



Food and Agriculture
Organization of the
United Nations



Farmer Field School Curriculum on Climate Smart Agriculture in Upland/Hilly Areas of Chin State



Myanmar

Farmer Field School Curriculum
on
Climate Smart Agriculture
in
Upland/Hilly Areas of Chin State
Myanmar

**Sustainable Cropland and Forest Management in Priority Agro-
ecosystems of Myanmar Project (GCP/MYA/017/GFF)**

Published by
the Food and Agriculture Organization of the United Nations
and
AVSI Foundation
Naypyidaw, 2019

Required citation:

FAO. 2019. *Farmer Field School Curriculum on Climate Smart Agriculture in Upland/Hilly Areas of Chin State, Myanmar*. Naypyidaw. 24 pp. Licence: CC BY-NC-SA 3.0 IGO

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) or AVSI Foundation concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO or AVSI in preference to others of a similar nature that are not mentioned.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views or policies of FAO or AVSI.

ISBN 978-92-5-131327-5

© FAO, 2019



Some rights reserved. This work is made available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo/legalcode>).

Under the terms of this licence, this work may be copied, redistributed and adapted for non-commercial purposes, provided that the work is appropriately cited. In any use of this work, there should be no suggestion that FAO endorses any specific organization, products or services. The use of the FAO logo is not permitted. If the work is adapted, then it must be licensed under the same or equivalent Creative Commons license. If a translation of this work is created, it must include the following disclaimer along with the required citation: "This translation was not created by the Food and Agriculture Organization of the United Nations (FAO). FAO is not responsible for the content or accuracy of this translation. The original English edition shall be the authoritative edition."

Disputes arising under the licence that cannot be settled amicably will be resolved by mediation and arbitration as described in Article 8 of the licence except as otherwise provided herein. The applicable mediation rules will be the mediation rules of the World Intellectual Property Organization <http://www.wipo.int/amc/en/mediation/rules> and any arbitration will be in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL)

Third-party materials. Users wishing to reuse material from this work that is attributed to a third party, such as tables, figures or images, are responsible for determining whether permission is needed for that reuse and for obtaining permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

Sales, rights and licensing. FAO information products are available on the FAO website (www.fao.org/publications) and can be purchased through publications-sales@fao.org. Requests for commercial use should be submitted via: www.fao.org/contact-us/licence-request. Queries regarding rights and licensing should be submitted to: copyright@fao.org.

CONTENTS

	Acronyms	iv
1	Background / Context	1
2	Introduction and Objectives of FFS in Central Dry Zone	1
3	Key Steps of FFS Implementation	2
4	General Principles of Climate Smart Agriculture in FFS context	3
5	Pre-FFS Preparation	4
5.1	Village Selection for the Establishment of FFS	4
5.2	FFS Committee Formation	4
5.3	Selecting FFS Facilitator	5
6	Collection of relevant information/data	7
7	Cropping Calendar of the Potential Crops in Upland/Hill Zone	7
8	Guiding Principles of FFS in Upland/Hill Zone	8
9	Farmer Field School Curriculum for Upland/Hill Zone	10

ACRONYMS

AESA	Agro-ecosystem Analysis
AVSI	Association of Volunteers in International Service
CA	Conservation Agriculture
CSA	Climate Smart Agriculture
DoA	Department of Agriculture
EPI	Ear Primordial Initiation
FAO	Food and Agriculture Organization of United Nations
FAA	Fish Amino Acid
FFS	Farmer Field School
FGD	Focus Group Discussion
GAD	General Administrative Department
GAP	Good Agricultural Practices
GEF	Global Environment Facility
GHG	Greenhouse Gas
IMO	Indigenous Microorganism
IPM	Integrated Pest Management
MoALI	Ministry of Agriculture, Livestock and Irrigation
MONREC	Ministry of Natural Resources and Environmental Conservation
NGO	Non-government Organization
PTD	Participatory Technology Development
SALT	Sloping Agricultural Land Technology
SFM	Sustainable Forest Management
SLM	Sustainable Land Management

1. Background / Context

The Food and Agriculture Organization of the United Nations (FAO) is implementing a project entitled “Sustainable Cropland and forest management in priority agro-ecosystems of Myanmar (SLM-GEF)” in coordination with the Ministry of Natural Resources and Environmental Conservation (MoNREC) and the Ministry of Agriculture, Livestock and Irrigation (MoALI) with funding from the Global Environment Facility (GEF). AVSI Foundation has been contracted to develop the National Farmer Field School (FFS) curriculum and FFS Handbook. AVSI Foundation has developed a FFS curriculum/module on climate smart agriculture (CSA) techniques/practices for each selected agricultural crop and for each of the three agro-ecological zones incorporating solutions to the major problems identified during the need assessments and also considering the findings of value chain analysis.

2. Introduction and Objectives of FFS in Upland/Hilly Areas

The Farmer Field School (FFS) is a learning process whereby a group of farmers come together and engage in a process of hands-on field-based learning process over a season/ production cycle. FFS is a time-bound learning by doing activity with a beginning and an end and aims to solve the problems related to cultivating crops.

FFS is a platform for holistic learning, and should address issues and aspects that directly or indirectly contribute to the performance of the local farming system, even if these issues are not agriculture-based as such.

All FFS programmes need to integrate programming on gender equality and nutrition concerns in FFS development. Gender norms, roles and customs are very relevant for FFS implementation such as assessment and targeting of the specific needs of male and female farmers, selection and gender awareness of facilitators, and composition of an FFS group (with adequate representation of women and girls) and targeting the specific needs and priorities of men and women.

This module of FFS has been designed to increase agricultural productivity of the priority crops in Chin State (Mindat and Kanpetlet Townships) by addressing the challenges identified during the needs assessments based on knowledge systems and practices by FAO with support of AVSI as a Service Provider. During the need assessment cultural barriers for FFS implementation, gender norms, traditions, etc. were considered. Generally, it's been observed that farmers, both men and women, have low knowledge of climate smart agriculture (CSA). The learning objectives of the proposed FFS modules are to:

- Empower farmers (both men and women) with knowledge and skills to improve the productivity of their main crops.
- Sharpen the farmers' ability to make critical and informed decisions that render their farming profitable and climate-smart for both male and female farmers.
- To sensitize farmers in new ways of thinking and solve problems linked to climate changes.
- Help farmers learn how to organize themselves and their communities, with a focus on women and girls.

3. Key Steps of FFS Implementation

FFS implementation follows a three phases approach in a crop season depending upon the duration of the crop cultivation.

I. Preparatory Phase

- a. Situation Analysis,
- b. Village selection for FFS implementation,
- c. Farmers selection for FFS (both male and female farmers),
- d. FFS group formation and organization,
- e. Selection and training of facilitators,
- f. Selection of learning activity/enterprise, and
- g. Design and setup of the FFS experimental field (demonstration plots). This is to compare the current practices with improved/alternative practices.

II. Basic FFS Cycle

- a. Regular learning cycles/sessions,
- b. Evaluating participatory technology development (PTD) activities,
- c. Gender-sensitive monitoring and evaluation to assess the different impacts on men and women
- d. Conducting field day (at the end of the season),
- e. Organizing exchange visits (Exchange visits with other FFS), and
- f. Organizing graduation ceremony. All the farmers (FFS Committee Members) who took part in the FFS activities by attending all the FFS trainings/meetings (with more than 80% of the attendance) and planting the given seeds in their own field will be awarded with a FFS Certificate during the graduation ceremony.

III. Post-graduation Phase

- a. Follow up activities,

- b. Networking, and
- c. Income generation and setting up second generation FFS, especially when new livelihood opportunities or challenges arise.

4. General Principles of Climate Smart Agriculture in FFS context

There are two ways by which agricultural production can contribute to mitigate climate change:

- Reducing GHGs emissions per unit of land and/or agricultural products, and
- Enhancing soil carbon sinks

CSA aims to sustainably improve agricultural productivity, enhance food security, boost farmers' adaptive capacity and resilience to climate shocks and contribute to GHG mitigation. Given limited understanding of farmers about CSA, the module aims to raise awareness of the principles of CSA. CSA approach is embedded in all activities of this module. The principles of CSA are:

- sustainably increasing agricultural productivity and incomes;
- adapting and building resilience of agricultural livelihoods to climate change; and
- reducing and/or removing greenhouse gas emissions, where possible.

CSA aims to strengthen livelihoods and food security, especially of male and female smallholders - farmers, herders, fishers, forest-dependent communities, as well as indigenous people –by improving their management and use of natural resources and adopting appropriate methods and technologies for the production, processing and marketing of agricultural products.

Adoption of climate smart agriculture is very important for adaptation and mitigation of the adverse climate impact and increase the resilience of livelihoods to threats and crises, especially for the poorest and most marginalized people that are disproportionately affected by hazards and crises.

FAO foresees a broader approach, working to build synergies among social protection and climate change to achieve sustainable growth and eliminate rural poverty. FAO uses a “twin-track” approach, on the one hand taking immediate steps to protect and support agriculture, food and nutrition, and on the other addressing in the longer term the underlying factors driving risks, disasters and crises. FAO's work focuses on developing, protecting and restoring sustainable livelihoods so that the integrity of societies that depend on farming, livestock, fish, forests and other natural resources is not threatened by crises. CSA uses a comprehensive approach in

seeking to improve rural livelihoods, increasing the productivity and resilience of poor communities, including rural women and girls, while also providing mitigation benefits.

5. Pre-FFS Preparation

5.1 Village Selection for the Establishment of FFS

There will be one FFS organized in each of the selected villages. FFS villages should be selected considering the following criteria:

- The villages should represent the specified agro-ecological zone.
- The villages should fall in the given pilot Township.
- The villages should be selected in such a way that they should represent the various variability within the given agro-ecological zone.
- The community in the village must be interested in and willing to take part in FFS activities. The community in the village should be informed about the FFS to be established in order to obtain formal consent and interest to partake in FFS activities.
- Sufficient number of men and women must be identified for the FFS Committee and to run the FFS, to represent the interests and priorities of both male and female farmers. Additional knowledge created by women differs from men's due to their life experience; ensuring that both co-create the FFS thus significantly enriches the entire group.

As a general rule, to avoid duplication, FFS will only be established in villages where there are not already similar FFS activities supported by other organizations. However, if there is scope of complementarily and synergies with existing initiatives, FFS can be established in the same village.

5.2 FFS Committee Formation

Assist the community in forming a FFS Committee comprising of 20-30 members, either through the formation of new group or strengthening of existing groups, ensuring an adequate number of women and girls. The gender dimensions should be analyzed and if men and women are generally involved in the farming activities, mixed FFS groups should be formed. The main criteria applied for selection of participants should be as follows.

- Group (FFS Committee) of 20-30 farmers,
- Observe the gender, age and experience balance and encourage women and youth participation as far as possible.

- Farmers having experience of local production and livelihood system and to grow the crops which are included in the FFS,
- Must be resident from the same village,
- Smallholder farmers (owning no more than 10 acres of land) or land users who are resource-poor and often have limited access to education, information, extension services, market access and financial capital,
- Farmers demonstrate interest and commitment to the full FFS cycle,
- Farmers demonstrate good attitude: eager to learn and share knowledge and experience, keen to work in the group, help to clean the site after the FFS session, etc., and
- Should continue for at least two subsequent crop cycles to see the results.

Facilitate FFS Committee to select a Chairperson, a Vice Chairperson, a Secretary, a Treasurer and a Lead Farmer. The Lead Farmer will host and take lead to establish study/ learning/ experiment/ demonstration plot and will gradually take over the responsibility of FFS Facilitator from DoA Extension Officer from the second year onwards. Rest should be considered as general members. The other members of the FFS Committee will be responsible for taking part actively in the regular FFS meetings/training to contribute, to learn and to replicate the learning in their own field and to disseminate to other farmers.

5.3 Selecting a Lead Farmer (FFS Facilitator)

The FFS Facilitator is a technically competent person who facilitates hands-on exercises. The Lead Farmer/Facilitator should possess the following skills/characteristics.

- Must be a member of the FFS Committee of the respective village.
- **Social skills:** ability to engage everyone in the group into productive learning and exchange process, gender sensitivity, good communication and presentation skills.
- **Interpersonal skills:** non-judgmental, supportive attitude, sensitivity to group dynamics processes (e.g. managing dominant behavior).
- **Technical skills:** ability to lead the group through the process of improving the crop production according to CSA principles, prior experience (or education) in farming and agriculture, understanding of market economy.
- **Organizational skills:** ability to guide the process for setting up the demonstration field and ability to keep records.
- **Gender awareness:** ability to address potential gender barriers as well as to be familiar with concepts of social inclusion and social vulnerability. Qualified female member

should be given priority as far as possible to become Facilitator/Lead Farmer. The FFS ToT programme will include gender mainstreaming issues/topics.

In the first year, while a Lead Farmer will be selected from among the FFS Committee Members, there will be a FFS Facilitator assigned by the respective Township DoA for each FFS who will be a technically competent person responsible for leading the group members through the hands-on exercises. From the second year onwards, the DoA Extension Officer will take a back seat only offering guidance whenever needed and the Lead Farmer from the FFS Committee will take over the responsibility of FFS Facilitator. Both the FFS Facilitator from the DoA Office and the Lead Farmer from the FFS Committee should ensure an adequate involvement of women and girls since the FFS is set up.

6. Collection of relevant information/data

A village profile will be developed for each FFS village prior to the FFS implementation using a standard format. The village profile will include geographical information, demographic information, available resources and livelihoods opportunities, livelihoods profile of the people, major crops grown in the village, cropping patterns/calendar, major problems associated with priority crops, major needs of the community and analysis of the gender roles and the division of tasks of men and women for each of the selected crops, assessing their capacity and needs.

All the relevant information from the standing crops and post-harvest information will be obtained using a standard template. The tools, methods, and indicators/questions used will be gender-sensitive, i.e. they do not exclude women from being able to give their opinions, and by including questions that directly address gender inequalities in the context of implementation. Gender-disaggregated data/information will also be collected on FFS attendance and gender-sensitive indicators will be created accounting for the diversity of ethnicity, gender, age, class, religion, and culture in the impact assessment. Specific indicators will be developed that are able to measure the achievement of gender equality among programme participants. This may require disaggregation of data by sex and their analysis to identify functional relations and effects.

7. Cropping Calendar of the Potential Crops (Elephant Foot Yam, Coffee, and Avocado) in Upland/Hilly Areas

Crops	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Elephant Foot Yam	Growing time								Harvesting time			
Coffee			Growing time						Harvesting time			
Avocado			Growing time						Harvesting time			

Source: Department of Agriculture, Mindat and Kanpetlet Townships (Nov, 2017)

8. Guiding Principles of FFS in Upland/Hilly Areas

As per the initial need assessment and value chain analysis done by FAO with AVSI Foundation as a Service Provider, Elephant Foot Yam, Coffee and Avocado have been identified as the priority crops in the area based on technical feasibility, the crops already being grown in the area and have high market demand and contribute to improved nutrition of men and women and their households, especially children, the elderly and the disabled. Gender considerations will cut across all indicators for data collection to ensure that information can be easily gender disaggregated. Therefore, the FFS module and FFS activities will cover those three prioritized crops.

Similarly, the project focus in the upland/hilly areas is to promote agro-forestry practices and hence, the above mentioned prioritized crops will be grown as a mix/inter crop i.e. Elephant Foot Yam and Coffee (or) Elephant Foot Yam and Avocado or any other suitable species as agreed with DoA on the same plot. Saplings of multipurpose *Gliricidia sepium* or *Grevillea robusta* (Silver Oak) will also be planted as windbreaks. *Gliricidia sepium* tree species can also offer fuelwood, nutrient-rich mulch, erosion control and soil stabilizer and high quality forage for ruminants. The FFS Committee can also select any other suitable tree species to be planted in consultation with Department of Agriculture and/or Forest Department Offices.

The crops will be planted in upland fields, using one of the following land management practices, based on the financial capabilities and fit-for-purpose criteria:

- **Terracing Method:** Terracing method refers to the method of producing crops on the sides of mountains or hills with the help of graduated steps or terraces builds into the slopes. This method of farming is labor intensive and employed effectively to maximize the growing area, in variable terrains. It is mainly operated to reduce soil erosion and water loss.

- **Sloping Agricultural Land Technology (SALT) Method:** SALT is a package of technologies for soil conservation, crop cultivation and sustainable food production that includes hedge row contour planting, alley cropping and terrace improvement through formation of bunds and contour planting among others.

The **guiding principles** for this FFS module are:

- Working in groups (15-30 farmers);
- Season-long activities (following the season of crops or development cycles of animals);
- Regular meetings/sessions during the season. The formal meeting/training has been planned in the curriculum to be one time in a month however, the FFS Committee meet informally as and when needed;
- Study/learning demonstration plots/experiments to compare current practices with improved/alternative practices;
- Using group knowledge to solve problems – e.g. learn from farmers, who are practicing terracing methods or sloping agricultural land technologies (SALT);
- Role of facilitator: to facilitate group work, rather than impose knowledge;
- Technical expert to provide input on CSA techniques and practices related to: a) high resistance seeds to the adverse factors, b) soil testing practices, c) land preparation techniques, d) soil nutrients and water management, e) proper application of crop protection and crop nutrition substances, f) integrated pest management, g) post-harvest techniques (storage) and prospects for processing;
 - Keep regular schedule of the meetings as specified in the curricula presented in the Section 9;
 - Observe the demonstration plot regularly after every FFS meetings and also outside the FFS meetings, as much as possible, to see the changes and any problems in the demonstration plot, and
 - Keep the crop records during the whole cycle. Also analyse and keep record on how male and female farmers are actually benefitting from these crops and the new techniques and practices.

Once the FFS has started and demonstration plot has been established, each FFS meeting/session should include the following steps as far as possible (this should be reflected for each FFS meeting occurring after establishment of the crops till harvesting):

- Agro-ecosystem analysis (AESA),
- A group dynamics exercise,
- Special topic, and

- Feedback on the session. The feedback will include the views and perceptions of both men and women

After the completion of the one cycle of FFS, the FFS Committee will need to continue the FFS on longer run on their own with minimum support from the project only for second year. The respective Township DoA Office will provide necessary technical supports as and when needed and will be responsible for the follow up activities. The DoA will also be responsible for monitoring the extent of adoption of newly acquired practices and how these are being scaled up in other neighboring communities.

9. FFS Curriculum/Module for the Potential Crops (Elephant Foot Yam, Coffee, and Avocado) in Upland/Hill Zone

Month	Module	Subject and Competence
March (Last week)	Pre-FFS Introductory Meeting	<ol style="list-style-type: none"> 1. Objectives of FFS, guiding principle, FFS Famers selection, FFS Committee formation, Selection of Lead Famer etc. 2. Introduction of participants: Facilitator, technical specialist, participants from villages. 3. Site selection for establishing demonstration plot (in Lead Famer's Field) also discussion and agreement on size (one acre), treatment to be included and layout of the demonstration plot. 4. Introduction of crops that will be covered in FFS training (Avocado, Coffee, Yam).
April	Module 1	<ol style="list-style-type: none"> 1. Introduction to CSA and its practices. 2. Introduction to GAP and its practices. 3. Introduction to SALT and its practices. 4. Introduction to CA and its practices. 5. Discussion on the forest cover in the intervention zone, especially regarding the challenges. Analysis of existing farming systems that affect the soil, the crop/plant, and environment from the participant's perspective (putting the

Month	Module	Subject and Competence
		<p>points on the flipcharts) and general discussion on that (brainstorming session).</p> <ol style="list-style-type: none"> 6. Introduction of climate changes and its effects. 7. Practical exercises on site clearing and use of residues as soil cover, making of A-Frame, finding out contour lines, establishment of contour bunds with available materials on the slope, such as waste bamboos and logs, stones, etc. (Agro-ecosystem practices) (Burning of organic residues, such as logs and twigs, weed residues, crop residues, must be avoided: no more smokes from the fields). 8. Establishment of small check dams with stones if available on the sites to prevent gully erosion 10. Collection of seeds and seedlings of hedgerow plants from available sources; <i>Grevillea robusta</i> (Silver Oak), <i>gliricidia</i>, <i>leucaena</i>, <i>tephrosia</i>, <i>flemingia</i>, <i>vertiver</i> grass. 9. Introduction of yam, coffee, and avocado (Theory) – varieties and their characteristics, growth stages, nursery raising, transplanting, life periods, etc. 10. Sowing of seed materials of yam (bulbils and/or small corms) in the Demo Plot with proper spacing based on the size of seed material (April is right time of sowing yam). 11. Mulching of sown pits with available organic residues. 12. Collection of soil samples for soil analysis that will be sent to soil lab to get the base line data of pH, soil texture, electrical conductivity, organic carbon, nutrient contents (N. P. K. Ca, Mg, S, Zn, B) and Na and related radicals (Cl, CO₃ and HCO₃). 13. Keeping records on crop managements for each crop and data entry in every training session. 14. Open discussion on the whole training session of the day and recording of participants feedbacks.

Month	Module	Subject and Competence
		15. Production of plans of actions for individuals to replicate the learning from the FFS Demonstration Plot in their own farm.
May	Module 2	<ol style="list-style-type: none"> 1. Concepts of Agroecosystem Analysis and practices. 2. Sowing of hedgerow seeds along the contour lines (<i>Grevillea robusta</i>, <i>leucaena</i>, <i>tephrosia</i>, <i>flemingia</i>), cuttings of <i>vertiver</i> grass if available (Agro-ecosystem practices) (Mulching with organic residues available in the field must be done immediately once after sowing of hedgerow seeds). Discussion on how to maintain and protect tree seedlings growth. 3. Broadcasting of rice bean (<i>Phaseolus calcaratus</i>) seeds to become live-crop cover. 4. Staking and digging of pits for growing of coffee and avocado with proper spacing by auger (4' x 8' for coffee and 20' x 20' for avocado) along the contours in the Demo Plot (yam, coffee and avocado will be planted as inter-cropping pattern with wider spacing for avocado and closer spacing for yam and medium spacing for coffee). 5. Pit filling with organic manures and composts. 6. Preparation of home-made organic products (Indigenous Microorganism-IMO, Fish Amino Acid-FAA, Preparation of EM, Tobacco-chili-ginger pesticide, etc.). 7. Compost making exercise (theory and practical). 8. Practical exercise on rearing of earthworms for compost production. 9. Keeping financial records on input costs and general expenditures. 10. Review on the status of individual's action undertaken according to their plans of previous session. 11. Production of individual's action plans to undertake at their farm. 12. Open discussion on the whole training session of the day and recording of participants feedbacks.

Month	Module	Subject and Competence
June	Module 3	<ol style="list-style-type: none"> 1. Introduction of concept of CA. 2. Observation on the growth of plants in the Demo Plot and effects of mulching on crop and weed growth. 3. Manual weeding and placing of uprooted weed residues in the plot (mulching again) (Herbicide application is strictly prohibited). 4. Collection of different varieties of yam available in the areas and growing them in the demo plot. 5. Analysis of varietal differences of yam and their market prices. 6. General discussion on the changes of weather conditions of present and the past, and its effects on crops and environment and outputs recorded. 7. Observation and analysis on the performances of activities undertaken in the previous sessions. 8. Recording of crop management and crop performances in crop record book. 9. Presentation of individual actions undertaken. 10. Production of individual's action plan. 11. Open discussion on the whole training session of the day and recording of participants feedbacks.
July	Module 4	<ol style="list-style-type: none"> 1. Introduction of Agro-forestry. 2. Planting of avocado seedlings in the pits already dug with spacing of 20'x20'. 3. Planting of coffee seedlings in the pits already dug with spacing of 4' x 8'. 4. Heavy mulching of planted seedlings at their bases with available organic residues in the field (plastic mulching will not be encouraged) (yam, avocado and coffee are already grown in the same plot as intercropping pattern and Agro-forestry system, and also along the contours).

Month	Module	Subject and Competence
		<p>5. Agroecosystem Analysis Exercise – Groups comprising of five Participants will study and make records on the following in Demo Plot.</p> <p>1) the effectiveness of SALT practices and erosion control measures, 2) effects of mulching, 3) soil organic matter and soil moisture conditions, 4) crop performances and incidences of pest and diseases, 5) performance of different varieties of yam.</p> <p>6. Recording of findings by groups.</p> <p>7. Group presentations on their findings and responding to questions raised by other groups.</p> <p>8. Making decisions and recording of important points for further actions for improvement.</p> <p>9. Recording of expenditures for crops in financial record book.</p> <p>10. Presentation of individual actions undertaken.</p> <p>11. Production of individual’s action plan.</p> <p>12. Open discussion on the whole training session of the day and recording of participants feedbacks.</p>
August	Module 5	<p>1. Concepts of Integrated Pest Management-IPM.</p> <p>2. Survey and collection of insects and classification of beneficial insects and pest.</p> <p>3. Concept of weed management.</p> <p>4. Manual weeding and placing of uprooted weed residues in the plot as mulch.</p> <p>5. Practical application of organic fertilizers, EM solution and pesticide on the plants including hedgerow plants.</p> <p>6. Recording of crop performances in each crop management record books (Yam, Rice Bean, Coffee, Avocado, <i>Gliricidia</i>, <i>Leucaena</i>).</p> <p>7. Presentation of individual actions undertaken.</p> <p>8. Production of individual’s action plan.</p> <p>9. Open discussion on the whole training session of the day and recording of participants feedbacks.</p>

Month	Module	Subject and Competence
September	Module 6	<ol style="list-style-type: none"> 1. Repetition of Agroecosystem Analysis Exercise: Groups comprising of five Participants will study and make records on the following in the Demo Plot: 1) the effectiveness of SALT practices and erosion control measures, 2) effects of mulching, 3) soil organic matter and soil moisture conditions, 4) crop performances and incidences of pest and diseases, 5) performance of different varieties of yam. 2. Recording of findings by groups. 3. Group presentations on their findings and responding to questions raised by other groups. 4. Making decisions and recording of important points for further actions for improvement. 5. Recording of crop performances in each crop management record books (Yam, Rice Bean, Coffee, Avocado, <i>Gliricidia</i>, <i>Leucaena</i>). 6. Recording expenditures in financial record book. 7. Presentation of individual actions undertaken. 8. Production of individual's action plan. 9. Open discussion on the whole training session of the day and recording of participants feedbacks.
October	Module 7	<p style="text-align: center;">Farming As A Business (FAAB)</p> <ol style="list-style-type: none"> 1. Group discussion on the following (Groups comprising of five participants). <ol style="list-style-type: none"> 1) What is agriculture as a business? 2) How can agriculture be done as a business? 3) What is the difference between food crop and cash crop? 4) Why intercropping can optimize output per acre? 2. Group presentations of their outputs and defending feedbacks from participants. 3. Documentation of important points for further actions. 4. Group discussion on essentials of agriculture as a business (plans of production, keeping of financial record book,

Month	Module	Subject and Competence
		<p>keeping the cash flow, knowing of cost of production, main cost drivers and alternatives).</p> <ol style="list-style-type: none"> 5. Discuss and explore the potential business opportunities for women and the most marginalized farmers to ensure their participation and equal benefits. 6. Group presentations of their outputs and defending feedbacks from participants. 7. Documentation of important points for further consideration 8. Group discussion on their understanding of the market system (role of brokers and traders, price variation in market systems, importance of linkages for market information, market prospects for a crop). 9. Group presentations of their outputs and defending feedbacks from participants. 10. Determination of ways to improve market system to benefiting to individual farmers and documentation of important points for further actions. 11. Discussion and planning on recommendations from Value Chain Analysis such as market information, linkages establishment with inputs/outputs market, financial institutions. 12. Introduction to Postharvest Handling. 13. Presentations of individuals on their activities undertaken in between the FFS sessions. 14. Production of individual's action plan. 15. Open discussion on the whole training session of the day and recording of participants feedbacks.
November	Module 8	<p style="text-align: center;">Exchange Visits</p> <p>An adequate participation of women and girls in such exchange visits will be ensured.</p> <ol style="list-style-type: none"> 1. Visits to other FFS in the Township (Building up the relationship among farmer groups).

Month	Module	Subject and Competence
		<ol style="list-style-type: none"> 2. Observation on the progress in other FFS and making comparisons with each other. 3. Sharing of experiences among farmer groups. 4. Dissemination of new findings to other farmer Groups. 5. Specific discussion during the exchange visits is on CSA based on their experiences in FFS and why the practices in FFS are relevant to CSA.
December	Module 9	<p style="text-align: center;">Farmer's Field Day</p> <p>An adequate participation of women and girls in the Farmer Field Day will be ensured.</p> <ol style="list-style-type: none"> 1. Visitors observation on the performances and achievements undertaken in FFS. 2. Presentations on the activities undertaken in FFS by FFS trainees (putting emphasis on CSA). 3. Sharing of technologies and ideas to visitors by FFS trainees. 4. Presentations of FFS participants on their experiences throughout the whole school session, emphasizing on why Climate Smart Agriculture becomes important in their farming, climate change effects on the crops, resilience of crops grown in the Demo Plot to the climate changes are because of proper crop and soil management practices. 5. Contribution of opinions, ideas, comments and suggestions from visitors and recording of contributions.
January	Module 10	<p style="text-align: center;">Graduation Day:</p> <ol style="list-style-type: none"> 1. Review on the whole FFS training session by participants and their awareness on CSA and its practices. 2. Review on the awareness of participants on CA, SALT, Agro-forestry, IPM, and Agriculture as a Business. 3. Development of plans of actions to undertake beyond FFS (strengthening of land management practices, caring of avocado and coffee plantation) (Yam harvest can be in January or February).

Month	Module	Subject and Competence
		4. Lessons learned from the FFS. 5. Evaluation of training session by participants. 6. Provision of Completion Certificate to participants. 7. Ending of FFS successfully.

Food and Agriculture Organization of the United Nations

Representation in Myanmar

Seed Division Compound, Department of Agriculture

Insein Road, Gyogon, Yangon

Tel: +95-1-641672

Fax: +95-1-641561

Email: FAO-MM@fao.org

ISBN 978-92-5-131327-5



9 7 8 9 2 5 1 3 1 3 2 7 5

CA3652EN/1/03.19