European Union

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IFAD
Investing in rural people

WFP World Food Programme

PROGRAM MDG1c

REDUCING HUNGER IN MOZAMBIQUE

MDG1C

CASE STUDY

Farmers Field Schools

Rationale

The Programme MDG1c support to the Mozambican Agricultural Extension system through its Result Component 3 served a purpose. While the Farmer Field School (FFS) approach had been introduced by Food and Agriculture Organization of the United Nations (FAO) around 2005, the FFS approach had never become the mainstream methodology of public agricultural extension in the country. After the halting of the PRONEA (Programa Nacional de Extensão Agrária) of the Ministry of Agriculture and Food Security (MASA) in 2010, a new phase of support to the National Agricultural Extension was designed and implemented from 2013 onwards. The redesign of the PRONEA was to focus more on participatory extension, devolution of extension to the district level and promotion of a value chain approach. The Programme MDG1c support had as its main goal the provision of "relevant advisory services which are accessible to smallholder farmers", and intended to be aligned with the new PRONEA.

FFS as point of convergence for learning: The FFS approach as promoted by FAO had in the first place a strong integrating effect through its field demonstrations and experimentation creating an opportunity for members to learn together. It was also a point of convergence for other Programme MDG 1c Result Components: the FFS was the starting point for the demonstration and multiplication of new varieties under the RC 1 Seed sector promotion; members of FFS were often benefiting from the RC 2 e-voucher component for the purchase of inputs; the same applied to the RC 4 Newcastle Disease vaccination (NCD) and the RC 8 Post-harvest construction of the Gorongosa type of maize storage bins. Unfortunately, the idea of using FFS as entry point to deliver the component of Nutrition Education (RC 16) was to a limited extent initiated in the last year. The converging character of the FFS as a nucleus of various activities not only significantly contributed to improved livelihoods, enhanced productivity, more food and nutrition security but also creating more coherence between participating households. This was shown through the interest to formalize their FFS into a farmer association which was the case for almost half of the FAO supported FFS.

The coherence with some other Programme MDG1c components was less evident. Though there was a geographical overlap between FAO's activities with the International Fund for Agricultural Development's (IFAD) work under the PRONEA Support Programme (PSP) in fourteen out of seventeen districts, the effort to complement the two programme components was more incidental than systematic. The support through IFAD was much more focusing on institutional strengthening of the staff of the Agrarian Extension Departments at provincial and district levels and other service providers such as NGOs and private companies as well as unions of farmer organizations (for instance the National Farmers Union UNAC). Later on, FAO and IFAD/ PSP decided to create new FFS groups through their collaboration with the district SDAE extension staff.

Based on theories of adult learning, the FFS approach consists of organizing farmers into small groups of about 25-30 farmers (men and women) on a voluntary basis, with the goal to gain practical knowledge about relevant agricultural practices through field observation and experimentation. It stimulates interaction between the participating farmers to jointly assess, compare and evaluate new practices and to apply them in their own fields responding to their own household needs. Members of FFS in general come together on a weekly basis with the district extension officer and under the leadership of a trained FFS facilitator, who is appointed by the group.

FFS has demonstrated to be a successful approach to include all kind of topics for learning. Many different types of FFS have emerged that have integrated issues such as soil fertility management, pest control, nutrition, marketing, pastoralism and even health topics such as HIV/ AIDS.

Implementation

The Programme MDG1c RC3 Agricultural Extension consisted of two components, one implemented by FAO and one by IFAD through their PRONEA Support Programme (PSP). The FAO Farmer Field School Component lasted from 2013 till June 2019, whereas the IFAD/ PSP Component 3 Agricultural Extension Service Delivery at Provincial and District levels had a duration of five years from 2013 till the end of 2017.

The main approach of the FAO component was the promotion of the Farmer Field School (FFS) approach to agricultural extension. FAO has already started this approach in Mozambique more than ten years ago, but at a rather limited scale. The IFAD/ PSP component had a much wider array of extension activities including FFS, Result Demonstration Fields (CDRs), plant clinics, field days, and radio broadcasting of extension messages.

The FAO Sub-Programme activities covered 17 Districts in five Provinces (six in Manica, four in Sofala, three in Tete, two in Nampula and Zambézia each). PSP concentrated its activities in 42 rural districts of all 10 provinces. Fourteen out of seventeen of the FAO districts were also covered by PSP. Interestingly, under the DNEA/ PSP project FAO was hired to implement FFS in Nampula, Zambézia and Tete provinces and to draft the FFS Action Plan in 2017.

An important difference between the two Agencies has been the way Agricultural Extension has been promoted: FAO has done so through capacity development of public sector agents, whereas the DNEA/ PSP did so through outsourcing to private sector agricultural extension service providers and the strengthening of these service providers (private sector and NGOs) at district and provincial levels.

Achievements and contribution to outcomes

1. Institutionalization of FFS approach

Through the Programme MDG1c FAO and IFAD/ PSP support to Agricultural Extension, the FFS approach has been given a major push in the back throughout the country. In close collaboration with the National Directorate of Agricultural Extension (MASA/ DNEA), the capacities of government staff, in particular extension staff of the Regional (DPASA) and District (SDAE) offices, were strengthened about the FFS approach. More than 500 MASA staff (67 new extension workers; 181 retraining on FFS; IFAD/ PSP 263 staff) has been trained about the FFS approach of which around 50 have become a FFS master trainer. Extension material and equipment have been made available to MASA staff to fulfil their task. The IFAD/ PSP component has produced communication material - including FFS manual and leaflets - relevant for extension services that were designed to be used for the dissemination of useful technologies and good practices. The in-service training in so many districts is considered one of the successes in capacity enhancement of the public agricultural extension service. Extension workers believe that training was important in improving their skills in a number of areas, including Framer Field School (FFS) approach.

Beyond the capacity building of the public extension staff, an important element that further contributed to the success of the FFS approach has been the introduction of FFS facilitators. The FFS facilitator is selected by the FFS group members and is further trained in the principles of the FFS approach, serving as the link between the FFS members and the SDAE extension staff, and guides the practical work in the field. FAO has played an important role in the (re-)training of FFS facilitators. Both extension workers and the FFS members expressed their satisfaction with this arrangement.

In a number of instances, extension staff recruited through Programme MDG1c funding were confirmed by Government and integrated in the national public extension staff (examples are SDAE staff in Malema and Ribaué). However, limited financial resources in the public sector might be a future constraint to continue activities at the same level as under the Programme MDG1c and to further recruit extension staff to work with the FFS approach.

On the basis of good practices and lesson learned, the FFS approach has been incorporated in a National FFS Action Plan, to which FAO has provided technical assistance. MASA now recognizes the importance of FFS as an approach to strengthening farmers' capacity and also to promote sustainable agricultural development. The National FFS Action Plan will contribute to the further consolidation and scale-out of the FFS methodology throughout the country.

2. Farmer knowledge enhanced and practiced through the FFS approach

Farmers testify that gaining practical knowledge on agricultural techniques and exchanging about agricultural practices are to them the strong points of the FFS approach. Through the regular meetings in the demonstration plots and the possibility to compare with their own practice, they are able to observe themselves about the introduced technologies. As a result the farmers participating in FFS have observed the improved yields of better spacing of crops, of the use of cover crops, of the advantages of intercropping. Also the attention given in the FFS to organic fertilizing, the use of bio-pesticides and conservation

agriculture have proven to be beneficial to the members. During the various field visits to FFS in different provinces, every time farmers indicated that the results they had seen in the demonstration plot convinced them to try the acquired knowledge in their own fields as well. One evaluation study concluded that the FFS approach was the third contributing factor to positively influencing their agricultural production after certified seeds and input subsidies, but before fertilizer use.

According to the FFS Impact evaluation study there are statistically significant differences in performance between the Graduate-FFS groups (groups that have completed their learning cycle) and a control group. This difference in performance appeared for most cases of recommended practices and in all four provinces covered by the impact evaluation. For instance, average maize yield among Graduate-FFS members was significantly higher than among respondents in the control group with yield increases from about 19 bags of maize/ ha (non-members) to around 26 bag of maize/ ha for Graduate FFS group members. Farmers are also more aware of the different qualities of varieties they have tested in their demo fields. As a result they ask agro-dealers to provide them with a specific variety once they have a positive assessment of the qualities.

However, the FFS has less contributed to the development of diversification strategies with farmers as the main emphasis has been on maize and bean production and less focus on other crops relevant for nutritional and/ or economic purposes. For example, the promotion of livestock production was not included in any of the FFS whereas goats and cattle are important sources of income generation or nutrition-dense food. Despite the fact that FFS members benefited from the Newcastle Disease vaccination campaigns, this was not based on the FFS approach but a side activity concentrating around the activities by NCD vaccinators in the same community.

There are also specific achievements for the other components of the Programme MDG1c that were linked with and resulting from the FFS approach:

- Through the FFS a total of 1682 demonstration plots have been established to test the characteristics and enhance the knowledge of FFS members about the qualities of the improved varieties. Seeds of a total of 33 new varieties have been distributed to the FFS for demonstrations and for multiplication of certified seeds. As such the FFS demo fields served as an important step for farmers to get acquainted with the characteristics of these new varieties in a “risk-free” context, and to decide whether or not to apply in their own fields. The multiplication of seeds through some of the selected FFS groups contributed significantly to the further spread of improved and certified seeds of varieties thus far unknown to these communities.

Results FFS-FAO

Outputs

961
FFS (+20%)

25.775
farmers participating (+29%)

76
extensionists trained (+27%)

1682
demo plots

33
varieties tested…of which

21
adopted

5
bio-fortified varieties

441
FFS graduated

99
FFS with micro-project funding

Impact

FCS
+ 5,07
points

HDDI
+ 0,8
points

Out of the 33 varieties tested, 21 were adopted by the FFS members.

- The field demonstrations of improved varieties included five varieties of bio-fortified seeds of beta-carotene fortified maize (2) and iron-fortified beans (3), which have quickly been accepted and disseminated.
- The continuation of the FFS approach through the FAO GEF programme has also introduced the issue of the identification and dissemination of varieties resistant to climate change. The FAO GEF programme has been fully vested on the achievements of the creation of FFS groups in three provinces that were part of the Programme MDG1c.
- The core of the Newcastle Disease vaccination campaign were trained vaccinators who were often identified from within the FFS groups. However, the outreach of the NCD vaccination was in most cases much larger than FFS members covering several communities and depending on the interest of the NCD vaccinator to provide the vaccination service. The NCD vaccinator has become more or less a private service provider paid by a small sum per vaccination. The link to FFS has been rather weak.
- The e-voucher programme link to the FFS groups has also been incidental and not systematic. FFS members were approached to apply for the e-voucher scheme to purchase agricultural inputs (Seeds and/ or fertilizers), but also non-members could apply. In practice, only around 20% of the FFS members are reported to have participated in the scheme. This has been partially due to financial constraints at the programme level (insufficient budget), but also the threshold to pay an own contribution which appeared to be too high for many poor households. After an initial reluctance to participate, the e-voucher programme became more popular under the FFS members. As a result, FFS members had a higher productivity under the e-voucher scheme (RC2) than non-members with FFS members having 10%-17% higher yields than non-members, including the FFS members of the control group who did not receive a voucher.
- The Nutrition education approach has been barely linked to the FFS groups, though in some instances FFS members have received training and information about the nutritional value of the food they are producing and how this should be for the feeding of children and pregnant and lactating women. The idea of using FFS as an entry point to deliver nutrition education was only initiated in the last year.

In terms of gender, graduate FFS members point out the significantly better relationship between men and women in their communities. This is in particular related to the participation of women in decision-making within the group – women are often member of the FFS leadership – but also within their households where decision-making about resources is taken more jointly. However, the community organisation is assessed to be worse for graduate FFS members than for non-members. The particular reason for this situation is not clear.

Positive impact on food security and nutrition

In terms of Food Security, there appeared to be a better performance of Graduate-FFS members in all provinces, when compared to respondents in the control group, mainly during the most critical months of the year (the lean period from October to April). In each of the four provinces evaluated, there was an average improvement in the number of months of available food by 1-2 months on average. In particular, in Nampula province a substantial improvement was recorded in the months of November-April with differences in food security (sufficient food supply) from 0% (control) to around 60% (graduate FFS) in the month of February (MDG1c Impact assessment FFS component, Ochoa et al, July 2019).

This positive impact of the FFS component on Food Security is also reflected in the positive difference in the mean value of two main indicators used as proxy: Food Consumption Score (FCS) and Household Diet Diversity Index (HDDI). The FCS score of the group benefiting from the agriculture components around FFS (including seeds, e-voucher and/ or vaccination) is 5.07 points better than the control group. Similarly, the HDDI has improved by 0.7 point (on a scale 0-10 points) compared to the control group.

In terms of nutrition security, meaning the goal to contribute to the reduction of chronic malnutrition (stunting), there is no evidence that the FFS component had a significant effect on the nutrition status of children below 5 years old. One of the factors explaining the lack of impact on nutrition status, could be related to the poor coherence between the different MDG1c components including the lack of synchronization of the FFS component with other components including the nutrition education one.

Sustainability: from institutionalization to capacity to implementation of the FFS approach

One of the strong points of the FAO and IFAD/ PSP support to a more comprehensive approach to building a public agricultural extension system has been its focus on institutionalization, capacity building of relevant staff at different levels, and attention to the practical organization of the FFS groups.

In terms of institutionalization, the Farmer Field School approach has been enhanced and incorporated in the National FFS Action Plan for which FAO provided technical assistance. MASA now recognizes the importance of FFSs as an approach to strengthening farmers' capacity and also to promote sustainable agricultural development. This means that the Ministry through its extension department, its provincial offices and the district staff can further build on the good practices of five years of intensive implementation and the lessons learnt during those years. Training material and manuals have been developed and FFS Masters have been identified to further train local staff. This capacity building throughout the Ministry with support of contracted NGOs as well as the experience of FAO in Mozambique and other countries has greatly contributed as well.

It has also been realized that the FFS approach can be further expanded to certain topics previously not covered, for instance responding to climate change. From early 2017 onwards the FAO GEF project has continued the FFS approach in various districts (in Tete, Sofala and Manica provinces) responding to challenges in agricultural production as a result of climate change. A major emphasis is on the identification of varieties that are resistant to drought or that can resist higher temperatures. In particular, interviewed SDAE staff from various districts indicated that they were very pleased with the continuation of the FFS approach now under the umbrella of the FFS approach.

At the practical level, the sustainability of the approach has been substantially enhanced by the realization that FFS membership should be completely voluntary. The initial cash incentive to create FFS at community level through the transfer of money once the FFS was established, proofed to be a failure in many areas as participation appeared to be rather opportunistic. As a result a quarter to a third of the FFS was discontinued after one year, but once this practice was abandoned the continuity of FFS was much better. More recently established FFS that did not have this incentive, appeared to be less opportunistic and more sustainable reaching 80% of existence one year after creation.

The knowledge and capacities that have been created and vested at community level such as the FFS facilitators (and others - to some extent related to the FFS approach, such as seed producers, silo construction artisans, NCD vaccinators, or care group mothers) will to a certain degree allow the continuity of the activities around learning for agricultural development. Many of the trained persons at community level have gained the respect and trust of the communities and they are considered as knowledgeable persons who can be consulted about their acquired knowledge.

The effort to sustain FFS by formalizing and registering the group as farmer association has also proven to be a successful approach. FFS members were proud to share their status of graduation once they had fulfilled the requirements. The registration of FFS groups as farmer associations with the district authorities further expressed their interest to continue with their group. The micro-projects financed by FAO further has helped consolidating the FFS by providing an incentive for income-generation.

Best practices and lessons learned

The FFS approach is a good basis to integrate learning activities contributing to improved agricultural productivity: The FFS approach to bring together farmers – both men and women - has been a good starting point for learning. After seed improvement and e-voucher participation, farmers consider their FFS membership to be a major factor contributing to productivity increases, ahead of the use of fertilizer or SDAE extension services. However, though the other activities under the FAO programme (NCD vaccination, construction of post-harvest silos and nutrition education) were vested on the FFS approach they have not fully been integrated nor did they always use the same FFS learning approach. The FFS approach has thus only partially created synergy with these activities and strengthened the results of these components. The potential is there to use the FFS approach for further technology development than only variety testing of main crops as maize and beans.

Strengthening of FFS capacity at community level has strongly contributed to ownership of service provision: The building of FFS facilitation capacities at community level has proven to be a major factor to implement and to sustain activities . In the first place, knowledge and capacities were created at community level (such as vaccinators, FFS facilitators, seed producers, silo construction artisans, health committees, care group mothers) which will allow the continuity of the activities and the services linked to it. Many of the trained persons at community level have gained the respect and trust of the communities and they are considered as knowledgeable persons.

FFS Institutionalization: Strong focus on Capacity Development: A strong point of both the FAO and PSP activities to strengthen the FFS approach has been the strong focus on capacity development through the training of MASA and SDAE staff at different levels including FFS masters through in-service training. This approach is considered to be one of the successes in capacity enhancement of the public extension service. SDAE extension agents feel confident to train facilitators and monitor and guide the performance of the FFS groups. The capacity of the SDAE offices has been enhanced by the confirmation of many extension agents who have been trained in the FFS approach. Many SDAE extension staff indicated that the participatory approach of the FFS made them more aware of the specific needs of the farming community as there was more exchange, learning and discussion. This was far different from the previous extension approach of training topics identified at the SDAE office.

Positive results have created the ground for the mainstreaming of FFS in Mozambique: The good results of the FFS approach and the strong focus on capacity building has contributed to the mainstreaming of the FFS in Mozambique. MASA recognizes the importance of FFSs as an approach to strengthening farmers' capacity and also to promote sustainable agricultural development. The SDAE staff have expressed their increased confidence to work together with farmers based on their needs and not the Ministerial priorities. As a result, the FFS approach is now considered to be the mainstream agricultural extension approach which has been elaborated into a National FFS Action Plan to further mainstream FFS in other provinces and districts.

FFS establishment should be based on voluntary participation: The start-up phase of the FFS groups is a critical phase of gaining trust with farmers and properly manage expectations about the extension service that can be provided through the FFS approach. It has become clear that it was not a good way to start Farmers are genuinely interested in gaining knowledge to improve their agricultural production and do not need to be triggered by money. but micro-projects could help consolidating the FFS and provide incentive for sustainability.

Challenges and opportunities

Scaling-out will take time: The FFS approach has appeared to be a rather labour-intensive approach to agricultural extension as only a limited number of FFS can be trained by SDAE extension staff (on average 4-5 groups per extension worker). Scaling-out (expansion to more communities) of the approach will thus need a further investment in staff capacity. However, during the five years of working with the FFS approach substantial experience has been gained and a lot of FFS facilitation material made available which may contribute to further scaling-out of the approach.

Making the approach more comprehensive: The main focus of the FFS has been very much on the cultivation of maize and beans and the introduction of new varieties of these crops. However the FFS approach can be used for many more interesting opportunities and thus become more comprehensive and responsive to the needs of the FFS members. For instance, horticulture or livestock production have been left aside, and low-cost soil fertility maintenance and pest control have only been addressed in a limited way.

Representation of women in leadership or facilitation: Despite the fact that there has been a genuine effort to include women in leadership positions in FFS management or as a FFS facilitator, there is still an underrepresentation of women in these positions. In particular the FFS facilitators are almost exclusively men, despite the fact that almost half of the FFS members are women. It will be important to include more women in the leadership positions as more activities – such as chicken rearing or horticulture – could be included in the FFS learning activities once their voice is better heard in the FFS management or as facilitator.

Need to spread out the facilitation roles: During the field visits and meetings with FFS in several provinces, it appeared that FFS facilitators (M) are often also involved as NCD vaccinators and/ or silo construction artisans as well. This accumulation of positions is not desirable as in case of absence or departure the provided facilitation skills and services might be lost. It would be better to spread out the facilitation roles over more persons including women.