

Investment in Human Capital and Rural Economies Project



Annual Report 2020

Executive Summary

The “Investment in Human Capital and Rural Economies” project was launched in 2019 as a scale up to a pilot mobile phone project that was implemented in Kilifi county in 2016. This scale up project targets approximately 200 Farmer Based Organizations (FBOs) to supply food to approximately 100 Home Grown School Feeding Programme (HGSFP) schools through a competitive procurement process using a mobile phone platform (MPP). A baseline survey to benchmark the economic and production status of the target households was conducted. 387 farmers were interviewed and 69 key informant interviews completed. From the results, the main source of income was farming (69%) and the average land size was 3.9 acres. The survey revealed low production of crops demanded by HGSFP schools, which could be due to limited use of certified seeds (37%), fertilizers (42%) and lack of modern farming equipment. The main challenges experienced by FBOs were low demand for their produce (58%) and lack of price information (52%) thus the need to link them to new markets including the HGSFP. Further, 100 FBO leaders and 100 additional representatives of the FBO groups were trained to use the MPP to respond to bids by schools. The training was held virtually from June to September 2020 with strict adherence to the Ministry of Health guidelines on COVID-19. Mobile phones were sent to the field coordinators and distributed to FBO leaders before the training. Among the steps taught were how to register an FBO and its members in the MPP; FBO communication with members (via SMS); price information – access to market prices and; how FBOs can respond to tenders and place their bids.

Additionally, 140 teachers from Tharaka Nithi and Kitui Counties were trained on usage of the MPP to procure food for school children. The steps included registration of schools and mapping their physical location; managing members of the school meals programme committee; creating and publishing a new tender; receiving bids and notifying bidders on bid opening dates and venue; awarding the tender and notifying the winning and losing bidders. In line with the objective of building the capacity of smallholder farmers on food production, farmer representatives (196) were also trained on Good Agricultural Practices (GAP) from October to November 2020 in collaboration with the Ministry of Agriculture and Cereal Growers Association. The training focused on land preparation, crop nutrition and soil fertility, spacing and seed placement, management of weeds, pests and diseases. The majority of trained leaders have transferred the knowledge to the rest of the FBO members; 2887 farmers have been reached. FBOs will further benefit from grants to acquire production inputs such as certified seeds and fertilizers and equipment for post-harvest handling including proper storage. They were taught how to write proposals in order to get the grants. The proposals have already been received and a panel constituted to evaluate the proposals and give recommendations for funding. As a way forward, we endeavor to continue building the capacity of smallholder farmers to enhance their production and engage with the HGSF market competitively while building the capacity of HGSF school teachers on the mobile phone system for food procurement.

1 Introduction

The advent of COVID-19 presented uncertainties around the world. In Kenya, the first case was reported in March 2020. The government through the Ministry of Health developed a strategy to protect the citizens from the virus. Measures were put in place, including directives to work from home, restriction of movement into and out of the capital city Nairobi (the hotspot for the virus) and health measures including frequent washing of hands and sanitizing, wearing face masks and keeping social distance were advised. Although these measures helped to slow the spread of COVID -19, new infections and deaths continue to be reported daily.

Consequently, the project timelines were disrupted. Planned activities at the country office were affected and delayed for a number of months. PCD, together with our partner Mfarm, discussed and agreed upon a virtual training programme for farmer based organization (FBO) leaders on the mobile phone platform (MPP). A virtual pilot training was undertaken with a few farmer leaders per county (8-10 leaders) to determine whether it could be done successfully. It was concluded that virtual training could be effectively delivered by training small groups of up to 8 people at a time. Consequently, two leaders from each of the 100 participating FBOs in year one of the project (200 leaders in total) were trained over a period of 3 months.

Other activities including training farmers on Good Agricultural Practices (GAP) were put on hold until restriction of movement was eased. This is because the training called for physical interaction at the field level. Training of teachers on MPP usage was also delayed for several months due to disruption of the school calendar that rendered the teachers inaccessible. Despite these challenges, a number of activities were implemented successfully as outlined in the following sections.

2 Activities Undertaken During the Year

2.1 Baseline Survey

A baseline survey was undertaken to establish the status of food production, marketing capacities and income of smallholder farmers, and the status of food procurement in participating schools (activities in support of the overall project goal of assessing the current status of the target smallholder farmers, FBOs and the target schools participating in the Home Grown School Feeding Programme (HGSFP).

The survey took place in two phases; March 16th -21st 2020 and August 10th – 22nd 2020. Phase one was halted due to COVID -19 debut in the country where all travel outside and into Nairobi county was stopped as well as all meetings. At that time, there were heightened fears of the virus amongst the population and the data collection exercise could not have been done successfully. The survey resumed in August when the restrictions were lifted and meetings with small groups were allowed, with strict adherence to health guidelines, such as social distance and wearing of masks. Our partners, Cereal Growers Association (CGA) and Rafiki Participatory Development Partners, were instrumental in the survey; they helped to identify data collection assistants and participated in their training, mobilized the FBOs and their members for the survey and supported in supervision of data collection exercise.

Quantitative and qualitative research methodologies were employed in the survey. These comprised of key informant interviews and individual interviews with smallholder farmers and FBO leaders, observations and informed judgement. In total, 387 individual farmers' interviews, 69 Key Informant Interviews (KIIs) with head teachers and FBO leaders were done. Below is a summary of the key findings.

2.2 Summary of key findings

2.2.1 Sociodemographic profile of the respondents

- Majority of the targeted beneficiaries (68%) were women with an average age of 44 years.
- Most of the respondents (48%) attained primary school education as their highest education level which was deemed to be relatively low but adequate for participation in project activities.
- The main source of income for most of the households (HHs) was farming (69%). However, crop production and productivity were very low in the project area and this was attributed to factors such as poor farming methods, low use of certified seeds, fertilizers and pesticides, heavy reliance on rain fed agriculture, limited access and ownership of agricultural and farming tools and inadequate post-harvest management.
- The average HHs income was KShs 16,067 (USD 147.40) per month while the average monthly expenditure per HH was KShs 14,938 (USD 137.04) with non-food items comprising the majority of HH expenditure.

2.2.2 Production and Marketing

- Average size of land used for crop production was 3.9 acres (73% of land owned by HHs).
- There was minimal production of crops in high demand by schools under the HGSP such as maize (72%), beans (8%), cow peas (26%) and green grams (60%) and this was linked to low production yields.
- There was limited use of certified seeds (37%) as well as use of fertilizer (42%) in crop production which could have resulted to the low yields.
- The least used good agricultural practices were water conservation such as mulching (13.2%), farm planning /farm calendar (12.7%) and keeping farm records (9%). The more adopted practices were crop rotation (54.5%), mixed cropping (49%) and terracing (45%).
- Post -harvest losses were experienced by 25% of the farmers in the previous season.
- Most farmers (66%) sold their produce through middlemen or brokers which exposed them to exploitation; there was limited use of FBOs in marketing farmers' produce (5%).

- The main challenges facing farmers during marketing were; low prices for crop produce (92%) – associated with high reliance on middlemen and brokers, the high cost of transport combined with poor infrastructure (53%), and delayed payments from buyers (23%). Other challenges cited included; lack of price information (21%), lack of support from FBOs in selling produce (19%), absence of market (9%) and inability to meet quality requirements by buyers (17%).

2.2.3 FBO Profile

- A number of FBOs had been established in the three Counties and formally registered to support farmers in aggregation of produce and access to markets.
- While 77% of FBOs had access to storage facilities, only 39% had modern storage facilities; 45% used basic traditional granaries thus exposing farmers' produce to post-harvest losses.
- The type of equipment mostly owned included gunny bags (39%), tarpaulins (32%), weighing scale (26%), threshers/maize shellers (26%) and drying racks (16%).
- The main services provided by FBOs to members were in selling crop produce on behalf of members (61.3%), connecting members to markets (29%) and the leasing of equipment and facilities (9.7%).
- The main challenges faced by FBOs when selling produce on behalf of farmers were low demand for produce (58%), lack of price information (52%) and unpredictable prices in the market (51%).
- The surveyed FBOs had limited awareness and knowledge on the use of the MPP to market crop produce on behalf of the members, especially to the HGSFP.

2.2.4 Schools profile

- The survey established that primary schools in the 3 Counties were a huge market for maize, beans, green grams and cow peas under the HGSFP.
- However, maize and beans were the most in-demand type of crops in the project area with regards the HGSFP. Most schools purchased these food stuffs from wholesalers (64%), and traders (25%) based locally in each county through an elaborate tendering process. Eleven percent procured from farmers.
- Each school spent an average of KShs 118,350 (USD 1,085.78) per term on food.

- Only schools in Kilifi county were aware of the MPP for tendering of food commodities (learnt during the pilot in 2016) and therefore it was necessary for potential bidders to be aware of the platform.

2.2.5 Conclusions and recommendations

- There was generally a low agricultural productivity by households in the project area. This was mostly attributed to the poor traditional farming methods practiced by the farmers. There is thus a need for training on modern farming practices/GAP and follow up support to help farmers to undertake the training.
- A relatively low proportion of farmers owned modern farming equipment. Additionally, most farmers did not use recommended farm inputs such as certified seeds, fertilizers, and pesticides. This had a direct negative impact on agricultural production. It is therefore recommended that farmers be supported through linkage to affordable or subsidized supplies of farming equipment and inputs. This can be achieved by working in partnership with National and county Government agencies, Non-Governmental Organizations (NGOs) and other private sector agricultural suppliers through arrangements such as Public, Private Development Partnerships (PPDPs).
- Additionally, climate smart agriculture should be embraced. This will involve training farmers on water conservation and harvesting as well as the use of irrigation technologies. Indeed, it was found that most of the farmers practiced rain-fed agriculture which contributed to low production.
- There is also a need to link FBOs to new markets. The study found that very few of the sampled FBOs sold their produce to HGSFP schools. A major reason for this was the lack of awareness on how to access the HGSFP market. There is thus a need for training on marketing and particularly on the tendering process in relation to the HGSFP market.
- Finally, there is a need to focus attention on institutional strengthening of FBOs through capacity building and financial support for purposes of effective marketing. Further, it is proposed that FBOs could then be combined to form Apex Organizations which would be important to negotiate better prices for farmers, upscale marketing and increase access to inputs, capacity building and enterprise management.

2.3 Capacity Building (Training)

2.3.1 Training FBO leaders on mobile phone platform usage

The COVID -19 pandemic affected the training schedule for FBOs on the MPP. As a result, virtual training of FBO leaders after a pilot of a group of 10 leaders from Tharaka Nithi county was done. Our partners' (CGA and Rafiki) field staff were first trained on the platform virtually by Mfarm so that they could act as training assistants in the field. Smart phones already purchased by Mfarm

were sent to the field coordinators via courier and distributed before the training. The FBO leaders were also taught how to use the smart phone and interact via zoom.

Virtual training of FBO leaders from the three Counties was undertaken from 24th June to 30th September 2020. The necessary COVID -19 restrictions were put in place; small groups of farmers (up to 8 people) were trained at a time; they would assemble in an open area and ensure social distance was maintained; they wore face masks throughout the training. The trainer was supported by the local coordinators in the Counties who ensured that the trainees followed every step of the process and that all their questions were answered before the next step. He/she was instrumental in moderating the speed of the trainer and conducted a session summary before the group dispersed. During the training, simulation of the tendering process on the MPP was done where the Programme Coordinator and the Project Intern logged into the platform as HGSF schools head teachers in order to create and float tenders while the FBO leaders responded to them.

A total of 200 FBO leaders were trained. Each FBO was issued with a smart phone and signed an agreement that the phone would be taken care of and that it will be solely used for the project and group activities.

The FBO leaders were taken through the following steps/processes on the mobile phone platform

- How to access the application on www.rootshelf.com
- How to log in and sign up as an FBO
- How to resister an FBO in the system and identify their physical location
- How to register members of the FBO in the mobile phone platform
- Manage FBO; where you can add or remove members
- FBO communication; where leaders can send out messages to members on their phones
- Price information functionality; where FBOs can get guidance on market prices
- Markets/tenders function; where FBOs can respond to tenders and place their bids
- Information on whether they won tenders or not

A refresher training will be done once funding to schools is confirmed to ensure that the leaders understand the steps/processes of mobile phone tendering and that they can use the system comfortably.

2.3.2 Training FBOs on Good Agricultural Practices (GAP) for enhanced productivity

The first objective of the project was to build the capacity of smallholder farmers on food production and post-harvest handling. In order to achieve this, it was necessary to train farmers/ FBO representatives on good farming practices to increase their productivity and have marketable surplus. They would in turn train the rest of the FBO members.

The training took place from 12th October to 12th November 2020. It was delivered by CGA field officers in collaboration with officers from the Ministry of Agriculture in the three counties. A total of 196 FBO representatives from Tharaka Nithi (66), Kitui (70) and Kilifi (60) were trained. The FBO leaders were required to train the rest of the members within a month from the end of

the training. PCD plan for follow up visits to farmers and ensure that the training is being cascaded and knowledge transferred affectively.



Figure 1: Ms Mumbua (CGA) facilitating GAP training in Mutomo, Kitui county

The following topics were covered during the training;

- **Crop Calendar-** An important tool for planning and timing activities on the farm for high productivity and profitability. The end of a season marks the beginning of the next season
- **Land preparation-** Timely and adequate land preparation is the foundation for good seed germination and development of seedlings
- **Crop Nutrition and Soil Fertility-** Good nutrition aids crop growth and production, leading to high yields thus profits. Soil Fertility can be determined from soil color, texture and through laboratory tests for chemical properties
- **Fertilizers-** They can be classified as organic or inorganic based on their constitution. All fertilizers are sources of nutritional elements such as sodium (Na), potassium (K), calcium (Ca), magnesium (Mg). Organic fertilizers are derived from decomposed living materials such as plant residuals and animal wastes such as cow dung
- **Spacing and seed placement-** Correct seed spacing and seed rate will increase the yield. Certified seed packets have spacing requirements printed on them as a guide

- **Weed management-** First weeding should be done within 2-3 weeks after emergence of weeds, then 2-3 weeks later in order to keep the crop free of weeds
- **Pest and diseases management-** Most of the pests and diseases can be managed by crop rotation, early planting, tillage or weed management. Use of agrochemicals should be the last resort
- **Fall Army Worm (FAW) and Integrated Pest Management-** FAW may be managed through ploughing land before onset of rains to expose pupae to predators and solar heat, early planting, handpicking and squashing egg masses as soon as they are spotted and use of pesticides. Planting a trap crop (a crop that the pest prefers to the crop being planted) may help reduce the use of pesticides.

2.3.3 Conclusions and Recommendations

The training was well received and farmers reported to be more enlightened on the good farming practices. They requested further training on the proper use of fertilizers and pest control as this is a recurring issue and a serious threat to food production. PCD has made strong linkages with the local Agricultural Officers and partners in order to support the farmers on such matters as need may arise. The officers assured PCD of their unfailing support in offering extension services to the farmers.



Figure 2: FBO leader training members on GAP in Kitui county

The majority of the trained FBO leaders organized their members and passed on the information after the training. Table 1 presents the number of farmers trained to date by gender.

Table 1: Number of farmers trained on Good Agricultural Practices (GAP)

county	No. of farmers trained on GAP		Total
	Male	Female	
Tharaka Nithi	403	513	916
Kitui	425	755	1180
Kilifi	235	556	791
Total	1,063	1,824	2,887

2.3.4 Proposals for funding for enhanced production

In order to help smallholder farmers to increase production, there is a budget line to support the FBOs with production inputs such as certified seeds, fertilizers, and post-harvest handling. To qualify for the funds, the farmer groups are expected to write small proposals justifying how the funds will help them increase production. It was therefore prudent to train the FBO leaders on proposal writing so that together with their members they could decide on the support required and write brief proposals. This was done alongside training on GAP after which they embarked on writing the proposals.

Proposals for funding have already been received by the coordinators at the county level. A panel for proposal review and qualification comprising of partners; CGA, Mfarm, Rafiki has been constituted. Terms of reference including a checklist/criteria for awarding the funds have been finalized and shared with the panel. The funds will be disbursed to deserving FBOs from April 2021.

2.3.5 Training of teachers on the use of the MPP

Training of teachers on MPP usage took place from 8th to 17th December 2020. The training was done in Tharaka Nithi and Kitui Counties and it involved the head teachers and teachers in charge of school feeding in the schools participating in the project. It was conducted in collaboration with Mfarm, CGA and MoE. A total of 68 teachers from Tharaka Nithi and 72 teachers from Kitui Counties were trained. The training had the following objectives:

1. To sensitize the teachers and education officials on the MPP and the project in general
2. To disseminate knowledge and skills on the usage of the MPP in the procurement of food commodities for the HGSFP
3. To sensitize head teachers and teachers-in-charge of HGSFP implementation on procurement guidelines

The team was accompanied by an Education Officer from MoE headquarters who did refresher sessions on the HGSFP specifically its objectives, implementation and procurement guidelines. This was very important as some of the teachers had not yet participated in the programme, whilst the existing cadre needed to be refreshed. The Officer outlined the manual procurement system after which Mfarm took over the training and introduced the mobile phone system of tendering.

This gave the participants an easy way of understanding how the manual system was being digitized.

The MPP training specifically dealt on the following actions;

- Registration of schools and mapping their physical location via the www.rootshelf.com domain
- Creating a list of the school meals committee. Creating a new tender (the teachers were able to create and publish tenders and floated them to FBOs)
- FBOs leaders (5 FBO leaders were present in each training for simulation purposes). They received notification on the tenders and were expected to respond to the tenders as a demonstration of the actual process.
- Schools received the bids and scheduled bid opening date and venue. FBOs that had put in their bids were notified that bids would be opened at a certain time, date and venue
- The schools shortlisted the best three suppliers (bids) depending on the prices quoted for each item and after deliberations one supplier was awarded the tender and the others declined
- Text messages/email notifications were sent to both the winning and losing bidders
- The schools set up a delivery date, venue and time to guide the winning supplier on food delivery after winning the tender
- The schools filled in delivery notes upon receiving the food and affirmed that the produce was delivered as agreed and was fit for human consumption



Figure 3: Ms. Linda Kwamboka (Mfarm) facilitating a training session on the Mobile Phone Platform in Kitui county

Post training feedback from participants

After each training, participants were asked to give their feedback on the training and methodology used, their perception on the MPP and general observations. The following feedback was given;

- Facilitators were well equipped and content delivery was excellent
- The MPP is very efficient, time saving and will help in phasing out paper transactions and improve the tendering processes as well as to help curb corruption
- The MPP is in tandem with the conventional digital way of doing things and is very transparent
- However, some schools may be disadvantaged by poor mobile network coverage

3 Challenges and recommendations

As a result of the pandemic, a few challenges in project implementation were encountered;

- Training of teachers on MPP usage in Kilifi county which was planned to take place from 18th to 21st Jan 2021 has not been accomplished. This was due to a reorganization of the school calendar whereby national examinations for the primary school certificate that would have been done in October to November 2020 were rescheduled to March 2021. The examination class (standard eight/grade 8) were recalled to school for second term from October to December 2020 and started their third and final term in January 2021. They will therefore sit the examinations in March 2021.

As is the tradition, during third term (the term where national examinations take place), there are usually very stringent regulations from MoE to guard against the integrity of the examinations. Schools are usually out of bounds to everyone except teachers and pupils while meetings/congregations with teachers and/or education officials are not allowed. Consequently, we shall not train the teachers as planned but we have rescheduled the training to April/May 2021.

- There have been general delays in implementation of project activities due to the COVID -19 restrictions. A no cost extension of the project up to one year may be necessary in order to achieve the project objectives.
- The government has not yet released cash for food purchase to schools for the current term; it is more focused on COVID -19 prevention and infrastructure development in schools.

As such, the MPP may not be used yet for HGSF food procurement. However, we are holding discussions with Mfarm on the possibility of the FBOs exploring other markets on the Mfarm platform as we wait for schools to receive funds in May 2021.

4 Way forward/ Future action

- We endeavor to continue building the capacity of smallholder farmers to enhance their production and engage with the HGSF market competitively. We plan to conduct a refresher training on MPP to ensure that FBO leaders fully understand how to use it. This will be done when confirmation on disbursement of funds to schools for purchase of food will be made.
- We will continue working with the school teachers, building their capacity on mobile phone tendering system and urging them to embrace this technology to enhance transparency and accountability of HGSF food procurement and improve the welfare of smallholder farmers through purchasing their produce.
- We shall continue engaging with our partners including MoE, MoA, WFP, Mfarm, CGA and Rafiki who have been very supportive in the implementation of the project specifically engagements with farmers and teachers during capacity building.
- We are supporting the MoE in the digitization of the HGSFP and all its processes.