KALRO
Kenya Agricultural & Livestock Research Organization

MESPT
MICRO ENTERPRISES SUPPORT PROGRAMME TRUST

MINISTRY OF FOREIGN AFFAIRS OF DENMARK
Danida

Banana Value Chain Trainers' Guide

Banana Value Chain Trainers' Guide

Disclaimer

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

Compilers Names

Winston Motanya, Nicholas Manyisa, Kenneth Kagai,Wilbur Mutai and Jane Kanamu

Editors

Mwalimu Menza, Solomon Mbivya and Bernard Mainga

Layout and Design:

Odipo Stephen

Published by

Micro-Enterprises Support Programme Trust

MESPT Plaza, 01 Tausi Rd

Westlands, between Westlands Rd & Muthithi Rd.

P.O Box 187-00606 Sarit Centre.

Email: info@mespt.org

Tel: 0722 207 905 | 0735 333 154

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 agro-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 agro-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.

Bananas are among the key value chains that MESPT has supported over the years through various interventions to enhance commercialisation. MESPT appreciates the importance of documenting best practices for the banana value chain in facilitating effective delivery of training for farmers and Agri-preneurs. Therefore, MESPT has facilitated the development of this Training Manual alongside the banana handbook and other resource materials through the Green Employment in Agriculture Programme (GEAP) with support from DANIDA.

This guide is expected to enhance the effectiveness of training in good agricultural practices and banana commercialisation. I am optimistic that this manual will be helpful to partners in the banana value chain, including county governments. I am grateful to DANIDA for the continued support of MESPT programmes. I am also thankful to the banana value chain experts who spearheaded the compilation of this training manual.

Rebecca Amukhoye,

Chief Executive Officer, Micro-Enterprises Support Programme Trust

Preface

The Green Employment in Agriculture Programme is a 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 selected agriculture value chains that include, Cassava, Coconut, Dairy, Export Vegetables, Pineapple, Indigenous Poultry, Moringa, Pineapple, and Aquaculture.

MESPT through GEAP tasked multidisciplinary teams to develop resource materials tailored for extension service providers and farmers. This Banana value chain trainers' guide is one of the series of the materials that were developed. MESPT further tasked value chain experts to develop a value chain manual for Banana. This guide is to be used as an instructional tool for training on implementation of good agricultural practices, value addition and marketing for the value chain. 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 value chain manual and other relevant resource materials.

This trainers' guide consists of two sections. Section I comprises information about the value chain, guidelines and notes for facilitators while section II comprises of the training modules. The modules have a uniform outline that ensures every aspect of the manual is fully covered using approaches that the trainees can easily understand. The modules are progressively arranged to achieve a logical flow of the sessions. Recommended training durations are also provided.

A variety of delivery methods are outlined and where possible, demonstrations and practical work is incorporated. To maintain quality of training across various groups and settings, trainers' guidelines, program, training methods and training evaluation have been provided in the guide. It is advised that the trainers' guide should be used in conjunction with the respective value chain manual and other relevant reference materials. It is also recommended that participant hand outs and facts sheets are provided to trainers.

MESPT is grateful to the value chain experts who spearheaded the development and production of this trainers' guide. It is my hope that counties and other users will adopt and optimally use this resource so as to increase productivity and profitability while ensuring a greener and more inclusive growth.

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 Organisa-tion 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 re-source material. Micro Enterprises Support Programme Trust (MESPT) is appreciated for co-ordinating the process of development and production of this document.

Table of Contents

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 six sub-sections, which include an overview of the Banana value chain in Kenya, Green growth opportunities in the banana sub-sector, the Objectives of the training, the Content of the Training, and the Facilitator Guidelines.

1.0 OVERVIEW OF THE BANANA VALUE CHAIN IN KENYA

Banana (*Musa* sp) ranks first among fruit crops in Kenya. Banana accounts for 32 % of the total value of fruits. Banana is grown widely in the country. The major banana-producing counties are Meru 17%, Kirinyaga 11%, Muranga 9 %, Kisii 8%, Tharaka Nithi 6%, Kiambu 5% and Taita Taveta 5%. Bananas are a major source of food, livestock feed and cash income in most parts of the country. The sub-sector employs about 80 % of the rural community and contributes over KES 16.8 billion to the Kenyan economy. Hence, it plays a crucial role in terms of contribution to food security, poverty eradication, and economic development.

Despite its great potential to contribute to food, economic, and nutritional security for smallholder farmers, the potential of the banana value chain remains untapped. The potential of banana yields under ideal conditions ranges between 30-40 tons/ha. However, smallholder farmers obtain less than 10 tons/ha. This is attributed to several constraints, namely inadequate knowledge of good agricultural practices, limited access to quality banana planting materials, erratic rainfall due to climate change, high cost of farm inputs, high incidence of pests and diseases, high postharvest losses, poor marketing infrastructure, weak farmer organization and limited value addition.

1.2 GREEN GROWTH OPPORTUNITIES IN THE BANANA VALUE CHAIN

Bananas are an exceptionally suitable crop for upscaling green technologies and building resilience to climate change among smallholder growers. Bananas show good response to green technologies, including organic manure, mulching and cover cropping, which reduce extra chemical load. Banana-based mixed cropping systems can also improve overall income per unit area of land while promoting environmental conservation.

The banana nursery operation also offers business and employment opportunities for young women and Vulnerable and Marginalized groups (VMGs).

1.3 OVERALL OBJECTIVES OF THE TRAINING

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

Provide farmer trainers with relevant attitudes, knowledge, and skills in Banana farming as a business and market assessment techniques for market-led production.

Enhance farmer trainers' knowledge and skills in Banana GAP, including on-farm Banana variety selection, establishment, and management of fields.

Equip farmers trainers with knowledge and skills in post-harvest and value addition of Banana.

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 Banana 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 banana 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. 1	Introduction	• Understanding the banana plant • Suitable areas for banana production in Kenya • Agro-climatic requirements for banana production • Economic importance of banana	• Better understanding of the banana plant • Proper site selection for banana production • The economic importance of bananas is appreciated	2 hours 30 minutes			
2. 3	Planting Materials and Propagation	• Banana varieties and variety selection • Banana propagation • Banana nursery management	• Awareness of improved Banana varieties • Knowledge of the production of quality banana planting materials enhanced. • Knowledge of banana nursery management enhanced	3 hours 30 minutes			
3. 5	Crop Management	• Land preparation. • Planting • Care of young plants • Care of old plants • Good agronomic practices	• Improved understanding of suitable land preparation practices • Planting and spacing recommendations are appreciated. • Innovative climate smart agronomics practices for increased Banana production are appreciated	5 hours			

No.	Module Name	Areas addressed	Expected Training Outcomes	*Duration			
	Integrated Soil and Water Management Practices for Banana Production	• Banana production and productivity	• Improved understanding and adoption of ISWM in banana production	4 hours 30 minutes			
4. 6	Pests and Disease Management	• Banana pests and how to control them. • Weed management in bananas. • Banana diseases and how to control them • Integrated Pest, weed and disease management.	• Enhanced capacity to identify and control important banana pests. • Enhanced knowledge of weed management in bananas. • Enhanced capacity to identify and control important banana diseases	6 hours			
5. 8	Banana Value Addition	• Maturity determination for various products • Banana harvesting techniques. • Post–harvest handling of banana. • Value–added banana products	• Knowledge of required maturity index is appreciated • Knowledge of proper harvesting techniques and storage facilities, hygiene, and monitoring enhanced. • Knowledge of the production of various value-added banana products enhanced	7 hours 30 minutes			

No.	Module Name	Areas addressed	Expected Training Outcomes	*Duration			
6. 7	Green Technologies and Mechanization	• Integrated soil and water management practices for Banana production • Organic banana farming • Mechanization of banana production	• Soil, water, and fertility management techniques were availed. • The option of organic banana farming is appreciated. • Mechanized banana production techniques appreciated	5 hours 30 minutes			
7. 13	Banana business and marketing	• Business opportunities in the Banana value chain • Investment Profiling for the Banana Value • Gross Margin Analysis • Banana Marketing skills • Record keeping	•Business opportunities in the banana value chain explored. •Investment options in the banana value chain profiled. •Knowledge of gross margin analysis enhanced •Knowledge on marketing skills enhanced •Knowledge on record skills enhanced	5 hours 30 minutes			
	Evaluation of the training	• Participants' assessment of each training module	•Effectiveness of training established. •Areas for improvement identified	30 minutes			
Total Duration				**40 hours 30 minutes**			**29 hours 20 minutes**

*The duration of the training includes 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:

Core Trainers—Master trainers drawn from KALRO, Universities, and Tertiary Institutions, State Department of Crop Development, Agricultural Research and County technical staff will facilitate initial Training and other stakeholders. They will also provide backstopping services for cascaded training.

County Government—The county Government will provide a team to be trained as ToTs. This team 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.

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 required stationery, including name tags and writing materials, may be available at the training venue before the training begins.

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/soft copy (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.

- **Training Room**—The room should have adequate space for participants to be seated in an arrangement that ensures an unobstructed view of the front. An ideal group of 20 to 30 participants is ideal. There should also be adequate desks and space for the trainers, their training materials, projector, and flip chart holders.
- **Demonstration Site** – Preferably should be within walking distance.
- **Market Sites**—These include retail outlets (kiosks, stalls, shops, and supermarkets), wholesale and aggregation points, and processing sites, if any. The operators should be informed in advance about the visits. They should not be very far away, preferably less than 20 minutes' drive.
- **Other sites** – these may include; on-farm open spaces

1.6.3 The Trainees

The trainees will be drawn from the public and private sectors based on their roles in the value chain. The trainer should act more as 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 the knowledge, skills and attitudes of the participants. The choice of methods has been informed by the competency issues being addressed, the time available and the experiences of the author of this manual. Depending on the 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 are 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/off-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 the way forward and evaluating the training on the last day of training. The individual trainees individually fill in valuation forms. The evaluation forms are then collected and analysed by the core facilitators.

Table 3: Sample Evaluation Form

1. Gender of the respondent (Please tick): Male [] Female [ ]
2. Please provide feedback on the topics by filling in 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) Integrated Soil and Water Management Practices for Banana Production			
5) Pests and Disease Management			
6) Green Technologies and Mechanization			
7) Banana Value Addition			
8) Business and marketing			

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

Give reasons: ……
….

1. How do you rate the training venue in a scale of 1-3 [ ](1-Poor,2-Good, 3-Very Good)
2. How do you rate the trainer/s in a scale of 1-3 [ ](1-Poor,2-Good, 3-Very Good)
3. How do you intend to apply what you have learned from this training?

……..

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.

Banana reference material will consist of materials such as the Banana production handbooks/ manuals/ guides, Pamphlets/brochures, and Factsheets on specific topics.

SECTION II: TRAINING MODULES

This part presents the content of 8 training modules: Introduction, Planting Materials and Propagation, Crop Management, Pests and Disease Management, Integrated Soil and Water Management Practices for Banana Production, Green Technologies and Mechanization, Banana Value Addition, and Business and Marketing.

Outline of the modules

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

Overview – Context and background to training needs, knowledge and skills GAP being addressed.

Module learning outcomes – What trainees are expected to learn.

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.

Facilitator guidelines –detailed sessions, training methods, materials, and session guides

MODULE 1: INTRODUCTION

1.1 Overview

Most of the production is rain-fed. 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 Banana production is, therefore, crucial for improved productivity and commercialization of the crop.

This module builds the trainees' skills to understand the different suitable agroclimatic zones, prescribing ideal altitudes, soils, temperatures, and rainfall levels, among other characteristics of Banana production. While these agroclimatic factors are critical for bananas' growth and yield performance, they also provide favorable conditions for pests, diseases, weeds, and beneficial soil-borne microbes. It is, therefore, important for farmers to be trained in suitable agroecological zones and innovative management practices for better Banana performance and yields.

1.2 Module learning outcomes

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

1. The importance of bananas in Kenya's economy is explained and appreciated.
2. Knowledge of altitudes and soil types/characteristics for Banana production enhanced.
3. Climatic conditions (temperatures, rainfall, and humidity) required for Banana production understood and applied.
4. Specific county agroecological zones for Banana 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 banana plant: Importance of Banana in Kenya's economy	• Presentations • Plenary discussion	• Flips charts • Felt pens. • Laptop • Projector • Participants' hand-outs • Field note book and pens • Masking tape	30 minutes
1.3.3 Banana production ecological/climatic requirements for optimal yields	• Presentations • Plenary discussion	• Flips charts • Felt pens. • Laptop • Participants' hand-outs • Projector	30 minutes
1.3.4 Banana 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 Banana 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 the way forward	• Flip charts • Felt pens. • Laptop	10 minutes
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, after that, invites them to introduce themselves and state their expectations) **Levelling of expectations** The trainees 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 bananas in Kenya's economy. • Indicate and describe altitudes and soil types/ characteristics for Banana production. • Describe climatic conditions (temperatures, rainfall, and humidity) required for Banana production. • Gain practical knowledge on specific county agroecological zones for Banana production. • Understand and be able to apply innovative Banana production and management technologies in suitable counties.	• Summarize the facilitator/trainee's involvement in Banana value chains. • PowerPoint presentation
1.4.2 Importance of Banana in Kenya's economy	
Plenary Presentation • The Banana plants. • Bananas in Kenyan households • General Banana production trends in Kenya • Banana consumption and markets **Guided discussions by the Facilitator** Questions/answers/comments	• PowerPoint presentation • Participants' handouts • Plenary discussion

1.4.3 Banana production ecological/climatic requirements	Session guide
Plenary Presentation • Altitude and Agro-ecological zones for Banana production • Climatic conditions (Rainfall, Temperatures, and humidity) • Soils (soil types, pH, general fertility for Banana) **Facilitator's guided discussion** Questions/answers/comments	• PowerPoint presentation • Participants' handouts • Plenary discussion
1.4.4 Banana production AEZs, average yields, and constraints in the target areas	**Session guide**
Plenary Presentation Facilitator guide in reviewing and discussing suitability map (County by County) **Group exercise.** Trainees to bring out a specific county or sub-county AEZs, land size, yields and constraints to Banana production and present in the plenary: • Agro-ecological zones (AEZs) and % area suitable for Banana • Average land/farm size under Banana production in Kenya • Average yield of Bananas per unit farm area • Constraints to Banana production • Opportunities to address 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 of specific county agro-ecological zones for Banana production	Session guide
Plenary presentation • Facilitator guides trainees on the practical knowledge applicable to specific county agro-ecological zones for Banana 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 the basis of the expectations listed earlier) • Trainees to recall the Banana production ecological/climatic requirements, Banana production AEZs average yields, and constraints in the target Counties. • Trainees will indicate new sets of skills and knowledge acquired from the module. The results are recorded per county presented. • Trainees will randomly identify the issues for the way forward. **Facilitator's guided discussion**	• The last participants' hand-outs/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 to train and expose trainees to banana varieties, propagation, and nursery management. This module also exposes trainees to the improved Banana varieties recommended for diverse uses and targeted production environments. The main varieties grown by small-scale farmers include dessert banana cultivars (Grand Nain, FHIA 17, Geradine Tucker-GT, Gross Mitchel, Apple banana, Williams hybrid, Valery, Chinese Cavendish, Giant Cavendish and Dwarf Cavendish) and cooking cultivars (*Gradi*, *Shisikame, Mutahato*, Uganda green, Kisii green and *Ng'ombe*) and multipurpose cultivars (such as *Muraru* and Gold finger).

Selecting the best Banana 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 an acceptable yield, be adapted to the production area, and have the highest level of preferred attributes. In order to optimise Banana 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 the 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 for consumers.

2.2. Module Learning Outcomes

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

Various improved Banana varieties, their ecological areas of cultivation and their uses are identified and compared.

Banana 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.	• Groups to bring out expectations. • Plenary presentation	• Module objectives • Marker pens • Flip charts • Projector • Laptop	20 minutes

Module 2. Planting Materials and propagation			
Sessions	**Training Methods**	**Training Materials**	**Time**
2.3.2 Introduction to the various improved Banana varieties, their ecological areas of cultivation and their attributes and uses.	• Group Exercises to identify local Banana landraces and varieties. • Plenary Presentations • Plenary discussion	• Flips charts • Felt pens. • Laptop • Projector • Manila papers • Field note book and pens • Masking tape	30 minutes
2.3.3 Recommended varieties for specific regions	• Plenary Presentation • Group exercise. • Field demonstration	• Flips charts • Felt pens. • Laptop • Projector • Manila paper	20 minutes
2.3.4 Instructions on banana 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 planting materials sources for Banana identified and adopted. • Information on planting materials understood and preferred variety identified. **Group exercise.** *Circulate samples of certified Banana planting materials* *Identify key information on Banana planting materials provided*	• Distribute Participants' handouts. • Group exercise. • Plenary discussion	• Demonstration of Planting materials suckers' samples	30 minutes

Module 2. Planting Materials and propagation			
Sessions	**Training Methods**	**Training Materials**	**Time**
2.3.6 Module review	• Participants' questions and comments • Facilitator's summary	• Participants' handouts • 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 themself, stating their profile and experience of working with farmers. **Trainees' introductions and expectations** The facilitator invites the trainees to state their expectations after brainstorming in their respective county groups. **Module Objectives** *The facilitator presents the module's objectives.* By the end of the module, the trainee should be able to: 1. Describe and explain Banana seed systems in Kenya. 2. Describe Banana planting materials production systems in public and private nurseries 3. Explain the role of private nurseries, community, and public nurseries in the production of quality Bananas.	• Summarize trainees' Expectations on a flipchart. • PowerPoint presentation
2.4.2 Introduction to Banana and the various improved Banana varieties and their uses	**Session guide**
(The facilitator describes the Banana crop and guides the trainees in identifying the various Banana improved varieties and their uses). **Group exercise and discussion.** Ask trainees to highlight and describe some of the Banana varieties they know. **Plenary Presentation** • Improved Banana varieties. • Categories of Banana varieties and comparison of various hybrid varieties. *Show trainees the photographs of each variety, as well as the full description and its uses.*	• Distribute participants' hand-outs. • Group exercise. • Plenary discussion

2.4.1 Introduction and Levelling Expectations	Session guide
2.4.3 Recommended Banana varieties for the target counties	**Session guide**
Plenary Presentation **Varieties for the target counties** • Banana growing regions and new regions are being targeted for banana cultivation in Kenya. • Banana varieties suited for each county. • Climate conditions for the target county (semi-arid, rain-fed and irrigated) **Group exercises.** Trainees discuss and come up with Banana varieties in their county. **Field demonstration** *(Identify farmers' fields with various Banana varieties).* • Visit the Banana plots with the trainees and assist them in identifying and studying the various varieties. • After the field visit, facilitate them to recall what they learned and discuss any issue that may arise. (you can also use Banana fruit samples/pictures for the various varieties)	• Distribute participants' handouts. • PowerPoint presentation • Group exercise. • Field demonstration
2.4.4. Instructions on planting materials package interpreted and applied	Session guide
Plenary Presentation • Certified planting materials sources for Banana identified and adopted. • Information on planting materials understood and preferred variety identified. *Circulate samples of certified Banana planting materials* *Identify key information on planting materials provided*	• Distribute Participants' handouts. • Group exercise. • Plenary discussion

MODULE 3: CROP MANAGEMENT

3.1 Introduction

Farmers' low yields in Banana production result from their non-adoption of 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 improved harvesting techniques to avoid losses.

In order to optimize the productivity of bananas, farmers need to adopt specific agronomic packages, without which the yield potential of improved varieties cannot be achieved. In addition, the weather vagaries caused by climate change make it necessary to incorporate adaptation or mitigation measures that can enable Banana farmers to increase their productivity. In this respect, climate-smart agronomic practices come to the fore. Therefore, there is a need to equip farmer facilitators from the targeted counties with skills and knowledge that will enable them to train farmers on innovative climate Banana agronomic practices that include planting materials 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:

Agronomic practices for Banana production described and explained.

Region-specific agronomic practices for Banana production optimization are outlined.

Appropriate inputs and their correct application rates for Banana production are described.

The timing for operations or input applications in Banana production is described and explained.

3.3 Module Summary

Module 3: Banana 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

Module 3: Banana Agronomic Practices			
Sessions	**Training methods**	**Training materials**	**Time**
3.3.2 Agronomic practices for Banana production	• Presentations • Group exercise (Groups tour the nearby farm for layout demonstration) • Plenary discussions (From the farm visit)	• Flips charts • Felt pens. • Laptop • Projector • Participants' handouts • Field note books • Pens • Masking tape	1 hour 30 minutes
3.3.3. Site selection, Land Preparation, planting materials selection, planting, water requirement, pest management, weed management and crop rotation	• Practical exercise (groups tour the nearby farm for layout demonstration) • Presentations	• Flips charts • Felt pens. • Laptop • Projector • Participants' handouts	1 hour 40 mins
3.3.4 Appropriate inputs and their recommended application rates for optimum production of Banana	• 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	1 hour
3.3.5 Module review and discussion	• Discussion/conclusion and the way forward	• Flip charts • Felt pens. • Laptop • Projector	30 minutes
Total			**5 hours**

3.4 Guidelines for Facilitators

Module 3: Agronomic Practices for Banana		
3.4.1. Introductions, climate setting	**Session guide**	
Preliminaries *The facilitator welcomes trainees to the module and then 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 Banana production. • Describe appropriate inputs and their correct application rates for Banana production. • Outline region-specific Banana production agronomic practices. • Specify the correct timing for all operations, including the application of inputs in Banana production.	• Summarize the trainees' expectations. • PowerPoint presentations • Group exercise (listing and presenting expectations). • Expectations lists are kept for later review of compliance.	

Module 3: Agronomic Practices for Banana	
3.4.1. Introductions, climate setting	**Session guide**
3.4.2. Agronomic practices for Banana production	
Plenary Presentation The facilitator presents critical factors: • Factors for selecting Banana 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 group tours to model farms to observe various planting and management techniques. **Plenary discussion** Questions/answers and comments	• PowerPoint Presentation • Plenary discussion • Distribute participants' hand-outs/training materials. • Practical exercise
3.4.3. Appropriate inputs for the optimal production of Banana and their correct/recommended application rates	**Session guide**
Group exercise. • The facilitator guides trainees to list and/or present the required inputs for use in Banana production. • The trainees get into county groups to provide lists of Banana 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 Banana inputs (planting materials, fertilizers, manures, among others), their application rates and appropriate time of application for optimal yields	• PowerPoint Presentation • Distribute participants' hand-outs. • Groups exercise • Plenary discussion

Module 3: Agronomic Practices for Banana	
3.4.1. Introductions, climate setting	**Session guide**
3.4.3. Appropriate inputs for the optimal production of Banana and their correct/recommended application rates	**Session guide**
Group exercise. • The facilitator guides trainees to list and/or present the required inputs for use in Banana production. • The trainees get into county groups to provide lists of Banana 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 Banana inputs (planting materials, fertilizers, manures, among others.), their rates and their time of application for optimal yields	• PowerPoint Presentation • Distribute participants' hand-outs. • 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 the basis of the objectives and expectations listed earlier) • *Trainees will randomly indicate new skills and knowledge learned 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 BANANA PRODUCTION

4.1 Introduction

Increasing pressure on soil and water resources and soil nutrient depletion have called into question the changing strategies and approaches of soil fertility management and plant nutrition. A 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 fruit production.

Globally, following the idea of sustainable development, ISFM is a holistic approach with a variety of overlapping components, including the use of certified cultivars, inorganic and organic fertilizers, and 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 components 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 banana cultivation, followed by nitrogen. There is a 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 smallholder production systems in addressing banana nutrient requirements. The encouraged use of organic manure and green manure in banana production is aimed at 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 banana 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 of 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 utilisation 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. Ability to identify temporary or permanent declines in 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 Banana 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 • Field note book and pens • Masking tape	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	50 minutes
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

Module 4: Integrated soil and water management practices for Banana production			
Sessions	**Training methods**	**Training materials**	**Duration**
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' handouts	30 minutes
4.3.7 Soil degradation and reclamation	• Presentations • Plenary discussion	• Flip charts • Marker pens • PowerPoint presentation • Participants' handouts	30 minutes

Module 4: Integrated soil and water management practices for Banana production			
Sessions	**Training methods**	**Training materials**	**Duration**
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 30 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 Banana in moisture-stressed conditions. The trainees are then invited to introduce themselves and state their expectations) **Module Objectives** *(The facilitator presents module objectives)* By the end of the module, the trainee should be able to: • Appreciate soil composition and what constitutes 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 Banana 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 to increase the use of organic manure and improve agricultural production. • Conservation agriculture as a climate-smart agriculture practice • Banana as an agroforestry plant in climate-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 banana production • Methods of tillage systems that conserve water in banana farming. • Principles of soil fertility management banana farming • Methods of soil fertility management for increased banana 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) Summarise the main points of the training and review them with the trainees. Discuss new things learned from this module with trainees. 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: BANANA CROP HEALTH – WEEDS, PESTS AND DISEASE MANAGEMENT

5.1 Introduction

Banana production is often constrained by damage caused by a range of insects, diseases, and weeds. These include weevil borers, nematodes, Fusarium wilt, Sigatoka, and *Xanthomonas* Wilt (BXW). Further, an acute shortage of knowledge among Banana farmers on the recommended crop health management options frustrates them, and most of them may abandon the crop if timely interventions are not prioritised.

Weeds present competition for growth and development resources needed by the Banana crop, i.e., moisture, nutrients, light, and space. This has significantly reduced the productivity and profitability of Banana 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 Banana 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 Bananas described and explained.
3. Knowledge of 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 Banana.
6. Safe use of agrochemicals (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 Banana 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 • Field note book and pens • Masking tape	1 hour

Module 5: Crop Health			
Sessions	**Training methods**	**Training materials**	**Time**
5.3.3 Sustainable Integrated Pests Management practices and scouting for threshold determination in Banana.	• Plenary presentation • Plenary discussion	• Flip charts • Marker pens • Projector • Laptop • Participants' handouts	30 minutes
5.3.4 Major Banana diseases that cause economic losses and conditions that favour their development, including their control methods	• Group work. • Plenary Presentation • Plenary discussion • Practical session	• Flip charts • Marker pens • Projector • Laptop • Participants' handouts	1 hour
5.3.5 Sustainable Integrated Management of Banana 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 Banana)	• Plenary Presentation • Plenary discussion • Field demonstration	• Flip charts • Marker pens • Projector • Laptop • Participants' handouts	1 hour
5.3.7 Safe use of agrochemicals and update source for registered agrochemicals (PCPB registered products)	• Presentations • Practical exercise • Plenary discussion	• Projector • Laptop • Flip charts • Marker pens • Participants' handouts • PPEs	30minutes

Module 5: Crop Health			
Sessions	**Training methods**	**Training materials**	**Time**
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: Banana Crop Health	
5.4.1 Introduction and levelling of expectations and objectives	**Session guide**
Introduction *(The facilitator welcomes trainees to the module and, after that, invites them to introduce themselves and state their expectations)* **Module Objectives** *(The facilitator presents module objectives)* By the end of the module, the trainee should be able to: • Identify major pests, diseases and weeds. • Describe and explain integrated pests, disease and weed management in Banana. • Explain the safe use of agro-chemicals (pesticides, fungicides, and herbicides).	• Summarize trainees' "Expectations". • PowerPoint presentation • Participants' handouts

5.4.2 Major Banana pests that cause economic losses and their control methods: emerging/migratory pests	Session guide
(The facilitator makes a presentation on the common Banana pests that are of economic importance) **Group work.** • Trainees will share Banana 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 Banana pests **Practical exercise** • Identification of Banana pests from provided specimens. **Discussion** • Let the trainees recall what they learned and discuss any issue that may arise	• PowerPoint presentation • Group exercise. • Practical exercise • Participants' handouts
5.4.3. Sustainable Integrated Pest Management (IPM) practices in Banana; 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 of the safe use of agrochemicals (demonstration on how to select the most suitable pesticides for the management of pests in Bananas). **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 Banana diseases that cause economic losses, conditions that favour their development and their control methods	Session guide
Group work. • Determination of Banana diseases in specific Counties **Plenary Presentation** • Presentations on Banana diseases and conditions that favour 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 Banana disease control measures. • Presentation on Integrated Disease Management (IDM) in Banana • An overview of the safe use of recommended ag-rochemicals (demonstration on how to select the most suitable fungicides for the management of major Banana diseases). **Field visit** - Visit to a nearby Banana field for collection and identification of diseased Banana samples	• PowerPoint presentation • Participants' handouts • Disease management guidelines • Field demonstration
5.4.6 Integrated weed management (Major weeds of Banana)	**Session guide**
Plenary presentation • Identification of weeds • Major types of weed in the Banana 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 the mixing of pesticides/ ITK products and their consideration of the safe use of pesticides. • Representative group leaders give presentations on the findings of the discussion. **Plenary presentation** The facilitator makes a 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 the safe use of pesticides.	• PowerPoint presentation by the facilitator and representative group leaders • Demonstrate the proper use of knapsack sprayers and protective gear, calibrate pesticides, and source registered pesticide information online on the PCPB website. • Distribute participants handouts (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) Summarise the main points of the training: The facilitator should review the following main points about climatic conditions suitable for Banana production: • Major pests of Bananas and their economic impacts on Banana production. • Integrated Pest Management (IPM) options for Banana • Major diseases of Bananas and their economic impact on Banana production. • Integrated Disease Management (IDM) options for Banana • Major weeds of Bananas and their economic impacts on Banana production. • Integrated Weed Management (IWM) options for Banana *(Discuss new things learned from this module with trainees. What are some of the issues that need clarification)?*	• The last participants' handouts • Summarize the main points from the module on a flip chart and display.

MODULE 6: BANANA VALUE ADDITION

6.1 Introduction

Banana is an important cash crop in Kenya. Banana processing creates cottage industries for income generation. This module introduces farmer trainers to the importance of bananas in addressing food and nutrition security at the household, community, and industrial levels. The module also covers the various banana value-added products, constraints in value addition, and suggested solutions. It is expected that the processing and value-adding methods provided will enhance the 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. The role of bananas as a food security crop is explained.
2. The nutritional composition of bananas, health benefits, food security, and income are described.
3. Challenges in value addition and utilization of banana, and suggested solutions identified.
4. Banana-based value-added products identified and explained.
5. Equipment and machinery used in value addition identified and explained

6.3 Module Summary

Module 6. Banana 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 banana as a food and nutrition security crop	• **PowerPoint Presentation** • **Group exercise.** • **Plenary Presentation**	• **Flip charts** • **Felt pens.** • **Projector** • **laptop** • **Participants' handouts** • **Field note book and pens** • **Masking tape**	**30 minutes**

Module 6. Banana value addition			
Sessions	**Training Methods**	**Training Materials**	**Time**
6.3.3. Nutritional composition of banana and its role in human health	• PowerPoint • Plenary presentation • Group exercise.	• PowerPoint presentation • Flip charts • Felt pens. • Participant handouts	45 min
6.3.4. Challenges in value addition and utilisation of banana	• Group exercise. • Plenary Presentation	• List of value-added products. • Checklist for prioritisation • Pair-wise ranking tool. • Flip charts • Felt pens. • Participants' handouts • Projector • Laptop	45 min
1.1.5 **Banana-based value-added products:**	• Plenary Presentations • Plenary discussion • Practical demonstration • Sensory evaluation of value-added banana products • Field visit to processing firms/groups	• Projector • Laptop • Participant handouts • Assorted value addition equipment and ingredients • Sensory evaluation forms	3 hours 30 min

Module 6. Banana value addition			
Sessions	**Training Methods**	**Training Materials**	**Time**
6.3.6.Equipment and machinery used in value addition	• **Plenary Presenta-tions** • **Plenary discussion** • **Practical demon-stration**	• **Projector** • **Laptop** • **Participant hand-outs** • **Assorted value addition equip-ment**	**1 hour**
6.3.7. Module review	• Plenary discussion • Presentations	• Flip charts • PowerPoint pre-sentations • Module evaluation forms	30 minutes
TOTAL			**7 hours 30 minutes**

6.4 Facilitator's Guidelines

Module 6. Banana value addition	
6.4.1 Introduction, expectations, and objectives	**Session guide**
Introduction and expectations *(The facilitator welcomes trainees to the module on the value addition of bananas. They are then invited to introduce themselves and state their expectations)* **Module Objectives** *(The facilitator presents module objectives.)* By the end of the module, the trainee should be able to • Appreciate the role of bananas as a food and nutrition security crop. • Describe the nutritional composition of bananas, health benefits, food security and income. • Identify constraints in value addition and utilization of bananas and suggest solutions. • Explain how to make banana-based value-added products. • Projector • Laptop • Participant handouts • Assorted value addition equipment and ingredients	• Participants' handouts • PowerPoint Presentation • Summarize trainees' expectations and display them on a flip chart/board.
6.4.2 Role of banana as a food and nutrition security crop	**Session guide**
(The facilitator presents on malnutrition cases in Kenya and the importance of bananas 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 banana and other processing ingredients. • Group exercise

Module 6. Banana value addition	
6.4.1 Introduction, expectations, and objectives	**Session guide**
6.4.3 Banana nutritional composition and impact of consumption on human health	
Plenary presentation • Overview of the documented banana nutritional composition and their role in human health and nutrition	• PowerPoint presentation • Participant handouts • Brochures, leaflets, manuals, factsheets, posters
6.4.4. Constraints in value addition and consumption of banana and suggested solutions	**Session guide**
Group exercise. Groups discuss the constraints in banana value addition and utilization. **Plenary presentation** Overview of constraints in value addition and utilization of banana	• PowerPoint presentation • Group Exercise
6.4.5 Banana-added products	**Session guide**
Plenary presentation • Overview of banana-based value-added products. • Meaning of value addition • Requirements for value addition of banana • Banana-based value-added products, sensory evaluation of the products. **Practical exercise** • Demonstration on formulation of banana-based products. • Practical sensory evaluation of value-added banana 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 banana 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 regarding banana value addition? › What questions do you still have about banana value addition?	Summary of the main points from the Module.

MODULE 7: GREEN TECHNOLOGIES AND MECHANIZATION

7.1 Introduction to the module

Green technologies are vital for making banana value chain more sustainable and efficient. They help reduce environmental impact, manage resources better and boost productivity, ensuring a more resilient and economically viable industry. It is therefore, essential that we promote relevant Climate smart Agriculture (CSA) and green growth technologies such as; organic farming, minimum tillage, composting, mulching, solar technologies, water harvesting etc.

Agricultural mechanization supports the enhancement of 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 the utilization efficiency of costly inputs (planting materials, chemicals, fertilizer, irrigation, water. etc.), reducing the unit cost of production, enhancing profitability and competitiveness in the cost of operation. It also benefits the conservation of agricultural produce and by-products from qualitative and quantitative damages. It enables value addition and the establishment of agro-processing enterprises for additional income and employment generation from farm produce. Agricultural mechanization is one of the important inputs that has the potential to revolutionize Banana 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 agriculture options identified and explained.
2. Land preparation machines demonstrated.
3. Use of pest, weed and disease control implements and tools demonstrated.
4. Processing machines and equipment demonstrated.

7. 3 Module Summary

Module 7. Green Technologies and Mechanization			
Sessions	**Training methods**	**Training materials**	**Duration**
1.1.1 Introduction, objectives and expectations	• Personal introductions/ know your audience. • Presentations • Plenary discussions	• Flip charts • PowerPoint Presentations	20 minutes

Module 7. Green Technologies and Mechanization			
Sessions	**Training methods**	**Training materials**	**Duration**
1.1.2 Land preparation machines explained	• Presentations • Plenary discussions	• Flip chart • PowerPoint presentation • Participants' handouts	30 minutes
1.1.3 Climate smart agriculture options	• Presentations • Plenary discussions • Practical demonstrations	• Flip chart • PowerPoint presentation • Participants' handouts	1 hour 30 minutes
1.1.4 Tractor-mounted hole digger/ hand held earth auger described and explained	• Presentations • Plenary discussions • Practical demonstrations	• Flip chart • PowerPoint presentation • Participants' handouts • Practical	30 minutes
1.1.5 Pest, weed and disease control equipment and tools usage demonstrated	• Presentations • Plenary discussions • Practical demonstrations	• Flip chart • PowerPoint presentation • Participants' handouts • Practical	1 hour 25 minutes
1.1.6 Processing machines and equipment demonstrated	• Presentations • Plenary discussions • Practical demonstrations	• Flip chart • PowerPoint presentation • Participants' handouts • Practical	1 hour
7.3.7 Module review	• Presentations	• PowerPoint presentation	15 minutes
Total			**5 hours 30 minutes**

7.4 Facilitator's Guidelines

Module 7: Green Technologies and Mechanization	
11 12 12.7 **7.4.1 Introduction, Objectives, and Expectations**	**Session guide**
(The facilitator welcomes trainees to the module on banana mechanisation tools and equipment that help reduce labour costs as well as post-harvest losses. They are then invited to introduce themselves and state their expectations) **Module Objectives** The facilitator presents the module objectives. By the end of the module, the trainee should be able to: • Climate smart agriculture options identified and explained. • Land preparation machines demonstrated. • Tractor-mounted hole digger/ hand held earth auger described and explained • Use of pest, weed and disease control implements and tools demonstrated. • Processing machines and equipment demonstrated. *In each case, state approximate prices and availability of machines, tools and equipment required*	• Summarize trainees' "Expectations" and display. • PowerPoint Presentation • Distribute Participants' Handouts on Module Objectives and Training Program
7.4.2. Banana climate-smart land preparation tools and equipment	**Session guide**
(The facilitator presents the commonly known land preparation tools and equipment) **Plenary Presentation** PowerPoint Presentation Highlighting: • Overview of the banana mechanization activities • Climate smart agriculture 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

Module 7: Green Technologies and Mechanization	
11 12 12.7 **7.4.1 Introduction, Objectives, and Expectations**	**Session guide**
7.4.3. Land preparation machines	**Session guide**
Plenary Presentation PowerPoint Presentation Highlighting: • Description and explanation of land preparation machines. **Discussion** Let the trainees recall what they learned and discuss any issues that may arise.	• PowerPoint presentation • Distribute participants' handouts. • Brochures, leaflets, and manual
7.4.3. Tractor-mounted hole digger/ hand held earth auger	**Session guide**
Plenary Presentation PowerPoint Presentation Highlighting: • Description and explanation of the Tractor-mounted hole digger/ hand held earth auger described and explained **Discussion** Let the trainees recall what they learned and discuss any issues that may arise.	• PowerPoint presentation • Distribute participants' handouts. • Brochures, leaflets, and manual
7.4.4. Demonstration of banana processing tools and equipment	**Session guide**
Plenary Presentation PowerPoint Presentation Highlighting: • Description and explanation of banana processing machines and equipment • **Discussion** Let the trainees recall what they learned and discuss any issues that may arise.	• PowerPoint presentation • Distribute participants' hand-outs. • Brochures, leaflets, and manual

Module 7: Green Technologies and Mechanization	
11 12 12.7 **7.4.1 Introduction, Objectives, and Expectations**	**Session guide**
7.4.4 Module review	**Session guide**
The facilitator leads the trainees in reviewing the module) Summarise the main points of the training and, together with the participants, review the main points: • Demonstrate • Climate smart agriculture options identified and explained. • Land preparation machines demonstrated. • The mounted hole auger/hand held earth auger was described and explained. • Use of pest, weed and disease control implements and tools demonstrated. *(Discuss new things learned from this module with trainees. What are some of the problems and issues that they have become more aware of in the module?)*	• Distribute participants' handouts • Summarize the main points from the module on a flip chart and display

MODULE 8: BANANA BUSINESS AND MARKETING

8.1 Introduction

Banana is mainly produced in Meru, Kirinyaga, Muranga, Kisii, Tharaka Nithi, Kiambu and Taita Taveta Counties. Markets and marketing of bananas are major concerns 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 are low. To strengthen the Banana value chain, it is important to equip farmer facilitators with the skills and knowledge of Banana farming business and marketing strategies. This module is designed to build the skills of trainees in Banana 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 are 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 are explained and described.
4. Various marketing approaches for bananas were identified.
5. Determination of Profitability (Gross margin analysis) described.

8.3 Module Summary

Module 8. Banana Business and Marketing			
Sessions	**Training Methods**	**Training Materials**	**Time**
8.3.1. Models for market-oriented production of Banana. (Levelling of participants' expectations about the module and objectives)	• Introduction • Plenary discussion	• Projector • Laptop • Flip charts • Marker pens • Masking tapes/flip chart holders	40 minutes
8.3.2. Developing a Business Plan for Banana 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 • Field Note Book and pens	1 hour 30 minutes

Module 8. Banana Business and Marketing			
Sessions	**Training Methods**	**Training Materials**	**Time**
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 the performance of Banana agro enterprise (Implementing a farm business: Recordkeeping, Break-even, Gross margin analysis, entrepreneurship	• Plenary presentation • Plenary discussion • Group exercise	• Projector • Laptop • Flip charts • Marker pens • Masking tapes/flip chart holders	1 hour
8.3.5 Scaling up Plan of Banana 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 Banana production model, Banana marketing entrepreneurship model and Internet/online/ mobile marketing)	• Plenary presentation • Plenary Discussion • Demonstration	• Projector • Laptop • Flip charts • Marker pens • Masking tapes/flip chart holders	1 hour
8.3.7. Module review	• Facilitator's summary • Plenary presentation • Plenary Discussion	• Module review • Participants handouts	20 minutes
TOTAL			**5hours 30 minutes**

8.4 Facilitators Guidelines

Module 8. Banana Business and Marketing	
8.4.1 Levelling participants' expectations about the module	**Session guide**
(The facilitator welcomes trainees to the module and, after that, invites them to state their expectations) *(The facilitator presents module objectives)* By the end of this module, the trainee is expected to: • Appreciate business concepts 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: cost of production, Recordkeeping, Break-even, Gross margin and entrepreneurship. • Identify the marketing approaches of Banana.	• Summarize trainees' "Expectations" and display them on a flip chart/board. • Participants handouts • PowerPoint presentation
8.4.2 Developing a business plan for Banana farm business	**Session guide**
(The facilitator will highlight elements of business concepts 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 the 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 Banana farming as a business and marketing	• PowerPoint presentation • Participants' handouts • Group exercise

Module 8. Banana Business and Marketing	
8.4.1 Levelling participants' expectations about the module	**Session guide**
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 they sell as a group.	• Participants 'handouts • Group exercise.
8.4.4 Profitability analysis - Reviewing the performance of Banana agro enterprise	**Session guide**
(*The facilitator highlights the importance of the tools in managing Banana production as a farm business)* **Plenary Presentation** • The farmer as an entrepreneur • Record keeping. • Profitability assessment (cost of production, break-even & gross margin) **Plenary Discussion** • Profitability analysis	• PowerPoint presentation • Participants' handouts • Plenary discussion
8.4.4 Scaling up Plan of Banana agro-enterprise Development Approach	**Session guide**
Group and Plenary discussions. • In groups three groups, the participants discuss how to scale up Banana agro-enterprise *The group leaders in each group present back to the whole plenary and discuss the outcomes.*	• Plenary discussion • Group exercise.

Module 8. Banana Business and Marketing	
8.4.1 Levelling participants' expectations about the module	**Session guide**
1.1.5 **Marketing Strategies**	**Session guide**
Plenary Presentation *(The facilitator highlights the marketing strategies for the Banana farm business)* • Market research • Producer organisations • Contract farming. • Online/internet marketing **Plenary Discussion**	• PowerPoint presentation • Participants' handouts
1.1.5 **Training review**	**Session guide**
(The facilitator leads the trainees in reviewing the module. Conclude by thanking the trainees) **Plenary Presentation** *Summarise the main points of the training*	• Plenary presentation • Summary of the main points from the Module.

CHAPTER 8: GENDER EQUALITY , HUMAN RIGHTS AND SOCIAL INCLUSION

8.1 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.

8.1 Chapter Summary

Chapter 8.0: Gender equality, human Rights and social inclusion			
Sessions	**Training methods**	**Training materials**	**Time**
8.1 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
8.1.1 Gender equality Definition of concepts	• Presentations • Individual reflections • Group exercise • Plenary discussions	• Flips charts • Felt pens • Laptop • Projector • Participants' handouts	30 minutes

Chapter 8.0: Gender equality, human Rights and social inclusion			
Sessions	**Training methods**	**Training materials**	**Time**
8.1.2 The business case for gender mainstreaming	• Practical exercise (groups tour nearby successful Agri- business where both the a model couple) • Presentations	• Flips charts • Felt pens • Laptop • Projector • Participants' handouts	40 minutes
8.1.3 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
8.2 Human rights	Individual reflections Buzz groups Plenary Presentations PowerPoint presentations	• Flip charts • Felt pens • Laptop • Projector • handouts	30 minutes
8.2.1 HRBA-PANT Principles	Group work Presentations PowerPoint presentations	• Flip charts • Felt pens • Laptop • Projector • handouts	30 minutes
8.3 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 8.0: Gender equality, human Rights and social inclusion			
Sessions	**Training methods**	**Training materials**	**Time**
Chapter review and discussion	• Discussion/conclusion Action plan	• Flip charts • Felt pens • Laptop • Projector	30 minutes
Total			**4, hrs**

8.2Guidelines for Facilitators

Chapter 8: Gender Equality, Human Rights and social inclusion		
8.1. 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** 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.	• Summarize the trainees expectations • PowerPoint presentations • Group exercise (listing and presenting expectations). • Expectations lists kept for later reviewing compliance	

8.1.1 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
8.1.2 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

8.2 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
8.2.1 HRBA-PANT Principles	
The facilitator lead the team on the PANT principles • Group work • Presentations • •PowerPoint presentations	• Flips charts • Felt pens • Laptop • Projector • Participants' handouts
social inclusions	
The faclilitator leads the trainee into group discussions on who is likely to be left behind in the value chain • Identification Who is excluded? Are some groups less likely to benefit from a Program/project because of their identity? • Analysis How and why is the particular group (or groups) excluded? What drives the exclusion? • Actions What actions can the groups/ farmers take to ensure there is social inclusion • Monitoring 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

MESPT
MICRO ENTERPRISES SUPPORT PROGRAMME TRUST

BANANA VALUE CHAIN TRAINING WORKSHOP FOR XXXX

TRAINING VENUE: XXX **DATES: XXX**

SAMPLE PROGRAMME

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 BUGOMA
13	Agesa Eric	County Government of KAKAMEGA
14	Benard Mainga	County Government of KWALE
15	Jane M 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

KALRO
Kenya Agricultural & Livestock Research Organization

MESPT
MICRO ENTERPRISES SUPPORT PROGRAMME TRUST

MINISTRY OF FOREIGN AFFAIRS OF DENMARK
Danida

Micro-Enterprises Support Programme Trust
MESPT Plaza, 01 Tausi Rd
Westlands, between Westlands Rd & Muthithi Rd.
P.O Box 187-00606 Sarit Centre.
Email: info@mespt.org
Tel: 0722 207 905 | 0735 333 154