



Food and Agriculture
Organization of the
United Nations



PROGRAMME MDG1c REDUCING HUNGER IN MOZAMBIQUE



CASE STUDY

E-vouchers

Rationale of the component

The e-vouchers component of the Programme MDG.1c funded by the EU was aimed at increasing smallholders and emergent farmers' access to agriculture inputs (seeds, fertilizers, agrochemicals) and at improving their knowledge on the cost-effectiveness of their use. The strategy was based on the underlying assumption that improved access to and increased use of agricultural inputs by smallholder and emerging farmers contribute to productivity and yields, enhancing agricultural production and possibly improving access to food through increased income.

The logic of intervention addressed both farmers and retailers with a twofold approach: 1) provide farmers (subsistence and emerging farmers) through e-vouchers with direct capital transfer, as a subsidy contribution for the co-payment of input supply; and 2) supporting the establishment of a network of inputs retailers that could reach farmers in most remote areas.

Targets

The e-vouchers component has benefitted 24,827 smallholder farmers (40.5% women) in 13 districts of 4 provinces. The programme targeted two kinds of beneficiaries:

- Subsistence farmers – those smallholders holding more than 0.5 ha of land, with at least one economically active person, but with limited market access, working mainly to satisfy their food needs but with some financial capacity to contribute to the inputs purchase. Widowed women heading households were also included in this group. Subsistence farmers had access to package A as described below.
- Emergent farmers – with more than 1 ha of land, paying for labour and/or having at least 2 economically active persons, linked to the market but lacking support for increasing their investment capacity to intensify their production, especially cereals. Emergent farmers had access to package B.

Potential beneficiaries were identified with the support of Local Community Committees, composed by local authorities, representatives of farmer associations, extension service and other key local actors. Selection criteria included:

- non-negotiable criteria (like being a resident and farmer for at least 3 agriculture seasons, registered in an extension programme, families with children under 5, possess identification documents; financial capacity to purchase the subsidized input, willing to share the knowledge with others, membership of an FFS or other extension service);
- negotiable criteria (willing to be trained for the correct use of inputs, beneficiary of other Programme MDG.1c components);
- and additional criteria (member of FFS, women headed households).

Implementation

The component was designed and implemented by the Food and Agriculture Organisation of the United Nations (FAO). It started on a limited scale in 2013/2014 season as a paper voucher. In the season 2015/16, a pilot in Manica province tested the use of an electronic system based on digital cards distributed to the beneficiaries. Despite some initial technological constraints due to cards availability and mobile network coverage, the e-vouchers were distributed according to planning and revealed to be a practical modality, allowing costs reduction and the required flexibility for adapting the system to local conditions and needs. Following a positive assessment of the pilot phase, the e-voucher was extended to Sofala, Zambézia and Nampula since the 2016/17 season. In Manica and Sofala it was implemented until March 2018 (the 2017/18 season was the last covered by the programme), while in Zambézia and Nampula ended in April 2019.

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The Programme provided two different kinds of inputs packages: A for subsistence farmers and B for emergent farmers. The composition of the two packages was agreed with the Ministry of Agriculture and Food Security, focusing on food and cash-crops, mainly maize and beans. With the introduction

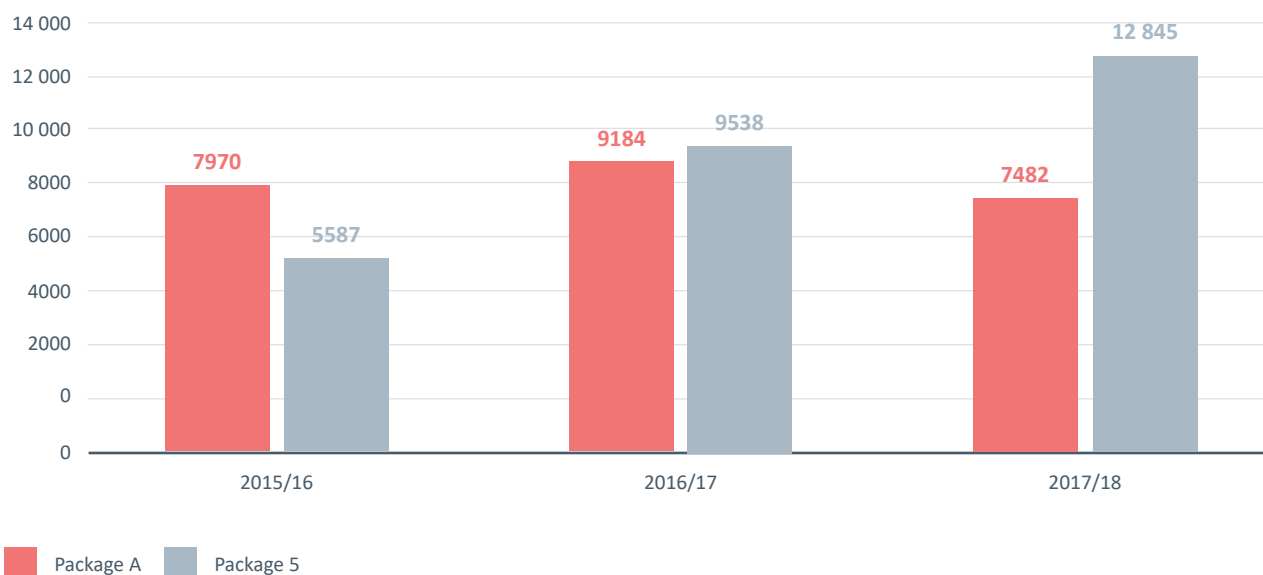
of the e-voucher, beneficiaries had the opportunities to choose type and quantities of inputs within a pre-defined list on inputs agreed with MASA/DPASA/SDAE and taken into consideration agro-ecological conditions:

Composition	Package A	Package B
Total value	2000 Mz (~35 USD)	7000 Mz (~120 USD)
Farmer contribution	25% = 500 Mz (~8,75 USD)	43% = 3000 Mz (~52 USD)
Seeds	Maize OPV (12.5 kg), Cowpea (4 kg), Vulgar Bean, Pigeon pea, Sorghum, Soybean, Peanut, Rice	Maize Hybrid and OPV (12.5 kg), Cowpea, Vulgar Bean, Pigeon pea, Sorghum, Soybean, Peanut, Rice
Chemicals	Inoculant, field and post-harvest insecticide (600 g)	Inoculant, field and post-harvest insecticide, urea, NPK

In both packages (A & B), during the last season (2018/19) horticulture crops were introduced with specific importance for nutrition. The e-voucher functioned as a discount coupon that the farmer could activate at an agro-dealer or retailer shop by contributing in cash for the co-payment based on the above amount for each package. Only once co-payment was completed the system released the subsidy and beneficiary could start the purchase inputs. Financial support was planned for 3 subsequent seasons for each farmer between October and March.

Since the start of the programme in 2014/15 the total number of farmers benefitting from voucher (both paper and electronic) has increased from 7,218 to 22,778 farmers in 2018/19. The use of the voucher has increased from 45,4% of the registered farmers during the 2014/15 season to 76,6% during the 2016/17. In some cases (around 2,000), beneficiaries of package A move to package B once they have increased their production capacity and improved their knowledge, also about the functioning of the system (less than 50 migrated from B to A).

Trend use of packages



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In parallel, support was provided to agro-dealers and retailers to ensure inputs availability to farmers even in those most remote areas. The component implementation by FAO involved careful screening and training of agro-dealers, seed quality control protocols, frequent field visit to monitor the programme. In the field, a national service provider (ADM) was in charge of designing the e-voucher platform, as well as of providing technological support and technical assistance. In initial stages, registration constraints and the lack of available e-vouches cards were referred by beneficiaries as causes of the reduced coverage. Other reasons were identified in the low

interest/willing of the farmers to support the co-payment due to lack of trust about quality of certify seeds that were normally distributed for free by different organizations. However, the presence of a field technical assistance by ADM contributed for the operationalization of the programme and the good working of the system. Any problem or issue related to the operationalization of the e-voucher system has been directly reported to FAO by the service provider on a regular basis and duly solved.

Description	Target	Achieved	%
Number of smallholders using agriculture inputs	24,000	22,778	94,9%
Number of retailer shops marketing inputs	130	108	83,1%
Productivity of maize increased – package A	15%	+17%*	113%
Productivity of maize increased – package B	15%	+78%*	520%

* compared to control group, source FAO November 2018 study on maize and bean yields.

Achievements and contribution to outcomes

During the Programme implementation, between 2015 and 2019, 64,637 vouchers have been sold, against a target of 60,000. This output contributed to the following outcome indicators:

As a result of the voucher scheme the use of improved agricultural inputs and the cultivated areas have increased.

The average use of agricultural inputs before the voucher scheme was reported to be 30% for Package A farmers and 40% for Package B farmers, but no specification was made between improved seeds and fertilizer. With the support of the programme, the use of certified seeds has clearly increased among beneficiaries' farmers (78% for Package A and 80% for package B, against 41% for the control group). While, the use of fertilizer has increased significantly for Package B farmers (49% against 21% of the control group), and even for 25% of Package A farmers which did not receive fertilizers. The Impact evaluation study of June 2019 reports on the (subjective) most

important factors of the last three years positively influencing agricultural production: for the Package A and B participants, certified seeds are mentioned as number one (54%), followed by e-voucher (39%) and FFS (30%). Fertilizer use (28%) and SDAE extension (23%) only follow thereafter. Other factors such as the membership of a Farmer Association (2%) and storage silos (4%) are rarely mentioned. There are no significant differences between Package A and Package B farmers.

Overall there has been a major impact of the e-voucher scheme on the production and productivity (increasing food availability) as well as income (food access). During the field visits one of the most striking testimony of the impact of the e-voucher was on income through increase of agricultural sales.; ex. A Barué farmer group was able to invest in irrigation equipment through the sales of maize that had considerably increased as a result of the voucher scheme. The June 2019 Impact evaluation also concludes that there has been a positive relationship between the voucher scheme and income, but not on the diversification of income sources. The agro-dealers' network also expanded

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and improved, which contributed to increase the supply of inputs and the coverage of the e-voucher programme in the target districts. The study concludes that 61% of interviewed farmers consider that the quality of their livelihood has improved as a result of the e-voucher scheme (32% stable; 6% worsened). The main mentioned was on income increase, and secondly the improvement of production and productivity as

well improved access to inputs. Improvement in diet was rarely mentioned (<10%).

In terms of contribution to the Programme MDG1.c outcomes, the e-voucher along with other components as improved the following indicators related to food availability and access:

<p>Increase productivity and production of staple food crops for farmers involved by 10% (compared to baseline)</p>	<p>Baseline value: inexistent Endline survey: no data</p> <p>Evaluation of maize and bean yields for the season 2017/18 in 10 districts participating in e-voucher:</p> <ul style="list-style-type: none"> Increased maize productivity by +17% for package A and + 78% for package B, compared to control group Increase in area cultivated of maize: 49% of farmers for package A and 55% for package B. (Control group: +28%) Impact evaluations of e-voucher 2019, season 2017/18: Increased area cultivated (ha) of maize +0.373 and beans +0.201 Increased quantity harvested: maize: +469 Kg, beans +135 Kg No significant impact on productivity 	<p>There is evidence that e-vouchers and FFS contributed to the increase in the area cultivated and production quantity of maize and beans.</p> <p>The evaluation of yields (2017/18) showed an increased productivity as well.</p> <p>Factors explaining these findings are:</p> <ul style="list-style-type: none"> e-vouchers facilitated access to and use of improved seeds and inputs, which is considered one of the factors that directly contributed to increased production. FFS trained farmers on improved cropping practices with proven effectiveness on increasing production and productivity
<p>Reduced percentage of households with own agricultural production with less than 5 months of food reserves</p>	<p>Baseline (2013) national level: 46%. Target: 35% (national level)</p> <p>Baseline 2013 (four districts) (cereal reserves, less than 4 months):</p> <ul style="list-style-type: none"> Alto Molócue: 20%, Dondo: 34%, Sussundenga: 12%, Tsangano: 31% <p>Endline 2018 (four districts): No data available</p> <p>Community level impact evaluation 2018 (cereal reserves, less than 4 months):</p> <ul style="list-style-type: none"> Beneficiary households (agriculture interventions): 36.1% Control group: 44.5% (sig. at 5%) Beneficiary households (all assessed interventions): 37.4% Control group: 43.6% (not sig.) 	<p>Indications that particularly the agriculture interventions (FFS, E-voucher) have contributed to the improvement in cereal reserves duration.</p> <p>Evidence:</p> <ul style="list-style-type: none"> Differences between beneficiaries of agriculture interventions and control group in the community level impact evaluation, prevailed after controlling by socio-economic factors e-voucher component evaluations show that the area cultivated and the quantity harvested of maize and beans has increased more among beneficiaries compared to control group, meaning that availability of basic grains has increased at household level.

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Agro-dealers. In the course of the e-voucher scheme, agro-dealers and their retail shops have substantially and sustainably increased their turnover (up to ten times), but somewhat decreased after the end of the component. According to them, the turnover is still much higher than before as farmers still continued to purchase seeds and fertilizers with their own funds. As a result of the increased turnover, some retailers were able to set up their own agro-dealer shops and directly trading on their own account even in more remote communities who thus far were not serviced at all. The e-voucher component thus contributed to improved service provision and private initiative of agricultural input suppliers. The Impact evaluation report implemented in six districts in Sofala and Manica (June 2019) indicates that agro-dealers reported to have better access to credit from the suppliers companies selling seeds and agricultural inputs (including fertilizers and agrochemicals) reflecting a better trust between suppliers and agro-dealers. The same report also highlights that the number of customers has grown substantially: whereas most dealers reported to have less than 1000 customers before the programme, the large majority now has more than 1000 customers and one-third report selling to more than 5000 farmers. The same study reports a 3-4 times increase in the volume of improved agricultural inputs (maize OPV, hybrid maize, vulgar beans) and 3.5-fold increase in fertilizer sales. Maize OPV sales are still almost twice more than hybrid maize.

E-voucher in emergency response

With the support of the Programme MDG.1c, the e-voucher system was implemented by the United Nations World Food Programme (WFP) in its humanitarian response to El Niño. Assistance was mainly provided as conditional in-kind food distribution, but alternative solutions have been also piloted in Tete province, using e-voucher system, commodity vouchers and unconditional cash transfer.

According to WFP final report, “within February and March 2017, a total of 2,529 households (HH)/11,641 beneficiaries, of whom 79% were women and children, were assisted with 11,028,760 Meticaïs across Cahora Bassa and Changara districts of Tete province. Beneficiaries were all provided with electronic cards as an electronic voucher with a monthly transfer value of \$69.25/HH. Each household was provided with a PIN code to redeem their commodities from a pre-selected retailer. The provided assistance represented an in-take of 1,893 kcals per individual (90% of estimated total required kcal intake of 2,100). The transferred amount allowed households to gain access to some 174.63 metric tonnes of food comprising of maize (122.24 mt), rice (10.48 mt), beans (20.96 mt), vegetable oil (8.73 mt), salt (3.49 mt) and sugar (8.73 mt).”

After Idai cyclone, the e-voucher mechanism implemented by FAO was exceptionally reopened in May 2019 for 45 days to reach affected beneficiaries of package A (subsistence farmer) in selected areas of Nhamantada (Sofala), Gondola, Macate,

Vanduzi and Sussundenga (Manica). The intervention was aimed at supporting the recovery of beneficiaries assisted under the Programme MDG.1c, testing the flexibility of the e-voucher under emergency situation, avoiding overlapping with other agriculture assistance interventions. It covered a total of 8172 affected H/H (4571 men and 3601 women) out of that 6,172 beneficiaries that already participated in the e-voucher programme, plus new 2,000 affected beneficiaries. Beneficiaries received through e-voucher a subsidy of 2.300 Meticaïs to be used for purchasing agriculture inputs, pre-selected according to the agroecological conditions and cropping season. The successful introduction and operationalization of the system for emergency purposes showed its relative ease of operation and robustness of the system.

Best practices and lessons learned

Interaction with FFS: studies show strong interaction between the participation in the e-voucher scheme and FFS membership. FFS members under the e-voucher scheme (RC2) had higher productivity (+10%-17%) than non-members, including the FFS members of the control group who did not receive a voucher. The potential is there to use the FFS approach for further technology development. After seed improvement and e-voucher participation, farmers consider their FFS membership to be a major factor contributing to productivity increases, recognising that gaining knowledge on agricultural techniques and exchanging agricultural practices are strong points of the FFS approach to them. Farmers participating in FFS are 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.

Agriculture inputs: farmers showed high interest in purchasing improved inputs and in increasing their production capacity. The progressive increase in the request for B package rather than subsistence farming and the fact that even after the end of the programme several farmers still purchase seeds and fertilizers at the agro-dealers is a clear achievement of the programme. There has been a main impact on the extension of area cultivated, in productivity and on increased income, but less so on the diversification of crops and income sources.

Packages: their composition, especially in terms of crops, was defined based on MASA priority having been designed to facilitate access to quality inputs of cereals and beans. Over the course of the programme MDG, additional crops (groundnuts, soya beans and vegetables) were also included in the voucher package in response to farmers' feedback to have more flexibility in the use of the e-voucher subsidies including other crops or small-scale irrigation.

Contribution: for many farmers, even the small requested contribution for package A was considered a constraint. There is a major challenge to scale-up the e-voucher programme as resource-poor farmers have little possibilities to benefit. As

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a result, relatively few farmers benefited from the e-voucher scheme (in some FFS less than 30%).

Agro-dealers: the capacity to reach farmers in remote areas, eventually through on-truck sale, increased the system coverage and the trust felt by farmers, even if sometimes implying delays in the inputs delivery. The potential for improving the business, but the limitation in being able to provide the different range of inputs requested by the farmers through this system, promoted the establishment of smaller retailers' shops in rural areas, enlarging the existing network.

Challenges and opportunities

- Fighting a culture of subsidy and freely inputs distribution, through government or donors' projects, which retains farmers to participate in an intervention requesting their financial contribution. This was identified as one cause for the initial low intake that has been progressively reduced when the beneficiaries were not included in other programmes and as long as they have understood the benefits and the financial interest and viability of the e-voucher system.
 - There is a huge interest and expectation from the beneficiaries that the component will continue. In some cases, follow-up programmes will continue inputs distributions (like the EU PROMOVE programme which will include packages costing less than 500 MT), but in most cases this will not happen. Currently, the government showed interest in expanding the e-voucher programme, but funds availability and technical capacity are major concerns. Dealing with expectations is a sensitive challenge for the implementing agencies and for the government.
 - The quality of the distributed seeds showed some (even if rare) problems at the beginning of the intervention with effects on productivity and farmers' trust. FAO works closely with the government seed authority for the monitoring/fiscalisation of agro-dealers network. Measures for improving the quality, by establishing a proper quality control system had to be put in place with seeds producers and distributors to minimise this problem.
 - Input availability and distribution not always happened in due time, when the farmers have sufficient money for their co-payment. Money availability for inputs purchase at the beginning of the main season is challenging (normally just before the end of the lean period, when funds are used for food purchasing). The PROMOVE will explore the possibility to minimize the problem through the introduction of a save pocket in the e-voucher in order to allow farmers to save some funds from the production sold after the harvest season.
 - Climate change also has effect on the agriculture calendar making the flexibility of the programme even more important so as to be able to respond to the changing patterns and timeliness of the input availability. The composition of the packages, in terms of crops and varieties is also influenced by climate change, but also by food security and nutrition aspects and market conditions.
- Main opportunities for the sustainability of the programme based on lessons learned and identified challenges and risks:
- The e-voucher system revealed to be effective and more efficient than the traditional paper voucher or the free distribution. There is therefore a clear interest from the government and other donors' to adopt this system for their intervention scaling-up to other provinces. This is an opportunity for continuing, building up and for enlarging the system.
 - The e-voucher can be used for multiple purpose. It performed well for emergency, being responsive and practical, but it also opens new perspectives for being used as an electronic wallet for saving purposes or credit. This was already tested under the new e-voucher emergency intervention (2019/2020) as multi-wallet hosting different partners/activities.
 - The mechanism should be linked to the credit systems as the lack of money was identified as the main reason for delaying inputs investment and ultimately made the use of voucher (activation) impossible. The majority of rural farmers in Mozambique have no access to any financial service, making financial inclusion a main priority.
 - Package diversification to address farmers' needs (range of crops and tools) and to better align to nutrition objectives. Farmers have shown increasing interest to participate in the e-voucher scheme as long as it really fits their needs.
 - The own contribution has proven that farmers are willing to contribute to the purchase of inputs, and this has continued even after the end of the programme, which reinforces the system sustainability.
 - The programme has also supported private sector development which is an opportunity to ensure the self-sustainability of the mechanism, with or without subsidy. Agro-dealers were very satisfied with the e-voucher system as it increased their turnover. Some retailers were able to establish themselves as independent agro-dealers, reaching remote areas; the trust between agro-dealers and their suppliers has grown leading to more supply on a credit basis.
 - There is a clear opportunity to strengthen the link between the participation in the e-voucher scheme and FFS

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membership; this shows the positive contribution of both inputs and knowledge transfer to productivity.

- Stronger emphasis could be dedicated to gender approaches for the e-voucher system in order to increase the number and percentage of benefitted women-headed households.

Based on the component exit strategy, several actions are foreseen for its sustainability:

- **Financing:** support MASA in the identification of financial sources and synergies for the continuation of the programme, including the District Development Fund for agro-dealers; discuss with the Central Bank how to integrate the mechanism into the financial system and explore potential partnership with private sector including commercial banks.
- **Operational:** identify opportunities to reduce operational costs and to improve partnerships with mobile money service providers to increase coverage and range of available services.
- **Management:** carry out studies for understanding e-vouchers impact and opportunities for management improvement and increased availability; organise regional meetings and activities for discussing with stakeholders potential partnerships and alignment to interest and needs.



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