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For quality of life

Farmer Field School Training Report

Development of appropriate processing technology for fruit and vegetable export by smallholder farmers in Kenya in cooperation with Equator Products Matuu, Kenya 17 – 21 September, 2007

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TABLE OF CONTENTS

LIST OF ABBREVIATIONS ii
1. Introduction 1
2. The Training Workshop Process 2
   2.1 Introduction 2
   2.2 Starting workshop 2
   2.3 FFS approach, principles, overview of steps 4
   2.4 Diagnosis of problems 5
   2.5 Curriculum development, experimentation and AESA 8
   2.6 Group dynamics and other implementation issues 10
   2.7 Planning 11
3. Observations and Conclusions 13

APPENDIX 1: LIST OF PARTICIPANTS 14
APPENDIX 2: FFS Training Program 17
APPENDIX 3: WORKSHOP PRESENTATIONS 20

LIST OF ABBREVIATIONS

AESA:	Agro Ecosystem Analysis
EP:	Equator Products
FFS:	Farmer Field School
PDCO:	Participatory Diagnosis of Constraints and Opportunities
PTD:	Participatory Technology Development

1. Introduction

The developments in the fruit sector in Kenya have trailed behind the well-developed export-oriented floriculture and vegetable sectors. Major causes are the dispersed and small-scale production, not well organised intermediate trade channels with low quality transportation facilities, and limited processing capacity. So far, the financial institutions have been very reluctant to invest in the fruit sector. However during a recently organised Fruit Investment Conference, it was observed that export market for (processed) fruits is promising. Both private and the public sector organisations expressed willingness to support further development of the sector.

Currently there is a tendency among fruit (and vegetable) exporters to move away from sourcing produce from small holders towards production by either relatively large out-growers or under own management. This trend forms a serious threat to the important small-scale producers in Kenya. The potential of processed fruit vegetables is certainly promising and will provide an appropriate alternative market opportunity for small producers. However, the processing industry in Kenya is underdeveloped and small-scale producers need access to appropriate and professional processing technologies at export standards.

A number of research activities have been conducted to explore the options for the export-oriented fruit sector in Kenya, however hardly any concrete research and pilot implementation on fruit processing, involving small-holder producers, exists.

A project, financed by the Dutch Ministry of Agriculture, Nature and Food Quality, has been formulated with the goal to contribute to sustainable income generation for small-scale farmers in Kenya through the production and processing of fruits for the export market by using appropriate processing technologies. The project has the following purpose:

- To conduct research on and adaptation of existing solar-energy systems for a range of fruits with high market potential;
- To develop commercial pilot supply chains with a centrally-organized processing unit and groups of small-holder producers (Farmers Field Schools);
- To analyse and evaluate the pilot supply chains resulting in a plan for up-scaling;
- To develop technical assistance and pilot Farmers Field Schools aiming at developing sustainable processed fruits and vegetables supply chains for small-holder producers.

The project is expected to lead to the following outputs:

- Description of the use of a smallholder processing line for preserving by drying fruits, using appropriate and sustainable technologies;

- Documentation for knowledge transfer to local and Dutch industries;
- 6 Farmers Field Schools established and operational;
- Technical assistance provided on IPM practices;
- Pilot supply chains analysed and plan for up-scaling formulated.

The project is implemented with Equator Products in Kenya, which sources bird-eye chillies from smallholder producers, conducts central processing and exports the product.
In the period September 17 -21 September, 2007 a training workshop on Farmer Field School (FFS) principles and concepts was held for staff of Equator Products (EP). The training workshop was held at the EP offices in Matuu, Kenya and facilitated by Davies D. Onduru (ETC East Africa) and André de Jager (Wageningen UR). It was attended by 7 participants **(see appendix 1)**. The objectives of the training workshop were to build the capacity of project staff (FFS facilitators):
- To understand basic principles of FFS approach;
- To acquire knowledge on establishment and running of FFS;
- To enable EP staff to relate FFS to chilli production in smallholder farms and identify specific requirements;
- To formulate a plan for FFS implementation with smallholder chilli producers delivering to EP.

In this project, FFS was selected as a methodology for integrating smallholder farmers in a chilli processing supply chain. The methodology is specifically used in capacity building of smallholders on chilli production and strengthening farmers' organisation.

2. The Training Workshop Process

2.1 Introduction

A general program was developed at the start of the training, but was adjusted during the course based on the progress made and specific priorities expressed. The overall program is presented in **appendix 2**. All introductions by the facilitators are presented in **appendix 3**. In the following sections of the report, a global overview of the workshop process and results is presented.

2.2 Starting workshop

Welcome
Almut Bayerkoehler (Equator Products) and the facilitators welcomed the participants

Participatory introductions
Participants were asked by the facilitator to pair up with their neighbours and learn three things about them (him/her) and then introduce their newly found friend/partner in plenary. The participants interviewed each other guided by the following questions:
- What is your name and role in the project?
- Do you have any experience in participatory extension methods in the field e.g. farmer field schools?
- Name two things that made you happy in the last three months and why

The facilitators then allowed time for each member of the pair to introduce his/her friend/partner in plenary. This exercise served as an ice breaker and as a team building exercise among the participants.

Levelling expectations

Each participant was asked to write his/her expectations (of the workshop) on cards. The participants were then given time to explain their expectations and mount them on the wall. From these cards (posted on the wall), six groupings of expectations were identified and discussed through participatory processes. The exercise resulted in the following expectations:

New technology	• Increase company yield through improved skills • New techniques of chilli production
Farmers needs and motivation	• How to motivate farmers (in general) • Understand farmers needs • Proper planning on how to work with farmers for a long period of time • Identifying farmers problems and solving them
Learning (methods)	• Methods used for training farmers for ease of understanding • How one can be a good community worker • The benefits of FFS training and transferring the same to farmers • Ways of introducing a new crop when people are not a aware of it • Methods of motivating farmers to participate in the project for a long time • Effective ways of approaching group to start the activities
Group processes	• More experience in group organisation • Solving group conflicts • How to organise responsibilities within the group (roles of group leaders) • How to approach many farmers as individual and as a group • How one can be good community worker • Assessing the performance of group leaders • Experience in group organisation
General	• How to approach many farmers as a group and how to approach individual farmers • Ways in which we can reach many farmers • How to help poor farmers who are wiling to do farming but have no resources (group organisation and technical aspects) • The benefits of FFS training and transfering the same to farmers
Up-scaling	• Ways in which to reach farmers easily (reaching many farmers; quality of training)

Learning norms and sub-group (host team) formation

Under the guidance of the workshop facilitators, participants drew their own learning norms and identified responsibilities that are required to ensure adherence to the identified learning norms. The following learning norms were agreed upon with the participants:

- Switching off mobile phones/putting them in silent mode
- Adherence to the time table
- Lifting up hands when asking questions
- Everybody is equal (no boss around)
- Punctuality/time keeping
- Avoiding walking around when sessions are on
- Excusing some participants to attend to some activities that may run concurrently with the workshop

To foster learning and to observe the learning norms, participants were divided into sub-groups. Each sub-group elected its own chairperson/moderator, a secretary and chose a name and motto. Each sub-group played the role of host team (in turn) each learning day. Host teams carried out the following responsibilities:

- Recap [for next day reporting]
- Time keeping
- Prayers
- Provided *energizers*
- Other functions as assigned by facilitator

The following host teams were formed:

Host team name	Motto	Leader/chairperson
Mungano Pilipili	Pilipili na maendeleo	Andrew Munguti (moderator) Grace Musyoka (secretary)
Say and do chilli farming	Farming without joke	Rachael Wekimwa (mod.) Thomas Maingi (secr.)

2.3 FFS approach, principles, overview of steps

An overview of the historic developments of Farmer Field Schools, the major principles and an overview of implementation steps were presented by the facilitators and discussed among the participants. In an exercise the participants were requested to:

- Identify main differences and similarities between FFS and the current approach by EP;
- Identify major advantages and disadvantages of FFS in dealing with smallholders growing chilli;
- Identify specific requirements (approach) needed to implement FFS with smallholders growing chilli.

The results of the exercise are presented in the following table:

Similarities	**Differences**
• Growing a healthy crop • Principle of participation • Principle of agro-ecosystem • New skills and information • Offering learning materials • Demonstration for training farmers	• Impose new knowledge on products according to EP guidelines and procedures on how to grow chillies • The farmers are not involved in decision making • Training programme is already set by EP and only slightly adjustable • The FFS has a wider spectrum than EP interests • No follow-up on farmers' progress • Irregular visits to farmers
Advantages	**Disadvantages**
• Empowerment • Additional skills • Bargaining power (to farmers) • Planning for crop production from seed to end product • Monitoring field regularly to avoid pests • Train farmers on record keeping	• It is a wide in scope • Farmers bargaining power may be used by competitors of Equatorial Products
Specific requirements for implementing FFS	
• Trained field staff • Evaluation of current situation and problems and improvement of the same (crop and group) • Regular visits to farmers	

A role play was done to demonstrate the need for rules and norms to facilitate a smooth learning process in a group.

2.4 Diagnosis of problems

The facilitators presented an overview of methods and tools for participatory diagnosis of constraints and opportunities, which were discussed among the participants.

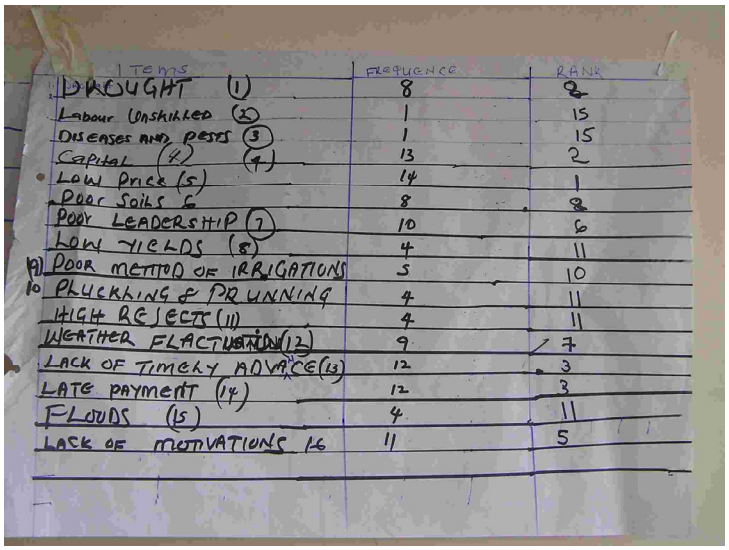
The following exercise was implemented:

Exercise Pairwise Ranking

In host team, one person assumes the role of a facilitator and another person a reporter/Secretary while the rest assume the role of farmers.

Tasks
The facilitator should:
(i) guide farmers in analyzing the problems/constraints of Chilli production (+ non-technical issues) using sharing/brain storming [non-formal education methods]
(ii) guide farmers in prioritizing the problems/constraints using pairwise ranking (analyze and rank)
(iii) Present results in plenary

The results are presented in the following pictures:



The classroom exercise on diagnosis was followed by a hands-on training of EP staff during a field visit to Kithimani Flower Self-Help Group. Discussions with members of the the groyp resulted in the following priority ranking of problems:

1. Low price for chillies
2. Availability of seeds
3. No partial payment on delivery (to cater for costs of picking)
4. Security (risk of having cash money in the house)
5. Late payment (once a month)
6. Access to loans through EP
7. Lack of inputs
8. Cash requirement for picking
9. Due to low price and tedious work difficult to hire labour
10. Dying of chilli plants
11. Curling of leaves

The field trip and the exercise of problem ranking was evaluated which led to the following observations:

<u>Process</u>

Introductions:

- Leading facilitators should switch of phone;
- Preferably one person responsible for each program component;
- Exercise was time consuming;
- More creative methods for introduction of people could have been applied;

- Objectives of the meeting were not introduced clearly;
- Awareness creation about FFS and the process should have been done at the start of the meeting.

Group history:
- Chairperson was the only person presenting history and gave other group members no chance to present their views; facilitator should in such cases stimulate other members to add to chairman's presentation;
- Group is not cohesive (mixture of tribes; settlement area) which showed in a plea for individual payments or at least no disclosure to other members about individual payments.

Constraints and ranking:
- Only a few farmers participated in the session on problem diagnosis;
- Verification of some of statements made by farmers are necessary (e.g. price received for green beans) to ascertain their authenticity;
- Because of high competition by brokers and other companies sourcing fruits and vegetables in the target area, EP should address the level of services and prices during the FFS activities;
- Differences between rich and poor in the group were observed;
- Process tended towards farmers posing problems and EP-representatives responding; facilitators needs to prevent this and aim towards a process of jointly addressing the posed challenges;
- Pairwise ranking was implemented very well, facilitators succeeded in a full and active participation of all group members.

Ending:
- The ending of the meeting could have been more structured;
- The conclusions took too long, mainly because objectives of the meeting were not well communicated at the start.

<u>Results</u>
- Major challenges were on how to deal with financial and economical issues;
- There is low awareness by farmers of the EP intention to establish long-term relations with smallholders and to to provide services, such as setting up an FFS);
- Establishment of "own nurseries" by farmers is an excellent issue to be addressed in FFS. However, there is need to explore options for assuring product quality;
- Labour picking chilies is tedious.

Follow-ups

- Various actions can be taken in FFS:
    - Topical issues (special topics for discussions);
    - Demonstration;
    - Experimentation;
    - Making observations in other fields (cross visits, study tours)
    - Discussions, negotiations
- Steering to a joint process; farmers need to own the process
- Structure of subsequent meeting with with this group is discussed in the planning section of this report (section 2.7).

2.5 Curriculum development, experimentation and AESA

Based upon the challenges jointly identified, the steps of building a curriculum including special topics, how to implement a participatory experimentation process and conduct an agro-ecosystems analysis were addressed by the facilitators.

Two exercises were done in the group:

- Design of a research protocol;
- Design of a general format for an AESA sheet.

Example of formulated research protocol by the participants:

Objective:	To assess the impact of application of 17-17-17 fertilisers on the yield and quality of chillies
Test crop:	Chillies
Hypothesis:	If we use fertilisers then the yield of chillies will double because we would have provided sufficient nutrients to the soils provided that the rains shall be sufficient.
Experimental Design:	Pairwise design C1 | T1 C2 | T2
Treatments:	On the T-plot 17-17-17 is applied; on the C-plot normal farmers' practice is implemented.
Resources needed:	fertilizer, jembe, labels, weighing scale, harvesting bags
Responsibilities:	General farm management practices – farmers Lay-out experiment – farmer/facilitators Application of fertilizers – farmer/facilitator Weighing – farmers/facilitator Recording – farmer/facilitator
Monitoring:	Monitoring once a week; check diseases and pests; yields Indicators: size of the bush, plant height, canopy, kg, number of flowers, branches, leave colour etc. Methods: quantitative and qualitative

Learning points:

- As accurate as possible formulation of objective and hypothesis e.g. 17-17-17 instead of fertilizer.
- Detailed description of trial design for instance including plot size, number of plants, location in the farm etc.
- As detailed as possible description of treatment; in this case no fertilizer rate has been indicated. In such a trial it is much better to include 2 or 3 levels of fertilizer rates to increase the learning impact.
- Monitoring activities need to be described in more detail and in a systematic manner for instance:

Monitoring	**Indicator**	**Method of measurement**
Yield	Kg per plot	Weighing
Pests	Number of aphids Number of trips	Counting aphids on x plants Counting trips on x plants
Nutrient status - N	Colour of leaves	1-dark green; 2- light green; 3-yellow
Etc.		

- See for examples of other projects presented in appendix 3.

During the exercise the following global outline of an AESA sheet was designed:

Background
- Name of FFS
- Group motto
- AESA number
- Plot number
- Problem addressed
- Meeting date
- Host team

General information
- Variety (test crop)
- Spacing
- Date of planting (seeds)
- Date of germinating
- Date of transplanting
- Soil type
- Land history
- Irrigation
- Treatment practice

Indicators / parameters
- Yield
- Foliage size
- Plant height
- Number of chili flowers
- Number of green and red chilies

Observations
- Leaf colour
- Weeds
- Insects / pests
- Soil moisture
- Plant health
- Beneficial organisms
- Diseases
- Nutrient deficiencies
- Chili maturity
- Shape of the leaf

Visual drawings

Recommendations

The facilitators introduced various methods to conduct group dynamic activities in FFS and exercises were done by the participants. Some remaining issues were introduced such as the organization of field days and exchange visits, graduation and post-graduation activities. A video of an FFS project in Kenya was shown to illustrate how all the steps addressed in this training are applied in practice.

2.7 Planning

The planning of the activities for the period October – December 2007 to start FFS with smallholders supplying to EP was discussed jointly with staff and management of EP.

1. Does EP want to start with adopting the FFS approach for the smallholder farmers?

- Yes, it helps in various ways to mobilise the farmers and to equip them with new skills;
- FFS helps empowering farmers with knowledge and increasing production. Initially the process may require more efforts, but eventually the farmers involved in the process will continue on their own, while the Company looks for other farmers (reaching more farmers);
- It assists farmers to realize and appreciate the local resources available to them for production;
- The FFS approach can address the interests of the company as well as those of the farmers.

2. Selection of pilot FFS

- Number of FFS: six in the initial pilot phase. There will be two main FFS facilitators (Peter and Andrew) supported by other staff (part-time as resource persons).
- Selection criteria: The six groups will be selected using the following criteria:
  - Proximity (close to tarmac)
  - Experienced farmers
  - Promising farmers
  - Irrigated areas (gravity irrigation)
  - Avoiding mixed settlement areas (different tribes, problems with trust)
  - Working with groups that have been working together in the past
- Location of the groups. Proposed groups include:

Existing groups:

- Kistimani/Makandara
- Katulye

Recently started groups:

- Kithimani Flower SHG

New groups:

- Kanaro
- Mamba
- Kaiudo

3. Establishment of FFS

- Keeping the group size small (15-30 persons)
- Selection of farmers through community meetings/follow-ups using earlier mentioned criteria
- Duration of the FFS: 2 years
- Meeting frequency of FFS: Agreement will be made with farmers. Initially, the meetings will be frequent and then may level out or become less frequent. However, it is desirable to agree with farmers on “meeting day”

4. Time table

Global time table

Activity	October				November				December			
FFS establishment												
Problem identification												
Curriculum development												
Experimental design												
Running curriculum												
Running experiments												
Demonstrations												
Backstopping												
Plan for up-scaling												

- A more detailed planning will be made and monitored for each of the 6 pilot FFS by the EP staff
- The facilitators are available for continuous on-line backstopping; 3 bakctsopping visits are planned during the implementation in 2007.

5 Follow-up meeting Kithimani Flower Self Help Group

The promised follow-up meeting with the group visited during the training should address the essential elements of the establishment of an FFS (groundworking) and an agenda should be set for addressing a number of problems mentioned during the priority ranking exercise. The issue of product price can be addressed in the subsequent meeting, which need careful preparation by the staff. This meeting should focus on the various cost elements of chilli production, what margins can be realised with proper management and how these margins compare to other fruits and vegetables.

3. Observations and Conclusions

The training workshop process was conducted smoothly with active and enthusiastic participation from EP staff. The workshop schedules and activities were carried out as expected. It was observed that more practice by EP staff would be necessary with the exercises and some of the tools and methods presented. Also additional attention could be paid to aspects of group conflicts and the problem solving role of the facilitator in the backstopping/experience sharing sessions.

The fact that EP provides the facilitators and initiates the FFS process with smallholders requires specific attention during the backstopping and possible follow-up training. Objective of EP is to come to a better chain integration and EP is willing to invest in capacity building at smallholders level to improve the productivity and quality of the product. In general, this serves the interests of both EP (more product, more export) and the smallholders (higher cash income). However, conflict of interest may also arise, as was observed during the field visit- the issue of product price paid by EP among others was raised by the farmers.

An interesting issue still remains the fact that there is a ready market for chillies, but that EP cannot source sufficient quantities from smallholders. Apart from droughts in the past period, farmers seem to be reluctant to switch to chilli production,despite the fact that EP provides a secure market over time at a known price. Farmers appear to prefer other export crops with higher market insecurity. The FFS process may help to better understand farmers' motives, but also a more specific research activity may assist EP in developing a more effective strategy for sourcing chilli from smallholders.

APPENDIX 1: LIST OF PARTICIPANTS

Name	
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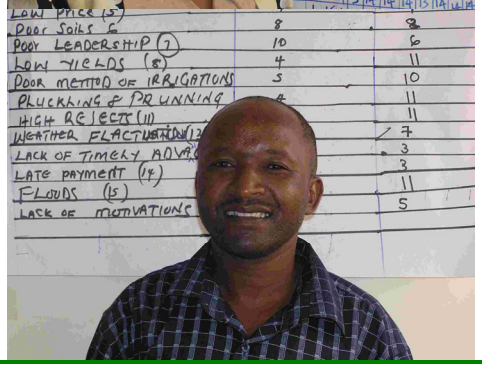
Andrew Ngumba Munguti Equator Products HCDA Yatta P.O. Box 50 Matuu 0734-576420 kwayo69@yahoo.co.ke	

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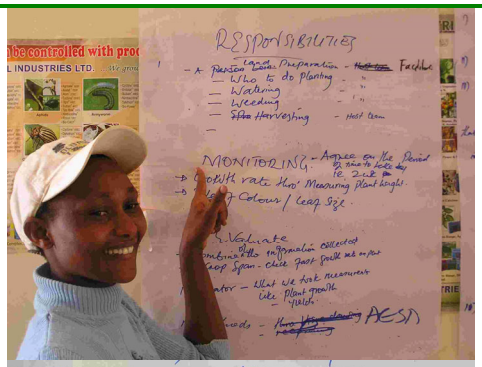

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APPENDIX 2: FFS Training Program

Daily time table:

9.00am	Start
11.00 – 11.15	Coffee/Tea Break
13.00 – 14.00	Lunch
16.00 – 16.15	Coffee/Tea Break
17.00pm	End of program

Elements of program:

- Introductions/ presentations
- Exercises
- Discussions
- Role plays
- Field trips
- Energisers

Day 1 Monday 17 September 2007

Preliminaries

- Welcome (AdJ)
- Introduction participants (DO)
- Finding your other half; sub-groups/host teams formation of 2 sub-groups; choice of slogans for each group (exercise; DO)
- Expectations of participants, objectives of the workshop (Discussion, cards; AdJ)

Tea/Coffee break

Farmer field school approach and principles

- FFS background and history (presentation and discussion; AdJ)
- FFS principles and characteristics of farmer field schools (presentation and discussion; DO)

Lunch break

Overview of steps in implementing FFS

- Overview of steps in implementing FFS (presentation and discussion; DO)
- Role of FFS facilitators (presentation and discussion; DO)

Tea/Coffee break

- Relating FFS with current approaches implemented (exercise; AdJ)

Day 2 Tuesday 18 September 2007

Implementing FFS

- Establishing FFS (presentation and discussion; DO):
  - Ground working activities
  - Building a learning contract with farmers
  - Leadership, team building and host team formation

Tea/Coffee break

- Setting rules and norms in a FFS (role play; AdJ)

Diagnosis of problems

- Participatory diagnosis of constraints and opportunities (presentation and discussion; AdJ)

Lunch break

- Pair-wise ranking of problems (exercise; AdJ)

Curriculum building

- FFS Curriculum building (presentation and discussion; DO)
  - Developing field school schedule/guide
  - Special topic sessions

Tea/Coffee break

- Preparation Field trip (discussion; AdJ)

Day 3 Wednesday 19 September 2007

Experimenting

- Designing and implementing trials with farmers (presentation and discussion; AdJ)
- Field trip: problem identification

Lunch

- Feedback session field trip (discussion, DO)

Day 4 Thursday 20 September 2007

- Designing and implementing trials with farmers (continued)

Agroecosystem analysis (AESA)

- Agro-ecosystem analysis (AESA) (presentation and discussion; DO)

Tea / coffee break

- Designing learning protocol with farmers (exercise; AdJ)

Lunch (including video presentation FFS Uganda)

- Design AESA sheet (exercise; DO)

Tea / coffee break

- Exercises continued

Day 5 Friday 21 September 2007

Group dynamics

- Group dynamic activities (exercise and presentation; DO)

Other steps in FFS implementation

- Overview of other activities in FFS: field days, exchange visits, graduation, post-graduation activities (presentation and discussion; DO)

Tea / coffee break

Planning

- Planning of FFS activities with smallholders delivering to Equator Products in period October – December 2007 (discussion; AdJ)

Lunch (including video presentation of FFS in Kenya)

- Planning continued
- Award training certificates
- Closing

APPENDIX 3: WORKSHOP PRESENTATIONS

Farmer Field School Training

Development of appropriate processing technology for fruit and vegetable export by smallholder farmers

Matuu, Kenya

17 – 21 September, 2007

Davies Onduru & Andre de Jager

ETC

Welcome address

ETC

Welcome address

Introducing the facilitators:

Davies Onduru:

André de Jager:

ETC

Welcome address

- Why FFS in this project? Use principles of FFS for:
  - strengthening farmers' learning activities on relevant technical issues
  - strengthening farmers' organisation
- Learn and discuss the principles of FFS
- Adapt and change approach to project situation where necessary
- Role of FFS in F&V supply chain relatively new → learning and developing together

ETC

Welcome address

Global planning

In 2007

- 6 pilot FFS with 20-25 smallholder farmers supplying EP established and operational
- X staff of EP trained in FFS principles and active as facilitator
- Major technical issues identified for selected crops and experiments in FFS conducted
- Evaluation of approach
- Plan for upscaling in 2008

ETC

Welcome address

Global planning

In 2008:

- X FFS with 20-25 smallholder farmers supplying EP established and operational
- X staff of EP trained in FFS principles and active as facilitator
- Major technical issues identified for selected crops and experiments in FFS conducted

ETC

Welcome address

Learn and enjoy !

ETC

Workshop objectives

- Understand basic principles of FFS approach
- Acquire knowledge and how to establish and run an FFS
- Adjust principles of FFS to smallholder fruit and vegetable production, processing and export
- Planning activities for 2007 and 2008

ETC

Workshop program

Day 1 Monday 17 September 2007

- Welcome, introduction, objectives, expectations

Tea/Coffee break

FFS approach and principles

- Overview of steps in implementing FFS
- Role of FFS facilitators

Lunch break

- Establishment of FFS: groundworking, learning contract, leadership, team building and host team formation

Tea/Coffee break

- Exercise relating FFS with current approaches implemented

ETC

Workshop program

Day 2 Tuesday 18 September 2007

- Overview of steps in implementing Farmer Field School
- Identification and training of facilitators
- Establishing FFS:
  - Ground working activities
  - Building a learning contract with farmers
  - Leadership, team building and host team formation

Tea/Coffee break

- Exercise role play
- Participatory diagnosis of constraints and opportunities

Lunch break

- Exercise
- FFS Curriculum building
  - Developing field school schedule/guide
  - Special topic sessions

Tea/Coffee break

- Preparation Field trip

ETC

Workshop program

Day 3 Wednesday 19 September 2007

- Designing and implementing trials with farmers
- Field trip: problem identification

Lunch

- Feedback session field trip

ETC

Workshop program

Day 4 Thursday 20 September 2007

- Designing and implementing trials with farmers (continued)
- Agro-ecosystem analysis (AESA)

Tea / coffee break

- Exercise experimental design

Lunch

- Exercise design AESA sheet

Tea / coffee break

- Exercises continued

ETC

Workshop program

Day 5 Friday 21 September 2007

- Planning activities October - December

Tea / coffee break

- Group dynamics
- Other issues FFS

Lunch (video)

- Evaluation
- Awarding certificate
- Closing

ETC

Workshop program

Elements of program:

- Introduction / presentations
- Exercises, discussions
- Role plays
- Field trips
- Energisers

ETC

Workshop program

Daily time table:

9.00am	Start
11.00 – 11.15	Coffee/Tea Break
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17.00pm	End of program

ETC

Farmer Field School Training

Development of appropriate processing technology for fruit and vegetable export by smallholder farmers

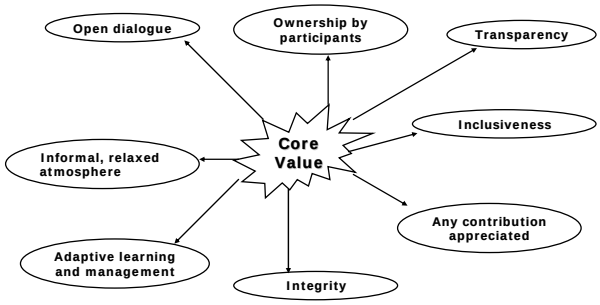
Matuu, Kenya

17 – 21 September, 2007

Davies Onduru and Andre De Jager

Introduction (preliminaries)

Workshop facilitation principles



Workshop Basic Methods

- Visualization
- Group dynamics
- Large and small group discussions
- Informal and structured discussions
- Field visit

Introduction of participants (2)

Objective:

- To help participants know one another
- To learn about participants role in the project
- To help participants relax at the beginning of the course

Exercise

i) Split participants into pairs. Ask each participant to interview their partners by focusing on the questions:

- What is your name and role in the project?

Introduction of participants (2)

- Do you have any experience of participatory methods in the field?
- What two things made you happy in the last three months and why?

(ii) Participants report in plenary about their "partner"

Group formation & host teams

Objective: To form groups/host teams

- Forming sub-groups using the animal game.
- Each sub-group should choose a unique "name related to Fruit/vegetable industry" for their group and a "motto/slogan" for their sub-group
- [Team name; Slogan]
- Each sub-group elects its own leaders: Chairperson/moderator/Secretary

Commissioning host teams

Host teams will play the following in turn:

- Recap [for next day reporting]
- Time keeping
- Prayers
- Energizer (group dynamic activity)
- Other functions as assigned by facilitator

Overall chairperson: Logistics/welfare/News/ Announcements/liaison with facilitators

Leveling expectations

- List down your expectations from this training workshop (in a piece of paper)

Workshop objectives

- Understand basic principles of FFS approach
- Acquire knowledge on how to establish and run an FFS
- Relate FFS to project activities

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FFS History Approach and Principles

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FFS Historical Background

1. Origin

- FFS is Indonesian expression "Sekolah lapangan" meaning field school: learning is field based
- FFS approach developed by FAO project in South East Asia in 1989, Central Java under "National IPM Programme
- Way for small-scale rice farmers to investigate and learn, for themselves the skills required for, and benefits to be obtained from, adopting practices in their paddy fields.

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FFS Historical Background

2. Precipitating conditions

- Devastating insecticide-induced outbreaks of brown plant hoppers *Nilaparvata lugens*) that destroyed 20,000 hectares of rice in Java (Indonesia) alone in 1986.

3. Response and emergence of FFS

- The Government of Indonesia's responded by training of farmers on IPM to reduce pesticide use and to preserve natural insect predators of the brown plant hopper

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FFS Historical Background

- The training was based on:
- ✓ Empowering farmers to handle their own farm decisions
- ✓ Experiential learning techniques (non-formal adult education methods)

4. Adaptations/Application of FFS

- FFS has been adapted to many study themes in other countries and to a variety of crops
- FFS was introduced in Kenya in 1995 and piloted in Western Kenya (maize systems) [Kenya being one of the 15 pilot countries]

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FFS Historical Background

In Kenya, FFS has been adapted to the following themes:

- Soil fertility/integrated nutrient management
- Pest management (IPM)
- Integrated production and pest management (IPPM)
- Livestock production/health (dairy cattle/zebus)
- Food security/nutrition
- Water harvesting/integrated soil & water management
- Conservation agriculture
- General natural resource management
- HIV/AIDS etc.

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FFS Historical Background

Examples of focus enterprises

- Vegetables
- Annual crops e.g. cereals, pulses etc.
- Coffee-vegetable systems
- Trees/agro-forestry
- Poultry
- Cattle production & health
- Aquaculture/fisheries etc.

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FFS Approach: Overview

Broad objective of FFS

To bring farmers together to carry out collective and collaborative inquiry with the purpose of initiating community action and solving community problems.

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FFS Approach: Overview

Specific Objectives

- To empower farmers with knowledge and skills in farming
- To sharpen the farmers' ability to make critical and informed decisions that render their farming profitable and sustainable
- To sensitize farmers in new ways of thinking and problem solving
- To facilitate farmers to organize themselves and their communities

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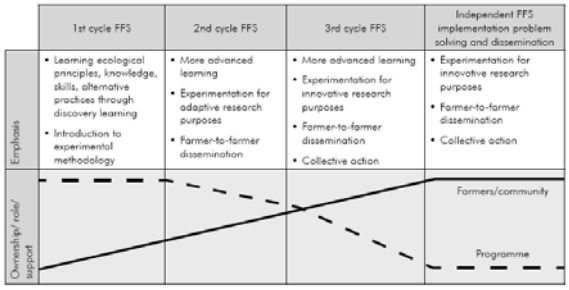
FFS Approach: Overview



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FFS Approach: Overview

- Farmer Field Schools (FFS) are platforms and "schools without walls" for improving decision-making capacity of farming communities and stimulating local innovation for sustainable agriculture
- Farmer Field School is a group of farmers (20-30 farmers) who meet regularly to study about the how and why of a given technology or farming practice through:

✓ discovery based learning approaches/adult education

✓ experimenting with technologies & assessing their relevance

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FFS Approach: Overview

- The learning process is based on agro-ecological principles
- During the learning, all the stakeholders participate on an equal basis in field observations, discussions and in applying their previous experiences and new information from outside the community to reach management decisions on the appropriate action to take
- FFS is a group based participatory extension-research approach, which gives the farmer an opportunity to make a choice in methods of production.
- FFS is carried out under the guidance of a facilitator (facilitated learning)

ETC WAGENINGEN UR

FFS Approach: Overview

- The training methodology is based on learning by:
  - ✓ doing (hands-on),
  - ✓ discovery and making comparisons,
  - ✓ a non-hierarchical relationship among the learners and trainers
- The results of FFS meetings are management decisions on what action to take- a dynamic process
- A field school therefore is a process and not a goal.

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FFS and other approaches

- FFS not a complete new approach, but effective mixture of various extension methods (T&V, Contact farmers, PTD, FSR&E, PLAR, etc.
- New elements: life-long learning; capacity building and empowerment; collective action

ETC WAGENINGEN UR

FFS and other approaches

Parameter	Transfer of technology (e.g. T & V model)	Facilitating learning
Farm practices	Utilising science-based uniform component technologies	Running the farm as a sustainable agro-ecosystem
Farmer learning	Adoption	Becoming expert at observation, inference, anticipation, and applying principles (usually in learning groups)
Facilitation	Transfer (demonstration)	Participatory non-formal education based on discovery and experiential learning

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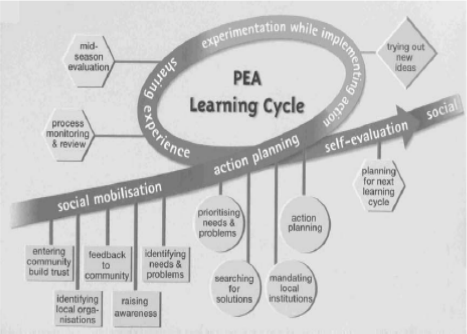
FFS and other approaches



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FFS and other approaches

- Part of broader shift in research approach:
  - From commodity to system
  - Linear research-extension-farmer → dynamic technology generation models
- Examples:
  - Forestry → social & community forestry
  - Pest control → IPM and FFS
  - Soil chemistry → Farmer-based soil fertility management and INM
  - Land use planning → Land use negotiation and watershed management

FFS and other approaches

Challenges and criticisms:

- Large-scale implementation
- Cost effectiveness
- Complex long-term issues (soils, perennials)
- Leadership and management
- Financial sustainability
- Facilitating environment

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FFS Principles and Characteristics

Farmer Field School Principles

Farmer Field Schools are based on four guiding principles

- Growing a healthy crop [through seed/propagule & efficient nutrient, water and pest management]
- Regular monitoring of fields to determine management actions necessary to produce a profitable crop
- Understanding the relationship between agro-ecosystems components and crop productivity [Cf. pests/natural enemies in IPM]
- Making farmers experts in their own fields

Characteristics of Farmer Field Schools

(i) Farmers as experts

- Farmers 'learn-by-doing' i.e. they carry out for themselves the various activities related to the particular farming practice they want to study and learn about.
- Farmers carry out comparative studies on enterprise of their choice. In doing so they become experts on the particular practice they are investigating.

Characteristics of Farmer Field Schools

(ii) The Field is the Learning Ground

- All learning is field-based: the "field" refer to a particular location of the study activity/enterprise-farm, crop enterprise, soil pit, dairy unit etc.
- Working in small subgroups they collect data in the field, analyse the data, make action decisions based on their data analysis, and present their decisions to the other farmers in the field school for discussion, questioning and refinement.

Characteristics of Farmer Field Schools

(iii) Extension Workers as Facilitators Not Teachers.

- The role of the extension worker is very much that of a facilitator rather than a conventional teacher
- The task of the extension worker is to guide the learning process, fill in the missing gaps and gradually hand over the stick.
- Once the farmers know what it is they have to do, and what it is that they can observe in the field, the extension worker then only offers help and guidance.

Characteristics of Farmer Field Schools

- The extension worker may take part in the subsequent discussion sessions but as a contributor in arriving at an agreed consensus on what action needs to be taken at that time [NOT as a conventional teacher/leader]

Characteristics of Farmer Field Schools

(iv) Scientists/Subject Matter Specialists Work With Rather than Lecture Farmers:

- The role of scientists and subject matter specialists is to provide backstopping support to the members of the FFS and in so doing to learn to work in a consultative capacity with farmers.
- Instead of lecturing farmers their role is that of colleagues and advisers who can be consulted for advice on solving specific problems, and who can serve as a source of new ideas and/or information on locally unknown technologies.

Characteristics of Farmer Field Schools

(v) The Curriculum is Integrated.

- The curriculum is integrated. Crop husbandry, land husbandry etc. are considered together with ecology, economics, sociology/adult education methods to form a holistic approach.
- Problems confronted in the field are the integrating principle

Characteristics of Farmer Field Schools

(vi) Training Follows the Production (Seasonal?) Cycle.

- Training is related to the seasonal/production cycle of the practice being investigated.
- For crops this should be a complete production cycle e.g. from land preparation to harvesting, from one change of cycle to another for perennials etc.
- For perennial crops, tree production, and conservation measures such as hedgerows and grass strips, training would need to continue over several seasons/years for farmers to appraise for themselves the full range of costs and benefits and to study complete production cycles

Characteristics of Farmer Field Schools

(vii) Regular Group Meetings.

- Farmers meet at agreed regular intervals
- For annual crops such meetings may be every 1 or 2 weeks during the cropping season; for perennial crops this may be different depending on theme of study
- For other farm/forestry management practices the time between each meeting would depend on what specific activities need to be done, or be related to critical periods of the year/season when there are key issues to observe and discuss in the field (every month etc)

Characteristics of Farmer Field Schools

(viii) Learning Materials are Learner Generated.

- Farmers generate their own learning materials, from drawings of what they observe, to the field trials themselves. These materials are always consistent with local conditions, are less expensive to develop, are controlled by the learners and can thus be discussed by the learners with others.
- Learners know the meaning of the materials because they have created the materials. Even illiterate farmers can prepare and fuse simple diagrams to illustrate the points they want to make.

Characteristics of Farmer Field Schools

(ix) Group Dynamics/Team Building.

- Training includes communication skills, problem solving, leadership and discussion methods.
- Successful activities at the community level require that farmers can apply effective leadership skills and have the ability to communicate their findings to others.
- Problems are presented as challenges, not constraints: Farmers' groups learn different analytical methods to gain ability to identify and solve any problem they might encounter in the field.

Characteristics of Farmer Field Schools

(x) Principles not Packages

The FFS approach trains on understanding principles more than packages of information; this improves farmers skills and enables them to access information by themselves

Examples:

- Cause and effect relationships,
- How to discover and learn,
- Learning to be able to learn more

Summary

- Farmer Field Schools are conducted for the purpose of creating a learning environment in which farmers can master and apply specific production/management skills.
- The emphasis is on empowering farmers to implement their own decisions in their own fields.

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Adult Learning Principles: Non Formal Education Approaches

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Introduction to Adult learning

1. Definitions

Much of what we learn is not an outcome of formal teaching. Most of it comes from a process of self-development and experience.

Adult Education

Education for children is often like filling a cup with tea, milk and sugar, while adult education is more like stirring an already full cup of tea to blend the ingredients in a new way

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Introduction to Adult learning

2. Basic facts about adult learning processes (IIED, 1995)

- Adults are voluntary learners. They perform best when they have decided to attend the training for a particular reason. They have a right to know why a topic or session is important to them
- Adults have usually come with an intention to learn. If this motivation is not supported, they will switch off or stop coming.
- Adults have experience and can help each other to learn. Encourage the sharing of that experience and your sessions will become more effective.

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Introduction to Adult learning

- Adults learn best in an atmosphere of active involvement and participation.
- Adults learn best when it is clear that the context of the training is close to their own tasks or jobs.
- Adults are best taught with a real-world approach.

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Non-Formal Education Approaches

Examples used in FFS

- Sharing
- Case study
- Role play (dramatized sessions)
- Problem solving exercises
- Panel discussions
- Group dynamics
- Small group and large group discussion
- Brainstorming
- non-formal education approaches.doc

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Non-Formal Education Approaches

Using Folk Media

Folk Media is the creative dissemination of information through cultural and performance arts

Examples:

- Poetry and verse speaking
- Song and dance; song alone
- Story telling, sayings, riddles and idioms
- Drama, skits and role play.
- Choral music

N/B: Should be used within the programme perspective

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Non-Formal Education Approaches

Exercise:

- Each group to write a poem describing one fruit processing topic; use broken sentences to make it easier
- Each group to write a thematic song that relates the 4 principles of FFS with fruit processing

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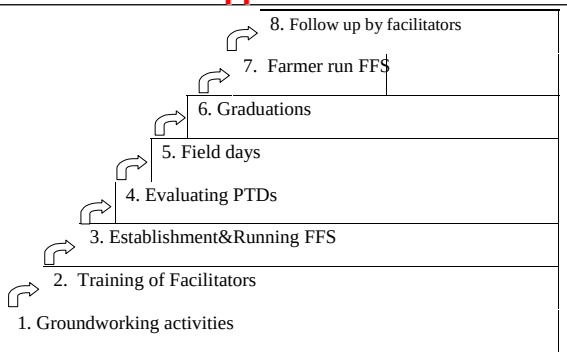
Implementing FFS: Overview, Ground working & Facilitators

Classical FFS Approach-overview



FFS facilitators and their roles

A facilitator is needed in FFS to:

- Guide the process of discovery-based learning
- Ensure an effective flow of information within the group so that participants can share information and arrive at a decision
- Moderate the participatory learning process
- Assist in sharing of information in a participatory way

Training of facilitators

Training of facilitators on:

- The theme of FFS (technical aspects if needed)
- How to effectively communicate on the various aspects of the technology using Non-formal education methods (NFE) [process]
- Participatory technology development (PTD)/Trials
- Developing FFS guidelines on conducting PTD (AESA)

Training of facilitators

- Non-formal education (NFE) methods with emphasis on what, when and how to use NFE in FFS
- Group dynamics (team building/leadership)

Qualities of a good facilitator

- Trained in FFS methodology
- Technically capable
- A good listener.
- Respects others and their opinions (open minded).
- Is cheerful
- Maintains eye contact
- Knows the audience in advance
- Should be well prepared (Can firmly grasp the subject).
- Dresses appropriately (in tandem with local culture??)

Qualities of a good facilitator

- Available and accessible by farmers
- Well mannered
- Composed/confident
- Be in "control" of the group/participants
- Convey acceptance/horizontal interaction with farmers
- A good time manager (conscious)/accountable
- Impartial

Qualities of a good facilitator

A facilitator should have good presentation skills:

On Content

- Explain the purpose of your presentation to your audience when you start.
- KISS! (Keep it short and simple)
- Start your presentation with a positive remark like for example:

"I am grateful to have the opportunity to tell you about……"

Qualities of a good facilitator

- No "suicide-openings
- ✓ "I don't know much about the subject"
- ✓ "I am replacing a colleague and didn't have time to prepare"
- ✓ "I'll never have enough time to explain……..."
- Explain all abbreviations: your audience always wonders what they mean.
- Use silence/pauses to emphasise what you have just said or to indicate that you are going on with the next subject.
- Make sure your presentation is relevant to the audience

Qualities of a good facilitator

On Relation with the audience/farmers

- Always keep eye contact with your audience, it will give you self confidence; get your message across
- Do not look at and talk to your flip chart, or personal notes.
- Check the comprehension of your audience by regularly watching their (non-verbal) communication;
- Do not stand with your back or side to the audience
- Use your voice/gestures properly, do not speak in monotones.
- Use your arms and hands to support your presentation, not to destruct the audience/farmers

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Implementing FFS: Ground working Activities

Ground Working Activities

- This is a collective term for activities conducted in a village with the objective of preparing or paving the way for the introduction of the FFS concept or project in a given area
- Activities under ground working may include:

✓ Identification of sites/geographical localities

✓Collecting information on general constraints, opportunities and farmers practices (secondary data) [actual farmers needs]

Ground Working Activities

- Determining the level of technology adoption
- Identifying existing technology which are not yet fully utilised
- Collecting information on the biophysical/socio-economic factors of the area
- Sensitization of relevant stakeholders (local institutions and relevant bodies; local leaders)

Ground Working Activities

- Farmer mobilisation (holding community meetings), rapport building and identification of FFS participants:

✓Awareness on intended activities (learning theme) and clarifying general expectations

✓School duration and theme

✓Enlisting interested farmers

Ground Working: Farmer selection (1)

Criteria

- Active/practicing farmer,
- willing to participate in all FFS activities
- Ready to work in a group/team
- Socially acceptable
- Farmers must have a common interest.
- Must come from same locality/same catchment/village etc

Ground Working: Farmer selection (2)

- Willing to follow the norms set by the group
- Must be willing to share experiences
- Must be willing to share financial costs, material costs and gains
- Open to all genders
- Must be interested in new technology

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Learning contract & Host teams

Learning contract (agreements)

FFS activities are consolidated through a learning contract or school norms and rules developed in a participatory way

Factors to consider include:

- Duration of FFS activities
- Frequency of meetings
- Central learning plot/study field
- Security of central learning plot/study field
- Compensation/benefits to be received by the farmer who has volunteered study field

Learning contract (agreements)

- Norms and rules to guide the school

✓ Punctuality

✓ Absenteeism

✓ Meeting days

✓ School daily rhythm (time to start and time to end)

Leadership & Team building

Local leadership structure

- Required for smooth coordination of group activities/running of FFS sessions
- Building farmer's capacity for organization/ leadership skills
- Group leadership may include:
  - ✓ Chairman/coordinator/moderator
  - ✓ Secretary
  - ✓ Treasurer??

Leadership & Team building

Local leadership structure

- Local leadership developed through

✓formal training on leadership skills and

✓ team building activities (group dynamic exercises in FFS)

Setting up host teams

- The process of sharing responsibilities, stimulating active learning and leadership skills in FFS is done in sub-groups (host team)
- The sub-groups take responsibility on a rotational basis. A host team is responsible for smooth running of FFS activities on a specific "FFS meeting day".

The host team should:

- Facilitate the whole "meeting day" activities
- Introduce "meeting day" program and activities
- Arrange the training venue
- Keep the training hall and premises clean

Host teams

- Provide the energiser/ice breaker exercises to relax the "learning atmosphere"
- Introduce the resource person/guest speaker
- Check the attendance of FFS participants (registration)
- Serve as the timekeeper
- Distribute the reading and other materials
- Assist the facilitator or reporter in the reporting and discussion
- Do other functions assigned by facilitator

Field School Schedule/Guide

FFS meets for half a day on the mutually agreed days between the farmers and the facilitators

A field schedule/guide is developed to facilitate implementation of activities "each FFS meeting day"

Objectives of field guides are to:

- help carry out activities smoothly within time
- ensure that farmers understand the objective of each activity
- ensure that everyone knows their role

Field School Schedule/Guide

- help facilitator prepare for events that take place in the FFS/handle learning topics
- ensure all necessary materials are available

Field School Schedule/Guide

A typical day for a field school is divided into:

- Prayer/roll call
- Review of the previous FFS day (Recap)
- Briefing on meeting day's activities
- Field observation (Agro-ecosystem analysis): PTD activity
- Discussion and presentation of field observation for decision making
- Group dynamic activity in small or large groups

Field School Schedule/Guide

- Special topic activity and discussion in the small or large group
- Planning for activities to be undertaken during the subsequent FFS meeting
- Summary and closure

Example 1:Field Schedule/Guide

Time	Duration	Activity	Reason	Leader
9.00-9.05	5 min	▪ Arrival ▪ Registration ▪ Sitting arrangements	▪ Knowing attendance	Host team
9.05-9.10	5 min	▪ Prayers	▪ Thanksgiving to God	Host team
9.10-9.15	5 min	▪ Recap ▪ Programme for the day	▪ Keeping every participant informed of the tasks ahead	Facilitator/Host team
9.15-10.00	50 min	▪ AESA	▪ Improve decision making ▪ Training farmers in data recording	Host team sub-groups
10.00-10.30	30 min	▪ Plenary	▪ Exchange of findings from AESA ▪ Sharing experiences	Host team/facilitator
10.30-11.30	1 hour	▪ Special topic	▪ Keeping participants abreast with new farming ideas and other matters of concern	Facilitator
11.30-11.40	10 min	▪ Group dynamics ▪ Break	▪ Building communication skills ▪ Problem solving ▪ Leadership ▪ Discussion methods	Host team
11.40-11.45	5 min	Summary/day's activity	▪ Exposing the day's learning points	Host team
11.45-11.50	5 min	▪ Programme for next meeting ▪ Announcements	▪ Prepare participants for next meeting activities	Host team /Facilitator/Group committee
11.50-11.55	5 min	Closing prayers	▪ Thanking God for the day	Host team
11.55-12.00	5 min	▪ Registration ▪ Departure	▪ Attendance and participation	Host team/Secretary

Source: Kibichoi FFS, Kiambu (INMASP Project)

Example 2:Field Schedule/Guide

Time	Activity	Objectives	Materials	Responsible Persons
8.00 a.m.	Prayer	To commit the days activities to the Lord		Host team
8.05 a.m.	Field monitoring (AESA)	To collect the data	Note books and pencils	FFS members
9.00 a.m.	Processing of AESA	To present the output of the analysed data		Representative farmer of each sub group
10.00 a.m.	Group dynamic	To revitalize the participants		Host team
10.30 a.m.	Special Topic (selection of mother stock)	To input on the specific topic	Pens, pencils Note book	Facilitator
11.30 a.m.	Planning for next week	To plan for the activities of the following week		Everybody
11.50 a.m.	Prayer	To thank God for the day's activities		Host team
12.00	END			

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Participatory Diagnosis Tools

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Participatory Diagnosis

- Describing and understanding current farming/production system
- Diagnosis of constraints and opportunities
- Classification of constraints and opportunities
- Preliminary identification of technologies

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Describe and understand farming system

Tools available:

- Baseline survey (structured- MONQI survey /semi-structured interview)
- Direct observation
- Resource maps
- Transect walks
- Seasonal calendar
- Farming systems diagrams
- Problem trees

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Semi-structured interviews

- Guided informal interview sessions
- Some questions pre-determined
- Mostly only on checklist of topics

Respondents:

- Key informants
- Focus groups
- Individual farmers and/or household members

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Resource maps

- Community social maps
- Land-use and resource maps etc.

- Visualisation of available resources
- Drawn by or together with farmers
- Use local sources → copy later on paper

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Resource maps examples

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Resource maps examples

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Transect walks

- Observation walk
- Jointly by farmer and team/facilitator
- Focus attention on different zones in study area, watershed, farm
- To understand local space and resource base
- Understand problems and opportunities
- Communication with farmers

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Transect walks (2)

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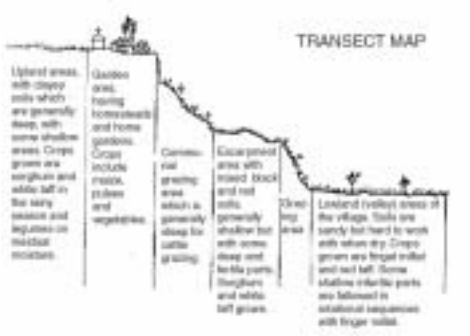
Transect walks (3)



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Seasonal calendars

- Trends over a year for important items such as rainfall, cropping, availability of grazing, labour supply, market prices etc.)

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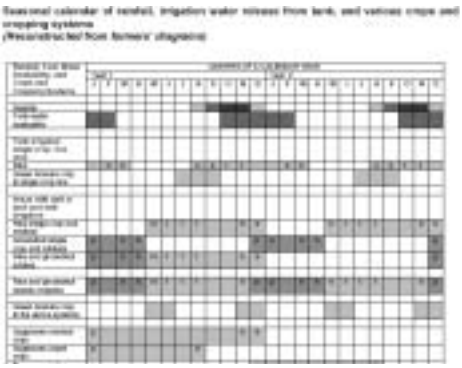
Seasonal calendars (2)



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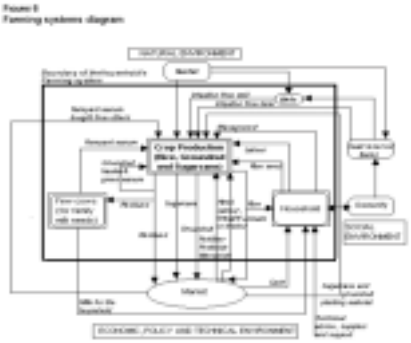
Farming systems diagrams



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Farming systems diagram (2)

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Problem trees

- Identify major focal problems (cards)
- Identify direct causes of focal problem

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Problem trees (2)

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Topics to address

- Physical and natural resource base
- Labour and farm power
- Farm household economy and strategies
- Crops and cropping patterns
- Crop production practices
- Use of new technologies and inputs
- Crop productivity
- Physical features and demography
- Social, economic and security aspects
- Agricultural support services

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Classification/ranking problems

- Matrix scoring and ranking
- Pairwise ranking

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Matrix ranking

- Ordering and structuring information gathering and planning
- Understanding farmers' technical knowledge and reveal criteria for ranking
- Grid representing relative value of preferences
- List items to be ranked, identify important criteria
- Individual vs group scores

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Matrix ranking (2)

If you use scoring and ranking matrix to assess the suitability of a technology or practice within the household farming system farmers may identify the following criteria and scoring:

(1= less, 2=second less 3= average, 4=more relevant, 5= most relevant).

Criteria	Labor (man/woman)	Cost	Loss of land	Availability of material	Risk
Composting	1	1	1	2	1
Mulching	2	2	1	3	1
Terracing	4	5	2	3	1
Drainage	3	3	1	2	1
Cover crop	2	1	2	1	2

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Matrix ranking (3)

Table 8: Treatment performance as perceived by farmers.

Treatment	Points Scored	Position
Tithonia + plant tea	24.50	1
Tithonia + CAN	18.00	2
Manure	12.25	3
Tithonia only	8.75	4

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Pairwise ranking

- Prioritise farmers identified problems through comparison

Example of pairwise ranking

PROBLEM	Erosion	Hard - compact	Limited knowledge on soil man.	Low nutrient content	Shallow soil
Soil erosion		Erosion	L.k.s.man.	Erosion	Erosion
Soil hard/compact	Erosion		Hard - compact	Hard - compact	Hard - compact
Limited knowledge on soil management	L.k.s.man.	Hard - compact		Low nutrient content	Shallow soil
Low nutrient content	Erosion	Hard - compact	Low nutrient content		Low nutrient content
Shallow soil	Erosion	Hard - compact	Shallow soil	Low nutrient content	

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Analysis knowledge gap/strategies

Brainstorming/sharing sessions:

- Analysis current (chilli) management practices
- Identify major problems
- Inventory of ideas for improvement by farmers
- What would farmer like to learn about?

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Matuu, Kenya

17 – 21 Sept, 2007

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Ranking Exercise (s)

Pairwise ranking Exercise (s)

Pairwise ranking exercise

In host team, one person assumes the role of a facilitator and another person a reporter/Secretary while the rest assume the role of farmers.

Tasks

The facilitator should:

(i) guide farmers in analyzing the problems/constraints of Chilli production (+ non-technical issues) using sharing/brain storming [non-formal education methods]

(ii) guide farmers in prioritizing the problems/constraints using pairwise ranking (analyze and rank)

(iii) Present results in plenary

Pairwise ranking exercise-presentation 1

Items/problems/constraints												
Constraint (1)												
Constraint (2)												
.....(3)												
.....(4)												
.....(5)												
.....(6)												
.....(7)												
.....(8)												
.....(9)												
.....(10)												
.....(11)												
.....(12)												
	1	2	3	4	5	6	7	8	9	10	11	12

Pairwise ranking exercise-analysis

Items/problems	Frequency	Rank
Constraint (1)		
Constraint (2)		
.....(3)		
.....(4)		
.....(5)		
.....(6)		
.....(7)		
.....(8)		
.....(9)		
.....(10)		
.....(11)		
.....(12)		

Pairwise ranking exercise-Presentation

Items/problems												
Drought (1)												
Pruning (2)	2											
Pest & disease (3)	1	2										
Hail damage (4)	1	2	4									
Declining soil fertility (5)	5	2	5	5								
Plucking cycle (6)	6	6	6	6	5							
Poor tipping-in (7)	7	2	7	7	5	6						
Inadequate factory capacity to collect leaf (8)	1	2	8	4	5	6	7					
Soil erosion (9)	1	2	9	4	5	6	7	8				
Removal of pruning (10)	10	2	10	4	5	6	10	10	10			
Unskilled labour (11)	11	11	11	11	5	11	11	11	11	11		
Inadequate fillings (gaps) (12)	12	2	12	12	5	6	12	12	9	10	11	
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**

Pairwise ranking-example (Analysis)

Items/problems	Frequency	Rank
Drought (1)	4	8
Pruning (2)	9	3
Pest & disease (3)	0	12
Hail damage (4)	4	8
Declining soil fertility (5)	10	1
Plucking cycle (6)	9	3
Poor tipping-in (7)	5	6
Inadequate factory capacity to collect leaf (8)	2	10
Soil erosion (9)	2	10
Removal of pruning (10)	6	5
Unskilled labour (11)	10	1
Inadequate fillings (gaps) (12)	5	6

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17 – 21 September, 2007

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Curriculum Development

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Curriculum

- An FFS curriculum is a guideline of activities to be undertaken during the FFS learning cycle i.e. it is a framework specifying all activities that takes place in farmer field school
- Farmer field schools are run based on solid tested curriculum
- FFS curriculum covers the entire learning (crop, livestock etc) cycle
- FFS curriculum is integrated.

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Curriculum

- Curriculum is based on farmers' needs (participatory development of curriculum)- In this way farmers become active learners.
- Methods of learning include field observations in small groups (host teams) and plenary presentations and discussions, discovery based learning/learning by doing, demonstrations, comparative trials etc. Most of the training time is spent in the field.

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Curriculum

- The major components of the FFS curriculum include:
  - Field guides
  - Special topics
  - Group dynamic activities; and
  - Field studies (experiments)/AESA (activities happening in the field).

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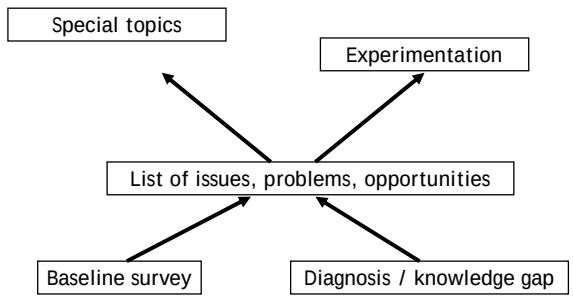
Special topics in FFS Curriculum (1)



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Special topics in FFS curriculum (2)

- List of issues
- Joint prioritisation of topics
- Planning topics for a period (season, year)
- Prepare topics: materials, persons etc.

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Special topics-preparation, example 1 (1)

DATE	SPECIAL TOPIC/DEMONSTRATION	AREAS TO BE COVERED	FACILITATOR
07.02.06	Farm planning and record keeping	i. General farm layout ii. Importance of record keeping iii. Types of records	DAO
28.02.07	Land preparation, planting, infilling and clonal selection	i. Land preparation tools ii. Preparation of planting materials iii. Clone types iv. Clone suitability	KDC and TRSHs
7.03.07	Diseases and Pests	i. Types of diseases & pests. Causes of dieback ii. Effects of diseases and pests. iii. Control and management.	TRFK/Kabeya
28.03.07	Agroforestry	i. Species and types ii. Recommended trees. iii. Measures against planting	DFO
4.04.07	Tea payments	i. Green leaf - Made tea selling ii. Payment variations. iii. Initial payment & bonus	ZM
25.04.07	Leaf Collection. Leaf handling	i. Roating. ii. Roles of farmer , LCC, Drivers and TRSHs at BIC iii. Spillages/loss of leaf before and on transit.	FUM

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Special topics-Session plans-Example (2)

Session	Topic	Objective	Main points	Methods/materials	Remarks
Pre-nursery stage					
1.	Introduction to onion growing	• To give an overview of onion production • To help participants know onion varieties and their characteristics • To introduce participants to diverse uses and food value of onions	• Onion varieties, origin and characteristics • Days to maturity, yield and market potentials • Climatic and soil requirements • Onion utilization and nutritional value	• Discussions • Field visits/visuals • Samples of onion varieties • Pictures of different onion varieties • Flip charts, markers, pens • Masking tapes • Note books	Knowledge on suitable varieties for growing in target environments
2.	Onion seed quality	• To introduce participants to the importance of onion seed quality and how to preserve seed quality • To determine seed viability and its importance	• Seed quality • Methods for preserving seed quality • Determining seed viability and its importance • Germination test (percentage germination)	• Discussions • Field visits/visuals • Experiment on seed viability • Seeds of different varieties (germination test) • Saucer, water • Old news paper/tissue paper • Flip charts, markers, pens • Masking tapes • Note books	

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Curriculum topics INM (example)

- Soil properties and functions
- Soil nutrient supply and deficiencies (macro-nutrients and micro-nutrients).
- Inorganic fertiliser use
- Green manuring and Tithonia use
- Cover crops
- Water harvesting (on-farm water harvesting; water harvesting for domestic use).
- Composting and compost use.
- Manure management and use.
- Soil Organic Matter management
- Biological sources of fertility (legumes, rhizobium use)
- Soil and water conservation practices (physical, biological and cultural measures; contouring).
- Concepts and principles of integrated nutrient management
- Agroforestry for soil fertility management.
- Soil physical fertility.
- Mulching

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Curriculum other topics (example)

- Timeliness in land preparation and planting
- Farm planning
- Record keeping
- Tree nursery management
- Organic farming and use of local farm resources.
- Tillage practices (double digging/deep tillage).
- Cookery
- Human nutrition/balanced diet.
- Fireless cookers.
- Cake baking
- Juice/jam making
- Soap making (bar soap)
- Milking salve
- Yoghurt preparation
- Leadership and team building.
- HIV/AIDS.

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17 – 21 September, 2007

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Participatory Technology Development

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Farmer innovation and experimental learning

- Testing new ideas part of farmers' learning life
- Innovation and experimentation vital part of FFS
- Problem-based
- Interaction researchers-farmers-facilitator-others
- Integrating farmer innovations in the FFS process

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Objectives of experimentation

- Test, monitor and evaluate 'new' ideas through comparative studies

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Role of Farmers and Facilitators

Farmers	PPS facilitators (Extension staff or researcher)
• Know the priorities of their problems • Know the local situation • Can assess their own possibilities and capabilities • Have good observational powers • Know local diversity of farmers and farming contexts	• Can identify technical constraints that are less obvious to farmers (researchers act as bookstoppers) • Know outside history and wide ranging research experiences • Have formal analytical tools and methods • Know outside diversity of farming contexts, systems and management practices
• Are sources of ideas for finding solutions to problems • Can assess feasibility of various options • Are inquisitive observers and experimenters	

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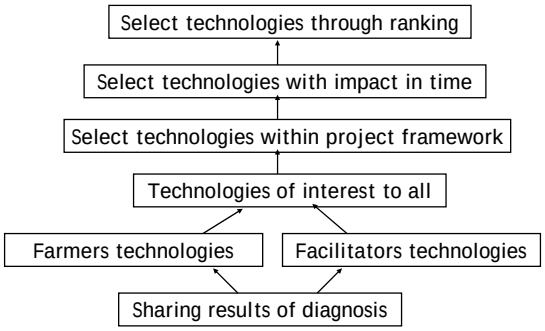
Selection of themes / topics



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Selection of experimental site

- Central learning plot
- Representative for farming system
- Host farmer(s) motivated, interested and committed
- Agreements on use of experimental plots
- Security
- Required size and type
- No distorting factors (shading etc.)

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Design of comparative experiments

- Number of experiments
- Simple experimental design (paired design)
- Simple treatments: control vs 1-2 treatments
- Size of plots
- Number of replications
- Plot demarcations and borders

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Monitoring and evaluation

- Regular observations to identify reasons for performance of technologies
- Building consensus on indicators (parameters and indicators)
- Deciding on frequency of monitoring
- In FFS is called Agro Ecosystem System Analysis (AESA)

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Learning protocol

- Objective
- Testcrop
- Hypothesis:
  If……then…….because…..provided that…..
- Experimental design (map)
- Description of treatments
- Resources needed
- Responsibilities
- Monitoring and evaluation indicators and methods

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Learning protocol (example)

Objectives: To demonstrate that the more the plucking rounds, the higher the production

Test crop: Tea

Hypothesis: If you increase plucking rounds to four (4) times a month, then you increase leaf production and quality because you shall be plucking only the mature two leaves and a bud provided that the weather remains conducive and there is no zoning (restriction in plucking) and other husbandry practices are the same.

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Learning protocol (example)

Experimental design (map)

5' x 3' (Control) (2 plucking rounds)	Plucking every 10 days (3 plucking rounds)	Plucking once a week (4 plucking rounds)

Description of treatments

Plot 1: (control): Plucked twice, mid-month and end month (14 days interval)

Plot 2: Plucked three times (after every 10 days)

Plot 3: Plucked four times (every week)

Resources required

- Plucking stick
- Plucking basket
- Weighing scale
- Plucking cape

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Learning protocol (example)

Morning and evaluation indicators

Indicator	Method of monitoring/evaluation
Weight of green leaf (kg)	Weight
Level plucking table	Observation
Shooting uniformity (uneven and even)	Observation
Sorting	Observation
Break back	Observation

Responsibilities

- Weighing of green leaf: chairman of host team.
- The grower should ensure that the bushes on the edges are cleared so that it does not harbour the pest.
- The grower should ensure no plucking for the next 14 days after spraying the affected plants (bushes).
- The facilitator and host team assess the response of the treatments using quadrant.

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Experimental design session

- Special FFS meeting to determine and formulate learning protocols

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Example FFS experiments (1)

- *"If we apply manure, DAP and Tithonia when planting maize variety Cargil 4141, grain yields will increase because manure, DAP and Tithonia improve nutrient status provided that rains are adequate, good quality seeds are planted and that planting takes place early in the season."*

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Example FFS experiments (2)

Treatment	Description
1	FYM at handful per planting hole (16t/ha)
2	DAP at tea spoonful per planting hole (216 kg/ha)
3	$T_1 + T_2$
4	$T_1 + T_2$ + Tithonia; Tithonia applied at 3.6 t/ha fresh weight

The treatments were kept simple and replicated twice using a pair-wise design within the central learning plot.

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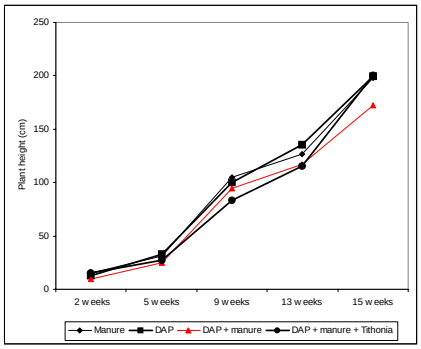
Example FFS experiments (3)



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Example FFS experiments (4)

Results 2002 SR	T_1	T_2	T_3	T_4
Maize grain yields (Kg/ha)	2,530	2,969	3,741	4,350
Gross income (Ksh/ha)	30,661	33,718	42,679	51,437
Variable costs (Ksh/ha)	28,558	19,858	34,110	36,209
Gross margins (Ksh/ha)	2,104	13,860	8,569	15,228
Net cash income (Ksh/ha)	19,954	18,510	26,232	32,322
Return to labour (Ksh/day)	95	210	155	199
Benefit Cost ratio	1.1	1.7	1.3	1.4
Value Cost ratio (V/C)		-0.4	2.2	2.7

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Example FFS experiments (5)

Treatment	Incidence of pests	Maize leaf colour	Plant health	Soil moisture retention	Incidence of weeds	Soil colour	Plant height	Yields	Labour demand	Selected technology
FYM	8.6	2.4	2.1	4.1	5.0	4.4	3.0	3.1	2.5	4.0
DAP	3.2	4.8	4.6	2.5	2.9	3.1	5.4	5.1	3.7	4.5
FYM + DAP	6.0	4.8	5.0	4.9	5.0	5.3	4.9	3.6	5.0	5.3
FYM+DAP+ Tithonia	2.1	8.1	8.3	8.5a	7.1	7.2	6.7	8.1	8.8	6.2

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Agroecosystem Analysis

AESA and Application in FFS

- Agro-ecosystem analysis (AESA) is one of the decision support tools used in FFS. Others are trials/experimentation (PTD) and special topics.
- AESA is the establishment (study) of the interactions between a crop (and other biotic) and a biotic factors co-existing in the field through regular observations with the aim of improving decision making; and optimising productivity.

Why AESA in FFS?

- Builds awareness on the relationship/interactions that exist between the various components (living, non-living, physical environment) of the farm
- Promotes learning by discovery and leads farmers towards their own analysis
- Guides farmers to critically analyse and make better management decisions (in their own fields)
- Improves decision making skills (& confidence) through small group analysis and presentations in plenary (large group) for critique and further discussions.
- Data collection and analysis tool; tool for monitoring experiments.

Components of AESA Chart/Sheet

1. BACKGROUND INFORMATION

- Information about FFS, host team , meeting dates etc.

2. GENERAL INFORMATION

- Information on technology/crop, treatments etc

3. INDICATORS/PARAMETERS (i.e. WHAT IS BEING MEASURED?)

- Quantitative data to be collected

4. OBSERVATION(S)

- Qualitative observations (indicators): e.g. leaf colour, weeds etc.

Components of AESA Chart/Sheet

5. VISUAL DRAWING (BASED ON WHAT IS BEING TRIED)

- Drawing of plant/plant condition, pests and their natural enemies, changes in leaf colour etc.

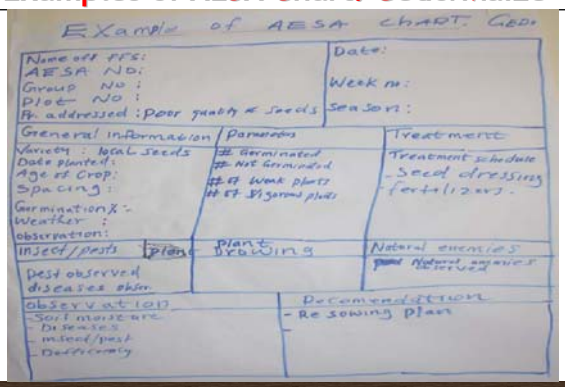
6. RECOMMENDATIONS

- Based on observations made by farmers from the trial/study plots

Examples of AESA Chart: IPM/IPPM

NAME OF FFS: AESA NO:< GROUP NO: PLOT NO: PROBLEM ADRESSED:		DATE: WEEK NO:
GENERAL INFO.	**PARAMETERS**	**TREATMENT**
Variety : Date planted: Age of crop: Spacing: Fertilizer: Weather: Time of observation: Plant population: Germination %:	Length of leafs: Width of leaves: No of leaves: No of diseased leaves: No of dead leafs: Length of plant: No of pods:	Treatment schedule: Management practices:
INSECT PEST	**PLANT DRAWING**	**NATURAL ENEMIES**
Pests observed:		Natural enemies observed:
OBSERVATIONS		**RECOMMENDATIONS**
Soil moisture: Diseases: Insect pests: Plant health: Deficiency: Weeds: Predators:		What management practices should be applied?:

Examples of AESA Chart: Gedo/Maize



Examples of AESA Chart-1: INM-1

AESA-INM CHART

1. Maelezo kijumla-Utangulizi (Background Information)

I. Jina la kikundi (Name of FFS)…….…….

II. Terehe ya mkutano (Meeting date)……

III. Sub-Group No.…….

IV. AESA No……..

V. Lengo la majaribio (trial objective)……

VI. Mbinu (Treatment-fertilization practice/tillage practice)

Plot 1:……Plot 2:……

Examples of AESA Chart: INM-2

AESA-INM CHART

VII. Mmea uliopandwa (Test crop)……

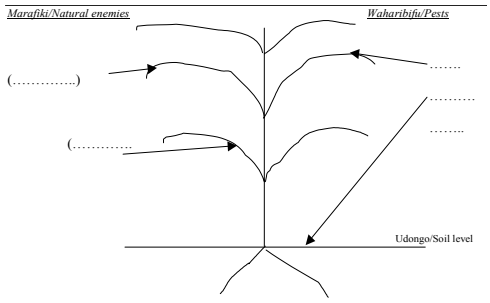
VIII. Tarehe ya kupanda (Planting date)……

IX. Umri wa mimea (Age of the plant)……

X. Nafasi ya kupanda (Spacing)……

Examples of AESA Chart: INM-3

2. Wadudu marafiki na waharibifu (Pests and natural enemies)



Examples of AESA Chart: INM-4

3. Matokeo (Observations)

Matokeo (Observation)		Plot 1	Plot2
I.	Idadi ya mimea** (Plant population)		
II.	Rangi ya majani (Colour of leaves)		
III.	Afya ya mimea (Plant diseases)		
IV	Unyevu/kuhifadhi maji (Moisture retention)		
V	Idadi ya kwekwe (Weed density)		

** Taken after germination and at harvesting time/Baada ya mimea kuota na wakati wa kuvuna

Examples of AESA Chart: INM-5

4. Vipimo vya urefu wa mimea (Plant height in cm-up to inflorescence stage)

Plots	Maelezo/description (Kawaida/Double digging)	Selected plants					Total	Average
		1	2	3	4	5		
Plot 1								
Plot 2								

Examples of AESA Chart: INM-6

5. Matatizo kijumla/General problems observed

.....

.....

.....

6. Mapendekezo/Recommendations

.....

.....

.....

Generic AESA chart-example (Tea Project)-1

1. BACKGROUND INFORMATION

- NAME OF THE FFS GROUP
- GROUP MOTTO
- AESA NO.
- MEETING DATE
- NAME OF THE HOST TEAM/ GROUP
- DATE OF STARTING THE TRIAL(S)
- CLONE(S)
- YEAR OF PLANTING

Generic AESA chart-example (Tea Project)-2

BACKGROUND INFORMATION (continued)

- SPACING
- PLANT POPULATION

2. GENERAL INFORMATION

- TECHNOLOGY BEING ADDRESSED
- LIST OF INPUTS
- TRIAL OBJECTIVE
- TREATMENT(S)
- REPLICATION NO/Plot No.

Generic AESA chart-example (Tea Project)-3

3. INDICATORS/ PARAMETERS (i.e. WHAT IS BEING MEASURED ?)

- YIELDS (KGS)
- FOLIAGE / SHOOT DENSITY
- TIME TAKEN (E.g. FROM PRUNING TO TIPPING-IN, FROM ONE PLUCKING ROUND TO THE NEXT ETC)

4. OBSERVATION(S) .....DEPENDING ON THE TECHNOLOGY BEING TRIED

Examples: Leaf colour, weeds etc.

Generic AESA chart-example (Tea Project)-4

5. VISUAL DRAWING

BASED ON WHAT IS BEING TRIED

6. RECOMMENDATIONS

BASED ON TECHNOLOGY BEING TRIED & OBSERVATIONS FROM FARMERS

INTRODUCING AESA TO FARMERS

1. Explaining AESA

The study in the field (study plots/trials/experiments) through observations is called "AESA". It involves observing:

- Crop performance (e.g. how fast the crop is growing/development)
- Crop condition: Are there pests? Are there diseases?
- The environment where the crop is growing and relating it to crop performance e.g.
    - Soil conditions (soil moisture status…)
    - Damaged plants
    - Weather conditions
    - Other factors (e.g. appearance of the plant) as appropriate for the study
- Making records in AESA sheet

2. Conducting AESA [4 –stage process]

Step 0: Explaining AESA before field observations (when farmers are doing it for first time)

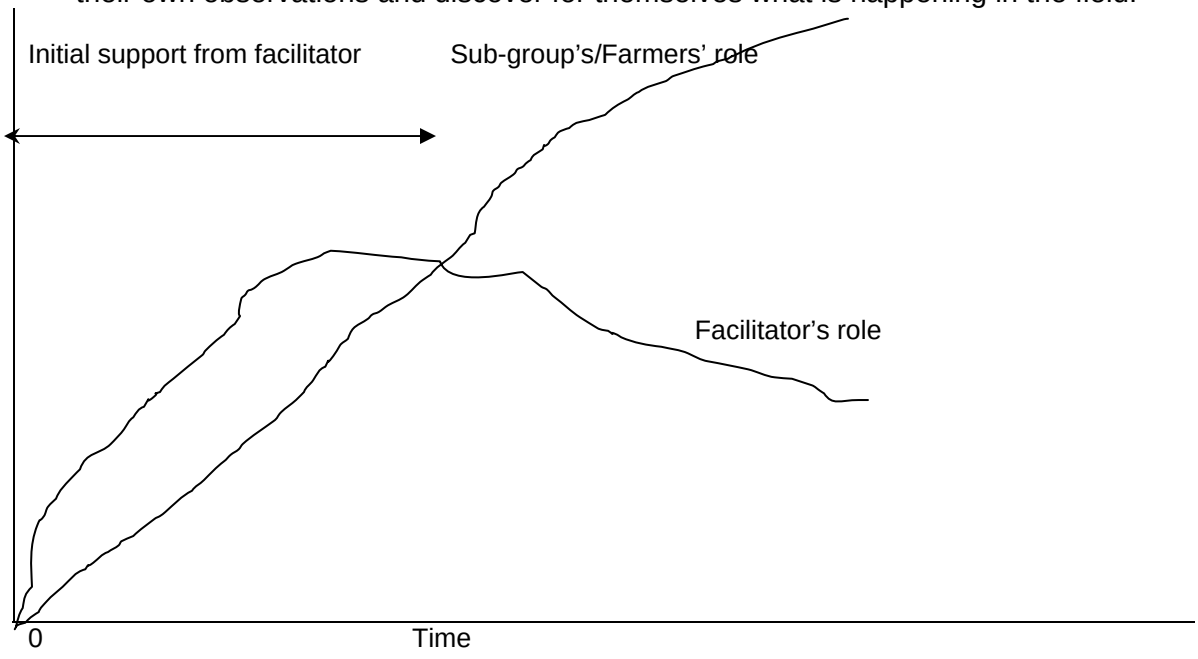
Stage 1: Making field observations in small groups (host teams)

- To encourage learning, the study in the field (trial) is done in sub-groups (host Cropms). Members of particular sub-groups should be persons who live in close proximity with each other (can walk to trial site).
- Each sub-group makes field observations/study on a designated *"trial site/treatment/block"* of trials *[initially with the support of facilitators until farmers become familiar with what they have to observe in the field and how they should make records]*.
- The field observation/studies are made in a regular manner [at agreed upon intervals/follows a greed upon calendar]

[Stage 1 is done by sub-groups in the locality of the trial]

Step 1: Field observations in sub-groups (host Cropms)

- In the field, learning takes place through "Learning by discovery" where farmers discover for themselves the "happenings" in the field.
- Initially, learning in the field will require much support from the facilitator- helping farmers in making field observations until farmers become familiar with what is to be observed and recorded in the AESA sheet.
- Once farmers know what they are supposed to do and observe during AESA sessions, then the role of facilitator becomes more of backstopping as farmers make their own observations and discover for themselves what is happening in the field:



Stage 2: Discussing findings in small groups

- During the making of field observations, the FFS participants should collect live samples/specimens of what they have seen (e.g. diseased leaves, discoloured leaves, weeds etc) for presentations and discussions during plenary. This also encourages learning by illiterates.
- After completing the making of the field observations, each sub-group, further discusses their field findings and observations among themselves and makes recommendations on how the issues/constraints/problems they have observed in the field can be addressed.
- The outputs of the study by subgroups are recorded in a systematic/structured manner in the AESA chart/guided by the contents of AESA chart/sheet.

[Stage 2 done by farmer groups in the locality of the trial]

Step 2: Sub-group discussions/synthesis and preparation of summaries

Stage 3: Sub-group presentations

- In plenary each sub-group presents their field observations in turn.
- Presentations include summaries of field observations as well as “live specimens” observed in the field.
- During presentations, the sub-groups are allowed to be questioned by other sub-group members on their findings, which they need to defend (using ecological arguments etc.)

Each sub-group makes presentations in plenary (in turn)

Stage 4: Whole group synthesis (plenary synthesis and summaries and collective decisions)

During whole group synthesis the following activities can be included in the discussions:

a) Making summaries of all presentations made by the various sub-groups/host teams

b) The facilitator may contribute to farmers' discussions by giving additional technical insights/explanations of the field observations
[Farmer-science knowledge linkages]

c) Reaching a consensus on management actions to be undertaken e.g. weeding

d) The facilitator's clarifications on how the management actions will be undertaken (why, how and when)

GROUP DYNAMIC ACTIVITIES (EXERCISES)

1. Introduction

In this topic, we are going to learn about group dynamic activities as used within FFS set-up

Objectives of group dynamic activities

- Create a pleasant learning environment, facilitate learning and create space to reflect.
- Enhance communication, problem solving and leadership skills.
- They break the ice and improve participation.

2. Types of group dynamic activities

There are many types of group dynamic exercises:

- Energise participants
- Enhance participation
- Strengthen a learning topic
- Strengthen group work and cohesion
- Solving group conflict

3. When to apply group dynamic activities

To apply group dynamics properly, the facilitator should keep the following in mind:

- be clear about what you want to achieve with the exercise (the objectives)
- be aware of the appropriate moment, e.g. do an exercise to energise people when they are feeling tired, or to tackle conflict if you see one arising
- Plan and prepare the exercises (reserve time for them in the FFS programme) and always add a ‘head’ and a ‘tail’ (introduction and analysis)
- Good exercises involve everyone (or majority) in the group
- Exercises should be adapted to local and cultural conditions and should not offend people or make them feel embarrassed.
- Remember that each FFS is unique and exercises should be modified for each specific FFS.

4. Examples of group dynamic activities

4.1. Energise participants

- **Claps**

Claps

In the FFS in Kenya, many different types of claps are used to energise the participants and also to welcome or thank a contributor.

Time
1–3 minutes.

Steps

1. The FFS clap: two rounds of three fast claps followed by one loud clap.
2. The OK clap: three fast stamps with one foot on the floor, three fast claps followed by the OK sign formed by the fingers.
3. The praise clap: three fast stamps on the floor, two fast claps followed by stretching the arms towards the person being welcomed or thanked.
4. The rain clap: the arms are raised above the head and the fingers are moving fast (like rain coming down), slowly the arms are lowered in a wide circle until they are down, followed by a loud clap with the hands.
5. The energy clap: the right arm is spinning around next to the body (like the wings of a helicopter) first slowly then faster. When the speed is at its fastest, a loud clap with the hands follows.

- **Coconut**

Coconut

Time
Five minutes.

Steps
The participants stand up and write the word C-O-C-O-N-U-T with their bodies (of course, any other word can be used)

- **Counting 1-10 (body exercise)**
- **Count down [number 5, 7 etc)**

4.2. Enhance participation

- **Whispering game (message relay/Wayward whispers)**

Purpose: Illustrate the breakdown of communication
Demonstrate the importance of good communication in undertaking community projects

Materials: None

Procedure:
Ask all the participants to form a circle. The facilitator then whispers a message to the first person on his right or to his left. Pass the message on, i.e., whisper to the next person and the next until the message gets to the other end of the circle. Ask the last person to receive the message to say the sentence aloud. The first person to whom the facilitator whispered the message will verify the accurateness of correctness of the message.

Relate the activity to good and clear communication as significant factor in successfully carrying out community undertakings.

People may view the degree of change in the original message or breakdown in communication as changes caused by certain hindrances or barriers to effective communication that affects implementation of community projects.

When activity is most appropriate
Use the activity as a starter for a session on effective communication or other topics on communication

- **Folding paper game**

Folding paper game

Objectives

- demonstrate that even simple instructions can be misinterpreted
- raise awareness of misinterpretation of instructions and facts through non-participation, absenteeism and not asking for clarification· develop ways to avoid/resolve situations of misinterpretation.

Materials

Several sheets of paper (square sheets are most interesting, as ingenious participants could choose to fold them from corner to corner, thus getting a triangle).

Time

Five minutes.

Steps

1. Select four participants (or ask for volunteers) and ask them to stand in front, facing the rest of the group.

2. Give each a sheet of paper. They must keep their eyes closed and must not ask questions.

3. Instruct them to fold their paper in half and then tear off the bottom right-hand corner of the paper. Tell them to fold the paper in half again and then tear off the top right-hand corner. Tell them to fold the paper again and tear off the bottom left-hand corner.

4. Ask them to open their eyes and display the unfolded paper to each other and the audience.

5. It is quite likely that the pieces of paper will look different. "What words in the instructions could be interpreted in different ways?" "How could the directions have been clearer to reduce the ambiguity?" "How can we encourage people to ask for clarification when they do not understand something?"

- **Knotty problem**

Knotty problem

Objectives

- demonstrate that groups empowered to solve their own problems are much more successful than those instructed by outsiders
- strengthen participants' confidence in their ability to solve problems themselves.

Time

10–15 minutes.

Steps

1. Select one, two or three participants to act as FFS facilitators. They are asked to leave the room while the facilitator instructs the rest of the group.

2. Ask the remaining participants to hold hands in a circle and tie themselves into an entangled knot. They must not let go of each other's hands.

3. Once the knot is complete, the 'facilitators' who left the room return and are asked to unravel this knotty problem within three minutes, using verbal instructions only. They should hold their hands behind their backs so they are not tempted to touch the others.

4. The participants entangled in the knot are asked to follow the facilitators' instructions literally and not make it easier for them by doing anything they have not been told to do.

5. The attempt is generally not very successful and sometimes even produces a more complex knot. Now repeat the exercise with the facilitators participating in the knot. When the knot is ready, simply ask the participants to get out of the knot themselves. This untying process is usually much quicker.

6. Ask the participants to comment on the differences between the first and the second time the knot was unravelled and why these differences occur. "What does the game tell us about the role of outsiders/facilitators and insiders (in the knot and in other problems in general)?" "What does the exercise tell us about the effectiveness of outsiders and managers in organising people?" "Who were the most successful in solving problems and why?"

4.3. Strengthen a learning topic

Using Folk Media
Folk Media is the creative dissemination of information through cultural and performance arts

Examples:
- Poetry and verse speaking
- Song and dance; song alone
- Story telling, sayings, riddles and idioms
- Drama, skits and role play.
- Choral music

N/B: Should be used within the programme perspective

Which watch? Whose shoe?

Objective:
To demonstrate that people are often not observant about things they see regularly
Materials: A non-digital watch or participant's shoes
Time: 5 minutes
Procedure:
A: The Watch

1. Ask someone in the group if you may borrow their watch for a moment. (Caution: make certain it is a non-digital type.)
2. Tell that person (after receiving the watch) that you would like to test his or her powers of observation, and ask the entire group to play along with the individual whose watch you are using, by covering their own watches.
3. Tell the individual to assume that the watch was lost and you found it. But, before you return it, you want to make certain the watch can be identified as being theirs. Some questions include: "*What is the brand name?*"; "*What colour is the face?*"; "*Is there anything else printed on the face?*"; "*Does it have Roman or Arabic numerals?*"; "*How many numerals are shown ?*"; "*Does the watch have the date and/or day on it?*"; "*Is there a second hand?*"
4. If the group is silently responding as the volunteer attempts to answer the questions, then the key learning point is more easily made: that most people cannot totally and accurately describe their own timepiece even if they look at it dozens of times a day.

4.4. Strengthen group work and cohesion

- **The time to be happy is now**

The time to be Happy is now
and the place to be Happy is Here
and the way to be Happy is to make someone Happy and
to Have a little Heaven down Here

Purpose: Serve as icebreaker
Illustrate the need for participation of all members in a team activity

Materials: Blackboard and chalk or newsprint and marking pen for use in writing the lyrics of the song

Procedure: Introduce the song. When participants have become familiar with the tune, ask them to omit the words that begin with letter H

When the activity is most appropriate:
Use the song as a starter in the morning in a session following a break. Use it with any number of participants.

Ask participants what happens when they omit certain words from the song.

Emphasise the parallelism of omitting words from the song to group members who are absent from a team activity i.e. how their absence affect team work

- **List as many as you can**

Purpose: Demonstrate the advantage of working in groups

Materials: Pieces of paper, ballpens

Procedure: The facilitator invites the whole group to listen while she reads a list of twenty wholly unrelated items such as:

Pin	Chair	Blanket	Medicine
Juice	Door	Line	Cake
Phone	Spoon	Care	Bulb
Sea	Cat	Globe	Watch
Ship	Carpet	Light	Flower

After reading the list ONCE, participants are asked to write the items they can recall.

At the end of three minutes, ask who among the participants was able to list twenty items, nineteen, and eighteen.

Then ask participants to work in pairs and give three minutes more for the task

After three minutes ask again, which pair has listed twenty items, nineteen, and eighteen. Next ask them to group in fours and do the same exercise in one minute. When time is up, ask which group was able to list all twenty items.

Process the activity when everyone has settled. Ask the following questions:

Were you able to list more items when you worked alone or when you worked in pairs? Did working with bigger groups result in your being able to list more items? Why was this so?

Parallel, the exercise with working in a group. Will more be accomplished in the group/community with farmers when they work in teams rather than when working alone? Find out why they think so.

When activity is most appropriate: The activity is most appropriate if the participants are asked to reflect on their experiences in implementing group projects/activities/FFS. More things are achieved by working together.

- **Drawing a house**

Objective

To raise awareness about collaboration and process control within a group.

Materials

- Newsprint paper.
- Felt-tip markers.

Duration

10-20 minutes

Steps

A. Ask the participants to form pairs.
B. Both partners of a pair hold the same marker in such a way that they are able to draw or write together.
C. The partners draw a picture and write a title together on a piece of newsprint paper. They are not allowed to speak during the exercise.

Discussion

A. How did you feel and react during the exercise?
B. What factors contributed to or constrained the process of joint drawing and writing?
C. What can we learn from this exercise? Have you ever experienced similar feelings and reactions in a real life situation? What constraints do we normally encounter in group collaboration?

Note: The discussion can be done as a small group assignment after which the groups present to the other groups.

4.5. Relaxation and fun

- **Follow me**

Objective

To relax and have fun.

Duration

5 minutes

Steps

A. The facilitator asks the participants to stand up and imitate all his/her movements.
B. Extend arms forward and begin clapping hands, first slowly but at increasing speed until everyone claps mechanically. Then suddenly stop. Notice how many participants continue to clap.
C. The exercise can be repeated by clapping above the head, or with different movements.
D. Evaluate the exercise. Why did some people continue to clap when the person they imitated stopped? Why couldn't they imitate exactly? What can be concluded from this exercise?

Source:
Collection of Games and Group Dynamics Simulations
Indonesia National IPM Program

4.5. Devise your own

- **9 dots game (creativity)**

Objective

To raise awareness about creativity and the conditions that favor and constrain it.

Materials

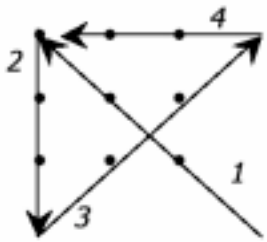
- Newsprint paper.
- Felt-tip marker.

Duration

5 minutes

Steps

A. Draw nine dots on a sheet of newsprint paper, as shown:
B. Ask the participants to connect all nine dots using only four lines and without lifting the pen.
C. Let them work individually on the exercise. Request that a few participants work on the problem on a sheet of newsprint at the front of the group.
D. If no one can solve the problem, show them how to do it (see picture). Notice how the participants react.



E. Discuss why they did not manage to solve the problem themselves? Why was their effort limited to the square formed by the dots and did not they dare to go "beyond the borders"? What restricted their creativity? Conclude that for creativity to flourish people must dare to go beyond their habits, should not feel restricted and need a supportive, judgement-free environment.

FIELD DAYS, TOURS AND GRADUATION

1. Field Days

- An occasion when farmers and facilitator show other people or the community what they have learned and results of the trial activities [dissemination to the rest of the community]
- 1-2 field days can be organized during the FFS running period. May be combined with graduation, [if two]
- Farmers become facilitators during the field days
- A guest speaker may be invited to address all invited persons during the field day

Whose Concern?

- It is the participants affair
- They plan and implement the activity
- The farmers may choose to invite other farmers from the same or neighbouring villages
- They may choose to invite their local administrators with the end view of orientating them on the program.
- Key aspect is that farmers themselves facilitate during the Field day

Example of activities carried out during FFS Field Day

- Registration/welcoming invited participants
- Introducing the objectives of the group and field day
- Overview of problems/constraints being addressed by FFS
- Visits to various plots/display stations

Example of field day programme

- Prayer
- Introductions
- Folk Media
- Farmer impressions on FFS/technologies
- Speeches
- Guest of Honour
- Vote of thanks

N/B: Facilitators for the day are the farmer Participants

2. Study tours [exchange/cross visits]

- Meant to expose participants to various technologies or activities of other FFS.
- Members of the same FFS can also visit each other to learn from each other's activities.

3. Graduation

- Marks the end of the study period
- The occasion is used to recognise the time input in the FFS by the farmers and facilitators.
- It is organized by the farmers, facilitators and the coordinating office
- It is also a forum to pass on the lessons learnt in FFS to the public, administrators, and create interest for more farmers to join the next planned FFS in the locality.
- The harvest and results of field trials are displayed, FFS participants dramatise (using folk media), lessons learnt at the FFS.
- Farmers who have participated in the FFS process are *awarded certificates of appreciation*