Group work** • Trainees to share Coconut pest information from their respective Counties **Plenary Presentation** • Names of pests and their descriptions • Symptoms of their infestation/type of damage • Data on economic significance of the common Coconut pests **Practical exercise** • Identification of Coconut pests from provided	• PowerPoint presentation • Group exercise • Practical exercise • Participants' handouts

specimens **Discussion** • Let the trainees recall what they learned and discuss any issue that may arise	
5.4.3. Sustainable Integrated Pest Management (IPM) practices in Coconut; scouting and threshold determination	**Session guide**
Plenary Presentation • IPM principles; how to implement them with a focus on cultural, physical, biological and chemical pest management options. • Critical considerations for proper scouting • Threshold determination and when to implement control measures • An overview on the safe use of agro-chemicals (demonstration on how to select most suitable pesticides, for the management of pests in Coconut). **Discussion** Let the trainees recall what they learned and seek clarification on the principles of sustainable IPM options	• PowerPoint presentation • Participants' handouts
5.4.4 Major Coconut diseases that cause economic losses, conditions that favour their development and their control methods	**Session guide**
Group work • Determination of Coconut diseases in specific Counties **Plenary Presentation** • Presentations on Coconut diseases and conditions that favor their development **Practical Exercise** • Identification of major disease species causing economic damage based on samples presented	• PowerPoint presentation • Participants' handouts • Disease identification guidelines • Practical exercise
5.4.5 Sustainable Integrated Diseases Management (IDM); scouting and threshold determination	**Session guide**
Plenary presentation • Critical considerations for scouting and when to implement Coconut disease control measures • Presentation on Integrated Disease Management (IDM) in Coconut • An overview on the safe use of recommended agro-chemicals (demonstration on how to select most suitable fungicides for the management of major Coconut diseases). **Field visit**	• PowerPoint presentation • Participants' handouts • Disease management guidelines • Field demonstration



- Visit to a nearby Coconut fieldfor collection and identification of diseased Coconut samples	
5.4.6 Integrated weed management (Major weeds of Coconut)	**Session guide**
Plenary presentation • Identification of weeds • Major types of weed in the Coconut field • Integrated Weed control measured **Plenary discussion** Integrated weed management	• PowerPoint presentation • Participants' handouts • Plenary discussion
5.4.7 Safe Use of agro-chemicals and sources of registered chemicals (PCPB registered products)	**Session guide**
Practical Trainees go into their groups and discuss: • Ways used by farmers in mixing of pesticides/ ITK products; and their consideration on safe use of pesticides • Representative group leaders give presentation on findings of the discussion **Plenary presentation** Facilitator makes presentation on: • Safe use of pesticides • Let the trainees ask questions on any of the covered topical issues and critical areas to share with farmers on safe use of pesticides	• PowerPoint presentation by facilitator and representative group leaders • Demonstration of proper use of knap sack sprayer, protective gear and calibration of pesticides, sourcing for registered pesticide information online: on PCPB website • Distribute participants hand-outs (brochures, leaflets and manuals) • Pest, disease and weed management guidelines
5.4.8 Module review	**Session guide**
(The facilitator leads the trainees in reviewing the module) Summarize the main points of the training: The facilitator should review the following main points about climatic conditions suitable for Coconut production: • Major pests of Coconut and their economic impacts on Coconut production. • Integrated Pest Management (IPM) options for Coconut • Major diseases of Coconut and their economic impact on Coconut production. • Integrated Disease Management (IDM) options for Coconut • Major weeds of Coconut and their economic impacts on Coconut production. • Integrated Weed Management (IWM) options for	• The last participants' handouts • Summarize the main points from the module on a flip chart and display



Coconut *(Discuss with trainees about new things learnt from this Module. What are some of the issues that need clarification)?*	

MODULE 6: COCONUT VALUE ADDITION

6.1 Introduction

Coconut is an important food security crop for communities along the Kenyan coast. A wide range of value added products can be processed from coconut. The value added products are described four sub-themes: products from the husks; shell, meat and water. These can be made from coconut harvested at the two main maturity stages – tender nut and mature nut. However, the technology of processing these products is not widespread among the coconut farmers and other value chain actors. Processing of virgin coconut oil avails high quality edible oil for household and industrial use. This makes use of locally available resource and saves on foreign exchange used to import edible oils (about KES 25 billion annually). Coconut shells pose environmental dangers and processing them into various products such as ear rings, bangles, cups, charcoal / activated carbon, etc. minimises this danger.

There is high demand for value added coconut products in rural and urban consumers. Coconut processing creates cottage industries for income generation.This module introduces farmer trainers to the importance of coconut in addressing food and nutrition security at the household, community and industrial levels. The module also covers the various coconut value added products, constraints in value addition and their suggested solutions. It is expected that the processing and value addition methods provided will enhance production and consumption of this crop towards food and nutrition security.

6.2 Module Learning Outcomes

By the end of the module, the following outcomes should be achieved:

1. Role of coconut as a food security crop explained.
2. Nutritional composition of coconut, health benefits, food security and income described.
3. Constraints in value addition and utilization of coconut, and suggest solutions identified
4. Coconut-based value added products identified and explained.

6.3 Module Summary

Module 6. Coconut value addition			
Sessions	**Training Methods**	**Training Materials**	**Time**

6.3.1. Introduction, Objectives Expectations	• Personal introduction • Group work • Plenary Presentation	• Flip charts • Projector • Laptop	30 minutes
6.3.2 Role of coconut as a food and nutrition security crop	• PowerPoint Presentation • Group exercise • Plenary Presentation	• Flip charts • Felt pens • Projector • laptop • Participants' handouts	30 minutes
6.3.3. Nutritional composition of coconut and its role in human health	• PowerPoint • Plenary presentation • Group exercise	• PowerPoint presentation • Flip charts • Felt pens • Participant handouts	45 min
6.3.4. Constraints in value addition and utilisation of coconut	• Group exercise • Plenary Presentation	• List of value added products • Checklist for prioritization • Pair wise ranking tool • Flip charts • Felt pens • Participants' handouts • Projector • Laptop	45 min
6.3.5 Coconut based value added products:	• Plenary Presentations • Plenary discussion • Practical demonstration • Sensory evaluation of value added coconut products • Field visit to processing firms / groups	• Projector • Laptop • Participant handouts • Assorted value addition equipment and ingredients • Sensory evaluation forms	3 hours 30 min
6.3.6. Module review	• Plenary discussion • Presentations	• Flip charts • PowerPoint presentations • Module evaluation forms	30 minutes
TOTAL			**6 hours 30 minutes**

6.4 Facilitator's Guidelines

Module 6. Coconut value addition	

6.4.1 Introduction, expectations and objectives	Session guide
Introduction and expectations *(The facilitator welcomes trainees to the module on value addition of coconut. They are then invited to introduce themselves and state their expectations)* **Module Objectives** *(The facilitator presents modules objectives.)* By the end of the module, the trainee should be able to • Appreciate the role of coconut as a food and nutrition security crop. • Describe nutritional composition of coconut, health benefits, food security and income. • Identify constraints in value addition and utilization of coconut, and suggest solutions. • Explain how to make coconut-based value added products.	• Participants' handouts • PowerPoint Presentation • Summarize trainees' expectations and display on flip chart/board.
6.4.2 Role of coconut as a food and nutrition security crop	**Session guide**
(The facilitator presents on malnutrition cases in Kenya and the importance of coconut in addressing food security and malnutrition challenges) **Plenary Presentation** PowerPoint presentation highlighting the critical elements: • Micronutrient malnutrition cases in Kenya • Dietary nutrient requirements (focusing on VMGs) **Group Exercises** Trainees discuss in groups, the main malnutrition challenges in their respective counties / regions	• PowerPoint presentation • Participants' handouts • Recipe books • Sample coconut and other processing ingredients • Group exercise
6.4.3 Coconut nutritional composition and impact of consumption on human health	
Plenary presentation • Overview of the documented coconut nutritional composition and their role in human health and nutrition	• PowerPoint presentation • Participant handouts • Brochures, leaflets, manual, factsheets, posters
6.4.4. Constraints in value addition and consumption of coconut, and suggested solutions	**Session guide**
Group exercise Groups discuss the constraints in coconut value addition and utilization **Plenary presentation** Overview of constraints in value addition and utilization of coconut	• PowerPoint presentation • Group Exercise
6.4.5 Coconut based value added products	**Session guide**

Plenary presentation • Overview of coconut based value added products • Meaning of value addition • Requirements for value addition of coconut • Coconut based value added products; sensory evaluation of the products **Practical exercise** • Demonstration on formulation of coconut based products • Practical on sensory evaluation of value added coconut products	• Participants handouts • PowerPoint presentation • Recipes • Sensory evaluation forms • Assorted value addition equipment and ingredients
6.4.6 Training review	**Session guide**
(The facilitator leads the trainees in reviewing the module) Review the main points about coconut value addition together with the trainees. · What new things did you learn from this Module? · What are some of the problems and issues that you have become more aware of in coconut value addition? · What questions do you still have about coconut value addition?	Summary of the main points from the Module.

MODULE 7: GREEN TECHNOLOGIES AND MECHANIZATION

7.1 Introduction to the module

Agricultural mechanization supports through enhancing production, productivity and profitability in agriculture by achieving timeliness of farm operations. It comes along with precision in metering and placement of inputs, reducing susceptibility to input losses, increasing utilization efficiency of costly inputs (seed, chemical, fertilizer, irrigation, water. etc.), reducing unit cost of production, enhancing profitability and competitiveness in the cost of operation. It also benefits conservation of agricultural produce and by-products from qualitative and quantitative damages; enables value addition and establishment of agro processing enterprises for additional income and employment generation from farm produce. Agricultural mechanization is one of the important inputs that has potential to revolutionize Coconut farming in Kenya especially when applied to planting, weeding, pest control, harvesting and post-harvest activities.

7.2 Module learning outcomes

By the end of the module section the following outcomes should be achieved:

1. Climate smart tillage options identified and explained
2. Bush clearing machines demonstrated

3. Tractor mounted hole auger described and explained
4. Semi-automatic harvesting robot equipment demonstrated
5. Coconut climbing machines demonstrated
6. Use of pest control implements and tools demonstrated
7. Use of tree crop power harvesters explained
8. De-husking machine equipment demonstrated
9. Grating machines and equipment demonstrated

7. 3 Module Summary

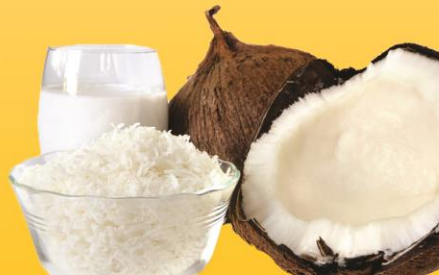
Module 7. Green Technologies and Mechanization			
Sessions	**Training methods**	**Training materials**	**Duration**
7.3.1 Introduction, objectives and expectations	• Personal introductions/know your audience • Presentations • Plenary discussions	• Flip charts • PowerPoint Presentations	20 minutes
7.3.2 Bush clearing machines explained	• Presentations • Plenary discussions	• Flip chart • PowerPoint presentation • Participants' handouts	10 minutes
7.3.3 Climate smart tillage options	• Presentations • Plenary discussions	• Flip chart • PowerPoint presentation • Participants' handouts	30 minutes
7.3.4 Tractor mounted hole digger described and explained	• Presentations • Plenary discussions	• Flip chart • PowerPoint presentation • Participants' handouts • Practical	15 minutes
7.3.5 Semi-automatic coconut climbing equipment explained	• Presentations • Plenary discussions	• Flip chart • PowerPoint presentation • Participants' handouts • Practical	30 minutes

7.3.6 Machines for harvesting coconuts explained	• Presentations • Plenary discussions	• Flip chart • PowerPoint presentation • Participants' handouts • Practical	15 minutes
7.3.7 Pest control equipment and tools usage demonstrated	• Presentations • Plenary discussions	• Flip chart • PowerPoint presentation • Participants' handouts • Practical	1 hour
7.3.8 Coconut de-husking tools and equipment demonstrated	• Presentations • Plenary discussions	• Flip chart • PowerPoint presentation • Participants' handouts • Practical	30 inutes
7.3.9 Grating machines and equi demonstrated	• Presentations • Plenary discussions • Demonstrations	• Flip chart • PowerPoint presentation • Participants. handouts • Practical	15 minutes
12.6.10 Module review	• Presentations	• PowerPoint presentation	15 minutes
Total			**4 hours**

7.4 Facilitator's Guidelines

Module 7:Green Technologies and Mechanization	
7.4.1 Introduction, Objectives and Expectations	**Session guide**
(The facilitator welcomes trainees to the module on coconut mechanization tools and equipment that help reduce labor costs as well as the post-harvest losses. They are then invited to introduce themselves and state their expectations) **Module Objectives** The facilitator presents modules objectives By the end of the module the trainee should be able to: • Climate smart tillage options identified and explained • Bush clearing machines demonstrated • Tractor mounted hole auger described and explained • Semi-automatic harvesting robot equipment	• Summarize trainees' "Expectations" and display. • PowerPoint Presentation • Distribute Participants' Handouts on Module

demonstrated • Coconut climbing machines demonstrated • Use of pest control implements and tools demonstrated • Use of tree crop power harvesters explained • De-husking machine equipment demonstrated • Grating machines and equipment demonstrated *In each case stating approximate prices and availability of machines, tools and equipment required*	Objectives and Training Program
7.4.2. Coconut climate smart land preparation tools and equipment	**Session guide**
(The facilitator presents on the commonly known land preparation tools and equipment) **Plenary Presentation** PowerPoint Presentation Highlighting: • Overview of the coconut mechanization activities • Climate smart tillage options **Discussion** Let the trainees recall what they learned and discuss any issue that may arise	• PowerPoint presentation • Distribute participants' handouts • Brochures, leaflets and manual • All participants
7.4.3. Bush clearing machines	**Session guide**
Plenary Presentation PowerPoint Presentation Highlighting on: • Description and explanation of bush clearing machines **Discussion** Let the trainees recall what they learned and discuss any issue that may arise.	• PowerPoint presentation • Distribute participants' handouts • Brochures, leaflets and manual
7.4.3. Tractor mounted hole auger	**Session guide**
Plenary Presentation PowerPoint Presentation Highlighting on: • Description and explanation of tractor mounted hole auguring operations **Discussion** Let the trainees recall what they learned and discuss any issue that may arise.	• PowerPoint presentation • Distribute participants' handouts • Brochures, leaflets and manual
7.4.3. Demonstrated of semi-automatic coconut harvesting machines and harvesting robot	**Session guide**



Plenary Presentation PowerPoint Presentation Highlighting on: • Description and explanation of tractor mounted harvesters as well as other harvesting machines including the harvesting robot **Discussion** Let the trainees recall what they learned and discuss any issue that may arise.	• PowerPoint presentation • Distribute participants' handouts • Brochures, leaflets and manual
7.4.3. Demonstration coconut climbing tools and equipment	**Session guide**
Plenary Presentation PowerPoint Presentation Highlighting on: Description and explanation of coconut climbing tools, machines and equipment **Discussion** Let the trainees recall what they learned and discuss any issue that may arise.	• PowerPoint presentation • Distribute participants' handouts • Brochures, leaflets and manual
7.4.3. Demonstration of coconut de-husking tools and equipment	**Session guide**
Plenary Presentation PowerPoint Presentation Highlighting on: • Description and explanation of de-husking implements and tools and their usage **Discussion** Let the trainees recall what they learned and discuss any issue that may arise.	• PowerPoint presentation • Distribute participants' handouts • Brochures, leaflets and manual
7.4.3. Demonstration of coconut grating tools and equipment	**Session guide**
Plenary Presentation PowerPoint Presentation Highlighting on: • Description and explanation of coconut grating machines and equipment • **Discussion** Let the trainees recall what they learned and discuss any issue that may arise.	• PowerPoint presentation • Distribute participants' handouts • Brochures, leaflets and manual
7.4.5. Coconut harvesting machine operating principles	**Session guide**
Plenary Presentation PowerPoint Presentation Highlighting on: • Techniques and methods of harvesting machine operating **Discussion** Let the trainees recall what they learnt and discuss any issues that may arise	• PowerPoint presentation • Distribute participants' handouts • Brochures, leaflets and manual
7.4.7 Module review	**Session guide**
The facilitator leads the trainees in reviewing the module)	· The last participants'

Summarize the main points of the training and together with the participants review the main points: • Demonstrate • Climate smart tillage options identified and explained • Bush clearing machines demonstrated • Tractor mounted hole auger described and explained • Semi-automatic harvesting robot equipment demonstrated • Coconut climbing machines demonstrated • Use of pest control implements and tools demonstrated • Use of coconut power harvesters explained • De-husking machine equipment demonstrated • Coconut grating machines demonstrated *(Discuss with trainees about new things learnt from this Module. What are some of the problems and issues that they have become more aware of in the module?)*	handouts Summarize the main points from the module on a flip chart and display

MODULE 8: COCONUT BUSINESS AND MARKETING

8.1 Introduction

Coconut is mainly produced in Coastal Region in the counties of Kwale, Mombasa, Kilifi, Tana River and Lamu. Coconut tree can yield up to 100-150 per tree per year under good rainfall environment. In the drier average yields are usually 75-100 nuts per tree per year.

Markets and marketing of Coconut is a major issue of concern to small scale farmers and other actors in the value chain in Kenya, particularly inconsistency in supplying sufficient volumes required for trade, seasonal supply and price fluctuations. The low production/volumes and bulkiness of the produce also limit farmers to the local markets, where demand is low and hence prices. To strengthen the Coconut value chain, it is important to equip farmer facilitators with the skills and knowledge on Coconut farming business and marketing strategies. This module is designed to build skills of trainees in Coconut farming business and marketing in Kenya.

8.2 Module Learning Outcomes

By the end of this module, the following training outcomes should be achieved:

1. The business concept and emerging farming business models explained and appreciated.
2. Planning a farm business using SWOT Analysis, farm budgeting and business plan described.

3. Tools for implementing a farm business, record keeping, break-even, gross-margin and entrepreneurship explained and described.
4. Various marketing approaches of Coconut identified.
5. Determination of Profitability (Gross margin analysis) described

8.3 Module Summary

Module 8. Coconut Business and Marketing			
Sessions	**Training Methods**	**Training Materials**	**Time**
8.3.1. Models for market-oriented production of Coconut. (Levelling of participants' expectations about the module and objectives)	• Introduction • Plenary discussion	• Projector • Laptop • Flip charts • Marker pens • Masking tapes/flip chart holders	20 minutes
8.3.2. Developing a Business Plan for Coconut farm Business i. (Business concept and emerging and farming business models) ii) Planning a farm business: SWOT Analysis, farm budgeting and business plan	• Plenary presentation • Plenary discussion • Group exercise	• Projector • Laptop • Flip charts • Marker pens • Masking tapes/flip chart holders	1 hour
8.3.3. Marketing as a group - collective marketing	• Presentation and • Plenary discussions • Role play exercise	• Projector • Laptop • Flip charts • Marker pens • Masking tapes/flip chart holders	30 minutes
8.3.4 Profitability analysis - Reviewing performance of Coconut agro enterprise (Implementing a farm	• Plenary presentation • Plenary discussion	• Projector • Laptop • Flip charts • Marker pens	20 minutes

business: Record keeping, Break-even, Gross margin analysis, entrepreneurship		• Masking tapes/flip chart holders	
8.3.5 Scaling up plan of Coconut agro-enterprise development approach	• Group work • Plenary discussions	• Projector • Laptop • Flip charts • Marker pens • Masking tapes/flip chart holders	30 minutes
8.3.6 Marketing Approaches (Contracted Coconut production model, Coconut marketing entrepreneurship model and Internet/online/mobile marketing)	• Plenary presentation • Plenary Discussion	• Projector • Laptop • Flip charts • Marker pens • Masking tapes/flip chart holders	20 minutes
8.3.7. Module review	• Facilitator's summary • Plenary presentation • Plenary Discussion	• Module review • Participants handouts	20 minutes
TOTAL			**3 hours 20 minute**

8.4 Facilitators Guidelines

Module 8. Coconut Business and Marketing	
8.4.1 Levelling participants' expectations about the module	**Session guide**
(The facilitator welcomes trainees to the module and thereafter invites them to state their expectations) *(The facilitator presents module objectives)* By the end of this module, the trainee is expected to: • Appreciate business concept and appreciate emerging and inclusive farmer-market linking models. • Describe how to plan a farm business using SWOT Analysis, farm budgeting and business plan. • Describe and explain the tools for implementing a farm business:	• Summarize trainees' "Expectations" and display on flip chart/board. • Participants handouts • PowerPoint presentation

cost of production, Record keeping, Break-even, Gross margin and entrepreneurship. • Identify the marketing approaches of Coconut.	
8.4.2 Developing a business plan for Coconut farm business	**Session guide**
(The facilitator to highlight elements of business concept and emerging farming business models) **Plenary Presentation** • Business concept and emerging farming business models **Group Exercise** • Discuss areas of adjustments in the models **Planning a farm business using SWOT Analysis, farm budgeting and business plan** *The facilitator highlights the components of SWOT matrix and their interactions to generate opportunities based on the other components)* **Plenary Presentation** • SWOT analysis • Budgeting • Business planning **Group Exercise** List the strengths, weaknesses, opportunities and threats in Coconut farming as a business and marketing	• PowerPoint presentation • Participants' handouts • Group exercise
8.4.3 Marketing as a group - collective marketing	**Session guide**
(The facilitator highlights the importance and benefits of collective and group marketing **Presentation and discussions** • Collective Marketing **Role play exercise** • In groups of two, the trainees will do a role play, where they sell individually and where sell as a group.	• Participants 'handouts • Group exercise
8.4.4 Profitability analysis - Reviewing performance of Coconut agro enterprise	**Session guide**
(*The facilitator highlights the importance of the tools in managing Coconut production as a farm business)* **Plenary Presentation** • The farmer as an entrepreneur • Record keeping	• PowerPoint presentation • Participants' handouts • Plenary discussion

• Profitability assessment (cost of production, break-even & gross margin) **Plenary Discussion** • Profitability analysis	
8.4.4 Scaling up plan of Coconut agro-enterprise development approach	**Session guide**
Group and Plenary discussions • In groups threes groups the participants discuss how to scale up Coconut agro-enterprise *The group leaders in each group present back to the whole plenary and discuss the outcomes.*	• Plenary discussion • Group exercise
8.4.5 Marketing strategies	**Session guide**
Plenary Presentation (*The facilitator highlights the marketing strategies for the Coconut farm business)* • Market research • Producer organizations • Contract farming • Online/internet marketing **Plenary Discussion**	• PowerPoint presentation • Participants' handouts
8.4.5 Training review	**Session guide**
(The facilitator leads the trainees in reviewing the module. Conclude by thanking the trainees) **Plenary Presentation** *Summarize the main points of the training*	• Plenary presentation • Summary of the main points from the Module.

MODULE 9: GENDER EQUALITY, HUMAN RIGHTS AND SOCIAL INCLUSION

9.1 Introduction

Gender equality, human rights, and social inclusion are essential for achieving peaceful societies, full human potential, and sustainable development. Empowering women leads to productivity and economic growth. Advancing gender equality is critical for reducing poverty and promoting health, education, and well-being. Human rights, including freedom from violence and socio-economic equality, should be enjoyed by all people. Studies have shown that many right holders especially those in rural areas are not aware of their rights and the need to demand the same from duty bearers who include the state and non-state actors and even within households.

The achievement of the 17 UN Sustainable Development Goals(SDG) is dependent on the operationalization and implementation of gender equality and women empowerment strategies, Human Rights Based Approaches(HRBA) and social inclusion is guided om the principle of Leave no one Behind. Restrictive gender roles and social norms a lived reality in most of the rural smallholder farms continue to drag development behind. While men and women continue to perform these roles as is, may of them lack awareness of how some of these community sanctioned roles continue to limit their progress in live especially among in creating wealth out of the agricultural value chains.

Intentionality in creating awareness among right holders to claim their rights , capacity building the duty bearers to meet the claims and ensuring those likely to be left behind like people living with disabilities (PWDs), the marginalized and the minorities among others are included would greatly contribute to common good, dignified lives and sustainable development.

This facilitator guide provides a lay out on how to train on the issues gender equality, human rights and social inclusion.

9.1 Module Summary

Module 9.0: Gender equality, human Rights and social inclusion			
Sessions	**Training methods**	**Training materials**	**Time**
9.1 Introductions and climate setting, objectives and expectations	• Self-introduction • Setting Norms & rules • Plenary Presentation • Plenary discussion • Group exercise	• Flips charts • Felt pens • Laptop • Projector	20 minutes
9.1.1 Gender equality Definition of concepts	• Presentations • Individual reflections • Group exercise • Plenary discussions	• Flips charts • Felt pens • Laptop • Projector • Participants' handouts	30 minutes
9.1.2 The business case for gender mainstreaming	• Practical exercise (groups tour nearby successful Agri- business where both	• Flips charts • Felt pens • Laptop	40 minutes

	the a model couple) • Presentations	• Projector • Participants' handouts	
9.1.3 Steps to mainstream gender	• Group exercise -same sex groups (trainees identify roles) • challenge these roles • Plenary discussions (share group work results) • Individual reflections • Presentations	• Flips charts • Felt pens • Laptop • Projector • Participants' handouts	40minutes
9.2 Human rights	• Individual reflections • Buzz groups • Plenary Presentations • PowerPoint presentations	• Flip charts • Felt pens • Laptop • Projector • handouts	30 minutes
9.2.1 HRBA-PANT Principles	• Group work • Presentations • PowerPoint presentations	• Flip charts • Felt pens • Laptop • Projector • handouts	30 minutes
9.3 Social inclusion	• Buzz groups • Plenary discussions • Group discussions on who is likely to be left behind in the value chain	• Flip charts • Felt pens • Laptop • Projector • handouts	30minutes
Chapter review and discussion	• Discussion/conclusion Action plan	• Flip charts • Felt pens • Laptop • Projector	30 minutes
Total			**4, hrs**

9.2Guidelines for Facilitators

Module 9: Gender Equality, Human Rights and social inclusion	
9.1. Introductions, climate setting	**Session guide**
Preliminaries *The facilitator welcomes trainees to the Chapter and thereafter invites them to introduce themselves and state their expectations* **Expectations**	• Summarize the trainees expectations • PowerPoint presentations • Group exercise (listing and

The trainees form groups (e.g., county based) and list expectations from the module *The facilitator presents the chapter objectives.* **Objectives** By the end of the training Chapter, the trainee should be able to: • Explain and describe what gender and gender mainstreaming is with practical examples • Describe appropriate steps to take in operationalizing the PANT principles • Describe and list those likely to be excluded from the value chains. • Specify the correct actions to take to address the root causes of exclusion and how they will be monitored.	presenting expectations). • Expectations lists kept for later reviewing compliance
9.1.1 Gender equality definition of concepts	
Plenary Presentation The facilitator introduces the topic of background information and gender equality • Individuals reflect on their understanding of various concept sex, gender, equity, equality, diversity, gender mainstreaming among others • Presentations are made to dispel biases and stereotypes • Plenary discussions **Plenary discussion** Questions/answers and comments	• Plenary discussion • Distribute participants' handouts/training materials • PowerPoint Presentation • Practical exercise
9.1.2 The business case for gender mainstreaming	**Session guide**
Group exercise • The facilitator guides trainees to visit successful Agri-business where both a model couple) • The group reflects on their findings • A PowerPoint presentation.	• PowerPoint Presentation • Distribute participants' handouts • Groups exercise • Plenary discussion
9.1.3 Steps to mainstream gender	**Session guide**
Group exercise : the facilitator conducts 1. Practical session on gender roles(daily calendar)-Women and men separately then present in plenary for further reflection 2. Practical session on Access, control, and ownership-separately then present in plenary 3. Social norms in the community about men and women-separate norms then present in plenary 4. Barriers and enablers to women and youth participation in the agricultural value chains and how they will be addressed by the group. 5. Presentations Plenary presentation and plenary	• PowerPoint Presentation • Distribute participants' handouts • Groups exercise • Plenary discussion

discussion 6. PowerPoint presentation The facilitator leads the trainees into 1. Individual visioning for a certain period future then in pairs share, prioritize and work on one priority area identify opportunities ,challenges and targets and activities 2. Plan on next steps	
9.2 Human rights	•
The facilitator leads the trainees into; • Individual reflections on their human rights, those who have duty to address these rights • Buzz groups to identify issues of human rights • Plenary Presentations • PowerPoint presentations	• Flips charts • Felt pens • Laptop • Projector • Participants' handouts
9.2.1 HRBA-PANT Principles	•
The facilitator lead the team on the PANT principles 1. Group work 2. Presentations **3.** •PowerPoint presentations	• Flips charts • Felt pens • Laptop • Projector • Participants' handouts
9.3 social inclusions	•
The faclilitator leads the trainee into group discussions on who is likely to be left behind in the value chain • Identification a. Who is excluded? Are some groups less likely to benefit from a Program/project because of their identity? • Analysis a. How and why is the particular group (or groups) excluded? What drives the exclusion? • **Actions** a) What actions can the groups/ farmers take to ensure there is social inclusion • **Monitoring** b) How would they know if they have made progress in ensuring social inclusion? • Action plan for mainstreaming Gender Youth and social inclusion	• Flips charts • Felt pens • Laptop • Projector • Participants' • handouts •
Review and Close out	**Session guide**

(The facilitator leads the trainees in reviewing the chapter) Summary of the main points from the training • Objectives and expectations (review done on basis of the objectives and expectations listed earlier) • *Trainees to randomly indicate new sets of skills and knowledge learnt from the module. The results are recorded per county presented* • Randomly (average of 10 cases) trainees identify key issues for the way forward issues.	• Participants' handouts • Summarize the main points of the module on a flip chart and display

ANNEX I SAMPLE PROGRAMME

MESPT
MICRO ENTERPRISES SUPPORT PROGRAMME TRUST

COCONUT VALUE CHAIN TRAINING WORKSHOP FOR XXXX

TRAINING VENUE: XXX **DATES: XXX**

Date and Time	Activity	Duration	Responsible

Annex 2. List of participants who validated this document

S/No	Name	Institution
1	Joseph Kairu	County Government of Siaya
2	Winston Motanya	County Government of Kisii
3	Nicholas Manyinsa	County Government of Kisii
4	Cecilia Mutuku	County Government of Machakos
5	Paul Busienei	County Government of Nakuru
6	David Kimera	Youth Agri-Preneur
7	Lawrence Swanya	County Government of Machakos
8	Kenneth Kagai	County Government of Trans-Nzoia
9	Benedict Khanyifu	County Government of Trans-Nzoia
10	Mwalimu Menza	Kenya Agricultural and Livestock Research Organization
11	George Kamami	County Government of Makueni
12	Moses Munialo	County Government of Bungoma
13	Agesa Eric	County Government of Kakamega
14	Benard Mainga	County Government of Kwale
15	Jane Kamamu	County Government of Kilifi
16	Teresia Ndungu	County Government of Nyandarua
17	Wilbur Mutai	County Government of Uasin-Gishu
18	Stephen Odipo	Kenya Agricultural and Livestock Research Organization
19	Solomon Mbivya	Papa Farmers Limited
20	William Mwangi	County Government of Makueni
21	Doreen Kinoti	Micro-Enterprises Support Programme Trust
22	Serah Nzau	Micro-Enterprises Support Programme Trust
23	Margaret Kikuvi	Micro-Enterprises Support Programme Trust

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