

EAFF e-Granary Grant Completion Report

Project Name: "Using the e-granary Innovative Mobile Platform to Deliver Economic Services to Farmers in East Africa"

Recipient Organization: EAST AFRICA FARMERS FEDERATION (EAFF) KENYA

Grant No.: 2000001801

Completion Period: November 2018 – June 2022

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LIST OF ACRONYMS

ACE	Agricultural Cooperative Enterprises
AGRITECH	Agriculture & Technology
AWPB	Annual Work Plan and Budget
B2B	Business to Business
CEO	Chief Executive Officer
COVID	Corona Virus Disease
CRM	Customer Relationship Management
DFAs	District Farmers Associations
EAGC	East Africa Grain Council
E-GRANARY	e-Granary Ltd.
EAFF	East Africa Farmers Federation
ERP	Enterprise Resource Planning
FIs	Financing Institutions
FOs	Farmer Organisations
FSP	Financial Services Provider
GAP	Good Agriculture Practice
GASFP	Global Agriculture & Food Security Program
ICT	Information and Communication Technology
IFAD	International Fund for Agricultural Development
M&E	Monitoring and Evaluation
MMI	Missing Middle Initiative
MS	Micro Soft
MT	Metric Tonnes
NAAC	National Alliance for Agriculture Co-operatives
PDR	Project Design Report
SMS	Short Message Service
SACCOs	Savings and Credit Co-operatives
TFC	Tanzania Federation of Cooperatives
UNNF	Uganda National Farmers Federation
USSD code	Unstructured Supplementary Service Data code

BACKGROUND

Name of grant	Using the e-granary Innovative Mobile Platform to Deliver Economic Services to Farmers in East Africa
Name of recipient	East Africa Farmers Federation (EAFF) Kenya
Goal, objectives and target group(s)	The Project Goal was to improve the income and living standards of participating e-Granary smallholder farmers in Tanzania, Uganda and Rwanda. The Project Development Objective was to increase productivity and profitability of participating e-Granary farmers. The direct target group were smallholder e-Granary participants. At least 50,000 farmers would be using e-Granary services at the end of the three-year implementation period. Based on gender-disaggregated data from the pilot phase, it was anticipated that the majority of participants will be women. Because activities involve actors along the value chain, input dealers, large buyers and other service providers would also benefit.
Benefitting country(ies)	At Design: Tanzania, Uganda and Rwanda. After Restructuring: Uganda and Rwanda.
Date of grant approval	7 May 2018
Date of grant effectiveness	7 May 2018
Completion date	30 June, 2022
Value of IFAD-funded grant (in US\$)	The grant was not financed with IFAD grant funding window but through GAFSP MMI initiative for a total of US\$2,610,000. Additionally, GAFSP provided COVID-19 additional financing valued at US\$ 427,000. IFAD is the supervising entity
Amount disbursed to date (in US\$)	2,916,643
Total financing, including co-financing (in US\$)	3,407,777.00

Overall implementation progress

The e-Granary Project, Large Grant Agreement was signed on May 7th, 2018 between East Africa Farmers Federation (EAFF) and the International Fund for Agricultural Development (IFAD). The agreement was financed for US\$ 2.61 million, through a contribution from the trust fund for the Global Agriculture and Food Security Program (GAFSP) under the Missing Middle Initiative (MMI) framework. Initially the project was to run for three years with a completion date of June 30th, 2021. However, during the supervision mission of January 11th -19th 2021 it was highlighted the importance of extending the duration of the project to facilitate the successful implementation of planned activities due to disruptions arising from the COVID-19 Pandemic. The project was granted an extension on September 16th 2021. As a result, the new completion date for the Project was set for June 30th 2022 with the Grant financing closing date slated for December 31st 2022. In addition, the Project received US\$ 478,240 as additional financing.

The design of the e-Granary project consisted of two main components: (i) access to services, which focused on setting up the mobile platform, registration of farmers, partnership development and roll-out of products; and (ii) capacity building and knowledge management, which aimed to enhance the financial literacy among the beneficiaries and raise public awareness and knowledge of e-Granary. Implementation progress at project completion is reported below.

Component 1: Access to services

1.1 Increased market access: e-Granary design focused on the forward contracting approach that sought to provide farmers with access to reliable and predictable markets. This framework meant building an ecosystem of partnerships from the off-taker backwards to the input provider. As such, e-Granary targeted creating a value proposition to the farmer; while ensuring that farmers working together would assure other value chain actors upstream such as input providers and financial partners of a secured market hence affording them access to certified inputs and affordable credit. E-Granary organised consultative meetings with national farmer organizations (FOs) that resulted in the identification of regions with potential farmers; and partnerships were established with value chain partners. Business to business (B2B) meetings were held for the farmers to better understand the terms of engagements and the products available for them in the market. E-Granary implemented a data management solution and captured data for farmers through FOs using mobile phones able to run on an Unstructured Supplementary Service Data (USSD) application.

The project registered 55,494 smallholder farmers, 35,922 and 19,572 in Uganda and Rwanda respectively against a target of 50,000 (110.98% achievement) for the two countries. These registered farmers were members of FOs; in Uganda the project on-boarded nine FOs, under the National Alliance of Agricultural Cooperatives (NAAC) and seven District Farmers Associations (DFAs) under the Uganda National Farmers Federation (UNFFE) while in Rwanda seven FOs in seven districts were recruited. Under sub-component 1.1, the project piloted a market linkage model by profiling off-takers and organising B2B meetings with off-takers and by mapping and profiling farmer aggregation centres to increase market access for farmers produce. The project progress report at completion reported that 10,936 Metric Tonnes (MT) (8,593 in Uganda and 2,342 in Rwanda) of commodities valued at US\$ 3.73 million had been traded against a target value of US\$ 4.5 million which was an 82% achievement for the project. These figures were based on aggregation of output at farmer group/cooperative level. These results were indicative that farmers had commitment to bulk produce. However, it is worth noting that the bulk of these sales were not done through the e-Granary infrastructure, thereby denying the business the envisaged mark-up on these transactions. Nevertheless, the project initiatives to establish B2B meetings with off-takers was a critical first step in assuring market access to farmers; and banks and insurance companies as well as input

providers and this also helped to create the confidence needed by farmers to sign up since the path to the market was made clearer.

Indeed, the outcome assessment carried out by the project indicated at completion, 93% of the farmers felt satisfied with services available on the e-Granary, nonetheless, not all FOs nor members had received services from e-Granary neither did all farmers transact on the e-Granary platform regularly. Further, the outcome assessment did not provide data in relation to frequency of number of sales to or purchases from each FO on the platform, although the emphasis on bulking and group marketing, in addition to the support in setting up bulking structures at FO level was evident and appreciated by farmers. The e-Granary was also yet to gain traction in terms of building relationships with farmers and coming down with a core balance sheet for the business. Most partnerships had only lasted for 1-2 seasons partly due to implementation delays as well as disruptions during the COVID -19 outbreak. Further, due to limited operational funds, e-Granary had not been able to enter competitively into the market which was dominated by spot pricing. While there were a number of reasons for these shortcomings, such as late disbursement of funds and COVID-19 disruptions, it also meant that the e-Granary model had not yet been proven to work. In a market based on spot prices and lack of trust, a model such as the e-Granary required to build solid long-term relationships and to have timely, patient capital, as well as a certain market size to be able to influence the market. Besides, due to the challenge of farmers engaging in side selling of produce in order to cater for their immediate cash needs, e-Granary was unable to enter into substantive predictable partnerships with off-takers using the forward contracting method.

1.1 Increased financial services. This sub-component focused on addressing the access for financial services challenge by smallholder farmers, who in many instances were viewed as a high-risk by financial institutions. The e-Granary partnered with financial institutions such as Equity Bank, Vision Fund Uganda, KCB Rwanda and Micro-Finance Support Centre to develop farmer centric financial products. The project reports indicate that 24,053 farmers were linked to financial institutions and received either seeds or fertilizer on credit, including 9,347 farmers in Uganda and 14,706 farmers in Rwanda. These farmers received financial literacy training from the banks (Equity Bank Uganda, Vision Fund Uganda, Post Bank Uganda, KCB Rwanda and Vision Fund Rwanda).

1.2 Increased access to extension services: Throughout the reporting period, e-Granary had supported 46,678 smallholder farmers with access to extension messages on climate smart and resilient techniques and this was a 212% achievement against the targeted 22,000 smallholder farmers at design. In addition, 7,437 of these farmers had received voice messages focusing on Good Agricultural Practices (GAPs).

Component 2: Capacity Building and Knowledge Management

Enhanced capacity of farmers on structured trade and financial literacy: The project targeted 12,800 smallholder farmers to receive capacity building in structured trade and financial literacy. E-Granary reported that 12,954 (101%) had received these trainings with 6,080 and 6,874 farmers being trained in Rwanda and Uganda respectively. The e-Granary approach entailed development of a curriculum and training materials. These trainings also used a Training of Trainer (ToT) approach and the ToTs were trained on financial literacy, good agronomic practices, crop protocols and on the e-Granary system. The objective was to make sure the trainings were cascaded to the smallholder farmer level. The ToTs therefore served as champions who then carried out trainings to other farmers.

Relevance to IFAD target groups

The IFAD Strategic Framework 2016 - 2025 seeks to promote *"inclusive and sustainable rural transformation and more resilient livelihoods for all poor rural people, including smallholder farmers, land-poor and landless workers, women and youth, marginalized ethnic groups, and*

victims of disaster and conflict, while not undermining the natural resource base". At design, the e-Granary was envisaged to contribute to more resilient livelihoods by increasing the productivity and profitability of smallholder farmers through greater use of certified inputs, crop insurance coverage, targeted extension messages and higher prices achieved by aggregating premium quality products for large volume sales of participating farmers.

At project completion, the e-Granary project had made some strides to validate its relevance to IFADs target groups. For example, in Uganda and Rwanda, the project had registered 55,494 smallholder farmers who were members of various groups on the e-Granary platform and that, as a result of B2B meetings and linkages with potential buyers, these farmer groups had sold 10,936 MT of produce to off-takers. The outcome assessment carried out by the project at completion revealed that a significant proportion (94%) of farmers reported that they had experienced improvement in revenue since joining the e-Granary. However, due to the limitations in the research method¹ used it was not possible to attribute these positive results –improvement in revenues – with the adoption of e-Granary.

Project interventions in support of e-extension services – text and voice messages - were established to be relevant and these were used to inform smallholder farmers on GAPS, giving alerts on weather and climate information, provision of information for farmers on collection and application of inputs such as seeds, fertiliser and agrochemicals amongst others. As a result of this service, farmers reported improvement in access to inputs such as planting fertiliser (91%) and top dressing fertiliser (87%) and this contributed to improved crop productivity as reported in the project's outcome assessment report at completion. However, there was a need to address limitations on the e-Granary platform regarding access to inputs. Review of the platform revealed that there was no direct interface between the farmers and input suppliers on the platform, since the design of the platform provided for a number of e-Granary interventions to happen outside the platform, in support of the farmers. For example, the system was to build up input purchasing requirements on behalf of farmers then sell to the farmers these inputs (potentially on credit). In addition, there was need to enhance capacity at the call centres provided for under the e-Granary to provide for a timely follow up with farmers such as on securing credit as well as to provide further extension services related to agronomy.

Outreach and gender focus

At design, the e-Granary project targeted a total of 90,000 smallholder farmers, with a target of 50% women beneficiaries. Initially, in terms of gender focus and geographic targeting, the project targeted 50,000 (50% Female), 20,000 (50% Female), 20,000 (50% Female) in Uganda, Rwanda and Tanzania respectively. During the supervision mission of 2021, it was mooted that these initial targets for overall outreach were ambitious and the targets were revised to have a total outreach target of 50,000 (50% Female) smallholder farmers. In addition, due to implementation challenges in Tanzania, it was agreed to remove the country from implementation. At completion, the project reported to have reached a total of 55,496 smallholder farmers. This represents a 110% achievement of the revised end target. In addition, this achievement comprises of 22,982 (41%) women and 32,514 (59%) men. Accordingly, the project did not achieve its target for female beneficiaries. In terms of country performance, the project has reached 35,924 (43% F, 57% M) and 19,572 (39% F, 61% M) beneficiaries in Uganda and Rwanda; respectively. Below is a table reporting the disaggregated outreach data per country and year of implementation.

¹ The outcome assessment used a Likert scale to assess the level of changes in revenue by farmers instead of using absolute measures of revenue for both treatment and control groups and comparing these figures with the baseline figures.

Table 1: Outreach disaggregated by country

Year	Gender	Uganda	Rwanda
2019	M	8,402	3,586
	F	6,122	1,868
	2019 Total:	14,524	5,454
2020	M	11,207	80
	F	8,677	28
	2020 Total:	19,884	100
2021	M	766	4,722
	F	510	3,413
	2021 Total:	1,276	8,135
2022	M	162	3,587
	F	76	2,288
	2022 Total:	238	5,875
Total beneficiaries reached at completion:		35,922	19,572

The e-Granary project had a target of 50% women beneficiaries. It was noted that this target was missed at completion and this was attributable to some challenges in the chosen farmer groups/cooperative by the NFO's in the participating countries. In addition, the project reported that most women in targeted farmer groups/cooperatives did not have phones to register on the platform and some of those that did used their husband's phones due to the cost of owning a personal phone. Besides, there were additional challenges such as low digital literacy of farmers.

In the project logical framework, the indicator on outreach was as follows: "number of farmers registered on the platform; 50% of the registered users actively using platform services disaggregated by product and user profile." This indicator was to track the number of beneficiaries that were actively using the e-Granary platform services. This assessment was to give evidence on the usability and adoption rate of the system by beneficiaries. Moreover, it would also provide an idea of sustainability of the technology. However, this was not conducted by the project nor included in the end-line survey. Granted, EAFF acknowledged the need to do such an assessment and was planning to do so in future as the implementation of the platform continues. Accordingly, although it was reported that 55,496 beneficiaries had been reached, the mission team could not verify how many of these beneficiaries were still actively using the system, hence deeming the performance to be moderately satisfactory.

Innovation

The e-GRANARY platform was designed to serve as a multi-stakeholder farmer led partnership that takes a full ecosystem approach to provide innovative support to smallholder farmers through a comprehensive demand driven model featuring four key elements: (i) Access to finance – from Financial Service Providers (FSPs) employing innovative lending models to deliver input loans to farmers; (ii) Access to inputs – through access to certified quality inputs at preferential rates through input as credit in partnership with FSPs; (iii) Access to agronomic training – e-Granary together with relevant research institutions has implemented a text and voice based e-extension services that accessible to all our farmers; and (iv) Access to market for marketable surplus – through forward contracts secured with large off takers. Leveraging mobile and web digital technologies, the platform would provide value to stakeholders in form of efficiency gains, reduced transaction costs and improved direct access to services for farmers and co-operatives.

A review of the platform established that the system had succeeded in establishing interactions between e-Granary, farmer mobilisers and farmers. Farmers mobilisers could

capture and feed farmer data at various stages of engagement with farmers and this information was used to provide timely and actionable information about farmers to potential buyers and inputs services providers and financial institutions. However, it was also noted that the system experienced some down times and had not fully taken into consolidation alternative options in areas with limited network. It was also noted that only one dedicated technical staff had been assigned to support in terms of system maintenance which was not sufficient for the large number of farmers registered on the platform. Additionally, at completion, the e-Granary needed to achieve a level of commercialization that would make the platform sustainable. It was also noted that despite institutional relationships with UNFFE, NAAC, DFAs and ACEs, e-Granary remained unprofitable and the use of forward contracts with buyers had faced challenges as previously mentioned in section 1.1.

Finally, although some evidence was available that provided an indication that farmers could have obtained higher market prices from use of the e-Granary, this was limited to two deals done between buyers and two FOS in two seasons. At the same time, it was evident that, in the current market situation, no buyer was willing to establish a minimum guaranteed price which rendered the use of forward contracts difficult as far as price was concerned but not on quantities needed by the buyer. It was however interesting to note that loan repayment was good with no defaults reported by farmers (or at least purchase at that price. Despite the above, at completion, the project would continue with efforts to promote establishment of forward contracts after e-Granary completion due to the potential benefits it brought to farmers compared with marketing arrangements. Further, to sustain the e-Granary, there was need to increase the scope of services available. For example, by generating revenue through the sale of inputs via the platform, as this market had displayed low price volatility, in addition to bulk procurements of fertilizers.

Knowledge management and communication

At design, e-Granary was to develop a Knowledge Management (KM) and Learning Strategy that would achieve the following objectives: (i) Guide implementation by improving project performance; (ii) Support efforts to scale up or replicate successes, and (iii) Share lessons with wider audiences to increase visibility and reinforce advocacy. The mission found that these objectives were in-line with the overall EAFF KM Strategy that was used during implementation. In addition, the following KM and communication activities were the envisioned at design: (i) Sharing knowledge and success stories from the targeted value chains across the targeted countries, (ii) Developing and packaging KM products appropriately and disseminating them to the relevant stakeholders in both countries; (iii) Development and dissemination of training manuals and curriculum of best practices in the targeted value chains; and (iv) Facilitating country level and regional KM events to discuss challenges, lessons and success stories amongst stakeholders both at the regional and country levels.

During the full implementation period, the mission found the following knowledge management, visibility and communication products had been developed: (i) Structured trade training materials, (ii) Crop protocols, (iii) Posters and brochures; (iv) Financial literacy training materials, (v) E-Granary strategic document, (vi) Farmer group engagement contract and criteria, (vii) Farmer budgets, and (viii) The e-Granary platform process flows. During interactions with beneficiaries at the e-Granary regional KM workshop and mission field visits in Uganda, there was some evidence that beneficiaries could attribute increase in crop productivity to the crop protocols and the e-extension services provided by EAFF. In addition, some of the beneficiaries appreciated the farm budgets tool since this tool taught the farmers how to appropriately plan their resources and their needs before the planting season. Further, interactions with farmers at the regional KM workshop, also validated that the project had made some impacts on smallholder farmers and also FOs. However, these impacts had not been effectively used

to foster advocacy and policy influence at the project and National Farmer Organization (NFO) levels, though this was still too early to call.

Overall, although the project had developed many useful visibility and KM products during implementation, there was no evidence of how these KM products were used to improve the project performance in terms of knowledge captured from the project's KM monitoring tool to inform decisions on planning of annual work-plan and budget activities.

Scaling up and sustainability

E-Granary business model as currently constituted leverages on the wide membership base of EAFF, which allows it to organise and aggregate a diverse base of farmers lending itself to achieve scale. By working with farmer groups and co-operatives, the platform provides an assurance to buyers of aggregated produce, while at the same time strengthening the co-operate sector thereby allowing access to markets and improved prices. These aspects of the e-Granary allow the model to be scaled up and also provides a basis for sustainability.

However, a review of the e-Granary and its current operations did not provide evidence that sufficient business was transacted on the platform to guarantee sustainability; probably since it was a pilot and a start-up in the target countries. On the other hand, it was also noted that the size of orders at the point of signing did not correspond with the deliveries generated due to side selling, amongst others, hence fell below the threshold to make the system self sustaining. Data from the project also revealed that the platform was yet to breakeven. There was also the additional need to include extra modules in the system to improve its usability. For example, a customer relationship management (CRM) platform was necessary. This would enhance and streamline interactions between e-Granary, farmer mobilisers, smallholder farmers and also enable interactions with third parties such as inputs suppliers, financiers and buyers/off-takers. Further, the payments platform on the system would also need to be activated after further engagements with financial partners so as to align the system with the systems of financial institutions in order to enable users from both ends to view transactions. It is noted that the Application Programming Interface (APIs) that could facilitate this was not developed by both e-Granary and the financial institutions and this needed a critical mass of farmers active on the system to allow tracking the volume of business transacted on the system which in turn would enable planning, forecasting and decision making needed to ensure sustainability. To ensure sustainability, it was also critical for e-Granary to have a buy-in with financial institutions who would then provide funds to farmers in terms of loans and credit. The mission noted that e-Granary had challenges in securing suitable financial partners during its implementation; and this process required patience and persistence.

However, the e-Granary was successful in establishing partnerships with other institutions which is key for scaling up of the business model and for sustainability. For example, the partnership with the East African Grain Council (EAGC) is a positive one that will enable the EAGC platform - G-Soko - to integrate with the e-Granary. Through G-Soko, EAGC provides real time grain market prices, cross border trade volumes, food stocks and climate information for the grain sector. The G-Soko provides some useful features such as (i) quality assurance of traded commodities, (ii) contractual agreements between smallholders, buyers and EAGC to govern parties doing trade; (ii) solution to assure payments and settlements and (iv) grain trade logistics through reputable service providers vetted by EAGC. Through the partnership with EAGC, e-Granary will gain access to markets for grains and this will also mitigate some of the challenges of market access for smallholder farmers thereby ensuring sustainability.

Lessons learned and implementation issues

An important lesson learned from the design and implementation of the e-Granary project is that for an agribusiness start-up, you need to adopt a tailored approach across different countries and value chains. Uganda and Rwanda presented different business environments to Kenya where the e-Granary was first implemented and this precipitated change in the business model, while the technology model remained the same. It meant that the revenue model would need to be accustomed to the respective country since the level of agriculture development was not the same; the capacity of the actors and government policy in agriculture also varied.

The e-Granary was designed as an integrated 'end to end' business model, to support delivery of services to farmers dealing in commodity value chains, by offering services such as aggregation of produce, connectivity to service providers and linkages to markets. However, a lesson learnt was that the technical deployment of an ICT tool was not in itself a measure of business achievement and that the usefulness of the platform would be measured not only in terms of the active use of the provided services (as not all could be monetized e.g. e-extension, seeds and pesticides except fertiliser) and the volume and value of grains traded through the e-Granary. For instance, it was challenging to monetize purchase of fertilizer in Rwanda since distribution was through a centralized system; while in Uganda it was possible to monetize both procurement of fertilizer and sale of grain. Further, it can be noted that an e-tool itself cannot generate business transactions, and that business transactions are a direct result of the relationships and trade in goods on the ground. Therefore, while the design and focus on the establishment of relevant ICT tools was important, it was only secondary to the establishment of business relationships on the ground and a trading footprint that showcased the viability of the core business concept, for which that ICT tool could enable.

Another key lesson from implementation of the e-Granary is that there is need to provide for working capital to manage the market risk at the onset before trust by the farmers is built to a level where the need for the working capital can be reduced. At completion, it was noted that the design of the e-Granary promoted aggregation of produce from farmers through FPOs and these farmer groups would then be linked to off-takers and the later would enter into forward contracts with the FPOs. However, this arrangement faced some challenges due to the twin challenge of farmers engaging in side selling due to the need for immediate cash while at the same time the buyers could not provide minimum price guarantees for the produce. A notable lesson from this arrangement is that not all business models, costs and operational structure are suited to any commodity/product or value chain or country.

The e-Granary business model was built on the connection between a private entity (e-Granary Ltd.) and a public entity – the EAFF. This gave the e-Granary unprecedented access to FOS across the region and the ability to directly benefit from the farmer cooperative capacity-building interventions of EAFF focused on grain – giving the e-Granary a clear differential advantage from the start. A key lesson from this arrangement was by using a recognised FO apex body, it was possible to have a wide reach of farmers to on-board to the e-Granary while at the same time this arrangement also provided an opportunity to capitalize on strategic private and public partnerships to deliver value chain solutions to farmers. For example, the e-Granary was able to connect farmers to inputs service providers and information on the platform also allowed linkages with potential buyers and off takers. Despite these advantages, at completion, it was noted that not all modules on the e-Granary platform were active such as the store management module and the farmer management module and that FPOs were not able to engage directly with input suppliers.

An important lesson learnt from the e-Granary was the need to focus on a common homogenous type of value chain. By focusing on the commodity grains, the e-Granary was

able to tailor services to address specific needs of commodity grain producers. For example, the delivery of e-extension services using text and voice messages focused on commodity grains farmers and that considered same crop calendars thereby optimising on the value of the service. Offering specialised technical services focused on one value chain was expected to result in higher positive impacts on crop productivity. The project outcome assessment at completion pointed out that 94% of farmers had reported a positive change in crop productivity per acre of land cultivated. However, it was not possible to attribute this positive change in crop productivity to delivery of services under the e-Granary. In addition, the outcome assessment did not provide a comparison between the average crop yields per acre at completion with that at baseline to establish actual changes in productivity for both beneficiaries (treatment group) and non-beneficiaries (control group).

With regards to flow of funds, it was noted that the project experienced instances of delayed disbursement of funds, which in turn affected the execution of activities and owing to the fact that all planning was season based, funding delays had the potential to affect an entire season. A lesson learned from this was that for e-Granary, being an agri-business oriented project, there was need to deploy resources in a timely manner through out the implementation period for the project.

Implementation arrangements

The GAFSP, MMI grant, *"Using The E-Granary Innovative Mobile Platform to Deliver Economic Services to Farmers in East Africa Project"* was an offspring of the EAFF. EAFF founded in 2001, is a regional FO covering 10 countries in the East Africa Community and the Horn of Africa, with a membership of 24 national FOs and co-operatives with about 20 million small-scale farmers involved in all aspects of agriculture. It is registered under the Societies Act in Kenya.

From inception, e-Granary was initially to be implemented in Uganda, Tanzania and Rwanda. In Uganda, the project was to work in partnership with Uganda Co-operative Alliance (UCA), which supports its members to increase their production and productivity and as a result increase household income. UCA's membership comprises Savings and Credit Cooperative societies (SACCOs) and Agricultural Cooperative Enterprises (ACEs) and District, Regional and National Unions. In addition, e-Granary was to work with Uganda National Farmers' Federation (UNFFE) which is an umbrella organisation of affiliated organisations with an estimated membership of 500 000 individual members. In Tanzania, e-Granary was to work with The Tanzania Federation of Cooperatives (TFC) which is the national umbrella organization for cooperative-based institutions. In Rwanda, e-Granary would work with IMBARAGA, which is an umbrella organization of national scope, and has 27,200 members of which about 60% are women. IMBARAGA operates a full training centre in Musanze, in northern Rwanda, that has the capacity to train 200 farmers a day. Other partners include IFAD, which was to provide supervision of the project on an annual basis for the first two years of the project, scaled up to bi-annual and subsequent monthly status meetings towards the end of the project. Additional support was provided through technical assistance to analyze the market and the e-Granary business model.

At design, the envisaged development trajectory for e-Granary was highly ambitious. GAFSP MMI grant, e-Granary's business model was set to be for whole value chains and to cut across a variety of crops. However, with the need to get to know the markets better and to pilot digital solutions, this was deemed too wide reaching; it was not feasible to engage in whole value chains at once. It was therefore decided that moving forward, e-Granary would focus on one value chain and facilitate in the most critical functions within its comparative advantage (marketing and linkages with off-takers). The platform would

also select clients carefully, and work with DFAs or ACEs which were already organized and had systems of extension.

During implementation, several changes were made to the project design; dropping activities in Tanzania and lowering expectations in Rwanda. In hindsight, reducing the scope of the interventions more drastically might have produced better results in terms of the likelihood of sustainability of the investments; as would more strategic exploitation of e-Granary as a regional company, in addition to the country-specific aspects. Farmers interviewed during the outcome assessment, indicated that they are quite happy with the services received. However, these reports presented no evidence of real achievements in terms of yields or increased prices received. Field visits did validate that in a few cases, increased prices were received by farmers through bulking and off-taker arrangements, but it is not evident that this was sustained for more than one or two seasons.

It was also noted that the COVID-19 pandemic clearly caused challenges for e-Granary and caused distortions to the market. For example, as a result of the Pandemic, travel restrictions and night curfews were imposed in Uganda and Rwanda which affected supply chains and operations of markets negatively. As a result of these COVID-19 related challenges, additional financing was obtained by the project team, however, the tangible impacts of this support was not yet to be quantified. Within EAFF and e-Granary, the relevant project structures have been put in place to engage with farmers, and from the operational side, the web platform provides the infrastructure for customer relation management; to handle payments; and in planning, forecasting and logistics.

Monitoring and evaluation

At design, it was agreed that operational monitoring would be coordinated by the EAFF Monitoring and Evaluation (M&E Officer), in close collaboration with the M&E focal points in each targeted country. Moreover, programmatic monitoring would be overseen by the EAFF Chief Executive Officer (CEO). It was envisioned that the e-Granary M&E System would be in line and compliant with the GAFSP M&E Manual. The design also recommended the project to procure M&E software in order to have a timely and efficient M&E system. The mission found that the project developed an M&E plan to guide M&E operations and data capturing was done through the use of standardized paper-based data capturing templates at the field level, which were then inputted in a Microsoft (MS Excel) sheet/report and shared with the EAFF M&E Officer. As planned in the Project Design Report (PDR), the project conducted a baseline and an end-line survey as planned. However, it is noted that the reports, and more specifically the end line outcome survey report had some notable gaps especially in granulation and with missing details of data collected. For example, some key performance log frame data for beneficiaries (treatment group) and non-beneficiaries (control group) were not collected such as crop yields per value chain per acre, increased income values; amongst others. Absence of these data may have rendered the report incomplete and it was not possible to attribute the changes in agricultural productivity derived from project interventions.

M&E System. Under the agreement in the additional financing, funds were allocated in Component 2 – ‘capacity building and knowledge management’ directly to strengthen and improve the M&E system by giving EAFF the opportunity to procure and develop a robust and digitized M&E System that would improve the efficiency and timeliness of data capturing for which the project acknowledged this as a significant need. The mission found that the EAFF team procured an Enterprise Resource Planning (ERP) Software and was yet to enhance the software with an M&E module as agreed in the previous supervision mission. However, it was noted that EAFF planned to use internally generated funds in the future to develop this system.

End-line Survey. As part of winding up activities, e-Granary conducted an in-house end-line survey in both countries. The aim of this survey was to capture data evidence on the progress of log frame outcome indicators. Specifically, these indicators were: (i) revenues of participating farmers increase by at least 40%, (ii) 20% increase in yields of targeted crops, (iii) Prices achieved by participants with a target of 30% greater than those of non-participants, (iv) percentage of supported rural producers' organization members reporting new or improved services provided by their organization, (v) Value of forward/supply contracts executed between farmers, warehouse operators and off takers (vi) number of forward/supply contracts executed between farmers and service providers, (vii) Number of EAFF farmers applying for credit through platform and (viii) Volume of product delivered to aggregation centers sold as premium grade. It would be expected that one of the key objectives for the survey was to measure attribution between beneficiaries who received project interventions and those who did not receive support from the project. Even though, the project identified the control group at baseline and also surveyed them at end-line, the finding and analysis of both treatment and control group results were not conducted in the draft end-line survey report. This observation alludes to the critical need for EAFF to invest in the capacity of their M&E if they are to produce evidence-based results from their interventions. Even though the reports showed positive feedback from surveyed beneficiaries on the overall e-Granary intervention, particularly in extension services, the mission found that some key indicators such as revenues and prices were not captured hence making it difficult to ascertain achievement of key log frame indicators. It is recommended that after project completion, an additional outcome assessment be carried out to establish the performance of the e-Granary as per the log frame indicators.

Financial and fiduciary management

Overall disbursements and funds absorption. The project had a budgeted contribution of US\$ 3,037,000 and US\$ 370,777 from GAFPS/IFAD and EAFF own contribution respectively. The actual expenditure achieved was US\$ 3,021,914.87 and US\$ 316,379 under GAFPS/IFAD and EAFF own contribution respectively resulting to a total expenditure of US\$ 3,338,294 and an overall absorption of 98%. The disbursements received from IFAD were US\$ 2,916,643 with the balance of US\$ 105,272 expected to be made once the final withdrawal application is submitted.

Organization and staffing. There were two financial management staff required for financial management of the project who were fully on board throughout the implementation period. EAFF further provided an additional accounts assistant to have a team of three staff who were noted to be adequate for the project. All other partners who were receiving advances from EAFF were required to provide a designated focal person at their organisation to process financial transactions for the project. There were no major challenges noted in regards to financial management staffing for the project.

Accounting and financial reporting. During the project implementation, the project was using Quick Books accounting system for financial recording and generation of financial reports. The system had various inherent weaknesses. Through the support by the e-Granary project, the organisation acquired a better accounting software namely Microsoft ERP accounting software that was operationalized in October 2022. This is a powerful accounting software popular with other organisations of the same nature and this system was selected after an extensive assessment of its capability vis-a-vis other proposed software. While this system was acquired towards closure of the project, it will greatly strengthen the organizations financial management and reporting. The system will also allow wide analysis of expenditure for ease of budget monitoring by component/sub-component, by categories, by regional offices, by year to date and cumulative expenditure since project commencements among other granular analysis including enhanced internal controls on recording and approvals of transactions.

Project assets handover. The project had acquired assets worth Kshs 11,789,451.79 (US\$ 98,245) which are currently held by EAFF and others by various partners that were participating in the project. EAFF has written to IFAD for approval to retain the assets in the organisation. This is seen as a further capacity building to the partner organisation since EAFF will continue to utilise the assets, that are still in good condition for other related activities. Based on IFAD approval, EAFF will share with the partners' formal assets handover letters with guidance on where the assets would be utilised.

Digitization of records. E-digitization has been implemented and documents were being scanned and uploaded to the ERP system acquired by the project. This system will enhance safe custody of project documents and ease retrieval for any future use, in addition to the hard copy documents that should be maintained as per the grant agreement.

Final project external audit. The final audit for the project is ongoing and was expected to be submitted by December 31, 2022 as required by IFAD. Based on the draft audit report, there were no major issues noted. The previous audit report for the period ended 31 December 2021 was carried out and submitted to IFAD as required and there were no significant issues noted.

Overall, there are no outstanding financial management issues except the submission of the withdrawal application and final audit report mentioned above. During project implementation, there were ongoing recommendations provided to strengthen financial management which were all addressed. The weaknesses in the accounting software was also a recurring issue which has since been resolved with acquisition of the Microsoft ERP accounting software.

Procurement

The mission noted that at inception, procurement for the project was conducted using the EAFF procurement manual and guidelines, but this proved insufficient to ensure consistency with IFAD procurement principles. During the project extension phase the procurement process was amended to be guided using the IFAD procurement guidelines and IFAD procurement handbook for the extension period. However, it was noted that the letter to the borrower did not clearly define the financial threshold for selection of procurement methods to be used except for the threshold of prior review. Based on the Procurement Plan 2021/2022, 88% of the activities planned were awarded and conducted in accordance with the procurement methods approved and the value of contracts awarded was approximately US\$ 159,310. The remaining 12% of the activities were not implemented and the funds reallocated.

It was noted that the request for quotation and the request for proposals contained content that was relevant and sufficient for bidders to respond to the requirement according to the nature of the contract concerned and were adequately consistent with the IFAD guidelines. The contracts were implemented in a timely manner and invoices were paid on time. Two activities connected to developing video documentaries were performed after the completion date of the project. These activities were included in the winding up schedule and approval were granted by IFAD Financial Management Department to have them included as winding up activities.

To ensure effective and efficient contract management, the contract signed should contain all documents as stated in the draft contract already specified in the request for proposals. Some elements for ensuring contract management were included separately in the contract such as the documents related to the annexes as stated in the contract. It is important to give procurement training to all those involved in the procurement (procurement, finance & technical team) before procurement implementation. The team should get technical support from IFAD as soon as any challenges are identified. Record keeping should be strengthened to ensure evidence of all the procurement process.

ANNEXES/APPENDICES

Updated Logical Framework

Results Hierarchy	Indicators												Means of Verification			
	Name of Indicator	Units	Baseline	End Target	Year 1- July 2018-Jun 2019		Year 2- Jul 2019-Jun 2020		Year 3- Jul 2020-Jun 2021		Year 4- Jul 2021-June 2022		End of Project Cumulative/ End-line Survey results	Source	Freq.	Resp.
					Target	Actual	Target	Actual	Target	Actual	Target	Actual				
<p>Goal: Improve the incomes and living standards of participating e-GRANARY farmers in Uganda and Rwanda</p>	Revenues of participating farmers* increase by at least 40%	\$, (%)	\$56/acre	\$78/acre (40%)	\$59/acre (5%)	0	\$61/acre (10%)	0	\$70/acre (25%)	0	0	\$286/acre (411%)	\$286/acre (411% increase from baseline)	Baseline, End-line, and Farmer cooperatives data	project start & project end	EAFF
<p>Project Development Objective: Increased productivity and profitability of participating e-GRANARY farmers</p>	20% increase in yields of targeted crops	Number of 100kg bags/acre, (%)	4 bags/acre	4.8 bags/acre (20%)	4.12 bags/acre (3%)	0	4.20 bags/acre (5%)	0	4.48 bags/acre (12%)	0	4.8 bags/acre (20%)	12.1 bags/acre (203%)	12.1 bags/acre (203% increase from baseline)	Baseline, End-line, and Farmer cooperatives data	project start & project end	EAFF and FOs
	Prices achieved by participants* 30% greater than those of non-participants	USD (\$), (%)	\$14 per bag (farm gate)	\$18.2 (30%)	\$14.70 (5%)	0	\$15.40 (10%)	0	\$16.10 (15%)	0	\$18.2 (30%)	\$23.66 (69%)	\$23.66 (69% increase from baseline)	Baseline, End-line, and Farmer cooperatives data	Seasonal, annual reports	EAFF and FOs

	Percentage of supported rural producers' organization members reporting new or improved services provided by their organization	%	11.5%	0	0	0	35%	0	80%	0	80%	94%	94% (increase from baseline)	Baseline survey	Seasonal and annual reports	EAFF & FOs
Outcome 1: Increased share of participants' marketed surpluses aggregated prior to sale	Value of forward/supply contracts executed between farmers, warehouse operators and off takers	USD (\$)	0	\$4.5M	0	0	\$0.5M	0	\$2.5 M	\$830 298	\$1.5M	\$2.8M	\$3.7M (82% of end target)	Signed contracts	Quarterly	EAFF/FOs
	Number of forward/supply contracts executed between farmers and service providers, i.e. warehouse operators, financial services and off takers	Number of contracts	0	28	14	0	3	0	15	12	10	8	20 (71% of end target)	Signed contracts	Quarterly	EAFF/FOs
Outputs: 1.1 eGRANARY	Number of farmers	Number of Farmers	0	50 000	10 000	4 997	5 000	9 354	35 000	26 424	10 000	14 719		e-GRANARY records	Quarterly	EAFF

platform developed and deployed according to technology roadmap	registered on the platform; 50% of the registered users actively ² using platform services disaggregated by product and user profile												55 494 (110% of end target)			
Outcome 2: Increased use of financial services/credit by participating farmers	Number of EAFF farmers* applying for credit through platform	Number of Farmers	0	11 700	5 000	0	1 700	586	7 000	4 857	3 000	17 933	23 376 (200% of end target)	e-GRANARY records	Seasonally	EAFF/FOs
Output 2.1: Lines of credit established	Value of loans extended by amount	USD (\$)	0	\$1.5M	\$1.02M	0	\$50,000	0	\$0.95M	\$598 297	\$0.5M	\$442 377	\$1.04M (69% of end target)	e-GRANARY records	Seasonally	EAFF/FOs
Outcome 3: Participating farmers adopt improved sustainable production and post-harvest practices	Volume of product delivered to aggregation centers sold as premium grade	MT	0	23 000	13 500	0	3 000	0	13 000	2 522	7 000	6 920	10 396 (45% of end target)	e-GRANARY records	Seasonally	EAFF/FOs
Output 3.1: Virtual extension modules operable	Number of farmers accessing e-extension services	Number of Farmers	0	0	0	0	2 000	5 040	10 000	39 620	10 000	11 812	56 472	e-GRANARY records	Seasonally	EAFF