Formative Evaluation of Farmer Field Schools as Rural Extension Methodology in CARE’s Programmes FAPIM and Primeiras e Segundas

*Farmer Field School members and extension worker controlling the weight of different cassava varieties from the last year’s Farmer Field School*
# TABLE OF CONTENTS

- LIST OF ABBREVIATIONS ................................................................. 2
- EXECUTIVE SUMMARY ................................................................. 2
- 1. INTRODUCTION ............................................................................ 6
  - 1.1. Purpose .................................................................................. 6
  - 1.2. Scope .................................................................................... 6
- 2. METHODOLOGY ........................................................................... 7
  - 2.1. Methods used ....................................................................... 7
  - 2.2. Data collection ...................................................................... 7
  - 2.3. Data analysis and limitations ............................................... 8
- 3. BACKGROUND .............................................................................. 9
  - 3.1. Agriculture context .............................................................. 9
  - 3.2. Farmer Field Schools .......................................................... 10
- 4. MAIN FINDINGS .......................................................................... 11
  - 4.1. Relevance .............................................................................. 11
  - 4.2. Effectiveness ....................................................................... 12
  - 4.3. Sustainability ....................................................................... 15
  - 4.4. Gender ................................................................................. 16
  - 4.5. Monitoring ........................................................................... 17
- 5. CONCLUSIONS ............................................................................ 18
- 6. RECOMMENDATIONS AND LESSONS LEARNED ....................... 20

## ANNEX

- Annex 1 – Terms of Reference .......................................................... 23
- Annex 2 - List of reference literature and documents consulted ........ 27
  - FAPIM related documents .......................................................... 27
  - P&S related documents .............................................................. 27
  - FFS related documents .............................................................. 27
  - Other literature ......................................................................... 28
- Annex 3 - Persons interviewed and consulted .................................. 30
- Annex 4 - Modifications in data collection ....................................... 31
- Annex 5 - OECD/DAC Evaluation Criteria ....................................... 31
- Annex 6 - Overview FAPIM and P&S .............................................. 32
- Annex 7 - FFS Curriculum ............................................................. 33
- Annex 8 - CARE’s Women’s Empowerment in Agriculture (WEA) Framework ......................................................... 34
- Annex 9 - Farmer Field School Quality Control Matrix ................... 34
LIST OF ABBREVIATIONS

AENA  National Association for Rural Extension
AESA  Agro-Eco-System Analyses
CA    Conservation Agriculture
CARE  Cooperative for Relief and Assistance Everywhere
FAPIM Forestry and Agriculture Program in Mozambique
FFS   Farmer Field Schools
PARP  Plano de Acção para Redução da Pobreza (PARP) 2011-2014
       (Mozambique’s Poverty Reduction Plan).
P&S   Primeiras e Segundas
SSA   Sub-Saharan Africa
WEA   Womens Empowerment in Agriculture
WWF   World Wildlife Fund

EXECUTIVE SUMMARY

Formative Evaluation of Farmer Field Schools as Rural Extension Methodology in CARE’s Programmes FAPIM and Primeiras and Segundas

<table>
<thead>
<tr>
<th>Programmes</th>
<th>FAPIM and Primeiras e Segundas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementing partners</td>
<td>CARE, WWF and AENA</td>
</tr>
<tr>
<td>Programme locations</td>
<td>Nampula province, Mozambique</td>
</tr>
<tr>
<td>Focus of evaluation</td>
<td>Farmer Field Schools</td>
</tr>
<tr>
<td>Field work</td>
<td>12th – 21st of September 2012 in Meconta, Ancoche and Moma districts including 5 FFS.</td>
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</tbody>
</table>

Purpose of evaluation

FFS were implemented as a rural extension methodology in four of CARE, Mozambique’s programs during last year’s farming season. This report aims at evaluating the first year’s achievements and limitations in order to find areas of improvement for coming years’ implementation of FFS.
Methodology

Fieldwork covered 5 FFS and interviewees were selected to represent a balanced number of men and women and also to assure that at least two younger farmers were included at each FFS. Semi-structured interviews were held with a total of 43 farmers: 13 women and 16 men who are currently members of the FFS; 4 previous members of the FFS (3 women and 1 man); and 10 non-members (5 men and 5 women). Interviews include small group interviews, separated by gender, with FFS members and individual interviews with non-members of the FFS, previous members and FFS extension workers. Also CARE/WWF staff and internal documents related to the programmes and FFS were consulted.

Background

Agriculture productivity is low in Mozambique and agriculture is to a large extent rain-fed, un-mechanized and subsistence-based (Nkala et al 2011). Traditional farming practices are not environmentally sustainable and consist of the frequent clearing of new land using slash and burn techniques and an intense land use during 2-3 years until soil fertility decline and new fields are cleared.

The FFS (Farmer Field Schools) are implemented in the FAPIM and P&S programmes as a link between CARE and the target group of poor farmers, especially women, to disseminate new crop varieties and encourage hands-on practical experimentation with CA (Conservation Agriculture). The FFS in the two programs share the same curriculum and are also facilitated by the same extension organization; AENA (National Association for Rural Extension).

Main findings

Relevance - with respect to present national policy and objectives, as teaching methodology in relation to conventional extension service and in terms of techniques taught.

Farmers join the FFS with expectations to learn new farming techniques and to increase their agriculture production and also their incomes. The extension methodology seems to be relevant and in general are participating farmers as well as extension workers positive towards the FFS. Also the farming techniques taught at the FFS seem to be relevant for the target group both in terms of compliance with national poverty reduction policies as well as in relation to the context and the target group’s pre-conditions. Yet, since only one FFS year has been concluded and it is difficult to compare learning outcomes after just one year, these findings should be further examined.
**Effectiveness** – to reach the target group, to disseminate farming techniques and improved plant varieties outside the FFS, to transform knowledge about CA into practice on farmers’ private fields and to create independent FFS.

FFS members showed capacity to in detail explain what they have learned and why they apply the different techniques. They also seem to, at least partly, apply their new skills on their private fields and it was confirmed that they also teach other farmers the new techniques. The improved seeds do not, on the other hand, seem to have spread outside the FFS and also to a very limited extent between FFS members. What still is not achieved is independent, farmer-led schools and the FFS groups are instead dependent on the lead and motivation from the extension worker. The FFS are also not yet as community owned as intended and participation in the schools was strongly related to membership in the previously established farmer associations. Also attendance rates have been reported to be lower than desired.

**Sustainable continuation and ability to generate a sustained and widespread practice of CA techniques**

The sustainability of the FFS depends on the continued participation of farmers and although there is a negative trend in the association’s membership, there are also some indications that the FFS will gain new members. For the sustained and widespread usage of the CA techniques taught in the FFS, the techniques also have to be reached and adapted by community members who are not affiliated to the FFS. It is confirmed that the CA techniques are spread to other community members, but in which scale was outside the scope of this report.

**Gender** – It is yet early to identify impacts on gender relations and women’s empowerment as a result of the FFS. The FFS have however potential to improve women’s empowerment, especially if the FFS are implemented with a gender awareness and if topics especially relevant for women are added to the FFS curriculum. Yet, it was expressed to be more difficult to attract women to the FFS and that as a mean to increase the number of women, participating men were asked to bring their wives. Special attention should therefore be paid to women’s possibility to join the school.

**Monitoring** – Indicators and clear objectives of what is intended to be achieved with the FFS are lacking and would facilitate monitoring. The monitoring of the first year’s FFS was not
conducted as planned and there is no single person responsible for the coordination and monitoring of the FFS between the different programs.

To conclude, FFS as extension method seem to be a relevant extension methodology for the introduction and dissemination of new technologies in the communities. Both the school and its content have potential to be appropriate for the target group in the specific context and also to be a gender strategic approach. It however seems like farmers and extension workers need to become better adapted to the teaching methodology in order to gain the most out of it. This includes improvements in members’ active participation and attendance as well as in the monitoring of the schools.

For the further expansion of FFS, it would be useful to further consider;

- How to maintain and expand participation in FFS.
- How to improve active participation and farmer-led schools.
- How to assure the transfer of improved seeds and techniques to the broader community, including the most vulnerable community members.
- How to facilitate for women to participate and become active participants.
- How to empower women through their participation in the FFS.
- How to conduct a useful and cost-effective monitoring of all FFS.
1. INTRODUCTION

1.1. Purpose

CARE Nampula implemented the, for them, new agriculture extension methodology Farmer Field Schools (FFS) during the recently completed farming season of 2011-2012. In total were 33 FFS and 476 farmers incorporated in 4 of CARE’s programmes. Although the programmes have different main objectives, their FFS curriculum is the same and is also applied by the same local extension organization; AENA (National Association for Rural Extension). During the second year, the number of FFS will double to a total of 64 schools and the purpose with this formative evaluation is to learn from the first year’s achievements and challenges of implementing FFS and to develop recommendations for coming years.

1.2. Scope

The evaluation departs from the OECD/ DAC evaluation criterion; relevance, effectiveness, efficiency, impact and sustainability (OECD/DAC 1991)\(^1\). Considering that the evaluation takes place just one year after the implementation of the first FFS, the evaluation will not consider its development impact and also not its efficiency. The main focus of the evaluation will instead be on the extension methodology’s relevance and effectiveness, also its sustainability will briefly be mentioned. More specifically, the report evaluates CARE’s FFS’s;

- **Relevance**: with respect to present national policy and objectives, as teaching methodology in relation to conventional extension service and in terms of techniques taught
- **Effectiveness**: to reach the target group, to disseminate farming techniques and improved plant varieties outside the FFS, to transform knowledge about CA into practice on farmers’ private fields and to create independent FFS
- **Sustained** continuation and ability to generate a sustained and widespread practice of CA techniques

In accordance with the ToR (Terms of Reference), attention will also be given to *gender* aspects. Since only minor differences in men’s and women’s perceptions about the FFS were

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\(^1\) For definitions of the OECD/DAC evaluation criteria, see Annex 5
found\(^2\) and due to difficulties gaining reliable answers on gender related questions\(^3\), this section is however reduced in relation to its initial scale in the ToR. Also, since a few relevant issues related to monitoring of the FFS emerged during the writing of the report, also a paragraph related to the FFS’ monitoring has been added.

The evaluation covers 5 FFS, in two of CARE’s programmes; 2 in Meconta inland district (in Naburi and Meco) within the Forestry and Agriculture Program in Mozambique (FAPIM) and 2 in Ancoche and Moma coastal districts (in Nampizopi, Namaponda and Mecane) within Primeiras e Segundas\(^4\) (P&S). Field research was conducted between 11\(^{th}\) and 21\(^{st}\) of September 2012.

2. METHODOLOGY

2.1. Methods used

The evaluation is based on qualitative data collection which initiated with a literature review of FFS together with a review of internal reports and project documents. Fieldwork was conducted in 5 of CARE’s FFS between the 12\(^{th}\) – 21\(^{st}\) of September 2012 and included:

- Individual interviews with key informants including extension workers and program managers and supervisors
- Individual interviews and group interviews with 29 FFS members, separated by gender\(^5\)
- Individual interviews with 10 non- and 4 previous FFS members

2.2. Data collection

The FFS were selected as to cover two CARE programmes in two geographical locations; inland and coast, as well as to have at least one male and one female extension worker as

\(^2\) Indeed, this does not conclude that there are no such differences and continued attention to gender aspects in the FFS should be taken.

\(^3\) Most questions relating to men’s and women’s differences were met with what seemed to be defensive answers and are therefore difficult to analyse.

\(^4\) Run by an alliance between CARE Mozambique and WWF

\(^5\) All FFS were notified in advance that the interviews would take place and that 3 women would be interviewed in the morning and 3 men after lunch. Yet, due to misunderstanding about this, modifications in the original plan of data collection were made. For more details on this, see Annex 4.
facilitator at each geographic location. To capture different viewpoints about the FFS, the individual FFS members were purposely selected according to gender and age with the intention to interview an equal number of men and women and to always include one younger man and woman at each school.

Non-members were randomly selected in the communities with an intention to keep a gender balance and drop-outs were, due to their limited number, appointed by the FFS groups and extension workers. All 5 extension workers were interviewed and other key stakeholders were continuously consulted to answer questions and concerns that came up as new data was obtained. For more detailed information of the respondents, see Annexes 3 and 4.

Interviews were of semi-structured character and interview guides were used and followed semi-rigidly, allowing questions to be reformulated and also re-ordered in accordance to the conversation as suggested by Bryman (2008:456). When appropriate and when consent was given, interviews were recorded.

2.3. Data analysis and limitations

The collected data was transcribed and data from different stakeholders and FFS groups was continuously cross-compared as a mean to triangulate, and thereby increase the validity of the obtained information (Mikkelsen 2004).

An important limitation with the evaluation is that it was conducted when the FFS was in a break between two farming seasons. It was therefore not possible to make direct observations during a FFS session. Observations such as active participation, the dynamics and roles between members and between members and extension workers could therefore not been caught in the atmosphere of the FFS.

A further limitation is the language barrier. The author has a medium level of Portuguese, but not all respondents speak Portuguese, especially women are less likely to speak Portuguese. The extension workers therefore facilitated as translators from Emakua to Portuguese during the interviews.
3. BACKGROUND

3.1. Agriculture context

Despite being an agricultural based country, 40% of Mozambican children suffer from stunting which is a result of long-term under nutrition (Napica de Araujo et al 2008). Part of the problem is low agriculture productivity (Nkala et al 2011) which is aggravated by plant diseases and climate change affecting rainfall and temperature (MICOA 2003).

Farmers in Nampula province, like 80% of Mozambique’s smallholders, face restrictions to access productivity increasing inputs such as fertilizers, pesticides and improved plant varieties, and agriculture is to a large extent rain-fed, un-mechanized and subsistence-based (Nkala et al 2011).

The farming practices used are not environmental sustainable and consist of the frequent clearing of new land using slash and burn techniques which is followed by an intense land use during 2-3 years until soil fertility decline and new fields are cleared. To meet rising food demands to a growing population⁶ it is essential that agriculture productivity increase and that existing natural resources are used in a sustainable manner. Yet the number of public agricultural extension workers is insufficient to cover Mozambique’s vast area and numerous farmers (Uaiene 2011). Actors such as CARE Mozambique and WWF are therefore important for filling this service gap.

⁶Mozambique had a population of 25.5 million and with an population growth of 2.5% the population is estimated to have reached 35 million in 2025 (MICOA 2003).
**Mapa:** Nampula province, divided into districts. Source Governo da Província de Nampula.

### 3.2. Farmer Field Schools

**Concept of FFS**

FFS depart from participatory teaching methods and are especially adapted to adult learning. Farmers regularly visit the FFS where they experiment with different farming techniques and crop varieties in order to observe and analyse how and why different outcomes are generated, and as a result be able to make informed decisions about their farming techniques. (Davis et al 2010) Team- and leadership building activities are also included in the curriculum as a further mean to increase social capital and build stronger community ties and with the aspiration that farmers can continue sharing knowledge also after the official graduation from the FFS (Braun et al 2006).

The first FFS started in Indonesia with the purpose to assist farmers with pest management. Today, FFS exist in several countries all over the world and is apart from pest management used as training method in livestock rearing for training in productivity increasing farming methods and in soil conservation as well as for social and health issues (Braun et al 2006). FFS were first introduced in Mozambique in 2001 and considering the limited usage of pesticides in Sub-Saharan Africa (SSA), has focus of FFS in the region instead been on production and resource management (Braun et al 2006).
FFS within FAPIM and P&S programmes

Within CARE’s programmes, the FFS are implemented as a link between CARE and the target group to disseminate new crop varieties and knowledge about Conservation Agriculture (CA\(^7\)) and thereby be an entry point for farmers to adopt CA techniques on their own fields. With these improved natural resource management skills taught at the FFS it is expected that agriculture production will increase, that negative impacts from draughts and cyclones is reduced and that an improved nutrition and higher level of food security is gained\(^8\). For a brief overview of the programmes’ objectives and expected outcomes see Annex 6 and for more details on CARE’s FFS curriculum see Annex 7.

4. MAIN FINDINGS

4.1. Relevance

Relevance with respect to present national policy and objectives

In Mozambique’s Action Plan for Poverty Reduction for 2011-2014 (PARP II), is the objective *Increase agriculture and fishery production and productivity*\(^9\) ranked as having highest prioritization among development areas in the country. More specifically, the following priorities are identified as important for increasing agriculture productivity: *improve and increase access to production factors, facilitate access to markets and improve sustainable management of natural resources (land, waters, fisheries, forests)* (PARP 2011:19). Being a school where soil conservation technologies are taught and improved plant varieties are disseminated, the FFS approach should be considered as relevant with respect to present national development policy and objectives.

Relevance as rural extension methodology in relation to conventional extension service

In general are participating farmers as well as extension workers very positive towards FFS. It is expressed that farmers learn more skills in comparison to the previous rural extension service they have experienced, and more importantly, that they also understand why to apply

\(^7\) According to FAO’s (2012) definition, CA consists of 3 components; minimum soil disturbance, crop rotation/association and organic soil cover. In the evaluated FFS, CA is introduced as the usage of dead cover crops, no tilling together with plant rotation and intercropping cassava with legumes.

\(^8\) Nutrition has not yet been introduced as a specific component in the FFS, but it is a future aspiration to increase nutrition’s importance in the FFS curriculum.

\(^9\) Author’s translation.
the different techniques. The demonstrations, comparing observations and discussions are mentioned by extension workers as well as FFS members themselves, as important elements for the learning. Yet, since only one FFS year has been concluded and it is difficult to compare learning outcomes after just one year, these findings should be further examined.

**Relevance of techniques for the target group**

Farmers join the FFS with expectations to improve their livelihoods. They want to learn new farming techniques and to increase their agriculture production and also their incomes. On the other hand, the reason for not participating or leaving the FFS, were quite varied; some key rationales included poor health, lack of food in the household, internal relations in the groups, lacking interest, lack of financial compensation and lack of time to participate.

It was found that in one group, approximately 20 adolescents in grade 8 had spontaneously joined the FFS and assisted the sessions during the year. The adults in the group were keen to explain that they wanted their youth to participate also in the future.

Regarding the target group’s common farming methods and limited access to inputs and tools, the techniques taught in the FFS seem relevant in terms of accessibility as well as ability to improve yields. A further proof of the technologies’ relevance is that non-members of the FFS, are asking FFS members for advice to be able to implement the same techniques.

Yet, one topic which still is outside the curriculum, and that was requested at two FFS, is commercialization of agriculture products. In these two schools, it was pointed out that as they had been able to increase production they now faced problems finding buyers. At one school it was mentioned as an example that 40 bags of groundnuts had still not been sold since they had not been able to find buyers offering a satisfying price.

**4.2. Effectiveness**

**Effectiveness to reach the target group**

Despite that the FFS are open to the entire community was membership of the schools strongly related to membership in the previous established farmer associations and in none of

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10 The indicators, marked in italics, are taken from the Quality Control Matrix in the FFS curriculum and can be found in Annex 9.
the 5 visited FFS had non-members of the associations joined the school. This was explained to be a result of the first year’s implementation strategy, which mainly focused on the associations. Yet, it appears to be a tendency that non-members of the farmer associations believe that the FFS belong to the association and that other community members would not be welcome to join.

**FFS attendance should be at least 80%**

Since no FFS sessions were attended for this evaluation, this could not be controlled. Indeed, in previous monitoring reports of the FFS, low attendance rates have been reported. It is also understood that not all members stay during the entire session, and thereby miss the last part which includes the Agro-Eco-System Analyses (AESA) and which is essential for drawing conclusions of the advantages between CA and farmers traditional practices.

**Effectiveness to disseminate farming techniques and improved plant varieties outside the FFS**

*Participating farmers should easily be able to articulate what they learned from the FFS.*

Through the interviews it became clear that most respondents were able to individually explain in detail what they have learned and why they practice certain techniques. Since CA techniques have been taught to the same farmers before, the techniques are not completely new to them. Yet, a male farmer expressed that when starting the FFS, it was difficult to participate actively in the FFS sessions, but now they are all confident and able to explain why and how to apply the different techniques. FFS participants also show capacity and to a large extent, eager to share their skills with other farmers and a majority of the interviewed FFS members confirm that they already have taught others. On the other hand, the spread of improved seed varieties among FFS members appeared to be more limited and also to vary between the different schools and especially the interviewed groups in P&S FFS expressed that they had not receive sufficient seeds for private use. According to CARE’s regional coordinator in Nampula, that is contrary to the initial plan which anticipated that all FFS participants would have private access to the introduced varieties already during the first year of implementation. Due to the limited spread of seeds between members within the FFS, the
spread of improved plant varieties to other community members appeared to be close to non-existing.

**Effectiveness to transform knowledge about CA into practice on farmers’ private fields**

Respondents frequently reported their personal practice of cover crops, intercropping and planting in rows. The practice of no tilling was however less commonly mentioned. This is also noticed by AENA FFS manager, who explain that no tilling is the most difficult component to introduce and believes it is related to farmers’ urge for immediate results and also the fact that they not yet feel confident about the effects of not tilling.

**Effectiveness to create independent FFS**

- **Farmers should be able to take the lead in collecting data from the field trials with minimum support from the facilitator**
- **Management decisions are made and carried out by the farmers based on the AESA**

Farmers’ management decisions and lead in data collection on the field was not possible to be observed in a FFS session since, as mentioned above, the FFS season was in a break. The general impression is however that despite having trained demonstrators\(^{11}\) in the groups, most FFS have still not become farmer-led schools. Instead of having a role as mere facilitators, the extension workers are seemingly still key persons for mobilizing FFS members and for bringing new ideas to the schools. Only two groups described how they learn as a group together with the extension worker and despite confirming that the group members will continue using CA techniques if no longer receiving assistance from the extension worker, it is unclear if the FFS groups would continue as a FFS without the extension worker. Since the role of the demonstrators still is limited, it therefore seems to be possible to expand their role, who despite being unpaid might find other rewards in their role, as described in Duveskog et al (2011) case study from Kenya.

\(^{11}\) Demonstrators are unpaid community members who are selected by the community and who receive additional training by CARE and are intended to be important for the continued learning of the FFS groups.
An implemented strategy to transfer well-organized FFS’s good practices to others is the use of exchange visits. During last year, one of these was carried out in FAPIM and four in P&S. These exchanges require vast coordination work, and thereby resources, but are described to be useful and they also seem to be desired by the FFS groups. In fact, a few groups expressed disappointment over the not yet realized exchange visits they were promised in the beginning of the year.

4.3. Sustainability

**Sustained continuation of the schools**
There seem to be a tendency of declining affiliation to the FFS, and also to the associations. In particular at one school it was articulated that women left because of their difficulty to divide their limited time between the private field, the household and the FFS. On the other hand, the reason men left the FFS was understood to be more related to the absence of financial compensation for their participation. This latter issue was described to be a problem of an insufficient understanding of the concept associativism and the function of the FFS. These misunderstandings and drop-outs from the FFS can become problematic for the sustainability of the FFS and it was pointed out that the issue of members leaving the school when they confirm that there is no financial compensation has a tendency to also discourage the remaining members in the group.

Despite these observations, at 2 schools it was believed that the number of FFS members would increase during next year. It was explained that more community members are likely to join the FFS when the schools become more known in the communities and especially when FFS members’ increased yields are observed.

**Sustained and widespread usage of CA techniques**
For the sustained and widespread usage of the CA techniques taught in the FFS, the techniques have to be reached and adapted also by non-members of the FFS. As mentioned above, farmers confirm that they teach other community members CA techniques, it was however outside the scope of this report to verify the extent of this spread and by whom CA techniques are implemented and this should be further investigated as the FFS continue.
4.4. Gender

Participation

If this is a mixed gender group women are leading at least 50% of activities, discussions and decisions

If this is a mixed gender group women’s voices account for at least 50% of the discussion.

It resulted difficult to gain an understanding of the gender balance in men’s and women’s active participation without attending a FFS session. Yet, from interviews with extension workers it was understood that especially in groups were men are in minority or less frequently attend the FFS, it appears like women are taking leading roles in discussions and analyses. In the schools were men were more dominating, it appeared that women had become more active in discussions by the end of the FFS year. Indeed, the fact that a few and strong women take on leading roles in FFS does not avoid that some women, and in particular the younger ones, are more shy and less actively involved in discussions.

Attracting women

Extension workers expressed difficulties attracting women to the FFS and it also appeared to be more difficult to recruit women as demonstrators and extension workers. During interviews it was observed that although the FFS consists of married as well as unmarried and widowed women, all of the interviewed women who were married participated together with their spouse. One extension worker’s strategy to attract more women to the FFS was explained as asking men to bring their wives to the school. This might be a valid gender strategy if it allows more women to participate, but it also risks excluding female-headed households and married women whose husbands are not interested in participating in the FFS. Furthermore, it also reduces the number of households reached by the FFS.

Potential gender strategy

The CA techniques taught at the FFS have potential to reduce the time women and men spend in agriculture activities and the typical female chore of weeding was reported to be reduced as an effect of the CA techniques applied. Duveskog et al (2012) and Braun et al (2006) point

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12 This was especially the case in Angoche, where men are dedicated to fishery and therefore give less prioritization to farming and the FFS.
out that the FFS also has potential to be a space to build relationships and to gain habits of sharing ideas as well as making decisions and become confident of individual capabilities and skills. These are all important aspects for increasing women’s empowerment. Additional FFS activities which have potential to empower women, are activities particularly adapted to women’s needs and typical chores such as nutrition, raising poultry and holding home-gardens (Callens and Gallagher 2003). When asked if nutrition and alimentation would be useful topics in the FFS, both FFS members and extension workers agreed.\(^\text{13}\)

Considering the above, the FFS therefore have potential to improve the three domains; agency, relations and structure, which are identified by CARE’s Women’s Empowerment in Agriculture (WEA) framework\(^\text{14}\) to be core areas of influence when aiming at a development impact for women and girls. Yet, specific strategies of how to improve women’s empowerment through the FFSs together with more training in gender awareness of the staff working with the FFS to is likely to be required to increase this impact. Brambilla (2001) argues that projects should be planned so that gender issues are taken into considerations at every stage and that a gender analysis continuously is applied.

**4.5. Monitoring**\(^\text{15}\)

According to the FFS curriculum should weekly AESA and monthly Quality Controls be conducted to monitor the FFS’s performance. The AESA monitors the agriculture outcomes from the different farming techniques applied and should be conducted by the extension worker and the FFS members. The Quality Control consist of 12 indicators\(^\text{16}\) which measure participation and performance in the school and should be conducted by each programmes’ supervisors. It was however found that the AESA was not conducted as frequently as planned, and the Quality Control was only conducted quarterly in FAPIM and never in P&S. Further, the collected data has not directly been used to improve the methodology.

CARE’s district coordinator confirms that the monitoring of the FFS need improvement and points out that one person should be responsible for the coordination and monitoring of all

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\(^{13}\) Those who showed less interest, argued that they already had received information from the AENAs extension worker or by other projects such as Save the Children.

\(^{14}\) For a description of the three domains, see Annex 8

\(^{15}\) This section is partly complemented after consultation and feed-back with CARE staff during the revision of the first draft report.

\(^{16}\) The Quality Control Matrix which can be found in Annex 9
FFS. At this point it is however difficult since only one of the programs with FFS would have a budget for such monitoring.

Farmer Field Schools are seemingly an appropriate component in the two programs, but no specific strategy of how the FFS are intended to contribute to the achievement of expected outcomes and program objectives is developed. Since many actors in different organizations and in different geographical locations are involved in designing and implementing the FFS, specific objectives and indicators that are written down and accessible to everyone would facilitate the sharing of joint expectations and procedures of the FFS. Also strategies of how to maintain and expand participation in FFS and how to reach the most vulnerable with knowledge and skills would be useful for improving the FFS’s outcomes, especially in the long run.

Indicators, which are specific, measurable, attainable, relevant and time-bound (Mikkelsen 2004:164) and which measure the FFS three main objectives;\(^\text{17}\) farmers increased agriculture production, improved food and nutrition security and long-term adaptation of conservation agriculture, would enable the comparison between actual and expected performance and outcomes and thereby facilitate the monitoring of the FFS’s development (Quinn 2011). Bramilla (2001) also underlines the importance to follow projects development with qualitative monitoring and evaluations of why or why not goals are met and a continued qualitative collection of the FFS development will be important for improving the FFS approach.

5. CONCLUSIONS

Farmers join the FFS with the expectation to improve their livelihoods; they want to learn new skills and improve their farming techniques but it is also clear that they join with an aspiration to increase their income. The reasons not to join the FFS, or to leave it, were more diverse and included among other things personal difficulties, internal relations in the groups, lacking interest, lack of time to participate and also disappointment over lacking financial compensation.

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\(^{17}\) As summarized by Delphine Pinault in November 2012.
It appears like the knowledge gained in the FFS is more profound than after previous extension interventions and that farmers understand why it is beneficial for them to practice the introduced techniques. This also allows them to be confident in transferring the knowledge to other farmers in the community. As no FFS session was able to be attended during this evaluation it was difficult to gain an understanding of men’s and women’s contribution and active participation in the FFS sessions and this, together with the relationship between the FFS leaders and regular members should be further investigated during the new FFS season.

Since farmers in the communities, including non-members of the FFS, observe that yields increase and that they are able to reduce their labour input when adapting CA techniques, other community members have showed interest in learning and adapting the techniques taught at the FFS. The extent of this knowledge sharing is however not explored in this report.

It is also unclear to what extent the FFS members are leading implementation of experiments and analyses. Yet, the overall group independence seemed to vary between different schools, depending on their internal dynamics and motivations. At this point, the groups still seem to be dependent on the extension worker’s presence, both in terms of technical issues, but also in terms of mobilizing and motivating the group.

Monitoring of the FFS has not been conducted as frequently as intended and despite a limited budget, increased monitoring of the FFS is recommended. Also, for the further expansion of FFS, it would be useful to further consider;

- How to maintain and expand participation in FFS.
- How to improve active participation and farmer-led schools.
- How to assure the transfer of improved seeds and techniques to the broader community, including the most vulnerable.
- How to facilitate for women to participate and become active participants.
- How to empower women through their participation in the FFS.
- How to conduct a useful and cost-effective monitoring of all FFS.

To conclude, FFS as extension method seem to be a relevant extension methodology for the introduction and dissemination of new technologies in the communities. Both the school and its content have potential to be appropriate for the target group in the specific context and also
to be a gender strategic approach. It however seems like farmers and extension workers need to become better adapted to the teaching methodology in order to gain the most out of it. This includes improvements in members’ active participation and attendance as well as in the monitoring of the schools.

6. RECOMMENDATIONS AND LESSONS LEARNED

Lesson learned
A majority of FFS participants confirm that they teach other community members the skills they learn in the FFS and they seem to like it and be proud of being able to transfer their knowledge to others.

Recommendation
Considering many FFS participant’s enthusiasm to teach others, there seem to be a possibility to expand the usage of community-based demonstrators, both within the school and also to encourage them to spread their knowledge and experiences to the broader community.

Lesson learned
In comparison to previous extension methodologies, FFS participants are more active in the learning process and they gain a more profound knowledge, with a seemingly less need for repetition. Yet, different FFS have reached different levels of maturity, both in terms of independence, group dynamics and in learning and adapting CA techniques.

Recommendation
Considering the potential to transfer new ideas and good practices between different groups via exchange visits and also the expressed eager of many groups to participate in these, it is recommended that the exchanges continue, and increase in number, if possible. In addition and also regarding the point above, it is also recommended that it is further investigated how the demonstrators together with the FFS members can take on a greater responsibility in relation to the extension worker to further increase the groups’ independence.

Lesson learned
FFS require quite a lot of time from participants which was mentioned as a restriction for some farmers’ participation and frequent attendance. This can especially be a problem for women with large households to take care of.
Recommendation
Each group is different and has different preferences and in order to enable farmers to combine FFS with other chores and thereby increase attendance rates it is recommended that the FFS become more responsive and flexible to community habits and ways of working. This can for example include members’ participation in the decision of when in the week the FFS meet and also the possibility to coordinate that refreshments can be provided to participants if the FFS are coinciding with the time when lunch is prepared.

Lesson learned
Disappointments of not being paid for participating in the FFS was raised in most communities which seemed to be a consequence of an insufficient understanding of the meaning of associativism and the purpose of the FFS.

Recommendation
Clear messages about the significance of associativism as well as the objectives behind and the benefits of participating in the FFS is recommended to be given to all FFS participants before starting the school. These are also recommended to be repeated and clarified during the year in order to avoid misunderstandings and discouragement within the groups. Clarifications should also include the issue of payment as well as if commercialization and other topics of interest to FFS participants will be included at a later stage, or if it is outside the scope of the schools.

Lesson learned
In one school a group of youth were also participating in the FFS.

Recommendation
If CARE is interested in integrating youth in the FFS, the level of interest in other communities should be investigated. In the same area as CARE implements FFS, the project SCIP is currently working with junior FFS and consideration to their work should be taken if looking into the possibility to also include youth in CARE’s program.

Lesson learned
FFS hold potential to increase women’s empowerment, yet, women’s active participation and possibility to hold leading positions within the FFS is less evident. There are also registered time and social restrictions to attract women to the FFS.
**Recommendation**

It is recommended that CARE’s Women’s Empowerment in Agriculture (WEA) framework is used as a tool for constantly analyzing how FFS affect gender relations and women’s empowerment and how activities and strategies can improve to better meet women’s needs, such as adding topics, particularly beneficial for women. In order for the WEA to be a useful tool it is also recommended that CARE’s and AENAs staff become further trained in gender awareness.

**Lesson learned**

The monitoring of the FFS was not conducted as frequently as intended during the first year’s FFS.

**Recommendation**

It is recommended that the AESA and the quality controls are conducted as intended so that the extension workers’ and FFS members’ progress and adaptation to the methodology becomes closer followed and if needed, facilitated by the programmes’ staff.
ANNEX

Annex 1 – Terms of Reference

Date: 14/09/2012

Terms of Reference

“Formative Evaluation of Farmer Field Schools as Rural Extension Methodology in CARE’s Programmes FAPIM and Primeiras and Segundas”

Evaluation purpose

Despite being an agriculture based country 40 % of children suffer from stunting, a result of long-term malnutrition Napica de Araujo et al 2008). Part of the problem is the low agriculture productivity and climate change affecting rainfall and temperature as well as plagues and plant diseases are further obstacles confronting farmers’ livelihoods and nutrition. To meet rising food demands to a growing population it is essential that agriculture productivity increase and that existing natural resources such as fertile land, forests, fishing waters and mangroves are used in a sustainable manner.

With new technology such as new crop varieties and soil conserving farming techniques, CARE Mozambique and WWF aim to improve farmers’ resilience to these increasing challenges and demands and the FFS (Farmer Field Schools) are introduced as a mean to reach farmers with these improved technologies. FFS is a new extension methodology for CARE, Nampula and has recently completed its first year in 4 of CARE’s programs. This evaluation will focus on the FFS implemented in two of CARE Mozambique’s programs; Forestry and Agriculture Program in Mozambique (FAPIM) and Primeiras e Segundas (P&S). The first year’s implementation included 33 FFS and 476 farmers, but will during the second year expand to a total of 64 schools.

Although the two programs have different main objectives, their FFS curriculum are the same and are also applied by the same local extension organization; AENA (National Association

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18 Mozambique has an estimated population growth of 2.5%. In July 2012, Mozambique had a population of 25.5 million which is estimated to have reached 35 million in 2025 (MICOA 2003).

19 Run by an alliance between CARE Mozambique and WWF.
of Rural Extension). Teaching methods, plant varieties and agriculture techniques used in the FFS are therefore the same.

The evaluation is formative and the purpose is to learn from the first year’s implementation of the FFS so that lessons can be learned and used for coming year’s implementation.

**Intervention background**

In contrast to knowledge transfer from an expert extension worker to a farmer, FFS depart from participatory teaching methods, especially adapted to adult learning, where experimental learning techniques are applied. Farmers regularly visit the FFS where they can experiment with different farming techniques and also with different crop varieties in order to observe and discuss how different techniques generate different outcomes and as a result make informed decisions over their individual farming techniques. A further characteristic of the FFS is the frequent gathering of community members who are able to share ideas and knowledge with each other and thereby build stronger community ties. Team- and leadership building activities are also included in the curricula as a further mean to increase the social capital and with the aspiration that farmers can continue sharing knowledge also after the official graduation from the FFS.

The FFS will be evaluated based on its *relevance, effectiveness and sustainability* as extension method for increasing small-scale farmers’ productivity and resilience to draught and erratic rain, while encouraging longer use of fields and reducing negative environmental impacts of shifting/slash and burn agriculture. Data from men and women will be separated in order to identify possible differences based on gender. The focus of the report is the FFS as extension methodology. Outcomes related to soil conservation and improved yields and incomes is therefore outside its scope.

**Evaluation questions**

1. Why (or why not) do male and female farmers participate in FFS; what objectives and expectations do participating farmers have when joining the FFS?
2. Is the FFS setting and participatory method of training an appropriate learning methodology for female and male farmers? (In relation to group extension? Do both
women and men feel that they personally contribute to the group’s learning and experimenting?

3. Are female and male participants learning new and to them useful skills?

4. Are women and men implementing the new techniques and improved varieties on their own fields? (Which and why/why not?)

5. If the funding for the extension agent would stop, would farmers continue to do experimentation themselves, or with others in their communities? What support would they need to continue?

Recommendations and lessons
Considering that the evaluation takes place one year after implementation of FFS within the projects, the FFS impact on participant’s livelihoods will be difficult to trace. Instead, recommendations and lessons learned will focus on teaching methods as well as participation level and a special focus will be on gender, and men’s and women’s possible differing participation as well as perception of the FFS approach applied.

Methodology
The report will be based on qualitative data from field visits and review of relevant literature including internal documents such as program descriptions and monitoring reports. Data from different stakeholders will be collected and triangulated so that the different perceptions about farmers learning, participation and implementation of skills gained in the FFS can be cross-compared and analyzed.

Field work will be conducted in 5 different communities where FFS has been implemented; Nampuri and Meco in Meconta district, Namizope and Namaponda in Angoche, and Mecane in Moma. Data will be collected through semi-structured interview with purposively selected FFS participants, non- and previous participants as well as key informants such as program supervisors and extension workers. An equal number of men and women will be interviewed and the sample will also contain younger farmers. Also the specific FFS will be purposely selected as a strategy to include schools from the two programs as well as to have one male and one female extension worker as facilitator at each geographic location.
Observations of the FFS sessions would have enriched the data, but since the evaluation takes place between two farming cycles and the FFS are therefore not running it will not be possible.

**Work plan and schedule**

The evaluation will be conducted between the 4th of September and the 10th of October 2012.

4th - 11th of September - Literature review and field preparations  
12th - 14th of September - Field work in Meconta  
17th – 21st of September - Field work in Angoche/Moma  
23rd of September – 9th of October – Writing report

Field work will be facilitated by CARE in Nampula, who supply transportation and field worker who can accompany in the communities and assist with translation.

**Reporting**

The first draft report, written in English, will be delivered to Lund University the 10th of October. A final version will be delivered to CARE Mozambique in Maputo, Nampula and Angoche, the alliance between CARE Mozambique and WWF and AENA no later than the 30th of November. The final report will also include a power point presentation with the main findings, available for CARE in Nampula and Maputo.
Annex 2 - List of reference literature and documents consulted

FAPIM related documents


P&S related documents


CARE –WWF Primeiras e Segundas Blog http://primeirasesegundas.net/


FFS related documents


Other literature


CARE International: About the Women’s Empowerment in Agriculture (WEA) Framework


Devereaux, S. and Hoddinott, J. (1993): Field work in developing countries. Lynn Reiner Publisher Inc. Colorado, USA


Evaluation of FF as Rural Extension Methodology


Annex 3 - Persons interviewed and consulted

<table>
<thead>
<tr>
<th>Name</th>
<th>Function</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan Mullins</td>
<td>CARE Mozambique – WWF</td>
<td>CARE Mozambique - WWF, Maputo</td>
</tr>
<tr>
<td></td>
<td>Alliance coordinator</td>
<td></td>
</tr>
<tr>
<td>Nicholas Dexter</td>
<td>Regional coordinator</td>
<td>CARE, Nampula</td>
</tr>
<tr>
<td>John Guernier</td>
<td>Program manager, P&amp;S</td>
<td>CARE Mozambique – WWF, Angoche</td>
</tr>
<tr>
<td>Jordào Matimula Junior</td>
<td>FFS manager</td>
<td>AENA, Nampula</td>
</tr>
<tr>
<td>Abdul Haje</td>
<td>P&amp;S Coordinator</td>
<td>CARE Mozambique - WWF, Moma, Pebane</td>
</tr>
<tr>
<td>Fátima Bernardo Jaime</td>
<td>Program officer, FAPIM</td>
<td>CARE, Nampula</td>
</tr>
<tr>
<td>Abdul Adelino Jahapo</td>
<td>Extension worker</td>
<td>AENA, Nampula</td>
</tr>
<tr>
<td>Esmeralda Antonio</td>
<td>Extension worker</td>
<td>AENA, Nampula</td>
</tr>
<tr>
<td>Benelito Adelino</td>
<td>Extension worker</td>
<td>AENA, Angoche</td>
</tr>
<tr>
<td>Joaquim Assani</td>
<td>Extension worker</td>
<td>AENA, Angoche</td>
</tr>
<tr>
<td>Magdalena Cipriano</td>
<td>Extension worker</td>
<td>AENA, Nampula</td>
</tr>
<tr>
<td>6 members</td>
<td>FFS</td>
<td>Escola Nova Aliança; Naburi, Corrane</td>
</tr>
<tr>
<td>2 non-members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 previous member</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 members</td>
<td>FFS</td>
<td>Escola Napothi Meco, Corrane</td>
</tr>
<tr>
<td>2 non-members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 members</td>
<td>FFS</td>
<td>Namizopi, Angoche</td>
</tr>
<tr>
<td>2 non-members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 previous member</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 members</td>
<td>FFS</td>
<td>Escola A vida começa assim Mpago, Namuatho, Moma</td>
</tr>
<tr>
<td>2 non-members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 members</td>
<td>FFS</td>
<td>Escola Gelo Sede; Namaponda, Angoche</td>
</tr>
<tr>
<td>2 non-members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 previous member</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11 key informants were interviewed and consulted; 5 program managers and supervisors and 5 extension workers (3 men and 2 women).

On village level were a total of 43 community members, including FFS members, non- and previous FFS members, interviewed. See table below for number of men and women and age groups.

### Interviewees in the FFS communities

<table>
<thead>
<tr>
<th>Ages</th>
<th>Members - women</th>
<th>Members - men</th>
<th>Non-members - women</th>
<th>Non-members - men</th>
<th>Drop out - women</th>
<th>Drop out - men</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-25</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>25-35</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

Evaluation of FFS as Rural Extension Methodology | 30
Annex 4 - Modifications in data collection

All FFS were prepared in advance that the interviews would take place and that 3 women would be interviewed in the morning and 3 men after lunch. Yet, due to misunderstandings and cultural factors, all respondents appeared at once at all FFS. This resulted in complaints of too much waiting. The interview method was therefore modified from mere individual interviews to a combination of short individual interviews and small group interviews, which separated respondents by gender to facilitate especially for women to express their opinions. This change allowed a reduction of total interview time, and although the initial plan suffered from this coordination problem, it was avoided that respondents would leave and go home. It was also a useful experience since it allowed for observation of group dynamics, which are important in the FFS, and which were not able to be directly observed due to the mentioned break in the FFS.

The intention was to interview an equal number of men and women but due to personal difficulties in one FFS (and a low general membership of women in the group), only one female member could participate. In another FFS, 4 instead of 3 men appeared and since it would have been impolite to turn down his offer to participate, it was decided that also he would be interviewed and included.

Annex 5 - OECD/DAC Evaluation Criteria

| Relevance | The extent to which the objectives of a development intervention are consistent with beneficiaries’ requirement, country needs, global priorities and partners’ and donors’ policies. |
| Efficiency | A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results. |
| Effectiveness | The extent to which the development intervention’s objectives were achieved, or are expected to be achieved, taking into account their relative importance. |
| Impacts | The positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended. |
| Sustainability | The continuation of benefits from a development intervention after major development assistance has been completed. Probability of long-term benefits. The resilience |
to risk of the net benefit flows over time (OECD/DAC 1991).

Annex 6 - Overview FAPIM and P&S

<table>
<thead>
<tr>
<th></th>
<th>FAPIM</th>
<th>P&amp;S</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall program objective</strong></td>
<td>Reduction of poverty and vulnerability of the population living in or nearby forests by increasing the sustainable benefits by communities from woodland resource.</td>
<td>To significantly increase food and livelihood security and opportunities for coastal inhabitants of northern Mozambique, with simultaneous increases in overall ecosystem productivity and renewal of the resource base.</td>
</tr>
</tbody>
</table>
| **Specific objectives**[^20] | • Promote sustainable agricultural and agro-forestry practices  
• Strengthen local communities in local government processes | • Ecosystems and livelihoods - To improve management of coastal marine and terrestrial ecosystems and develop sustainable livelihoods that rely on these ecosystems, in ways that are mutually reinforcing. |
| **Expected results and Key Deliverables**[^21] | • Improved agriculture productivity  
• Reduced post-harvest losses  
• Added product value | • Farmers adopt conservation agriculture and agro-forestry techniques that improve soil fertility and water retention, reduce erosion, increase yields of crops and timber products and maintain agro-biodiversity.  
• Farmers access seed and plant a greater range of food and cash crops that perform under diverse conditions, with a focus on drought and other impacts of climate change.  
• Farmers adopt low-cost but effective post-harvest |
technologies to increase quality and quantity of crops for home use or for sale.

| **Target group** | Poor natural resource dependent people living in or nearby forests in Meconta District located in Nampula Province in the northern part of Mozambique | Poor natural resource dependent coastal communities from Angoche, Moma and Pebane districts that live in priority landscapes within the overall Primeiras e Segundas biosphere^22 |

### Annex 7 - FFS Curriculum

The FFS curriculum, shared by both programmes, was developed by CARE staff from USA, Mozambique, Liberia and Sierra Leone during July and August in 2012.

The curriculum has five learning topics;

- Late Planting
- Weeds
- Soil structure
- Soil moisture and water infiltration
- Mulches

All topics have corresponding experiments to facilitate the understanding of CA practices in comparison to conventional practices.

In order for FFS participant to understand the basic science behind CA, a number of key topics; soil structure, water infiltration, effect of soil cover, humidity, erosion, weeds, soil organisms and cover crops should be included in all FFS. Other topics, such as taste tests, crop pest problems, fertilization strategy and other local topics are more flexible, and can be decided by each FFS.

Additional components of the FFS are:

- A Ballot Box test in the beginning of the farming cycle and one in the end to compare participating farmers previous and new skills.

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^22 P&S does not have a specific description of its target group. Instead and for the purpose of this summary, the above was described by program manager John Guernier to be the target group.
• Agro-Eco-System Analyses (AESA) to measure the development of agriculture conditions under CA and farmers conventional practice
• Farmer Field Day at the end of each farming cycle when all community members are welcome to the FFS field to observe and learn from the FFS participants.

Annex 8 - CARE’s Women’s Empowerment in Agriculture (WEA) Framework
For CARE’s rural interventions with an objective to make an impact on women and girls, CARE has developed a Framework for Women’s Empowerment in Agriculture (WEA). The framework includes the following 3 domains;

• Agency; women’s capacities as individuals to take action
• Relations; building relationships, coalitions and mutual support to expand agency and alter structures
• Structure; social norms and institutions that codify and reinforce gender relations at every level of society

Annex 9 - Farmer Field School Quality Control Matrix
Supervisor: _________________________             Date: _____________
FFS Facilitator: ____________________

<table>
<thead>
<tr>
<th>No.</th>
<th>Farmer Field School Activity</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Attendance is at least 80%.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The FP/CA and research plots are established and have signs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The FFS has all of the previous AESA available and farmers are referring to the past week to look at changes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>All materials (flip chart paper, colored pencils/crayons, plastic bags, etc.) are available at the FFS.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>If this is a mixed gender group, women are leading at least 50% of activities, discussions and decisions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>If this is a mixed gender group, women’s voices account for at least 50% of the discussion.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Farmers are taking the lead in collecting data from the field trials with minimum support from the facilitator.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Each farmer group prepares and AESA after field investigations and presents their findings to the larger group.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Management decisions are made and carried out by the farmers based on the AESA.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>At least one team/leadership activity is facilitated AND discussed among the farmers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>The farmers can easily articulate what they learned from the previous FFS.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>The FFS fields are successfully protected from livestock.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: This quality matrix should be completed by the supervisor for each FFS at least once per month and discussed with the FFS facilitator.