Farmer Field Schools

KEY PRACTICES
for DRR Implementers

Humanitarian Aid
and Civil Protection

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Farmer Field Schools: Key Practices for DRR Implementers

ISBN 978-92-5-108328-4 (print)
E-ISBN 978-92-5-108329-1 (PDF)

Authors	Godrick Simiyu Khisa, James Okoth and Erin O´Brien
Series coordinators	Javier Sanz Alvarez and Erin O´Brien
Photographs	© FAO/Javier Sanz Alvarez except cover, which is © FAO/Raul Tomas Granizo and page 6 (left), which is © Mario Samaja
Design and layout	Handmade Communications, design@handmadecom.co.za

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This brief is part of the series, *A Field Guide for Disaster Risk Reduction in Southern Africa: Key Practices for DRR Implementers*, coordinated by the FAO Subregional Office for Disaster Risk Reduction/Management for Southern Africa. This series has been produced with contributions from COOPI, FAO, OCHA and UN-Habitat, and comprises the following technical briefs:

- Information and Knowledge Management (COOPI)
- Mobile Health Technology (COOPI)
- Safe Hospitals (COOPI)
- Disaster Risk Reduction for Food and Nutrition Security (FAO)
- Appropriate Seed Varieties for Small-scale Farmers (FAO)
- Appropriate Seed and Grain Storage Systems for Small-scale Farmers (FAO)
- Farmer Field Schools (FAO)
- Irrigation Techniques for Small-scale Farmers (FAO)
- Management of Crop Diversity (FAO)
- Community-based Early Warning Systems (OCHA and FAO)
- Disaster Risk Reduction Architecture (UN-Habitat)

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Foreword by ECHO

The southern Africa and Indian Ocean region is extremely vulnerable to cyclones, floods, droughts and tropical storms. These recurrent climate-related shocks negatively affect the highly sensitive livelihoods and economies in the region, and erode communities' ability to fully recover, leading to increased fragility and vulnerability to subsequent disasters. The nature and pattern of weather-related disasters is shifting, becoming unpredictable, and increasing in frequency, intensity and magnitude as a result of climate change. Vulnerability in the region is further compounded by prevailing negative socio-economic factors, such as high HIV rates, extreme poverty, growing insecurity and demographic growth and trends (including intra-regional migration and increasing urbanization).

The European Commission's Office for Humanitarian Affairs (ECHO) has actively engaged in the region through the Disaster Preparedness ECHO (DIPECHO) programme since 2009, supporting multi-sectorial disaster risk reduction interventions in food security and agriculture, infrastructure and adapted architecture, information and knowledge management, water, sanitation and hygiene, and health. This programme operates with two objectives, notably:

- Emergency preparedness by building local capacities for sustainable weather-hazard preparedness and management, including seasonal preparedness plans, training, emergency stocks and rescue equipment, as well as Early Warning Systems.
- Empowering communities through multi-sectorial and multi-level approaches with DRR mainstreamed as a central component and improved food and nutrition security as an outcome.

This is done in alignment with national and regional strategies and frameworks.

For DIPECHO, one of the main measures of success is replicability. To this end, technical support through guidelines established for DRR implementers is a welcome output of the DIPECHO interventions in the region. ECHO has supported regional partners, namely COOPI, FAO, UN-Habitat and UN-OCHA, to enhance the resilience of vulnerable populations in southern Africa by providing the funding to field-test and establish good practices, and to develop a toolkit for their replication in southern Africa. It is the aim of the European Commission Office for Humanitarian Affairs and its partners to fulfil the two objectives sustainably and efficiently through the practices contained in this toolkit to ensure the increased resilience of the most vulnerable populations in the region.

Cees Wittebrood
Head of Unit, East, West and Southern Africa
Directorate-General for ECHO
European Commission

Foreword by FAO

The southern Africa region is vulnerable to a diverse array of hazards, largely linked to environmental causes (such as drought, cyclones and floods); human, animal and plant diseases and pests; economic shocks; and in some areas socio-political unrest and insecurity, among others. The region's risk profile is evolving, with new factors becoming gradually more prominent, including a trend towards increased urbanization, migration and mobility, among others. Natural hazards will be progressively more influenced by trends in climate change. Disasters in the region are often composite and recurrent, and have a dramatic impact on livelihoods and on southern African countries' economy and environment, often undermining growth and hard-won development gains.

Increasing the resilience of livelihoods to threats and crises constitutes one of the Strategic Objectives of FAO's Strategic Framework (Strategic Objective 5, or SO5). FAO specifically aims at building resilience as it relates to agriculture and food and nutrition security, which are among the sectors most severely affected by natural hazards. The impact of shocks and disasters can be mitigated and recovery can be greatly facilitated if appropriate agricultural practices are put in place; improving the capacity of communities, local authorities and other stakeholders is therefore central to resilience building.

Together with partners, FAO is undertaking intensive work in southern Africa to consolidate the resilience of hazard-prone communities; this is leading to an improved knowledge base and to documentation of good practices. This toolkit purports to disseminate improved methods and technologies on key aspects of agriculture, such as appropriate seed varieties, irrigation, storage systems, land and water use and Farmer Field Schools, in the hope that they may serve different stakeholders to improve their resilience-building efforts. A multi-sectoral approach and solid partnerships are seen as key to the success of resilience-building work. For this reason, this toolkit also includes non-agricultural aspects of good resilience practices, contributed by FAO partners: the UN-OCHA, UN-HABITAT and COOPI, which certainly strengthen this collection.

David Phiri
Sub-Regional Coordinator
FAO Sub-regional Office for Southern Africa
Harare

Mario Samaja
Senior Coordinator
FAO Sub-regional Office for DRR Southern Africa
Johannesburg

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Acronyms and Abbreviations

AESA	agro-ecosystem analysis
CA	conservation agriculture
CAP	community action/adaptation plan
CMDRR	community-managed disaster risk reduction
DRC	the Democratic Republic of the Congo
DRR/M	disaster risk reduction/management
FAO	Food and Agriculture Organization of the United Nations
FFFS	farm forestry field schools
FFLS	farmer field and life schools
FFS	farmer field schools
ICIPE	International Centre of Insect Physiology and Ecology
IPM	integrated pest management
IPPM	integrated production and pest management
JFFLS	junior farmer field and life school
LRRD	linking relief, rehabilitation and development
M&E	monitoring and evaluation
PDRA	participatory disaster risk assessment
PM&E	participatory monitoring and evaluation
SFS	seed farmer schools
SPFS	Special Programme for Food Security
ToF	training of facilitator
VICOBA	village community banking

Preface

Natural hazards have become more frequent and intense in the last few decades, increasing the often significant negative impacts on the gross domestic product of countries in southern Africa and undermining development efforts. Forecasts are negative as a result of climate change, which is increasingly linked to more frequent and severe weather patterns that are expected to have a dramatic impact on these countries' economies and environments.

Southern African countries face many risks associated with natural hazards – mainly cyclones, droughts and floods – due to the high levels of exposure and vulnerability of an important segment of the population, namely small-scale farmers who are dependent on agriculture and livestock for their livelihoods.

Farmer field schools (FFS) represent a significant step forward in agricultural education and extension by increasing the resilience of small-scale farmers. Traditional top-down technology transfer systems have a role in some aspects of agriculture development, but the human capacity building required for the creation of independent commercial farmers and farmer organizations needs new approaches. Farmer field schools provide specific technical skills. They also provide organizational skills and practice, analytical skills and practice, and basic group assets, such as the trust and confidence required for joint activities.

This booklet provides an overview of the FFS approach and considerations for FFS implementation, and relates FFS experiences in Africa and the southern Africa region.

1. Introduction: Building Resilience Through the FFS Approach

Building vulnerable communities' resilience to threats and hazards in a rapidly changing world calls for transformative approaches that can organically evolve to suit the dynamic and unique needs of different livelihood systems. However, most of the existing service-delivery mechanisms in agriculture are built around conventional extension models of one-way communication based on broad recommendations. The farmer field school (FFS) approach provides a flexible and responsive platform for meeting the needs of farmers in varying contexts.

Over the years, the FFS approach has been adapted in many countries to suit complex and diverse smallholder farming systems. In Africa to a large extent, this includes adaptation for increased climate variability, such as more frequent occurrence of drought, and other natural hazards. The approach has been applied in Africa among farmers, agro-pastoralists and pastoralists as well as among internally displaced and refugee communities.

FFS programmes adopt a holistic livelihoods model ensuring that – beyond agricultural production – entrepreneurial, marketing and savings skills are core components of the learning process. In the framework of disaster risk reduction (DRR), the FFS programme has had a two-tiered level of activities: group and community. The group level activities mainly comprise cycle-long learning (e.g. seed

Common objectives of FFS interventions include: i) improving productivity for food security and reducing rural poverty; ii) building resilience among communities faced with recurrent hazards, such as drought, floods and transboundary plant and animal pests and diseases; and iii) enhancing individual and collective agency and action for livelihood improvement.

to seed, in crops; or egg to egg, in poultry), guided by a curriculum, validation and comparative studies. Alongside these activities are livelihood diversification activities directed at empowering households to build resilience.

The community-wide activities are complementary and extend beyond the scope of FFS. These activities contribute towards a support system for community resilience and may include activities such as rangeland rehabilitation, revitalization of the local seed system, watershed management, community animal health, early warning systems, community-based market information systems, resources management and sharing agreements and mechanisms for conflict management. The implementation of both levels has to be done in consultation and collaboration with local governments, the national agricultural research system, the private sector and civil society.

2. Overview of the FFS Approach

History and evolution of the approach

The FFS approach was developed by the Food and Agriculture Organization of the United Nations (FAO) in South East Asia in 1989. It emerged as a way for small-scale rice farmers to investigate and learn the required skills for adopting integrated pest management (IPM) practices for themselves in their own rice paddy fields.

The approach proved to be very successful in helping to control rice pests and was quickly expanded to other countries in Asia and later also to Africa, the Middle East and Latin America. In Africa, the FFS approach was introduced in 1995 in Kenya (east Africa) and Ghana (west Africa) under the Special Programme for Food Security (SPFS) and thereafter quickly spread throughout the continent. During its expansion, the FFS programme began to broaden its scope beyond IPM to cover other types of agricultural production and incorporate socio-ecological aspects, such as livestock, community forestry, HIV/AIDS, water conservation, soil fertility management, irrigation, food security and nutrition. Over the years, thousands of FFS groups have been implemented and the approach taken up by a large number of development actors and governments.

Applications in post-disaster or high vulnerability contexts have increasingly interlinked agricultural and human development, i.e. farmer field and life schools (FFLS), to address underlying threats affecting livelihood productivity, such as HIV/AIDS, conflict, gender inequity and gender-based violence, for example. The junior farmer field and life schools (JFFLS) – widely applied in Mozambique, for instance – are a further adaptation targeting orphans and vulnerable children and youths.

FFS are essentially schools without walls that introduce new technological innovations while building on indigenous knowledge. Through experiential learning techniques applied in a group setting and with regular meetings over a long time period, farmers learn how to analyse their situation and make informed decisions about their livelihood practices and resource-use strategies.

What are FFS?

Farmer field schools are built upon an adult non-formal education approach – the field is the classroom and learning occurs through learning by doing, experimentation, observation and reflection. Operationally, the FFS are organized around a season-long series of weekly or biweekly meetings, focusing on biology as well as agronomic and management issues, wherein farmers conduct agro-ecosystem analyses, identify problems and then design, carry out and interpret field experiments using farmer's practice to improved practices comparisons.

This reduces the risks involved in self-experimentation and empowers people who have not had access to formal education. In addition, the FFS also include a significant focus on group and individual capacity building (e.g. developing human and social assets).

FFS usually comprise a group of between 20 and 30 farmers (including elders, men, women and youths) who regularly meet (ranging between weekly to biweekly depending on the specific needs of the group) over a defined period of time to study the '*how* and *why*' of a situation in a given context under the guidance of a trained facilitator.

Apart from technical issues, group dynamic exercises and sessions addressing the 'topic of the day' (relating to non-agricultural issues) are integrated in the learning process. Folk media, including songs and storytelling, are often used to internalize learning and disseminate information on technical and social issues. Tools, such as illustrations, practical demonstrations and real-life exhibits are

further used as learning aids adapted for illiterate group members. Unlike some other extension approaches, FFS are more about developing people than developing technology.

Why FFS?

Capacity building of rural communities has traditionally been seen by research and extension institutions as a mechanism to transfer technologies to land and resource users. This approach, however, has proved inadequate in complex situations where community members must frequently adjust their practices to changing conditions. Technology packages, delivered in a 'top-down' manner, have often been too complex, expensive or poorly adapted to peoples' needs.

The FFS approach, in contrast to most conventional extension approaches, strengthens the capacity of local communities to analyse their livelihood systems, identify their main constraints and test possible solutions.

By merging their own traditional knowledge with external information, farmers can eventually identify and adopt the practices and technologies most suitable to their livelihood system and needs to become more productive, profitable and responsive to changing conditions.

The FFS approach empowers farmers through the use of experiential and participatory learning techniques rather than prescribing what to do. The purpose of the FFS is to improve the decision-making capacity of participants and their wider communities and to stimulate local innovation.

The specific objectives of FFS include to:

- empower farmers with knowledge and skills to make them experts in their own context;
- provide platforms where farmer groupings and extension and research workers jointly test and adapt options within the specific local conditions;
- facilitate farmering communities to learn new ways to solve problems and adapt to change;
- sharpen the ability of farmers to make critical and informed decisions that strengthen their coping mechanisms;
- help farmers learn how best to organize themselves and their communities; and
- enable farmers' livelihoods to become more resilient and less vulnerable to disasters, such as drought.

Key features and principles of the FFS approach

A set of key features and principles to guide FFS practice are listed below:

1. Learning by doing. FFS recognize that farmers do not change their behaviour or practices merely based on advice of what and how to change; rather the FFS approach allows farmers to learn through testing the proposed changes in a controlled, group-based environment. Discovery-based learning is an essential part of the FFS as it helps participants to develop a feeling of ownership and to gain the confidence that they are able to reproduce the activities and results on their own.

2. The field is the learning ground. The field, herd or the landscape is the main learning ground, around which all FFS activities are organized. Farmers learn directly from what they observe, collect and experience in their surroundings. Participants also produce their own learning materials (drawings, etc.) based on their observations and experiences. The advantages of these home-made learning materials are that they are consistent with local conditions, inexpensive to develop, and owned by the learners.

3. Learner-led study. Farmers decide what is relevant to them and what they want the FFS to address in their curriculum. This ensures that the information is relevant and tailored to participants' actual needs. The facilitator simply guides the learning process by creating opportunities for participants to engage with new experiences. This ensures that the information is relevant and tailored to the participants' actual needs.

4. Training follows the natural cycle of the study subject. In FFS, training is based on the natural cycle of the study topic, for example, from 'seed selection to harvesting'. This allows farmers to discuss and observe aspects in the field in parallel with what is going on in their own fields, such as learning about weeding takes place when it is weeding time, etc.

5. Learning from mistakes. Behavioural change requires time and patience. Learning is an evolutionary process characterized by free and open communication, confrontation, acceptance, respect and the right to make mistakes. This is crucial as often more is learned from mistakes than from successes. Each person's experience of reality is unique.

6. Competence, not information, is the goal. In FFS the focus is on developing skills and competences rather than assimilating information regarding new technology options. The focus is on understanding the basic science behind various aspects of the agro-ecosystem to enable farmers to carry out their own innovation process, i.e. understand the 'why' behind the 'how'.

7. Discovery-based learning. As much as possible, technical information is brought out through discovery-based exercises. For example, digging soil pits to analyse soil types and layers, breeding ticks to understand lifecycles, etc. Discovery-based learning is an essential part of the FFS, as it helps participants to develop a feeling of ownership and to gain the confidence that they are able to reproduce the activities and results on their own. Problems are presented as challenges, not constraints. Groups learn different analytical methods to help them gain the ability to identify and solve any problem they may encounter in their daily life.

8. Experiential learning. The basic assumption is that learning is always rooted in prior experience, which is unique to each person, and that any attempt to promote new learning must take into account experience in some way. Therefore, sharing and discussion among its members is a core element of the FFS.

9. Group trials and experimentation. Innovation and experimentation are vital components of the FFS process and offer opportunities for learning and for building capacity among farmers to adapt continually and improve the way they manage their resources. The experimentation in FFS has less emphasis on the generation of research outcomes related to technologies and more emphasis on the process of experimentation and analysis. Group-managed trials, whether crop- or livestock-based, form the nucleus of the FFS

learning because the site of the trials usually becomes the meeting point and learning space for the group. Typical experiments in FFS may be the testing and comparison of new crop varieties, options for improved soil management, poultry feed and housing, etc. In experimentation, a control treatment is usually included in the design, the purpose of which is to provide a standard against which various alternative (new) options can be compared. More often, the control treatment is the farmers' practice. This allows farmers to compare the new options directly with their own practice.

10. Facilitation, not teaching. Trained facilitators (usually government, non-governmental organization extension workers or community members) guide the learning process by mentoring and supporting the participants to take responsibility for their own learning through the use of participatory appraisal tools, among others. In the discussions, the facilitator contributes and facilitates the group to reach consensus on what actions need to be taken. One or two facilitators are assigned to a FFS group for the full duration of the FFS learning cycle and will be present at the scheduled FFS meetings. Facilitators are trained in a formal training of facilitators (ToF) course developed and run by experienced FFS master trainers before the start of a FFS. Researchers, subject matter specialists and external experts are occasionally invited to provide technical support to FFS groups as needed.

11. All FFS are unique. Learning topics within the FFS should be chosen by the community and group members. Training activities must be based on existing gaps in the community's knowledge and skills and should also take into consideration its level of understanding. Every group is different and has its own needs and realities. As participants develop their own content, each farmer field school is thus unique.

12. Systematic training process. All FFS follow the same systematic training process where the cornerstone is to observe and analyse the field experimental activities. Every FFS session includes at least three activities: agro-ecosystem analysis (AESA), which is explained further in the text below, a 'group dynamic activity' and a 'topic of the day'. A group dynamic activity leads towards team building and organizing skills for the group itself. A 'topic of the day' usually includes technical information to complement the 'learning by doing' and 'field experimentation' in FFS. The topic of the day is normally a farming-related topic, but could also be any other subject of concern to group members, such as nutrition, gender, microfinance, etc. If the facilitator lacks the specific expertise, external specialists or other community members can be invited to lead discussions. The entire FFS learning session is usually held for a half-day duration (i.e. four to five hours long).

Table 1: Timetable of a typical FFS learning session

Time	Activity	Description
8.00	Opening	Often with prayer, song/story etc. and attendance register
8.10	Recap and briefing	Reviewing previous activities and briefing on the proposed activities of the day
8.20	AESA field trial observations	Field observation and data collection on experimental plots in subgroup
9.00	AESA analysis and recording findings	Group processing and analysis of field observations
9.40	AESA presentations and discussions	Each subgroup presents results and discusses action to take
10.10	Group dynamic activity	
10.20	Topic of the day	Guided discussion or discovery-based exercise on a farming or cross-cutting topic of relevance, chosen by the farmers, sometimes facilitated by a guest specialist
11.20	Review of the day's activities	Reviewing the activities and main lessons learned during the day
11.30	Planning of next week's activities	Planning follow-up activities that will take place outside the FFS session and activities for the next session
11.40	Evaluation of day's activities	Evaluating day's activities using any evaluation tool
12.00	Closing	Announcements and closure (often with prayer)

Farmers meet weekly (most annual crops and livestock), biweekly (some long-term crops) or monthly (most perennials) on regular schedules defined and agreed on by the group members. The length of the FFS cycle depends on the focal activity. With livestock, a full-year cycle or more is usually needed to allow for all seasonal variations to be studied.

Agro-ecosystem analysis

The cornerstone of the FFS methodology is the agro-ecosystem analysis (AESA), which is a field-based analysis of the interactions observed between crop/livestock and other biotic and abiotic factors coexisting in the crop/livestock field (e.g. between plant/animal growth and pests, diseases, weeds, water, soil and weather conditions). The purpose of AESA is for farmers to learn to make regular field observations, analyse problems and opportunities encountered in the field and to improve decision-making skills regarding farm management. The process is holistic and farmers work in subgroups of four to five persons under the guidance of a trained facilitator to enhance the participatory learning process. Usually, this exercise takes about two to three hours and is done throughout the season or learning cycle so that the problems and decisions being studied overlap with similar issues in the participants' own fields, thereby increasing the motivation for learning.

A ESA is a four-stage process, as described below.

Stage 1. Making field observations: In subgroups, farmers make observations in the field based on a range of monitoring indicators. Emphasis is on observing the interactions between various factors in the agro-ecosystem.

Stage 2. Analysing and recording findings: Each subgroup structures, reflects on, records and analyses their findings from the field, including making drawings of the field situation and elaborating on decisions and recommendations.

Stage 3. Presenting the feedback: In a plenary, each subgroup presents their results and conclusions. Feedback and questions from the other groups require the group to defend their decisions with logical arguments.

Stage 4. Discussing actions to take: In a plenary, the participants synthesize the presentations and collectively agree and decide what actions to implement based on the decisions they have taken.

Source: Modified from FAO & FFS-PS. 2013. *Pastoralist field schools training of facilitator's manual*.

Key steps in FFS implementation

FFS implementation is undertaken in three phases: the preparatory phase, the implementation phase and the post-graduation phase. Each phase has a set of associated steps and activities. The implementation steps could be described as the foundation of the FFS.

The preparatory phase activities include a precondition survey, the selection and training facilitators, the ground working and FFS group formation. This period entails group formation and organization, problem identification, selection of learning activity/enterprise and setting up the farm experiments, a process that takes between one to three months. The implementation phase entails the regular learning cycles/sessions, including conducting field days, exchange visits and graduation. This period takes between 3 and 18 months depending on learning activity/enterprise. The post-graduation activities entail follow-up activities, networking, income generation and setting up of second-generation FFS.

Key steps in FFS implementation are summarized in the figure on page 17.

Steps in FFS implementation

PHASE 1 FFS preparation
STEPS

1. Pre-condition survey
2. Identification and training of facilitators
3. General ground work
   - Establish contact with the community
   - Awareness-raising meeting to introduce the FFS concept
   - Identification and selection of the participants
   - Identification of the focal activity (FFS learning enterprise)
   - Identification of the learning site
4. Establishing the FFS
   - Participatory introduction of the participants
   - Levelling of expectations
   - Identifying the host team
   - Participatory planning of FFS activities

   (a) Establishing the FFS group
   (b) Problem analysis and ranking
   (c) Identifying potential solutions
   (d) Developing the learning programme
   (e) Developing a detailed budget
   (f) Submitting a grant proposal
   (g) Developing a participatory monitoring and evaluation (PM&E) plan

PHASE 2 FFS implementation
STEPS

5. Regular FFS sessions with core activities
   - Comparative experimentation
   - AESA
   - Topic of the day
   - Group dynamics
   - PM&E
6. Field days
7. Exchange visits
8. Graduation

PHASE 3 FFS post-graduation
STEPS

9. Follow up of FFS activities
10. Establishing FFS networks
11. Income-generation activities
12. Setting up of second-generation FFS

3. Considerations for FFS Implementation

Laying the foundation for FFS interventions

Internalizing participation and local ownership in service delivery

FFS is a participatory approach wherein learners establish their agenda and curriculum for learning, often with strong cross-sectoral elements. Experience in southern Africa has shown that FFS interventions frequently produce a number of spin-offs or unpredicted effects when participants are allowed to lead and steer their own development process. This is largely positive, but it also makes high demands on the internalization of a flexible and open approach to programme management. This allows for frequent and continuous adjustment to planned activities to accommodate emerging needs and demands by project and programme beneficiaries.

A spirit of participation and a culture of accountability to field-level participants should be internalized throughout all management levels of organizations that support FFS. This is to ensure that generic and organic local-level development progress does not clash with rigid programme structures, inflexible log frames and hierarchical management structures. For this reason, it is recommended that field-level training on FFS and formulation be combined with capacity-building and awareness-raising activities of higher level staff and management in addition to the support given to FFS participants.

Linking relief, rehabilitation and development (LRRD)

In disaster risk reduction/management (DRR/M), emergencies are commonly described as being on a continuum, i.e. as an ongoing process of interrelated actions that are initiated before, during or after disaster situations. DRR/M actions aim to strengthen the capacities and resilience of households and communities to protect their lives and livelihoods, through measures to avoid (prevention) or limit (mitigation) adverse effects of hazards, and to provide timely and reliable hazard forecasts.

During emergency response, communities and relief agencies focus on saving lives and property. In post-disaster situations, the focus is on recovery and rehabilitation, including the concept of 'building back better'. This implies that DRR activities are also initiated during recovery and rehabilitation. Conceptualizing DRR/M as continuum, rather than occurring in phases requires a paradigm shift that reflects the reality: the transition between pre-, during and post-disaster situations is fluid, in particular in areas that are regularly exposed to hazards. The value of this framework is its ability to promote a holistic approach to DRR/M and demonstrate the relationships between hazard risks/disasters and development. For instance, the activities in mitigation and prevention comprise the development portion, while relief and recovery comprise the humanitarian assistance portion, with preparedness linking both types of efforts.

The link between FFS and strengthening people's and communities' resilience is that, through FFS, farmers acquire knowledge and experience of good agricultural practices that help to reduce the impact of hazards – such as floods, drought, plant and animal pests and diseases – which increases their yield or reduces production damage and losses. This contributes to people's food and nutrition security and possibly also generates additional income through the sale of their produce. This helps to strengthen people's and communities' resilience to crises and threats. Good practices for DRR in agriculture are, for example, the use of elevated, flood-resistant animal shelters, early-maturing seed varieties and so on.

The FFS approach is very well placed to strengthen the difficult link between emergency, rehabilitation and development (linking relief, rehabilitation and development – LRRD). It adds value to emergency interventions at the rehabilitation, mitigation (normal life) and preparedness stages. For example, during rehabilitation,

the FFS adds value to the distribution of agricultural inputs, making sure that farmers make good use of seeds and tools or take best care of animals distributed by relief agencies.

It has become evident that such rehabilitation efforts have to be looked at in a broader context of food and livelihood security, assisting people in restoring and securing their livelihoods and returning to normal life.

The FFS approach can also be an entry point for 'building back better', improving livelihoods compared with what existed before the emergency, i.e. the introduction of drought resistant varieties will increase the rural communities' resilience and will reduce future losses.

FFS is also considered useful in the mitigation and preparedness stages, particularly so where disasters are recurrent phenomena, for example in hazard prone and/or extremely poor areas. Here, FFS can provide a greater degree of resilience and faster recovery for the next emergency. Enhanced community sharing and better management of natural resources, reduced conflicts, enhanced social capital and strengthened local safety nets can make a big difference in increasing the resilience of hazard prone rural communities in order to cope better with recurrent threats.

Creating linkages for holistic service delivery

FFS should be used, if possible, as one element in a broader multisectoral approach towards enhanced resilience in hazard-prone rural areas, articulated around complementary and synergetic interventions.

Encouraging results from areas of high vulnerability in the eastern African region have demonstrated highly synergetic links between FFS, community-managed disaster risk reduction (CMDRR) and village community banking (VICOBA).

CMDRR typically forms the entry point in the community allowing for a broader community process to reflect on threats and hazards and for the development of a community action plan. FFS groups then play a proactive role towards contributing towards the achievements and progress of these plans, ensuring that group activities are well linked to community priorities.

Further linkages with local savings systems, such as VICOBA, enhance the economic empowerment of members and groups while the trust and cohesion fostered by FFS enhance the success of the savings system.

Building capacity

For quality implementation of the FFS approach, there is a need to build a sufficient pool of master trainers and FFS facilitators to sustain the FFS process in the field.

A FFS master trainer is a person with thorough experience and training in the FFS methodology, and who has undergone a season-long master training course on the FFS methodology. An FFS facilitator is charged with the day-to-day responsibility of facilitating

The main roles of master trainers include, among other things:

- mentoring of FFS activities in the field, especially supporting facilitators on-site;
- running ToF, including preparation and follow up in the field;
- monitoring, evaluating and documenting experiences;
- advocating for the approach;
- managing, designing and budgeting FFS programmes;
- assisting in the development of training materials, such as the innovation of new FFS facilitation exercises;
- exploring FFS opportunities;
- being an active member of the FFS network; and
- being a general resource person on the FFS approach.

a FFS group and must have undergone a Training of Facilitator (ToF) course.

If there is not a sufficient pool of master trainers, or when a FFS is started in a new country, it is recommended that master trainers be trained through a comprehensive season-long master trainer training course to build national or organizational capacity to backstop and mentor FFS interventions before the commencement of FFS activities.

In the FFS project design, there should be a deliberate effort to have competent project managers, master trainers, supervisors and facilitators. Organizations implementing FFS should have designated FFS master trainers affiliated to the organization.

Selection and training of facilitators

FFS facilitators need to be identified and trained before commencing FFS activities. FFS facilitators are trained through a formal FFS training of facilitators (ToF) course developed and run by experienced FFS master trainers. The FFS ToF aims to build capacity among facilitators on the FFS approach as well as on facilitation skills in general. These courses vary in length, depending on the target group and the need for inclusion of technical topics. There are various models for the ToF: either season-long training, covering the entire duration of the focal activity, or short training courses. However, when conducting short ToF courses, from experience

in eastern Africa, it is recommended that there be a minimum of 22 actual training days on FFS methodology (see the Annex for a sample ToF programme). A minimum of two master trainers on FFS methodology are recommended to conduct the ToF on a daily basis for the duration of the training course. Technical specialists should be invited where necessary.

It is recommended that there be a minimum of 15 and a maximum of 30 participants for each ToF course to ensure maximum participation in practical activities. The majority of the participants in the ToF should be able to serve as the FFS facilitators charged with the day-to-day responsibility of facilitating group-learning sessions. Suitable facilitators are those that live in the local community, speak the local language, have some level of advanced skills, knowledge and experience in agriculture/livestock, are able to share experiences and connect with the other community members and have dynamic and confident personalities. Ideally, the ToF should also be attended by a few extension supervisors/coordinators/managers of the project that will oversee the field implementation and support the trained facilitators.

Often, two (or more) facilitators are identified to run one FFS as a team. The ToF should also be complemented by regular refresher training and on-the-job mentoring of the facilitators during FFS implementation. It is important to note that a ToF will not qualify a person to run subsequent ToF for other staff. This is because a season-long master training course is required to be allowed to run a ToF course.

Community entry

FFS tailored towards DRR and Climate Change Adaptation (CCA) are established following a catchment pattern recognizing the fact that, in hazard prone areas, the entire community will be affected in the case of certain hazards (floods, cyclones, drought, etc.).

Community immersion therefore starts with a diagnosis of the problem through participatory disaster risk assessments (PDRAs) conducted with communities in each catchment area where the FFS groups will be established. The PDRA process involves a systematic analysis of hazard trends over time; profiling and characterization of recurrent hazards; identifying vulnerability in terms of human beings, productive assets and critical services as well as existing capacities.

Based on the outcomes of the exercise, community action/adaptation plans (CAPs) are developed defining possible measures to increase the resilience of rural communities and minimize the effects of the hazards when they happen.

The respective individual FFS groups in a given catchment area then tease out the relevant CAP-specific aspects around which the learning curriculum and field activities are anchored. These become the FFS group action plans, which also act as a local baseline against which the FFS and the community can progressively carry out self-assessments.

Activities should begin at least two months ahead of the planned start of the FFS. Other steps recommended for this activity include:

i) Conduct an awareness-raising meeting. Holding a meeting with the community to introduce the FFS concept is necessary in areas where awareness about this approach is low. The facilitator needs to ensure that community members have a clear understanding of what they can expect from the FFS. Participants and the facilitator can then discuss how to move forward to plan the FFS implementation.

ii) Identify and select the participants. Through consultations with the community and the help of local leaders, 30 to 40 FFS participants should be identified (groups tend to shrink to 25 to 30 after the first few sessions due to farmers' busy schedules, wrong expectations, etc.). In the identification process, the facilitator needs to be aware of gender relations and cultural practices within the community; however, ideally the group should include a mix of men, women, youth and elders from a cluster of villages.

Establishing a learning curriculum

Once the FFS group is established, the facilitator develops a programme, i.e. the curriculum for the FFS, based on the focal activity (FFS learning enterprise) and gaps identified.

Sufficient time should be spent on identifying the focus of the FFS to avoid involving farmers in activities that are not of interest to them. The selection of the FFS activity depends entirely on local peoples' needs and interests, for example planting a drought-resistant

variety, introducing an early-maturing seed variety for maize, millet and sorghum, etc.

In collaboration with the group, the facilitator decides what activities need to be undertaken to further explore the problems, test the solutions and identify what kind of outside assistance is needed. Key activities to facilitate learning in the FFS are the AESA, field-comparative experiments and topics of the day, where group discussion and short- and medium-term learning exercises are conducted.

A curriculum defining the FFS season and outlining dates of meetings and the topics of discussion needs to be drafted and made accessible to all.

Supporting implementation

FFS project budgeting and learning grants

Any FFS programme should allocate sufficient resources for FFS field implementation, staffing, master trainer support, ToFs, conducting reviews, conducting community exchange visits, graduation events, monitoring and evaluation (M&E), development of materials and adapting existing training materials to local context.

Direct funding to FFS groups for learning activities is preferable, as opposed to in-kind support, in order to enhance ownership and develop financial management skills in the group. Any form of group funding should include an element of cost sharing by the group.

Experience has shown that, through the grant process, groups have a very high level of ownership of the field school process and

many field schools enjoy a high level of matching funds, material inputs provided by the community and participants and an increasing ability to manage funds and activities on their own.

The process of grants application and management (making work plans, budgets, organizing fields, paying facilitators and managing funds) also allows groups to organize themselves to continue on their own.

Currently, learning grants to FFS groups range from US$400 to US$800, depending on focal activity/enterprise and duration.

The costs of FFS will be highest at the beginning of a programme, i.e. in year one. The years after the initial foundation has been laid will be much less expensive. FFS costing is highly context specific, but a typical costing, based on an example from the southern African region for a crop intervention, including the running of one ToF for 30 participants and the season-long running of 20 FFS groups is presented below.

Table 2: Indicative costs of establish a FFS in southern Africa

Item	Indicative cost US$
Training of facilitators course	25 000
Community entry and start-up	10 000
Group learning grants @ 800/group	16 000
Facilitator regular meetings	10 000
Supervision/technical support/M&E	15 000
Total	56 000

Indicative cost per group US$2 800

Monitoring and evaluation

FFS projects and programmes should include comprehensive baseline studies in their design to help to evaluate the impact of a FFS through comparisons between existing knowledge and practices before the start of a FFS and after its implementation. The FFS project/programme should also have an inbuilt M&E system, including participatory M&E tools and exercises, such as maps and sketches, drama and role plays, photographs, transect walks, proportional piling, a pictorial self-assessment matrix, matrix scoring/ranking and an evaluation wheel or spider web. The FFS programme team has to undertake continuous documentation and dissemination of good practices and success stories.

Participatory impact assessments should be done at the end of the project and results disseminated to show the knowledge, understanding and skills the FFS participants and communities have gained, so that any remaining needs can be identified and addressed during follow-up sessions.

Technical support

To ensure the high quality of field activities, the ToF should be accompanied by follow-up and technical support on particular aspects linked to the implemented activities and on-the-job mentoring of the trained facilitators by the master trainers and/or FFS experts, in particular at the start, during and towards the end of a FFS and/or when the need arises.

Learning networks

When there are several FFS in a region, FFS networks should be encouraged. Networking can help to raise awareness within the private sector, which can result in increased and continued collaboration and coordination of market actors and activities, to the potential benefit of the participant farmers and other farmers in the community.

One or two FFS field days should be conducted during the duration of FFS implementation. Field days provide an opportunity for non-participants and the larger community to be exposed to the lessons, skills and knowledge gained by the FFS group in the process. In addition, they provide FFS members with an opportunity to display and share their experiences, e.g. the experimentation results and learning activities, including group dynamics. Field days also reinforce the FFS cohesion and raise awareness within the community, the government and other organizations in the area, creating support and new demand for FFS.

Exchange visits/tours should also be encouraged. Exchange visits are educational tours to another FFS, agricultural institution or innovative communities. They encourage FFS members to compare the activities of other groups with their own and to exchange tested technologies and unique innovations.

Ensuring exit mechanisms

Every FFS should ensure that they have a continuity plan. After graduation, the FFS groups should be encouraged to continue with activities of their choice. They may decide to continue the field school for another season or study another topic, and should preferably be assisted with regular follow-up and technical backstopping. Encouraging networking among FFS groups through regular meetings and creation of mechanisms for exchanging ideas is an effective way of ensuring sustainability.

Within the context of DRR, income generation and livelihood diversification activities by individuals and groups should be encouraged, as should public–private partnerships to help to strengthen the resilience of vulnerable communities. FFS should also be encouraged to link with other systems, such as microgrants or access to credit.

4. FFS Experiences

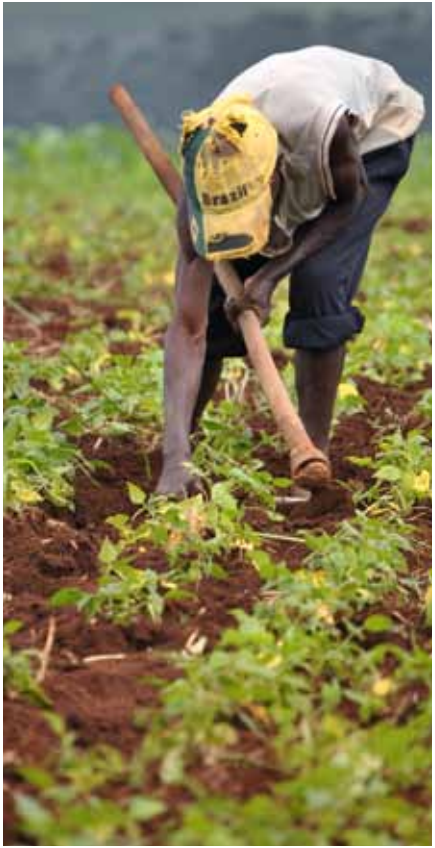
The Africa experience

The FFS approach was introduced in Africa in 1995 in Kenya (east Africa) and Ghana (west Africa) under the Special Programme for Food Security (SPFS) and thereafter quickly spread throughout the continent.

The focus of these FFS was on integrated production and pest management (IPPM) because of the relatively low levels of production and pesticide usage. Bringing the FFS approach to Africa required a range of adaptations and modifications to the initial approach to make it applicable to the specific farming systems in the region with its wide diversity of crops grown and where pests are not necessarily the major production problems. The African context also provided specific challenges, different from those in Asia, such as long distances between farming communities, limited national funding for public extension services, mixed small farm holdings and highly unpredictable weather patterns with frequent droughts.

Table 3: Overview of FFS implementation in Africa (1995–2011)

Country	Start year
Ghana	1995
Kenya	1995
Mali	1997
Tanzania	1997
Zimbabwe	1997
Ethiopia	1999
Uganda	1999
Zambia	1999
Senegal	2000
Benin	2001
Burkina Faso	2001
Malawi	2001
Mozambique	2001
Niger	2001
Nigeria	2001
the Democratic Republic of the Congo (DRC)	2002
Cameroon	2003
Sierra Leone	2003
Swaziland	2003
Gambia	2004
Namibia	2004
South Sudan	2004
Togo	2004
Angola	2005
Rwanda	2005
Somalia	2006
Burundi	2009
Central African Republic	2011



Following the success of the IPPM programme, several new FFS initiatives were initiated in the continent and the approach was expanded to new enterprises and study topics. Adaptations made to the approach include, among others:

- livestock FFS in Kenya that adapted the approach to animal health and production issues of smallholder dairy production;
- farm forestry field schools (FFFS) in Kenya, Ethiopia and Niger that focus on farm forestry;
- farmer field and life schools (FFLS) in Kenya, Uganda, Mozambique, Namibia, Zambia, Zimbabwe, Rwanda, Burundi, DRC and Central African Republic, focusing on a range of life skills and confidence-building aspects alongside the agricultural training (when this is done with vulnerable youths, the approach is termed junior FFLS (JFFLS));
- agropastoral field schools in Kenya, Uganda, Ethiopia and Niger, focusing on herd and landscape issues;
- conservation agriculture FFS (CA-FFS) in Kenya, Uganda, Zimbabwe, Zambia, etc.;
- soil and water management FFS in Zimbabwe, Zambia, Madagascar, Uganda, Kenya, Tanzania, Rwanda, DRC, Bukina Faso, Mali, Senegal, Togo, Niger, Lesotho, etc., focusing on soil husbandry, minimum tillage conservation agriculture, soil conservation, water harvesting and water moisture management in rain-fed systems;
- seed farmer schools (SFS) in Ethiopia, focusing on promoting quality seed for smallholder farmers;
- self-reliance of refugee communities in Uganda and post-emergency recovery; and
- rehabilitation of former internally displaced communities in Uganda.

Also in Africa, FFSs have become the foundation of the field-based food security programmes and are taking on a new role.

FFS have been conducted by a wide range of institutions in Africa, including FAO; the Danish International Development Agency; national agricultural research systems; Consultative Group on International Agricultural Research centres, such as the International Potato Center and International Centre of Insect Physiology and Ecology; universities; many national governments and numerous non-governmental organizations.

Experiences in southern Africa

Within the southern Africa region, the greatest FFS experiences are found in Zimbabwe and Mozambique. FFS were first introduced in Zimbabwe in 1997 by FAO under a technical cooperation programme, the main focus of which was integrated production and pest management by smallholder cotton farmers in communal and resettlement areas of Zimbabwe. Following this, initial project adaptations emerged, including FFS on organic cotton, land and water management, integrated soil, water and nutrient management, dry season feeding of livestock, poultry and agribusiness as well as JFFLS pilot activities.

In Mozambique, FFS were introduced by FAO in 2001 through a south-south cooperation project in the Zambezia province. Following its success, FFS activities were expanded through PAN II, the National Programme for Food Security, which facilitated the establishment of FFS in 12 districts of three provinces between the years of 2004 and 2008.

The programme aimed at institutionalizing the FFS approach within the government extension system in order to i) increase the impact of extension on food security and agricultural productivity among poor households and especially women and ii) expand the FFS programme in eastern and southern Africa between the years 2005 and 2008. Mozambique has also been spearheading the JFFLS approach in Africa since 2003, with a number of manuals developed based to a large extent on the Mozambique experiences.

Other countries with some FFS experience include: Zambia, Malawi, Angola, Lesotho and Swaziland. In Zambia and Malawi, FFS and FFLS have been implemented on IPPM and land and water management. In Malawi, FFS have also been conducted on various topics related to sustainable agriculture and food security.

In Angola, the approach was introduced by the Danish Refugee Council in 2005 in the Uige and Malanje provinces, northern Angola to support sustainable development among the resettled farmers. After that, FAO integrated FFS in the SPFS in Bie and Huambo, between 2006 and 2012.

Now FAO is implementing the FFS component of a World Bank funded project (MOSAP) that works in Bie, Huambo and Malanje. Currently some Global Environment Facility projects, which will also have FFS components, are in the process of being developed.

5. Conclusion

FAO and other stakeholders in the agriculture, food security and DRR sectors have been working with governments in southern Africa and in other regions to promote the use of the FFS approach to promote improved agricultural technologies for increased resilience. The importance this approach places on cohesion and effective communication is central to establishing early warning systems that can raise awareness of impending or imminent threats and hazards and to increasing safety nets to better cope with the negative impacts of hazards. These considerations can help affected communities and households return to their normal – or even an improved – status as they recover from a hazard.

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Annex

Twenty-two day training plan for a farmer field school

Notes:

ToF training to take 22 actual training days

The training programme can be conducted continuously or be divided into two phases (Phase 1: 12 days and Phase 2: 10 days)

Daily sessions have been programmed at 7 hours per day

Daily starting time and ending time to depend on local situation

Phase 1: 12 days

Week 1				
Day	Session	Duration	Topic	Topic outline
Day 1	1	2 hrs	Official opening of the course and climate-setting	Welcome address Guests' speeches and official opening Getting to know each other Levelling of expectations Course objectives and programme and content overview Host team formation and sharing responsibilities Training norms
	2	2 hrs	Crop production overview	Overview of crop production in the region/country
	3	1 hr	FFS overview	Origin of FFS What is and why FFS? Role of FFS in extension
	4	1 hr	FFS principles	FFS principles and their application
	5	2 hrs (1 hr day 1 and 1 hr day 2)	Adult learning	Characteristics of adult learning Adult learning and teaching Adult learning principles Application of adult learning principles in the context of FFS

Day 2	5		Continuation adult learning	
	6	2 hrs	Communication skills	What is and why communication in FFS? Elements/process of communication Barriers of communication Using appropriate non-verbal behaviour for communication
	7	3 hrs	Experiential learning and discovery-based learning	Concepts of experiential learning Phases of experiential learning Application of experiential learning in FFS Concept of what is this? What is that?
	8	2 hrs (1 hr day 2 and 1 hr day 3	Participative training techniques	Common participatory techniques of training Application of some of the participatory training techniques
Day 3	8		Continuation participative training techniques	
	9	2 hrs	Facilitation skills for FFS facilitators	What is and why facilitation? Good qualities of facilitator Role of facilitator Verbal and non-verbal facilitation skills
	10	2 hrs	Facilitating open discussion	Facilitation techniques How to conduct open discussions
	11	2 hrs	Visual aids	What are visual aids and why use them? Use of visual aids Guidelines for developing visual aids
Day 4	12	2 hrs	Evaluating learning	Need for evaluating learning sessions Methods of evaluation of learning sessions
	13	5 hrs	PRA tools and techniques	What and why participatory tools and techniques of PRA? Participatory tools and techniques of PRA tools
Day 5	14	7 hrs	FFS group visit/practice	Overview of the FFS learning session Feedback of field visit
Day 6	15	7 hrs	Steps in FFS implementation	Preparatory phase Implementation phase Post-graduation phase

Week 2				
Day 7	16	30 min	Introduction to FFS core activities	FFS core activities
	17	7 hrs	FFS core activity 1: Experimentation in FFS	What is and why experimentation in FFS? Principles of experimentation in FFS Types of experiments in FFS Steps in experimentation in FFS Development of sample experiments at FFS level
Day 8	18	7 hrs	FFS core activity 2: AESA	Concept of ecosystem What is and why AESA? Steps in conducting AESA Development of sample AESA formats
Day 9	19	1.5 hrs	FFS core activity 3: Topic of the day	What is and why topic of the day How to identify topic of the day How to present topic of the day Sample examples
	20	1.5 hrs	FFS core activity 4: Group dynamics	What is and why group dynamics Purpose of group dynamics Categories of group dynamics Points to watch in use of group dynamics
	21	7 hrs (4 hrs day 9 and 3 hrs day 10)	FFS core activity 5: PM&E	Why monitor and evaluate? Defining the goal Selecting what to monitor Developing a monitoring plan Choosing a method to collect the information Sample tools: evaluation wheel and village mapping
Day 10	21		Continuation PM&E	
	22	7 hrs (4 hrs day 10 and 3 hrs day 12)	Development of FFS learning schedule	What is and why learning schedule Steps and process in development of the learning schedule
Day 11	23	7 hrs	FFS group visit/practice	Situation analysis using PRA tools Feedback of field visit

Day 12	22		Continuation development of FFS learning schedule	
	24	2 hrs	Team building	The difference between a team and group Stages of team growth Role of a facilitator in team building How to build a successful team Common problems in teams Team building exercises
	25	2 hrs	Closing Phase I of training	Phase 1 evaluation Take-home assignments Closing remarks
Phase 2: 10 days				
Week 3				
Day 13	26	1 hr	Climate setting	Welcome address Recap of Phase 1
	27	4 hrs	FFS group management and leadership	Developing an FFS constitution FFS leadership FFS records FFS resource mobilization
	28	2 hrs	Conflict management and peace-building	What is conflict? Causes of conflict Types of conflict Results of conflict Stages and dynamics of conflict Conflict transformation and peace-building Functions and positives of conflict
Day 14	29	7 hrs	Business skill	Introduction to farming as a business Selection of the FFS commercial enterprise Profitability analysis of FFS enterprises Budgeting and planning the FFS commercial enterprise

Day 15	30	7 hrs	Natural resource management (NRM)	What are natural resources? Classification of natural resources What is natural resource management? Ownership regimes in NRM Stakeholder analysis in NRM Importance of NRM
Day 16	31	7 hrs	Crop production	Integrated production and pest management Suitable agricultural practices Good agricultural practices for selected crops
Day 17	32	7 hrs	FFS group visit/practice	Practice on facilitating sessions Feedback of field visit
Day 18	33	3 hrs	Crop production continuation	
	34	4 hrs	HIV/AIDS	What are HIV and AIDS? Ways of HIV transmission, ways in which HIV is not transmitted, and protection against AIDS HIV/AIDS pathway Understanding the dynamics of the disease in rural communities
Week 4				
Day 19	35	4 hrs	Gender in FFS	What is gender? Gender roles Sociocultural aspects Gender analysis FFS gender indicators Types of gender-based violence (GBV)
	36	3 hrs	Human nutrition	Basic facts on nutrition Definitions and food groups, diet diversification, food handling and preservation Nutrition and HIV/AIDS

Day 20	37	14 hrs	CMDRR	Constructing a seasonal calendar Identifying the hazards within a community How does a disaster affect my life? Understanding community vulnerability Capacity assessment Hazard mitigation
Day 21	37		Continuation of CMDRR	
Day 22	38	2 hrs	Action planning	
	39	1 hr	Course evaluation	
	40	2 hrs	Graduation and official closing	Closing speeches Award of certificates

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ISBN 978-92-5-108328-4

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I3766E/1/04.14