



Uganda, Rwanda and Tanzania

**Using the eGranary innovative mobile platform to
deliver economic services to farmers in East Africa**

Large Grant Design Document

Contents

Abbreviations and Acronyms	iii
Summary Sheet	iv
I. BACKGROUND	1
II. RATIONALE: RELEVANCE AND LINKAGES	2
A. Link to outputs of Grants Policy and corporate priorities.....	2
B. Contribution to Selected Strategic Direction and to DSWP (for G/R grants)	2
C. Rationale for grant financing, for selected implementing agency and for recipient selection and recipient capacity	3
D. Linkages with on-going projects and grants	3
E. Preliminary results from the pilot phase	4
III. THE PROPOSED PROJECT.....	4
A. Target Group and project scope by country	5
B. Overall Goal, Objective and Description	6
C. Project Outcomes	8
D. Project Activities.....	10
IV. PROJECT IMPLEMENTATION ARRANGEMENTS.....	11
A. Implementing Organisations	11
B. Project Management and Implementation Period	14
C. Project management team	15
D. Monitoring, Evaluation and Reporting	16
E. Indicative Workplan	18
V. SUPERVISION, KNOWLEDGE MANAGEMENT AND SCALING UP	20
A. Supervision Arrangements	20
B. Knowledge Management and Learning	20
C. Scaling up and sustainability.....	20
VI. PROJECT COSTS AND FINANCING	21
VI. FINANCIAL GOVERNANCE.....	24
A. Procurement Procedures for Goods, Services and Human Resources	24
B. Financial Management System, including accounting specifications.....	24
C. Flow of Funds and Disbursement Arrangements	25
D. Audit Arrangements	25

ANNEXES

- 1. Results-Based Logical Framework**
- 2. Supporting Documentation to Grant Design Document (see attachment)**
- 3. Eligibility and Due Diligence Checklist**
- 4. Financial management questionnaire**
- 5. Working Paper #1 on Technology Development**
- 6. Working Paper #2 : Technology Deployment**
- 7. Financial Management Country Notes**
- 8. Economic and Financial Viability**
- 9. Elements of the MoU between EAFF and MODE and with NFOs**

Abbreviations and Acronyms

ACEs	Area Cooperative Enterprises
AFD	Agence Française de Développement
CEO	Chief Executive Officer
DFAs	District Farmer Associations
EAFF	Eastern Africa Farmers Federation
EAGC	East Africa Grain Council
EAX	East Africa Exchange
EC	European Commission
FOs	Farmers Organizations
GAFSP	Global Agriculture and Food Security Program
IFFCO	Indian Farmers Fertiliser Co-operative
NCCR	National Cooperatives Confederation of Rwanda
MVIWATA	Mtandao wa Vikundi vya Wakulima Tanzania
MMI	Missing Middle Initiative
MODE	Mobile Decisioning Holdings Ltd
PMT	Project Management Team
PRELNOR	Project for the Restoration of Livelihoods in the Northern Region
SDC	Swiss Development Cooperation
SFOAP	Support to Farmers Organization in Africa Programme
TFC	Tanzania Federation of Cooperatives
UCA	Uganda Co-operative Alliance
UNFA	Uganda National Farmers' Association
UNFFE	Uganda National Farmers Federation
VODP	Vegetable Oil Development Project

Summary Sheet

1. Name Originator: Eastern African Farmers' Federation	2. Division(s)! : ESA
3. Title of the proposal: Using the eGranary innovative mobile platform to deliver economic services to farmers in East Africa	
4. Value of IFAD grant: 2,610,000 US\$ The grant is not financed with IFAD grant funding window but by GAFSP MMI initiative for a total of 2,610,000 US\$	5. Co-financing: US\$ 370,777 EAFF Total cost: US\$ 2,980,777
6. Implementation period: 36 months	7. GRIPs ID: 2000001801
8. Selected Priority Area²: Innovative ICT for Smallholders	
9. Window: Country Specific Large grant (for GAFSP financing)	10. Country/Countries: Uganda, Rwanda, Tanzania
11. Background/relevance: While the financing is from GAFSP the grant is directly relevant to IFAD's 2017 priorities for the grant program. eGranary's innovative ICT mobile technology will facilitate product aggregation, provide timely weather and extension advice, will digitize and deliver different loan products to farmers and allow for close monitoring of agricultural campaigns. The proposal is closely aligned with the objectives of IFAD's Grant Policy as it holds great potential for scaling-up, will strengthen capacities of the recipient and sub-recipients and will lead to more effective advocacy for smallholders and increased incomes through aggregation.	
12. Direct and indirect target group: The direct target group are smallholder eGranary participants. At least 105,000 farmers will be using eGranary services at the end of the three-year implementation period. Based on gender-disaggregated data from the pilot phase, it is 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 will also benefit.	
13. Goal, objectives and expected outcomes: The Project Goal is to improve the income and living standards of participating eGranary smallholder farmers in Tanzania, Uganda and Rwanda. The Project Development Objective is to increase productivity and profitability of participating E-Granary farmers. Anticipated outcomes include (i) E-granary platform will be working with 90,000 smallholder farmers registered onto the e-Granary; (ii) Smallholders will have increased market access - 108,500 MT of product worth >80M USD sold on the market by smallholder farmers; (iii) Smallholders will have increased access to financial services - 31,500 small holder farmers receive credit on their mobile phones; (iv) Smallholders will have increased access to extension services - 10,000 small holder farmers access agriculture extension services via mobile phones.	
14. Key activities by component: Component 1: Access to Services: Registration campaign, platform establishment, partnership development, roll out of products. Component 2: Capacity Building and Knowledge Management: Enhanced capacity of farmers on structured trade and financial literacy; Increased public awareness and knowledge on the success of e-Granary - 30 knowledge products developed and disseminated.	
15. Recipient: Eastern Africa Farmers Federation EAFF.	
16. Rationale for recipient selection and recipient capacity: The recipient was competitively selected by GAFSP MMI initiative and IFAD was identified by EAFF as supervising entity given track record of partnership between IFAD and EAFF.. The capacity of the recipient was judged by IFAD to be satisfactory based on a due diligence report.	
17. Project cost: <i>(provide approximate breakdown by year and category of expenditure. Include also indication on the use of co-financing, as applicable)</i>	

Category		Total cost Year 1	Total cost Year 2	Total cost Year 3	Total	GAFSP contribution	EAFF contribution
I	SERVICES, GOODS AND INPUTS	-	-	-	-	-	-
II	CONSULTANCIES	293 250	95 750	60 750	449 750	389 250	60 500
III	WORKSHOPS	231 500	163 500	113 500	508 500	508 500	-
IV	EQUIPMENT AND MATERIALS	52 000	6 000	-	58 000	54 000	4 000
V	SALARIES AND ALLOWANCES	402 000	410 040	418 241	1 230 281	1 065 752	164 529
VI	TRAINING	176 000	101 250	68 750	346 000	246 250	99 750
VII	OPERATING COSTS	94 901	69 901	61 901	226 704	197 954	28 750
VIII	INDIRECT(Administrative) COSTS	71 605	48 501	41 436	161 542	148 295	13 247
TOTAL		1 321 256	894 942	764 578	2 980 777	2 610 000	370 777

18. Key Risks: Uncertainty and distortion in the grain markets mitigated by establishing predictable supply contracts; Availability of funds for lending mitigated by MODE's established relationship and confidence of financial institutions; Defaults on loans mitigated by using the group guarantee approach; Achieving the critical mass of farmers using the platform mitigated by intense outreach efforts.

19. Monitoring & Evaluation, KM and Learning: *(describe how results will be measured, data will be collected and lessons learnt will be shared.)* The eGranary data input process will be location based and disaggregated by age, gender, commodity and season and reports will be generated as such at the end of the season; we will closely evaluate the effectiveness and efficiency of its training modules to enable quick response to issues; we shall regularly evaluate uptake of services such as financial and extension services to enable review and adjusting of the same. We will conduct targeted surveys using both field surveys and surveys administered through mobile telephones (call centres) to determine the degree of farmer adoption as well as focus group discussions. Regarding reporting, EAFF will provide on-time consolidated AWPBs, biannual progress reports based on a format agreed with IFAD, a mid-term report, a detailed exit strategy, and a final report which highlights lessons learned. MODE will also provide data on access and repayments. Results will be shared through publications, GAFSP platform, IFAD platform and public events.

20. Supervision modalities: IFAD will undertake direct supervision of the Grant. Supervision will consist of field missions and intermittent technical backstopping as the need is identified and relevant to the progress and challenges within each country..

21. Linkages: The Country Programme Managers for Rwanda, Tanzania and Uganda are leading the grant preparation process and fully supportive of the grant that will be part of the activities that IFAD will supervise in the country programmes. Linkages with projects will involve use of storage facilities constructed by on-going and closed IFAD-funded projects by eGranary participants as well as training participants on post-harvest handling by project staffs. In addition, participating National FOs (NFOs) are partners on certain IFAD projects and also sit on IFAD's national steering committees; this will be a significant advantage to identify opportunities for further linkages.

22. Scaling up: Once the platform is operational, a robust outreach campaign and use of existing farmer profile databases will facilitate scaling up to other farmers groups among EAFF's members.

23. Sustainability: The sustainability of the e-Granary is primarily based on the financial benefits for the actors involved, which will create the incentives for its continuation as a self-sustainable business solution.

24. Other aspects: *(describe any other aspects that can further strengthen the proposal, for example in terms of innovation, partnerships and contribution to a public good related to IFAD's strategic priorities)* There is potential for partnership with activities supported by IFAD investment programme at country level – in terms of use of post-harvest facilities and linkages with grassroots cooperatives and FOs being supported by IFAD country programmes. In addition, the e-Granary initiative as such is an innovative approach to link up farmers to markets through their vertical integrated structures, linkages with financial sector and use of ICT platforms. As such a strong KM agenda is associated with the grant to assess its scalability and replication elsewhere. .

¹ Note that interdivisional and interdepartmental collaboration is strongly encouraged.

² The indication of a strategic direction **only applies to Global/Regional grants. Please select one Priority Area only.** For further details, see Strategic Guidance for IFAD Grants 2016 presented to EMC, dated 29 July 2015

I. BACKGROUND

1. Agriculture is the backbone of the Tanzania, Uganda and Rwanda economies, contributing on average more than 24% of the Gross Domestic Product (GDP). The bulk of the production is by smallholder farmers, contributing above 60% of the food consumed in urban centres and almost 90% of that in rural areas. Despite this, the region has remained a net food importer, with the majority of imports (about 90%) being grain. Smallholder farmers have over the last decades experienced low incomes and very limited access to economic services, such as financial, marketing, extension and technical advisory services, thus dashing any possibilities of them increasing the profitability of their business.
2. Most financial institutions consider smallholder farmers as high-risk clients. As such, they have not been motivated to develop financial products to meet farmers' needs and have created requirements that limit farmers' ability to borrow either long or short term. Farmers lack a traceable financial history that a credit product can be based upon. Farmers also lack access to regular and predictable markets that are ready pay a premium on quality, ending up receiving 100% low-grade price, which gives no incentive to invest in quality and grade the products. Usually, farmers are unable to benefit from upward price fluctuations, as the majority sell directly after the harvest season, when prices are at their seasonal lowest. Finally, extension services are mainly government-led and suffer from the typical constraints faced by the public sector in terms of resources to reach most farmers.
3. The two key constraints to economic transformation that smallholder farmers face in East Africa and that the project is going to address are the limited access to both input and output markets as well as to appropriate financial services. These two aspects are closely interlinked. Lack of access to financial services limits the capacity of smallholder farmers to invest in their enterprises in order to get access to the most lucrative (and demanding) markets. On the other side, the numerous constraints in accessing input and output markets reduce the incentives of farmers to invest in production improvements. As a result, farmers are trapped into a vicious circle of low-input/low-output technology.
4. Provision of economic services to smallholders is constrained by the high fragmentation and geographic dispersion of the latter, which represents a challenge for both the private sector operators willing to establish commercial partnerships with them and the public sector in the delivery of public goods such as extension services.
5. The e-granary is an innovative solution developed by EAFF which will address the twin challenges of access to markets and financial services, creating positive synergies between the two. Furthermore, this technology bypasses the issue of farmers' fragmentation by creating a virtual aggregation space. This space provides up to date data on the farmers' enterprises and can disaggregate farmers' data by location, group, gender and age. It also allows aggregation of input demand (and projections) as well as actual data on harvest and harvest projections, which is then used to facilitate access to markets and the roll out of a credit product via mobile phone. This platform helps establish and broker commercial partnerships between private sector operators, such as processors, input/output traders, financial institutions etc., and smallholder farmers. It facilitates the meeting of demand and supply of agricultural produce, reduces risks and transaction costs and leverages private financing for investment in smallholder agriculture. Once the platform is established, additional services such as agricultural extension and technical capacity building can be plugged and played onto the e-Granary. The data on the platform is wholly owned by EAFF and all actors coming on board shall provide services on a revenue share basis.
6. The document was developed by EAFF with technical support from IFAD. Annexed to this document are Working Papers on System Architecture and Technology Deployment that can serve as roadmaps and guidelines at grant start-up.

II. RATIONALE, RELEVANCE AND LINKAGES

A. *Link to outputs of Grants Policy and corporate priorities*

7. The eGranary Large Grant Proposal is closely aligned with the objectives of IFAD's Grant Policy. The proposed activities offer approaches and technologies with large potential for scaling to achieve greater impact. Should eGranary perform as expected, it can be scaled up to other NFO member cooperatives and associations. The six NFOs participating in eGranary represent some 4.5m members. Platform architecture will be constructed capable of handling high volume data so scaling to much larger numbers will not present technical problems. Expansion to additional EAFF member countries would be part of a longer-term agenda.
8. Implementation of the grant will strengthen the institutional and policy capacities of EAFF and the participating National Farmers' Organizations and will enhance their ability for advocacy and policy engagement. The eGranary will pitch at the grassroots level since the targeted farmers are meant to benefit from the array of services that the eGranary will be offering and the data collected will be used to develop policy, financial and market inclusivity models for smallholder farmers. Data on the eGranary will be location specific and be disaggregated into gender, age, commodity and season, this means that EAFF will be able to make different decision matrices based on different data combinations and this will help in targeting smallholders and in proposing better policies or potential investments benefiting them. The income models in paragraph 46 show the value and benefit that the smallholder farmers shall derive from the eGranary. The East African Community is aware and supportive of eGranary. Success will empower EAFF to play an even stronger role in advocacy and policy development. Finally, dispositions have been included to generate and share knowledge to increase development impact. eGranary is truly an innovative model. As such, EAFF recognizes the critical importance of generating and managing knowledge to understand and resolve implementation constraints, highlight successes, share knowledge with the development community, and scale up activities to new participants. EAFF will support this agenda with a strong KM component and will use traditional surveys and focus groups and Unstructured Supplementary Service Data (USSD³) interactive mobile phone surveys to generate key learnings and will manage and share knowledge through various media, documentation, public events, seminars and conferences.
9. The proposed grant is aligned to IFAD's 'Strategic Framework 2016-2025' to promote "inclusive and sustainable rural transformation" and more resilient livelihoods for all poor rural people. eGranary will contribute to more resilient livelihoods by increasing the productivity and profitability 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. Institutional and other large buyers will reduce collection costs by shortening the supply chain and concentrating purchases. Service providers, financial institutions and implementing partners will generate service fees to enhance sustainability.

B. *Contribution to Selected Strategic Direction and to DSWP (for G/R grants)*

10. The eGranary grant proposal is directly aligned with four of the five grant priority areas for 2017: increased rights and access to the most vulnerable people to resources, innovative ICT for smallholders, decreasing food losses along the value chain and improved data collection and results management. Participating farmers will have greater access to agricultural inputs through attractive financing offered by eGranary which will result in higher yields; innovative ICT mobile technology will facilitate product aggregation, provide timely weather and extension advice, will digitize and deliver different loan products to farmers and allow for close monitoring of agricultural campaigns; food losses will decrease through better post-harvest practices; and data collection and results management will improve by the establishment and exploitation of a farmer profile data base which will furnish timely data on eGranary participants.

³ Unstructured Supplementary Service Data (USSD), sometimes referred to as "Quick Codes" or "Feature codes", is a protocol used by GSM cellular telephones to communicate with the service provider's computers. USSD can be used for WAP browsing, prepaid callback service, mobile-money services, location-based content services, menu-based information services, and as part of configuring the phone on the network (from Wikipedia)

C. *Rationale for grant financing, for selected implementing agency and for recipient selection and recipient capacity*

11. This grant will be financed in the amount of \$2.61m by the GAFSP Missing Middle Initiative. GAFSP has provisionally approved this grant based on the alignment of the previous Concept Note submitted by EAFF with the directives and core success factors enumerated by the Missing Middle Initiative. The Missing Middle Initiative is focused on producer organizations (POs), civil society organizations (CSOs) and small and medium enterprises (SMEs). Through this initiative, GAFSP aims to stimulate investments along the full spectrum of the agriculture value chain. to promote improved access to finance (grants, concessional finance or commercial finance) and complementary services (extension, capacity building, technology or access to markets) to smallholder farmers.
12. EAFF selected IFAD as the designated supervisory institution for this grant and costs for supervision are included in the GAFSP MMI Initiative but are not part of the overall grant budget which will be solely used by EAFF for the implementation of the eGranary Initiative. IFAD assisted EAFF to build out the GAFSP Missing Middle Concept Note into IFAD's Large Grant Design Document. As part of this process, technical and financial due diligence was conducted to ensure that EAFF and participating NFOs had the capacity to implement the grant according to IFAD's established procedures.

D. *Linkages with on-going projects and grants*

13. The respective IFAD Country Programme Managers for Tanzania, Rwanda and Uganda have been leading the grant preparation process with support from IFAD team in support to East Africa Hub and PTA inputs. Most of the participating NFOs are currently implementing partners of IFAD-funded projects and/or members of the IFAD Country Programme Management Team (CPMT) as well as participating in the annual review meetings on the Country Strategic Opportunities Programme (COSOP). Most have a broad familiarity with IFAD's loan portfolio and specific experience providing services to past or on-going projects. This knowledge will help EAFF develop solid linkages and synergies with the loan programme.
14. There are many complementarities between eGranary and the loan portfolios. Several on-going or recently completed projects are working in the same value chains as those selected by EAFF and its member organizations and are implementing activities that directly complement and reinforce eGranary initiatives.
15. In Uganda, the PRELINOR Project is working in the grains and pulses value chains, supporting the establishment of collection centres and wholesale markets, the provision of extension services and strengthening FO management structures. In Rwanda, the Climate Resilient and Post-Harvest Agribusiness Support Project (PASP), working in the beans and maize value chains, is establishing 110 commercial hubs that will provide the physical infrastructure and the capacity building to aggregate and market products. Four large warehouses (capacity 1,500mt) have already been constructed. In addition, in the project area of the recently completed KWAMP Project, increased rice production has led to a steep increase in the demand for marketing services and marketing loans. In Tanzania's Market Infrastructure, Value Addition and Rural Finance Support Project (MIVARF) more than 20 warehouses have been constructed or rehabilitated and certain of these warehouses are implementing warehouse receipts systems.
16. eGranary will leverage the activities of the aforementioned projects by targeting Farmers' Organizations located in close proximity to collection centres and warehouses established through the projects. eGranary will capitalize on capacity building and extension services already being offered to strengthen management, production and post-harvest handling. eGranary will consult closely with IFAD Country Programme Managers during the site selection process, will include the CPMT and Project Management Units in its annual work planning exercises and evaluations and will ensure that the IFAD Country Programme Managers are kept fully abreast of the progress of the grant.
17. eGranary is also in the process of signing an MoU with Kilimo Trust, an NGO and IFAD grant recipient that promotes regional agricultural trade. Kilimo Trust will provide training to EAFF members in Farmer Business Schools, facilitate product sales through its established business linkages and furnish technical content to eGranary's extension programme.

E. Preliminary results from the pilot phase

18. The e-Granary pilot initiative has completed a first season in Kenya and is currently mid-way through Season II. Prior to the beginning the first season, 20,000 farmers were registered onto the e-Granary platform however, only a small subset of those registered were slated to contract loans and participate in the preliminary planting seasons in order to facilitate the initial trialing of the concept. During the first season, EAFF, through Export Trading Group (ETG), the identified buyer, extended in-kind loans in the amount of \$47,295 (certified seed and fertilizer advances) to 1200 farmers to plant 800 acres of maize and four hundred acres of soya beans. On behalf of the participating farmers, EAFF contracted Acre Africa, an insurance provider, to provide multi-risk insurance to participating farmers. 9.5 mt of certified maize seed and 10.2 mt of soya seed were distributed to the participating farmers. Although the maize crop began well, an extended drought during the tasseling stage wiped out the crop. EAFF filed an insurance claim on behalf of participating farmers for \$60,000. Heritage Inc., the insurance underwriter, has agreed to payment that will be forthcoming in the following weeks. Soya seed sourced from SEEDCO, a Zimbabwean firm, was delivered late and was subsequently planted in Season II.
19. In Season 2, 2,400 farmers participated in the programme that was extended to the Mount Kenya, Rift Valley and Nyanza regions. Farmers received in-kind loans totalling \$67,900 comprised of 12.5 mt of fertilizer and 19.8mt of maize seed but were only able to plant 17mt on 1665 acres due to late arrival of a portion of the seed. The maize crop has germinated and is at the establishment phase. In the absence of weather-related incidents, the crop will be harvested in August. The soya crop will be harvested in the coming days. Farmers received a bundled product including an in kind loan and an insurance cover. Average advances (in kind) have been very modest. For Season 1 and 2, average advances amounted to \$39 and \$28 respectively.
20. Persistent drought has been a setback for the farmers in the first season. For the second season, EAFF again subscribed to crop insurance on behalf of farmers. The Heritage insurance company is currently conducting a field monitoring exercise before providing a final quote for multi-risk cost of production insurance coverage. Cost of the insurance coverage is estimated at \$11,738. Payment for insurance premiums and the cost of received inputs has been divided into three equal instalments. Participating farmers have already paid the first instalment covering estimated insurance premiums.
21. EAFF has entered into partnership with ETG to provide certified seeds and fertilizers to farmers and also to buy the harvest. The off-taker agreed to provide a floor (minimum) price as part of the forward contract; this price will not be static but will vary depending on product availability, season and prevailing market price. This kind of agreement ensures farmers' access to certified inputs required to boost productivity but they are also guaranteed a market because of supply agreements between farmers and ETG, previously negotiated by EAFF. Furthermore, the off-taker is assured of the quality of the maize and soya as it provided the varieties corresponding to its needs.
22. **Current experience with eGranary deployment.** In the first season, farmer registration, the submission of planting and harvest data, and data analysis for contracting were digitized. Other elements like bulk input orders, input financing, crop aggregation, sales, payments and insurance registration and pay out were done manually. In the second season, which is currently in progress, some components of the digital credit solution, such as loan module and payment gateway (e.g. acceptance of payments to business account, as well as disbursement to a consumer account), have been developed but have not yet been live-tested with farmers.
23. Working with its member NFOs, EAFF has been providing farmer groups training on structured trade. In Uganda and Tanzania, EAFF helped facilitate cross-border trade, assisting unions in Tanzania to sign 14 MoUs with buyers and to negotiate eight agreements between cooperatives and off-takers in Uganda. Previous efforts to build farmer group capacity to engage in structured trade will make it easier to introduce eGranary. In part due to this training, most NFOs bring some experience implementing and facilitating forward contracts; a few also offer inputs financing and advance payments, either on behalf of or through their member organizations. Although capacity levels vary considerably between NFOs and their members, those producer groups with some experience in structured trade will be familiar with processes such as business to business meetings, production planning, and group aggregation, making it easier for them to successfully adopt the eGranary.

III. THE PROPOSED PROJECT

A. **Target Group and project scope by country**

24. The target group will be smallholder farmers who are members of national organizations belonging to EAFF in Rwanda, Tanzania and Uganda. The vast majority of these farmers are already beyond subsistence farming and are typically producing some surplus currently traded in local markets. Because of the lack of access to financial services and established linkages with off-takers and input suppliers, as well as access to technical advisory services and sources of technology, they are trapped in a low input/low output circle characterized by low productivity and low quality of the final produce. They produce grains and staples for the domestic markets, which are typically fragmented, poorly structured and characterized by high transaction costs and limited incentives for quality produce. Targeted number of farmers for eGranary are:
- 50,000 in Uganda (50% women), of which 50% from 10 District Farmer Associations (DFAs) affiliated to Uganda National Farmers Federation (UNFFE) and 50% from 60 Area Cooperative Enterprises (ACEs) affiliated to Uganda Co-operative Alliance (UCA) .
 - 20,000 in Rwanda (50% women) distributed among rice; maize and beans value chains of which 10,000 are from National Confederation of Co-operatives of Rwanda (NCCR) affiliated farmer organizations and 10,000 from IMBARAGA members.
 - 20,000 in Tanzania (50% women), of which 15,000 from farmer organizations affiliated to Tanzania Federation of Co-operatives (TFC) and 5,000 from FOs affiliated to MVIWATA (*Mtandao wa Vikundi vya Wakulima Tanzania*).
25. EAFF and the NFOs will implement an information and outreach campaign at project start-up. Special attention will be paid to ensuring widespread participation of women and youth. During the first two seasons of the eGranary Kenya Pilot, 68% of the participants were women. EAFF anticipates that women's participation will be high in other countries, reflecting both smallholder demographics and the results of targeted outreach. Inclusion of youth will also be a special focus of eGranary's initial outreach campaign.
26. **Uganda.** The target crops shall be maize, pulses, soya and rice; eGranary will work in the following regions, the Northern, South Western, Mid-Western, and Central. Mobile connectivity for targeted farmers is high at over 80%. The EAFF members raised the need for the project to focus on generating real-time data on farm production, harvesting and post-harvest activities as a basis for provision of various services, starting with aggregation and marketing; financial services; extension services and access to farm inputs.
27. **Rwanda.** The target crops are Rice, maize and beans, the target areas include the East (4 districts): Bugesera, Nyagatare, Gatsibo, Kirehe; the North (3 districts): Musanze, Burera, Gakonge; the South (3 districts) of Kamonyi, Ruhango, Nyanza; and the West (2 districts): Nyabihu, Rubavu. There is an apex national farmer federation of rice farmers' cooperatives (FUCORIRWA) currently with a membership of 55,000 farmers and one also for maize and bean farmers that will be targeted under the two EAFF member organizations (IMBARAGA and NCCR). The mobile connectivity of targeted farmers is upwards of 90%.
28. **Tanzania.** The Target crops are Maize, rice and pulses. The target regions are Southern Highlands of Njombe, and Mbeya; the Eastern Region of Morogoro and South West Region of Rukwa The mobile connectivity according to members of targeted the farmers is more than 90%.
29. The selection of targeted crops and regions was made after extensive consultations with national farmers' organizations. Criteria included the volume of commercial surpluses in each country, the availability of existing warehousing space in specific localities, the degree of mobile connectivity and the opportunities for synergies with existing IFAD-funded projects.
30. EAFF and its participating members have set a target of 90,000 over the three-year grant period (Uganda 50,000; Rwanda 20,000 and Tanzania 20,000). Targets were established with NFOs, based on country size, population and prior experience mobilizing individual FO members. Given that the combined membership of the six NFOs is estimated to be approximately five million, 95% of whom are smallholder farmers, the target of 90,000 represents 1.8% of total membership in the participating NFOs. Because start-up activities will be staggered over time, EAFF, working hand in glove with each country's NFOs, will be able to focus on stimulating widespread participation. Registration campaigns

will be conducted, supported by different media, to sign up eGranary participants. These campaigns will use the NFOs' networks of cooperatives and farmer associations to reach down to sub-district levels.

31. Groundwork is being laid to expedite start-up in Uganda. USSD Platform compatibility testing is ongoing. EAFF will incorporate farmer profiles from a 60,000-member database that it built in partnership with the two participating NFOs and CTA⁴ among others. Harnessing the existing database will be an important step in achieving registration objectives. Preliminary planning meetings have been held with buyers, service providers and implementing partners. These activities should greatly facilitate a quick start-up.

Based on EAFF projections, the expected financial breakeven point will occur with a participation of 70,000 borrowing participants, assuming average field size of 0.7 acres, and yields of 2.1 tons per acre.

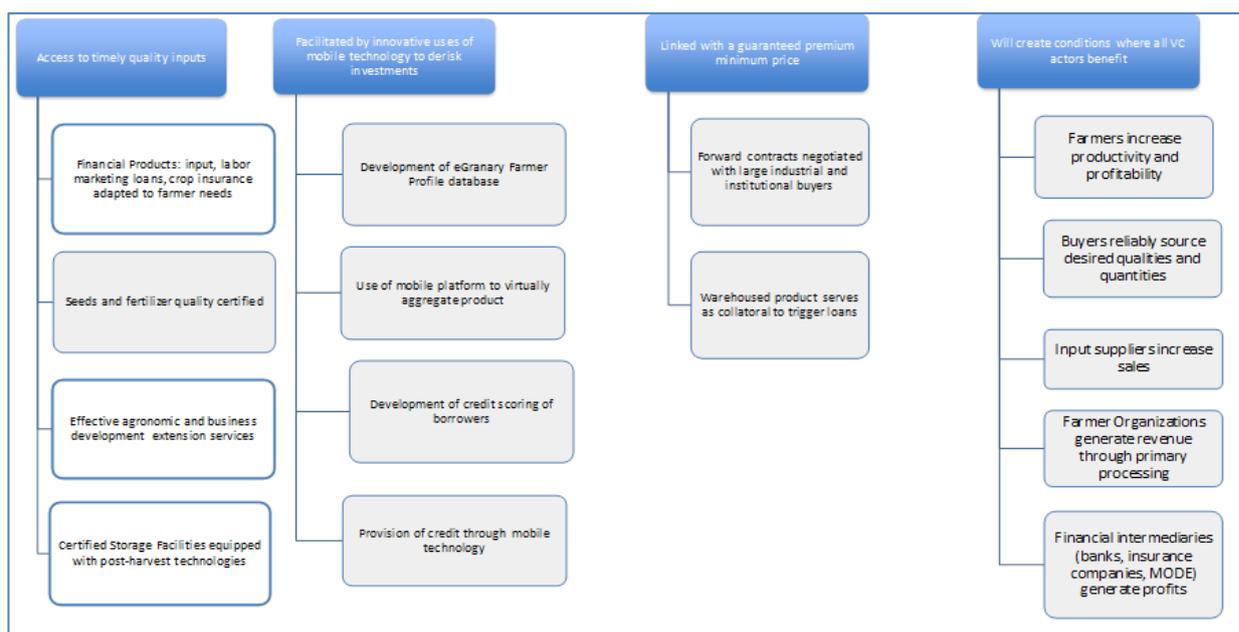
B. Overall Goal, Objective and Description

32. The Project Goal is to improve the income and living standards of participating eGranary smallholder farmers in Tanzania, Uganda and Rwanda.
33. The Project Development Objective is to increase productivity and profitability of participating E-Granary farmers
34. Description: e-Granary is an innovative solution based on the established concept of warehouse receipts systems to jointly tackle the challenge of counter-cyclical access to markets and credit provision. The innovation stems from the a) use of mobile technology to gather information at farmers' level, b) use of mobile platform to virtually aggregate products to attract larger and more structured buyers that can pay higher premiums, c) linkages to business partner, MODE, for the rolling out of the credit systems (both at production and harvest time) to address liquidity constraints faced by farmers, and e) concept development, ownership, and management of the initiative by existing FOs, from the ground up to a regional network. In addition the e-platform will also provide e-extension services using an established and functioning system in India.
35. Farmer credit lines will be sourced through MODE and other financial institutions in the region. MODE is a data driven financial technology mobile phone platform focused on providing Nano loans in emerging markets. MODE has operations in 31 countries with a customer base of over 250 million. Currently MODE is processing over 1.5M loan transactions daily on its platform across all its operations.
36. MODE is not a bank with deposit taking capabilities, but rather sources its capital through developed commercial relationships with the Kenya Commercial Bank and Barclays Bank with presence in all of East Africa, Mauritius Commercial Bank (MCB), UBA bank, and Zenith Bank among others. MODE relies on the strength of the business cases it develops to secure financing from these financial institutions. Given MODE's spectacular growth and successful track record, coupled with the strength of the business case, stakeholders are confident that access to finance for farmer loans will not pose a constraint for MODE or other financial institutions.
37. **Theory of change.** The theory of change of the programme is based on a fundamental premise that a market-driven approach coupled with bulking of produce and input requests are needed to help smallholder farmers sustainably increase their income and improve their livelihood. This is operationalized through the central role that EAFF and its membership at regional level plays in aggregating farmers into membership based organizations and through the innovative use of digital platforms that will enable smallholders benefiting access to stable markets, accessing credit and productivity enhancement.
38. Such business model is not a novelty *per se*, since stocking practices are common to address seasonal price volatility and bulking is also a common practice to increasing farmers' bargaining power. What is new in the approach is the fact the project concept combines elements on existing business models for smallholder development (stocking, warehouse receipts systems, bulking of

⁴ CTA is the Technical Centre for Agriculture and Rural co-operation, it is a joint institution of ACP group of states and the EC. EAFF in partnership with its members in Uganda –UCA & UNFFE and CTA have been profiling farmers in maize and soya bean value chains on an online platform as part of digitizing registration of farmers, this exercise is also part of a bigger program supported by the government of Uganda to profile all farmers in Uganda.

produce and input requests) with new elements such as use of digital platforms *cum* access to credit based on individual profiling of farmers. The latter will be articulated via a new typology of credit provision deployed by financial service providers with nano credits without the need for collaterals or guarantees. Most of the all the novelty is based on the fact that the concept has been articulated and owned by a regional network of farmers and thus all benefits will be distributed to their members rather than primarily captured by private entities.

39. This approach necessarily requires better organization and capacities of smallholder farmers, towards their graduation into producer/farmer organizations, capable to handle such new system and getting the buy-in from their members from the eGranary model. Hence a crucial dimension of sustainability will be to provide basic training and capacity support specifically at NFO level, and of improving their managerial capabilities, services and thus enhancing their market engagement.
40. The following diagram presents the eGranary's Theory of Change (ToC). Key assumptions underlying the ToC are:
 - ✓ the e-Granary operates robustly and remains live throughout the project period devoid of regulator challenges.
 - ✓ Farmers willing to register and interact willingly on the e-Granary.
 - ✓ The contracts between the off-takers and farmers are honored.
 - ✓ Financial service providers find the e-Granary attractive to invest in.
 - ✓ Farmers' patron the financial and e-extension services on the platform, use and pay for the services.
 - ✓ Farmers have access to mobile phones and know how to use them
 - ✓ Mobile network coverage in rural farming communities participating in the program in the concerned countries
 - ✓ Farmers will be provided the relevant inputs, capacity training and services to enable them to engage in the platform



41. The e-Granary is based on aggregation of produce within the structure of existing Farmers' Organizations (FOs) from the district up to the regional level. Primary level cooperatives and district farmers associations are responsible for mobilizing farmers, and are held accountable for the aggregation of produce in identified physical warehouses. National FOs and their provincial structures in Rwanda, Tanzania and Uganda will take charge of e-Granary field activities and will monitor project implementation, build capacity of primary cooperatives to meet their supply obligations, organize and look for markets. In addition national FOs will also provide agronomical support to lower level FOs. EAFF, the regional network, will be managing the e-Granary initiative, developing the partnership with MODE, and linkages with regional and international buyers.

42. eGranary has been developed so that all actors benefit, farmers with higher yields and profits, input suppliers with higher sales volumes, service providers through fee generation and buyers who will benefit from several advantages including: information on planting volumes, expected harvest dates and tonnage, the traceability of purchased product, and the opportunity to improve farmer quality assurance, thereby reducing the buyer's grading costs.

C. Project Outcomes

Component 1 – Access to Services

- E-granary platform set up – and working with 90,000 new smallholder farmers registered onto the e-Granary
- Increased market access - 72,600 MT of product worth >24 M USD sold on the market by smallholder farmers;
- Increased access to financial services - 26,900 smallholder farmers are receiving credit on their mobile phones
- Increased access to extension services - 8,300 smallholder farmers access agriculture extension services via mobile phones.

Component 2 – Capacity Building and Knowledge Management

- Enhanced capacity of farmers on structured trade and financial literacy - 12,800 smallholder farmers directly trained;
 - Increased public awareness and knowledge on the success of e-Granary - 30 knowledge products developed and disseminated.
43. The above results will be achieved by developing in the three countries (Tanzania, Rwanda and Uganda) a communication and payment platform (e-Granary), that will create a virtual space for the brokering of commercial partnerships and contracts between farmers and off-takers and input dealers, as well as for the provision of financial services with low transaction costs. Access to these two key services (marketing and financial) will be closely interlinked, thus creating synergies in overcoming failures and constraints in the different markets. Furthermore, the platform will host “plug and play” applications for the provision of additional services to farmers, such as e-extension targeted according to crop, stage of growth and agro-ecological zone.
44. The e-Granary market linkage component will be hinged on generating reliable data about the farmer such as plantings made and harvest expected. This data shall be used in negotiating contracts with buyers for current and future crop produce, It is envisaged that the data shall be used to plan for inputs supply and distribution, plan for product procurement, collection and storage. This will eventually make the smallholder farmer be considered as an important actor in the value chain, they shall see an incentive in participating in profitable value chains and thus can access certified seed which will in turn lead to increased yields and better income to the farmer, while the data from the e-Granary shall serve as a “pay-slip” to the farmer. Already in Kenya as a result of this platform EAFF has entered a formal agreement with the Export Trading group (ETG) to supply them pulses and in term they will provide certified seed and fertilizers.
45. The e-Granary financial services are more attractive to farmers than the traditional financial services available on the market in many respects: a) E-Granary loans require no collateral and farmers are not expected to fill lengthy and tedious paperwork; b) E-Granary loans do not require farmers to first accumulate savings; c) E-Granary loans are tied to farmers expected income, following the successful model adopted in the dairy and tea sectors in Kenya; c) E-Granary loans are relatively cheap compared to alternative sources, at 2% per month versus 3 & 6% per month offered respectively by Equity and Kenya Commercial Bank (KCB) banks; d) E-Granary loans are tied to farmers group to help in spreading repayment responsibility using peer pressure to reduce loan default risk; e) E-Granary loans will be disbursed in batches based on the crop cycle .

46. The experience in Kenya shows that the income of smallholder farmers will increase between 40% and 100%, as follows:
- Value increase from the grading; 10-20%
 - Better buyers and sales moment; 30-50%
 - Better inputs by using credit; 10-20%
 - Storage loss reduction; 0-30%
 - Fees & interest; 10-15%
47. The above estimates used data from maize crop budgets developed by the USAID-KAVES Project during a 2013 comprehensive Value-Chain Analysis of several different crops. This information was combined with empirical data from on-going EAFF activities and agreements with institutional buyers and financial institutions. EAFF used the same yield target and costs in estimating the impact of eGranary participation. The KAVES study estimates that yields for maize in Kenya can be increased from six bags/acre to 25 bags, production costs per bag decreased from KSH 3091/acre to KSH 1716 and gross returns increased from KSH (-1750) to KSH 27,100. The KAVES study findings are wholly consistent with EAFF's estimated impacts. These impacts vary from 40% to 100%, reflecting differing circumstances among participating communities in the three countries. The logical framework establishes the objective of 40% increase in income and a 20% in yield, reflecting a blended estimates across different countries and different crops.

D. Project Activities

Component 1 – Access to Services

48. E-granary platform set up - 90,000 smallholder farmers registered onto the e-Granary
 - Registration campaign strategy developed and validated
 - Country Registration Campaign teams formed; trained and dispatched
 - Campaign and visibility materials developed and deployed in different languages.
 - Campaign platforms e.g. media engaged
 - Set up of e-Granary: Acquisition of country licenses for e-Granary operations in the 3 countries; Customization of e-Granary to specific needs/circumstances of targeted farmers (including language) and country.
 - Set up and operationalize the call centres.

49. Increased market access 85,050 MT of product worth >28m USD sold on the market by smallholder farmers;
 - Pilot the market linkage model.
 - Roll out after “proof of concept”
 - Map out and profile the relevant off-takers.
 - Organize Business 2 Business meetings with off takers to seek partnerships
 - Organize meetings with certified warehouse operators to seek partnerships
 - Map out and profile farmers aggregation centres
 - 25 supply contracts signed annually
 - Seasonal harvests posted on e-Granary continuously

50. Increased access to financial services - 31,500 smallholder farmers receive credit on their mobile phones
 - Piloting of the credit model.
 - Roll out after “proof of concept”
 - Develop and Validate strategy to promote, increase and retain credit product uptake
 - Development of promotion material for the credit product to farmers.
 - Farmers registered on e-granary actively accessing credit annually and borrowing in subsequent years.

51. Increased access to extension services - 10,000 smallholder farmers access agriculture extension services via mobile phones.
 - Piloting of the e-extension model.
 - Roll out after “proof of concept”
 - Develop and Validate strategy to promote, increase and retain e-extension uptake
 - Development of promotion material for the e-extension product to farmers.
 - Farmers registered on e-granary actively accessing e-extension throughout the season

Component 2 – Capacity Building and Knowledge Management

52. Enhanced capacity of farmers on structured trade and financial literacy
 - Development of curriculum and training material for structured trade.
 - Development of curriculum and training material for financial literacy.
 - Establish an agronomy support system for the e-extension.
 - Training of Trainers (ToT) Training of farmer leaders, managers and representatives of target organizations (regional, national).
 - Cascade trainings for smallholder farmers at the sub-national level.

- Run two radio episodes per year on structured trade in 3 major radio stations in the target countries
53. Increased public awareness and knowledge on the success of e-Granary
- Project fliers; pamphlets developed and disseminated.
 - Knowledge management & learning events held internally for EAFF -at national and regional level once a year.
 - Project steering committee held yearly
 - Procurement of k-Macho software for M&E
 - Field visits for M&E made every season
 - Joint management between EAFF, MODE, Technology advisor and any additional partners every week.
 - Exchange learning visits made once a year to commodity exchanges/ off takers/ between FOs.
 - Project documentary developed
 - Project results and impacts posted on-line (including social media) and on mainstream media
54. Since the eGranary approach will be new to smallholder farmers, EAFF and its NFOs members will be developing specific training materials to support farmers on using the platform to access services. Trainings will be deployed by NFOs on the basis of approaches that NFOs have successfully implemented before. In addition, training materials will be based upon the one developed from eGranary Kenya which is full of schematics, pictorials and with simplified steps In both Tanzania and Rwanda trainings will be provided in national languages (Swahili and Kinyarwanda) while in Uganda material will be developed into 3 languages – Luo, Ankole and Langi. The development of the eGranary platform will be also benefiting from the fact that mobile penetration is high in the East Africa region and that in Rwanda and Uganda farmers are already using devices for mobile money. In addition, the project will be benefiting from the profiling and mobilization of farmers in Uganda undertaken with a project supported by CTA in Uganda, the Market-led User-Owned ICT4Ag Enabled Information Service (MUIIS5) that as 30th September 2017 has registered 110,000 farmers members of Agricultural Cooperatives, Farmer Organisations, and Commodity Associations from 50 districts of Uganda's agricultural regions.

IV. PROJECT IMPLEMENTATION ARRANGEMENTS

A. *Implementing Organisations*

55. EAFF (www.eaffu.org), founded in 2001, is a regional farmer's organization covering 10 countries in the East Africa Community and the Horn of Africa, with a membership of 24 national farmer organizations 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. EAFF serves its members on the basis of 2013-2020 Strategic Plan whose focus is entrepreneurship through organization of farmers into units that can participate in profitable agribusiness ventures. Over the last three years EAFF has been able to roll out its agribusiness strategy that centres on making smallholder farmers key value chain actors. The strategy has three main components namely warehousing, inputs and value addition. Using a variety of tools to integrate farmers into the EAC market, EAFF mobilised 25 off-takers in the last two years from Kenya, Uganda and Tanzania with whom EAFF signed contracts. EAFF has recently signed an MoU with the East Africa Commodity Exchange (EAX) and the EAGC (g-soko platform) which are both operating commodity trading platforms in East Africa. The proposed e-Granary project is in itself a scaling out of the Linking Farmers to Markets Project with a new feature of using technology to aggregate farmers' production and offering them services (financial and extension).
56. Over the last three years (2013-2015) EAFF managed a total of 18 grant programmes, totalling 7.9M USD giving an average yearly value of USD 2.6M. Since 2006 EAFF has successfully implemented 5 grants for a total of USD 2.9M while by December 2017 the SFOAP programme

⁵ Please refer to <http://muis.cta.int/2017/07/02/mobilising-cooperatives-and-farmer-organisations-for-icts-enabled-agribusiness/>

for a total of USD 2.7M will be completed. EAFF Secretariat is composed of 15 staff comprising, amongst other the CEO, Trade and Agribusiness officer, Policy and advocacy officer, Institutional development officer, Finance officer, Gender and Youth officer, Field Officer (e-Granary), Communication officer and IT support and also outsources consultants to provide services. Additionally EAFF has perfected the subsidiarity principle of involving members in project implementation thereby tapping into a pool of more than 80 national staff.

National FOs.

Uganda

57. Uganda Co-operative Alliance (UCA), was registered in 1961, and supports its members to increase their production and productivity and as a result increase household incomes. UCA's total membership is of 319 members of which Savings and Credit Cooperative societies (SACCOs) are 246; Agricultural Cooperative Enterprises (ACEs) are 55 and District, Regional and National Unions are 33. UCA is organized with 9 regional offices that support the secretariat to deliver its mandate. UCA and EAFF have successfully implemented Linking Farmers to Markets from 2014-2015. UCA was able to mobilise 10 Ugandan cooperatives involved in maize production and were able to secure supply deals that enabled cooperatives to access loans that were valued at more than 200 000 USD and sold Maize worth more than 1M USD.
58. Uganda National Farmers Federation. Founded in January 1992 as the Uganda National Farmers' Association (UNFA) and turned into a Federation in 2002, UNFFE played a key role in the formation of farmers groups at the district level. This resulted in the emergence of District Farmers' Associations (DFAs) as branches of the UNFA in the districts of Uganda. The UNFFE is an umbrella organisation of 72 affiliated organisations of which 54 are active – with an estimated membership of 500 000 individual members. Main development partners are IFAD, EC, AFD, SDC, WE EFFECT, EC funded Food governance Project and Agriterra.

Tanzania

59. Tanzanian Federation of Cooperatives. The Tanzania Federation of Cooperatives (TFC) is the national umbrella organization for cooperative-based institutions. TFC is composed of 6,000 member cooperatives and 700,000 farmer members. TFC has its own commercial building in Dar es Salaam and is now in the process of setting up a co-operative bank and an insurance company to serve its members based on the Kenya model. Development partners have included the International Co-operative Alliance (ICA), International Labour Organization (ILO), Government of Tanzania, German International Co-operation, EAFF, EC and USAID. They successfully implemented the farm-trade project from 2014-2015 where one of their participating co-operatives produced 10,000 Metric Tons of rice that was sold to a Uganda buyer (upland rice) and to the government of Tanzania.
60. Mtandao wa Vikundi vya Wakulima Tanzania. MVIWATA has more than 100 000 individual small-scale farmers. The main strategic thrusts of MVIWATA are a) capacity building of small-scale farmers on lobbying and advocacy; b) economic empowerment of small-scale farmers through creation of projects such as savings and credit, cereal banks, rural tourism and other rural enterprises; c) affiliation with national and international networks and organisations for lobbying and advocacy purposes. MVIWATA has extensive experience in managing contracts from various partners such as IFAD, EU, SDC, AFD within the SFOAP, FERT within the Support to Rural Markets Project (SRM), AGRITERRA, OXFAM & VECO.

Rwanda

61. IMBARAGA is an umbrella organization of national scope, IMBARAGA 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. With a staff of 22 full-time employees and 50 part-time agronomists, they work to improve the technical capacity of their member farmers. The organization's team of agronomists does most of the training and provides extension services. During the past ten years, IMBARAGA has established partnerships with various organizations of civil society at local and international levels and recently has partnered with IFAD, EC, SDC, the AFD within the context SFOAP, the International Fertilizer Development Center (IFDC) the International Potato Center (CIP), Food and Agriculture Organization of the United Nations (FAO), and Swedish International Development Agency (SIDA).

62. National Cooperatives Confederation of Rwanda. NCCR is the umbrella organization that promotes and represents the interests of the cooperative movement in Rwanda. It supports its member Federations, Unions and Primary Cooperatives through capacity development, information sharing, advocacy and collaboration with public, private and civil society organizations at local, regional and international levels. Though a relatively younger organization, NCCR has committed staff and management teams who actively engage with the Federations.
63. In connection with the elaboration of this design document, an IFAD financial management specialist visited the finance departments of EAFF and all participating National Farmers' Organizations to assess financial management practices and capacity. As a result, EAFF and IFAD have a good understanding of areas within specific NFOs requiring support. A staff recruitment plan (see section on project management) has been elaborated and budgeted to help implementers meet IFAD fiduciary requirements.

Strategic Partner

64. **Mobile Decisioning Holdings Ltd (MODE)** (www.mo-de.com) is a Kenyan based company, founded in 2010. It has expanded its operations to over 25 countries globally serving a total of 30 telcom partners. MODE business has a captive base of over 250 million users in Africa, Latin America and Asia. MODE operates from offices in 8 countries with over 150 employees and cooperates with large telco's like Tata, Reliance, Airtel, MTN among others. The company disturbed the market of microcredits by introducing nano-credits (0.05 – 10 USD), offered via the mobile phone. MODE has expertise in providing advance credit on future income like future salary, future phone credit acquisition and future utility payments.
65. MODE has won a number of awards for their activities providing access to credit for low-income households. Among the awards were The East Africa Entrepreneur of the Year (of the All Africa Business Leaders Awards), IBM Global Entrepreneurship award and the Most innovative Service award (MTN). In its 2015 financial year, MODE was able to lend out >500M USD and is therefore bringing this expertise to eGranary and shall allocate part of the funds it generates with its financial partners to provide the credit facility to EAFF members. MODE will do credit scoring to determine award of loans and shall create a credit collection system that will de-risk both themselves from exposure and the cushion the farmer from default.
66. **Jiunga Technologies Limited (JTL)**. JTL is domiciled in Nairobi – Kenya and they have expertise in developing “content aggregation and dissemination software” on which eGranary is based on. EAFF and JTL have an MoU for their service for the eGranary initiative.
67. **Africa-is-Talking** (www.africastalking.com). Africa's Talking Ltd is a mobile technology company with its headquarters in Nairobi, Kenya. Their goal is to unlock the potential of mobile communication networks across Africa by simplifying the process and technologies required to exploit them. The Africa's Talking SMS/ USSD / Voice and Airtime APIs has more than 1000 active developers spanning corporates, tech start-ups, SMEs and even budding techies. Their deep involvement with developers ensures that they provide excellent service for any technical solution over mobile. Africa's Talking Ltd aims to build the best mobile technology systems that are scalable, robust, reliable, and cloud-based, enabling end users to interface directly with telecommunication service providers across the continent. This is in line with the objective to provide high quality connections that are cost effective for both small and large enterprises. Africa-is-Talking is the link between EAFF and the Mobile Network Operators in Uganda, Rwanda and Tanzania. EAFF is currently working with Africa-is-Talking on the eGranary in Kenya and the latter assisted EAFF in accessing the USSD short-code for Kenya (492#) and is working with EAFF to get access short codes for Uganda, Tanzania and Rwanda. EAFF and Africa-is-Talking have an MoU to have EAFF eGranary initiative linked with telcom in East Africa.
68. **IFFCO – Indian Farmers Fertiliser Co-operative** - Indian Farmers Fertiliser Cooperative Limited (IFFCO) is one of India's biggest cooperative society which is wholly owned by Indian Cooperatives, in the co-op monitor report of 2014 they were listed as the largest agriculture co-operative by turn over in the world. Today it has over 36,000 Indian Cooperatives with over 55million members in diversified business interests ranging from General Insurance, Rural Telecom, manufacturing and selling of fertilisers. The impact of IFFCO extends across the world with joint ventures like JIFCO- Jordan, KIT-Dubai, OMIFCO-Oman, ICS-Senegal, IFFCO

CANADA - Canada. Global partnership extends with strategic MoUs with several international fertiliser players and other raw material suppliers. IFFCO has a agriculture extension company called IFFCO-KISAN (www.iffcokisan.com) which manages an e-extension platform that reaches more than 3.5Million farmers and had content for more than 80 commodities which they have stabilized for the last 10 years. The extension service is offered through Voip (Voice over Internet protocol) service and is done in partnership with Airtel India. EAFF intends to have a south-south partnership with IFFCO to build a similar platform and benefit from their experience.

B. Project Management and Implementation Period

69. EAFF, in strong collaboration with its national members organization, will be responsible for the general operations of e-Granary, coordinating and supporting all actors involved. MODE will provide the IT- and payment-infrastructure and the credit to farmers. Funding for this will come from a number of banks (MODEs current bank guarantee costs are 5-9% p.a.; while cash loans vary from 15- 20% p.a.) that MODE has a longlasting relationship with. The Indian Farmers' Fertilizer Cooperative (IFFCO) shall assist in the set up of the e-extension component and transfer the skills to EAFF staff at regional and national offices, but also to the National research systems/ academia, which will be engaged in the project.
70. EAFF will have overall responsibility for the GAFSP MMI initiative and will be in charge of setting up of the e-Granary system in Rwanda, Tanzania and Uganda. At the same time, EAFF will manage the e-platform in coordination with its national level FOs members and will scout for potential buyers at regional and international levels. During activity planning, EAFF, NFOs and IFAD will pay special attention to avoid duplication of services that may be provided by current loan projects. In addition, lessons learned during the pilot phase of eGranary in Kenya, notably the need to secure seed well before planting dates will be incorporated into standard operating practices.
71. National level FOs will coordinate all country level activities (mobilization of primary cooperatives and district farmers' associations, capacity building, mentorship, agronomic support and market intelligence), while primary cooperatives and district farmers associations will be in charge of managing forward contracts with buyers and business and contract development with warehouses' owners. EAFF and the national level FOs shall also counter sign these contracts. The following table details the key responsibilities of the major actors.

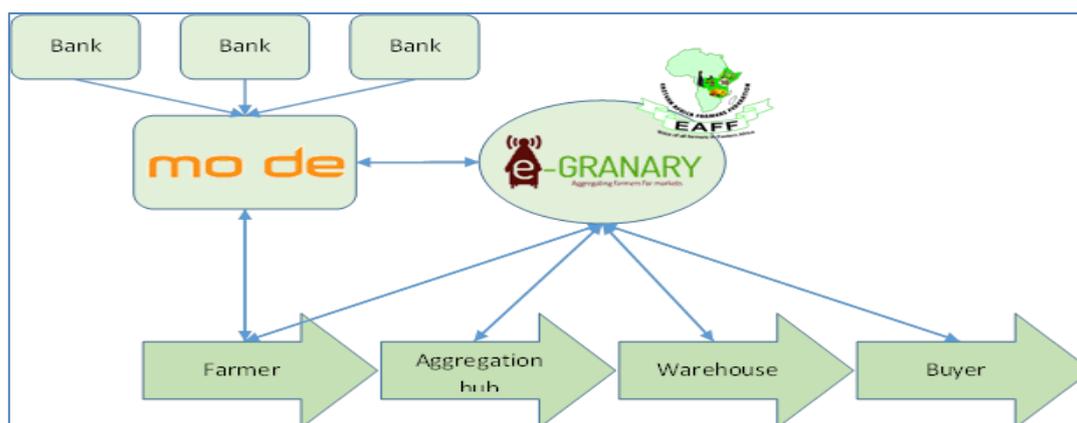
Institution	Responsibilities
EAFF ⁶	<ul style="list-style-type: none"> ✓ Overall technical and financial management of the eGranary platform; ✓ Establishing necessary partnerships; ✓ Development and execution of planting programmes; ✓ M&E and Knowledge Management; ✓ Managing contract for TA specifically for technology development, including technical architecture design and selection of a technology vendor; review regulatory environment and make design recommendations for digital financial services ✓ Analyse regulatory environment and make design recommendations for digital financial services ✓ Oversee recruitment and training of field officers and mobile enabled field agents ✓ Elaboration of capacity development programmes; ✓ Ensure compliance with applicable laws and regulatory requirements in each targeted country; ✓ Coordinate of annual work plan development ✓ Oversee project evaluation.
NFOs	<ul style="list-style-type: none"> ✓ Hosting eGranary platform in respective countries; ✓ Support convening of national and sub-national partnerships; ✓ Convene national level meetings; ✓ Mobilization of farmers from targeted commodity groups; ✓ Field monitoring and training of farmers in agronomy, quality assurance and commodity aggregation;
Local Farmer Organizations	<ul style="list-style-type: none"> ✓ Coordinate with NFOs to organise and mobilize farmers for platform registration ✓ Coordinate farmer product delivery ✓ Oversee inputs distribution ✓ Ensure farmer produce meets buyer quality requirements

⁶ EAFF will be working under the heading of the eGranary Steering Committee

MODE/ financial partners	<ul style="list-style-type: none"> ✓ Provide technical support services; ✓ Source and arrange funding for credit to farmers; ✓ Develop marketing campaigns to drive uptake and usage 	<ul style="list-style-type: none"> ✓ Data analysis and credit score modelling; ✓ Develop financial literacy curriculum ✓ Support training on financial products;
Technology vendor	<ul style="list-style-type: none"> ✓ Technology development and deployment, technical architecture design and make design proposals for digital financial services and agricultural content 	
Buyers	<ul style="list-style-type: none"> ✓ Provide reliable market for production; ✓ Provide fertilizers, seeds and crop protection products (where possible); 	<ul style="list-style-type: none"> ✓ Offer collection and transportation services; ✓ Support training on agronomy, post harvest handling and quality assurance;
Commodity Exchanges	<ul style="list-style-type: none"> ✓ Offer certified warehouses for storage; 	<ul style="list-style-type: none"> ✓ Purchase production
IFFCO (Extension service providers)	<ul style="list-style-type: none"> ✓ Provide or support development of content for e-extension; ✓ Provide field support in the provision of extension services; 	<ul style="list-style-type: none"> ✓ Test delivery channels to identify most effective approach; ✓ Provide content for digital agricultural component.

72. In order to promote, effectiveness and efficiency at country level, program implementation modalities will be rationalized to reduce operating costs and foster collaboration. One country level eGranary management team will service both NFOs. One NFO will hold the USSD registration however both NFOs will have access rights and will be able to visit the portal separately. Additionally, one farmer organization will take the lead on business development while the other will focus on the agronomic aspects thus, trainers hired by one organization will also provide services to the other. One NFO will be responsible for convening national committee meetings while the other serves as co-chair. The respective roles of the two NFOs in each country and EAFF will be materialized by a Contract (refer draft contract Annex 8) between each NFO and EAFF which will define the responsibilities of each party, activities and budget.
73. Following grant approval, EAFF will sign a grant agreement with IFAD and then sign contracts with the national FOs for implementation of national level activities. Similarly, a contract will be signed with MODE for the business technology and facilitating access to credit. Diagram 1 sketches the implementation arrangements for the e-Granary initiative.

Diagram 1 – Implementation arrangements



C. Project management team

74. The proposed project will be managed and implemented under the overall responsibility of the EAFF. EAFF will appoint a Project Management Team (PMT), constituted by the EAFF CEO (overall coordinator); the EAFF Trade and agribusiness Officer (Project manager); the e-Granary Business Development Officer (to be hired); the e-Granary Field Officer (in charge of e-Granary field activities at EAFF); the agronomy team coordinated by EAFF Chief Executive Officer (CEO);

- EAFF M&E and KM officers (to be hired) and EAFF finance officer. The PMT shall also bring on board staff from MODE and IFFCO. The PMT shall be meeting regularly, physically and virtually.
75. The EAFF CEO will have general oversight and responsibility for project implementation and will be responsible for all the financial transactions of the project. He will report to the EAFF Board and the Supervising Entity. The team will oversee project implementation, monitoring, evaluation and reporting and will (business meetings, market linkages, coordination, training on structured trade, coordinate field visits, etc.)
76. At the country level, the project will be implemented in three countries – Rwanda, Tanzania and Uganda. In each country, EAFF members who will play a key role in the implementation of the project: IMBARAGA and NCCR in Rwanda; MVIWATA (National Networks of Farmers' Groups in Tanzania) and TFC in Tanzania; UCA and UNFFE in Uganda.
77. Each organization will appoint the following key personnel:
- (a) A coordinator (giving a total of 6) to take charge of e-Granary field activities and monitor project implementation at organization level and assist EAFF to mobilize member farmers onto the system, build their capacity to meet their supply obligations, organize and look for markets. This coordinator shall be cost-shared between the member organization and the project.
 - (b) One agronomist per country (giving a total of 3) to provide agronomical support. They will be allocated as follows: in Uganda at UNFFE, in Tanzania at MVIWATA and in Rwanda at IMBARAGA. These shall be paid on part time basis and shall commence in year 2 and shall assist in the e-extension.
 - (c) Three national business development advisors, one per country to assist in coordinating the business development aspects of the e-Granary.

D. *Monitoring, Evaluation and Reporting*

78. The grant will be monitored at several levels. Operational monitoring will be coordinated by the EAFF M&E Officer, in close collaboration with the M&E focal points in each country. Programmatic monitoring will be overseen by the EAFF CEO. Strategic monitoring will be conducted by the Project Steering Committee.
79. Given the digitization of critical implementation processes, EAFF and its member organizations will benefit from continuous updating of key indicators and milestones. This will allow for highly detailed monitoring and will facilitate rapid corrective action. Indicators, where appropriate will be disaggregated by gender and age to ensure the tracking of young farmers participating.
80. The EAFF M&E Officer, in close collaboration with EAFF member organizations, and their M&E focal points in each country, will be responsible for expanding the Logical Framework to Activity level and ensuring a uniform reporting format in each country. Project monitoring will be in line, where justified, with the overall GAFSP's new M&E Manual and MMI Guidelines⁷, and the TORs for the M&E Officers at EAFF and NFOs levels will be compliant to GAFSP M&E manual, to the degree possible. Within each NFO, a designated eGranary M&E focal point will be responsible for coordinating the development and monitoring of annual work plans and budgets, working in close collaboration with NFO senior management, the eGranary Country Officer hired under the grant and consultants and staff involved in data entry and platform maintenance. The M&E Officer will also be responsible for the coordination and oversight of the annual work planning development process in each country. At start-up, the M&E Officer will develop a comprehensive M&E Plan that will be introduced, explained and discussed in the first participant country, prior to the development of their AWPB. The M&E Officer will make frequent visits to participating

⁷ For GAFSP new M&E manual please refer to <http://www.gafspfund.org/sites/gafspfund.org/files/Documents/GAFSP%20Final%20Draft%202017%20M%26E%20Plan%20June%20upload.pdf>, while for the GAFSP MMI Guidelines, please refer to <http://www.gafspfund.org/sites/gafspfund.org/files/Documents/GAFSP%20Missing%20Middle%20Pilot%20Projects%20Initiative%20-%20Guidelines%20%28Endorsed%20by%20Steering%20Committee%29.pdf>

- countries to assist teams with monitoring and will conduct quarterly “check-ins” to assess progress against AWPB objectives.
81. The EAFF CEO will be responsible for programmatic monitoring. He, along with the head of EAFF’s participating member organizations, will be able to access the eGranary platform, to determine the current status of most indicators appearing in the Logical Framework. The CEO will make quarterly presentations to the eGranary Steering Committee on progress to date.
 82. A steering committee will be nominated to provide strategic guidance and direction to the eGranary. It will approve the consolidated AWPB, make periodic field visits to ground truth progress and review audit reports. IFAD-funded Project Management Units will be represented on the steering committee to ensure integration of the eGranary grant within on-going loan projects and PMU staff will regularly participate in implementation support missions.
 83. EAFF will continuously evaluate the services it provides through eGranary. Since the activity entails significant changes in farmer behaviour with respect to post-harvest handling, product aggregation, and use of mobile technology, eGranary will closely evaluate the effectiveness and efficiency of its training modules. It will conduct targeted surveys using both field surveys and surveys administered through mobile telephones to determine the degree of farmer adoption. This will allow EAFF to rapidly revise training modules in areas with sub-optimal adoption.
 84. Critical leverage factors – in terms of increased sales by farmers and amount of credit secured - will be closely monitored as part of the logical framework. In this regard the targets are the value of forward/supply contracts executed between farmers, warehouse operators and off-takers will reach the total amount of 24M US\$ (with a crowing-in effect of GAFSP Funds: Private Funds = 1: 9.2) and an increased access to finance equal an amount of 3.42M US\$ of credit secured through the establishment of credit lines.
 85. Regarding reporting, EAFF will provide on-time consolidated AWPBs, biannual progress reports based on a format agreed with IFAD, a mid-term report, a detailed exit strategy, and a final report which highlights lessons learned.

E. Indicative Workplan

PLANNED ACTIVITIES	MILESTONES	TIME FRAME												RESPONSIBILITY
		Y1				Y2				Y3				
		1	2	3	4	5	6	7	8	9	10	11	12	
1. E-granary platform set up														
Registration campaign strategy developed and validated	Establishment and operationalization of the e-Granary	█	█											EAFF/ MODE
Country Registration Campaign teams formed; trained and dispatched		█	█	█	█	█	█	█	█	█	█	█	█	EAFF/ MODE
Campaign and visibility materials developed and deployed in different languages.		█	█	█	█	█	█	█	█	█	█	█	█	EAFF/ MODE
Campaign platforms e.g. media engaged			█	█	█	█	█	█	█	█	█	█	█	EAFF/ MODE
Set up of e-Granary:			█	█	█	█	█	█	█	█	█	█	█	MODE/EAFF
Set up and operationalize the call centres			█	█	█	█	█	█	█	█	█	█	█	MODE/EAFF
2. Increased market access														
Pilot the market linkage model	Execution of the supply contracts	█	█											MODE/EAFF
Roll out after "proof of concept"			█	█	█									MODE/EAFF
Map out and profile the relevant off-takers		█	█	█	█	█	█	█	█	█				EAFF
Organize Business 2 Business meetings with off takers to seek partnerships.		█		█		█		█		█		█		EAFF
Organize meetings with certified warehouse operators to seek partnerships		█	█		█		█		█		█			EAFF
Supply contracts signed annually		█		█		█		█		█		█		EAFF
Seasonal harvests and volumes traded posted on e-Granary continuously		█	█	█	█	█	█	█	█	█	█	█	█	EAFF
3. Increased access to financial services – 31,500 small holder farmers receive credit on mobile														

PLANNED ACTIVITIES	MILESTONES	TIME FRAME												RESPONSIBILITY
		Y1				Y2				Y3				
		1	2	3	4	5	6	7	8	9	10	11	12	
Piloting of the credit model.		■	■											EAFF/MODE
Roll out after "proof of concept"			■	■										EAFF/MODE
Develop and Validate strategy to promote, increase and retain credit product uptake		■	■											EAFF
Development of promotion material for the credit product to farmers.		■	■	■	■	■	■	■	■	■	■	■	■	EAFF
Farmers registered on e-granary actively accessing credit annually and borrowing in subsequent years		■	■	■	■	■	■	■	■	■	■	■	■	EAFF
4. Increased access to extension services - 10,000 small holder farmers access agriculture extension services via mobile phones														
Piloting of the e-extension model.								■	■					EAFF/IFFCO
Roll out after "proof of concept"									■	■	■			EAFF/IFFCO
Develop and Validate strategy to promote, increase and retain e-extension uptake								■	■	■				EAFF/IFFCO
Development of promotion material for the e-extension product to farmers.	Execution of the e-granary awareness & registration campaign								■	■	■	■	■	EAFF/IFFCO
Farmers registered on e-granary actively accessing e-extension throughout the season									■	■	■	■	■	EAFF

V. SUPERVISION, KNOWLEDGE MANAGEMENT AND SCALING UP

A. Supervision Arrangements

86. IFAD will undertake direct supervision of the Grant. Supervision will consist of field missions and intermittent technical backstopping as the need is identified and relevant to the progress and challenges within each country. Supervision will be coordinated with EAFF and the respective countries and stakeholders/cofinanciers /partners involved in the Grant. Supervision will include fiduciary matters and technical aspects. The supervision mission will work with the implementing partners for each of the components / key activities to improve implementation and impact as well as with the respective Farmer's Organizations responsible for management issues. That will include reviewing audits and expenditures as per the financing agreement. The table below provide a breakdown of the budget for design, supervision and other costs (to be) incurred by IFAD.

Table 1 – Budget for IFAD design, start-up, supervision and closing activities

Task	US\$
Additional design (incl. preparation of manuals, fiduciary and operations)	60 000
Start-up workshops	15 000
Technical and fiduciary supervisions (45 000/year * 3)	135 000
Completion Report	15 000
TOTAL	225 000

B. Knowledge Management and Learning

87. The objectives of the Knowledge Management Plan (KMP) are threefold: improve project performance, support efforts to scale up or replicate successes, and share lessons with wider audiences to increase visibility and reinforce advocacy. Because the grant will be implemented in three countries and will involve a host of discrete interventions along six different value chains, sharing knowledge about successes and constraints is of critical importance to improve project performance. eGranary will undertake regular stock taking exercises to draw out learnings from specific activities in each implementing country and by each implementing NFO and these will be shared through stock taking reports, print and visual media and workshops and conferences. Scaling up activities to reach 70,000 participants is essential for the financial viability of eGranary. Sharing the positive impact of eGranary on potential participants through KM events and packaging of knowledge products will figure prominently in the KM plan. EAFF and its participating members will share lessons learned with wider audiences through reports, case studies, internet blogs, testimonials, and widespread participation in workshops and conferences. Special attention will be paid to assessing the effectiveness of KM events. Soliciting feedback through exit questionnaires and implementing surveys to evaluate technology adoption will be regular features of KM efforts.
88. All staff working on eGranary will have specific KM responsibilities inscribed in their Terms of Reference and will be held accountable to deliver on their KM duties. KM activities will be explicitly inscribed and budgeted in the annual work plan and M&E programme and will be linked to the Logical Framework. As part of the grant's staffing plan, EAFF will engage a Knowledge Management Officer who will oversee knowledge management within EAFF and provide technical support to the NFOs.

C. Scaling up and sustainability

89. The sustainability of the e-Granary is primarily based on the financial benefits for the actors involved, which will create the incentives for its continuation as a self-sustainable business solution. Here below are the main expected benefits (and financial incentives) for each actor:

Table 2. Project benefits

Actor	%	Benefits
Farmer	>40%	Total income increase
Aggregation hub	2%	Over the base fee payments (collection & administration)
Warehouse	3%	Over the sales price (grading & storage fee)
EAFF	3%	Over the sales price (coordination and brokerage)
MODE	2%	Over the credit issued

90. Annexed to the document (see annex 8), find an assessment of the financial viability of the business case. From the overall projected Profit and Loss, the break-even is expected in year 4 of the project, by end of Y3 the year on year loss had reduced to 331,000 USD with a cumulative loss of 2,798,500 USD, which would be largely compensated by the GAFSP MMI support requested for the project (2.8 USD).
91. EAFF's exit strategy will be twofold:
- (i) Through business development, linking farmers to markets and creating established viable commercial partnerships that will last after the end of the project.
 - (ii) Through revenue generation, as the e-granary system will generate income for EAFF and its membership, thus setting the basis for a self-sustainable business solution. If the e-granary proves to be a successful model for aggregating farmer produce through the loan provision and advertisements, it is expected to generate enough resources to sustain itself.

VI. PROJECT COSTS AND FINANCING

92. The budget figures presented below relate to eGranary activities within the project life. The difference between this amount and amount in the concept note relate to costs to be incurred after the close of the GAFSP project

Table 3 Project Costs by category

Category		Total cost Year 1	Total cost Year 2	Total cost Year 3	Total	GAFSP contribution	EAFF contribution
I	SERVICES,GOODS AND INPUTS	-	-	-		-	-
II	CONSULTANCIES	293 250	95 750	60 750	449 750	389 250	60 500
III	WORKSHOPS	231 500	163 500	113 500	508 500	508 500	-
IV	EQUIPMENT AND MATERIALS	52 000	6 000	-	58 000	54 000	4 000
V	SALARIES AND ALLOWANCES	402 000	410 040	418 241	1 230 281	1 065 752	164 529
VI	TRAINING	176 000	101 250	68 750	346 000	246 250	99 750
VII	OPERATING COSTS	94 901	69 901	61 901	226 704	197 954	28 750
VIII	INDIRECT(Administrative) COSTS	71 605	48 501	41 436	161 542	148 295	13 247
TOTAL		1 321 256	894 942	764 578	2 980 777	2 610 000	370 777

Table 4. Project Costs by component

COMPONENT		Total cost Year 1	Total cost Year 2	Total cost Year 3	TOTALCOSTS	GAFSP contribution	EAFF contribution
1. Access to Services							
1.10	Technology costs	392 651	249 791	217 484	859 926	779 132	80 795
1.20	Mobilisation on to the egranary platform	305 000	181 000	115 500	601 500	540 500	61 000
1.30	Increased Market Access	62 000	32 250	18 750	113 000	73 000	40 000
1.40	Increased Financial Services	15 000	-	-	15 000	15 000	-
Total Component 1		774 651	463 041	351 734	1 589 426	1 407 632	181 795
2. Knowledge Management, Learning, and M&E							
	2.1. Enhanced capacity of farmers on structured t	12 500	2 500	-	15 000	-	15 000
	2.2 Increased public awareness and knowledge c	102 500	47 500	57 500	207 500	185 000	22 500
	2.3 Monitoring and Evaluation	50 000	58 000	33 000	141 000	92 000	49 000
Total Component 2		165 000	108 000	90 500	363 500	277 000	86 500
3. Programme management							
3.10	Project staff	270 000	275 400	280 908	826 308	742 573	83 735
3.20	Software and installation for financial reporting	40 000	-	-	40 000	34 500	5 500
Total Component 3		310 000	275 400	280 908	866 308	777 073	89 235
TOTAL COMPONENTS 1-3		1 249 651	846 441	723 142	2 819 234	2 461 705	357 529
3.3	Administrative costs-5.7%	71 605	48 501	41 436	161 542	148 295	13 247
TOTAL BUDGET		1 321 256	894 942	764 578	2 980 777	2 610 000	370 777

NB: Under cost of mobilisation to the eGranary platform (subcomponent 1.2), unit cost per farmer profile has been provided. The costs to be incurred here include field assistants movement costs, meetings with farmers, training costs, farmer leaders outreach and movement costs

Table 5 Project Costs by financier

TOTAL BUDGET	2 980 777
GAFSP CONTRIBUTION	2 610 000
EAFF CONTRIBUTION IN KIND	370 777

93. Component one is the largest cost area and includes four subcomponents: i) technology ii) farmer mobilization of onto eGranary iii) market access and iv) increased financial services. The technology subcomponent includes the development of an enterprise level software platform for delivering eGranary services and the accompanying technology infrastructure and equipment costs, including software development time; integration with telco technology; short-codes; hosting; security audits; and mobile devices and airtime for agents and farmers. It also incorporates technology staff, including platform support call center operators, national system administrators, and a regional technology product owner who will oversee and manage the technology vendor. Farmer mobilisation onto the eGranary platform is comprised of payments to field agents for farmer registration; training of field staff on the platform; mapping and vetting farmer groups; and user design research. The market access subcomponent includes mapping of off-takers and other market players; developing an eGranary business plan; and procuring storage and equipment as needed. Finally, increasing financial services includes product design for financial services; regulatory analysis; development of financial literacy curriculum; and mapping of financial services providers.
94. Component two includes three subcomponents. Enhanced farmer capacity on trade and finance incorporates value chain analyses; developing training curriculum; designing ToTs; and translating materials. Increased public awareness of eGranary includes the development and delivery of marketing campaigns to farmers; public marketing materials; regional knowledge and learning events; a project steering committee; and a documentary. The final subcomponent is monitoring and evaluation, which includes evaluation design; baseline and endline enumeration; M&E software, and on-going project monitoring activities.
95. Component three covers staff and consultants for program management from EAFF, NFOs, and Technology Vendor. This component includes a regional manager; country level project

coordinators; field officers; and a percentage of the EAFF CEO and Finance Officer salaries (copy of CEO contract refer to Annex 8).

96. Budget categories for Salaries, Allowances and Consultancies account for a high percentage of overall costs (about 60%). EAFF and the IFAD-fielded team believe that this high percentage devoted to staff and consultants is entirely justified given the human resources required to develop and maintain the eGranary platform. Moreover, this budget allocation is typical of projects focused on developing e-solutions to value chain finance and marketing.

VI. FINANCIAL GOVERNANCE

A. Procurement Procedures for Goods, Services and Human Resources

97. Procurement Procedures for Goods, Services and Human Resources by the Grant shall be carried out in accordance with relevant National procurement regulations, to the extent such are consistent with the IFAD Procurement Guidelines. Procurement arrangements by procurement method shall be specified in the PIM. In all cases where goods and services worth more than two hundred thousand US dollars (US\$ 200, 000) are to be procured through the Project (meaning that such amount refers to the Project as whole and not to a single contract), a procurement plan shall be provided and submitted to IFAD for clearance. The Procurement Plan shall identify procedures and method to be applied by EAFF.
98. All procurement activities carried out by EAFF will be conducted in a manner which provides best possible value; is fair, objective and transparent; is compliant with the contractual and regulatory frameworks for development partners and national authorities and which reflects and uses international best practice in the application of ethical standards.
99. The AWPB including the procurement plan shall be developed by the sub-grantees/relevant National Farmer Organizations under the guidance of EAFF and be consolidated by EAFF and approved by Management Board of the Project. The Procurement Plan shall include (1) the various contracts for goods, works and consulting services required to implement the Project during the Project Fiscal Year; (2) the proposed methods of procurement for such contracts; and (3) the related IFAD review procedures, if any.

B. Financial Management System, including accounting specifications

100. Establishment of the specific guidelines for the project materialized in a Project Implementation Manual (PIM) should be prepared and shared with IFAD for no-objection, in which, financial management, procurement, accounting and disbursement, tailored and adapted to the requirements of the project implementation should be specified. To facilitate early start-up of the Programme, a start-up workshop on financial management and procedures will take place after the effective date of the grant and be pre-financed by EAFF.
101. The Recipient shall maintain separate records and prepare its financial statements in accordance with international accounting standards in respect of the Grant.
102. An integrated web based accounting/information system will be procured and used by the Project at each level. All finance staff will be trained in using the software. The system will record all expenditures by categories, components, project activities and sources of funding at all level of the project.
103. The applicable Fiscal Year for the Recipient shall be 1st January to 31st December.
104. The Recipient shall maintain separate records and shall prepare its financial statements in accordance with internationally recognized accounting standards. All financial and audit reports submitted to IFAD shall be in the currency of the Grant Agreement. The Recipient shall submit to IFAD semi-annual unaudited Statements of Expenditure (in the form of Schedule 4 based on the categories of expenditures as per Schedule 2), within 45 days of the end of the reporting period. Such financial reports shall disclose both IFAD funds and any other sources of financing specifying whether the expenditures were incurred in cash or in kind, and consolidating the expenditures incurred by sub-grantees, if any. The sub-grantees will be accountable to the Recipient for the use of sub-grant funds and be subject to normal audit oversight. Nevertheless, the Recipient will be ultimately and solely responsible for the management of grant funds and for financial reporting to IFAD. Advances to sub-grantees will only be recognized as eligible expenditures once justified. The Recipient will be accountable for the use of sub-grant funds.
105. Income generated from the Grant Funds (if any) will be disclosed in the Statements of Expenditure and audit reports submitted to the Fund.
106. Final Report. As soon as possible after the Project Completion Date, but in no event later than six (6) months thereafter, the Recipient shall provide the Fund with a Final Report covering the Project

Implementation Period of this Agreement and consisting of (i) a Final Statement of Expenditure, list, signed by an authorised representative of the Recipient which reports on the use of the total amount of the Grant; (ii) a Completion Report, of such scope and in such detail as the Fund shall reasonably request, on the execution of the Project, its costs, the activities undertaken, the level of accomplishment of the Project Goals and Objectives, the results achieved from the Project and the benefits derived and to be derived from it; and (iii) The institutional financial statements shall disclose the sources and use of IFAD funding". If the Recipient fails to supply a Final Report by the final reporting date specified herein above, and fails to furnish acceptable written explanations of the reasons why it is unable to comply with this obligation, the Fund may take action to prevent payment of any outstanding amount from being made and to recover any amounts unduly paid or unspent. The Fund may request additional information as required.

C. *Flow of Funds and Disbursement Arrangements*

107. In line with IFAD Grant Provision, the Recipient shall maintain separate records and financial accounts prepared in accordance with internationally recognized accounting standards in respect of the Grant.
108. There shall be a designated account denominated in US dollars to be opened for the Grant, through which IFAD funding shall be channelled. The designated account is to be set up at and managed by the Project financial management team of the Project. They will be directly responsible for the management, maintenance and reconciliation of the designated account activities.
109. The Recipient, sub-grantees and implementing agencies shall open and maintain a separate bank Account in local currency to receive the proceeds from the designated account. The project financial management team will ensure that funds are transferred from designated account to project accounts in line with the relevant budget plan. The sub-grantees and implementing agencies are also responsible for reviewing their disbursement request as well as the supporting documentation required in order to justify the advance payment received from designated account of the Project.
110. As from the Effective Date, and after receipt by the Fund in satisfactory form of a copy of the Agreement countersigned by a duly authorized representative of the Recipient, a completed Evidence of Authority to Sign Withdrawal Applications and Statements of Expenditure and a completed Bank Account Certification Form, the Recipient may request withdrawals from the Grant in advance during the Project Implementation Period by using the Withdrawal Application signed by the authorised representative of the recipient or his delegated signatory. The amount so requested shall not exceed 75% of the expenditures included in the relevant AWPB, as cleared by IFAD. For the second and following Withdrawal Applications, the Recipient shall submit to the Fund a Statement of Expenditure with respect to the use of at least 75% of the immediately preceding instalment (and 100% of previous instalments if any).
111. The Recipient shall also ensure that audit requirements are fulfilled. The last tranche shall be reimbursed by IFAD upon submission of the Final Report, and the Withdraw Application
112. Duties and taxes related the project activists will be financed by the Recipient.

D. *Audit Arrangements*

113. The Recipient shall have its institutional and the project specific financial statements audited on a yearly basis by independent auditors in accordance with International Standards on Auditing. The institutional financial statements shall disclose the sources and use of IFAD funding. Additionally, the Recipient shall ensure that the audit report shall include a specific opinion on the project, an opinion on the financial reports and Statement of Expenditures (SOEs) and a management letter. These audit reports should be submitted within 6 months of the end the Recipient's Fiscal Year. The annual audit reports, the specific opinion on the project and the audited financial statements should be based on the NFOs annual reports with clear reference to them. The EAFF audit report should result from the consolidation of the audit analysis carried out by certified auditors at national level. The TORs for the auditors shall be shared and cleared by IFAD. The audit reports of NFOs shall be available upon request, if needed.
114. The final financial consolidated report for the total grant proceeds and use shall be prepared in accordance with international accounting standards and be audited accordance with International Standards of Auditing. The final audit report shall include an audit opinion on the financial reports and

a management letter. The final audit report shall be elaborated on the basis of the national final audit reports of national partners as final consolidated audit report. The audit report shall be submitted to IFAD by the grant closing date at the latest.

Annex 1: eGranary Results-based logical framework

Results Hierarchy	Indicators					Means of Verification			Assumptions (A) / Risks (R)
	Name	Year 1	Year 2	Year 3	Cumulative	Source	Frequency	Responsibility	
Goal: Improve the incomes and living standards of participating E-Granary farmers in Tanzania, Uganda and Rwanda	<ul style="list-style-type: none"> Revenues of participating farmers* increase by at least 40% 	5%	10%	25%	40%	EAFF			<ul style="list-style-type: none"> Existence of favourable and stable policy environment (A)
Project Development Objective: Increased productivity and profitability of participating E-Granary farmers	<ul style="list-style-type: none"> 20% increase in yields of targeted crops 	3%	5%	12%	20%	EAFF database		FOs	<ul style="list-style-type: none"> Weather related incidents impact harvests (R); Participants have access to services, certified seed and fertilizer (A)
	<ul style="list-style-type: none"> Prices achieved by participants* 30% greater than those of non-participants 	5%	10%	15%	30%	EAFF database and market analyses	Quarterly	EAFF and FOs	
	<ul style="list-style-type: none"> Percentage of supported rural producers' organization members reporting new or improved services provided by their organization 	0%	35%	80%	80%	seasonal surveys	seasonally		
Outcomes/ Components: Outcome 1: Increased share of participants' marketed surpluses aggregated prior to sale;	<ul style="list-style-type: none"> Value of forward/supply contracts executed between farmers, warehouse operators and offtakers 	\$4.5M	\$5.9M	\$13.6M	\$24M	Signed contracts	Quarterly	EAFF/FOs	<ul style="list-style-type: none"> Farmers able to meet quality and quantity buyer specifications;(A) Availability of aggregation centers fulfilling requirements (A) ; Buyers willing to offer floor prices (A); Cost of storage acceptable (A); Farmers able to meet quality and quantity offtaker specifications (A)
	<ul style="list-style-type: none"> Number of forward/supply contracts executed between farmers and service providers i.e., warehouse operators, input providers, financial services and offtakers 	14	13	23	50	Signed contracts	Quarterly	EAFF/FOs	
	<ul style="list-style-type: none"> Volume of traded product on eGranary platform 	13,500MT	18,000 MT	41,100MT	72.600MT	eGranary records		EAFF/FOs	

Results Hierarchy	Indicators					Means of Verification			Assumptions (A) / Risks (R)
	Name	Year 1	Year 2	Year 3	Cumulative	Source	Frequency	Responsibility	
Outputs: 1.1 eGranary platform developed and deployed according to technology roadmap.	<ul style="list-style-type: none"> Number of new farmers* registered on platform 80% of registered users actively using platform services disaggregated by product and user profile 	10,000	20,000	60,000	90,000	eGranary records	Quarterly	EAFF	<ul style="list-style-type: none"> eGranary sensitization campaigns successfully implemented;(A) Farmers have access to mobile phones and airtime (A)
Outcome 2: Increased use of financial services/credit by participating farmers	<ul style="list-style-type: none"> Number of EAFF farmers* applying for credit through platform; 	5,000	6,700	15,200	26,900				<ul style="list-style-type: none"> MODE secures credit lines (A) Farmers demand E-Granary loans (A) Financial products appropriate to each commodity.(A)
	<ul style="list-style-type: none"> Number of loans extended by amount 	\$1M	\$1.3M	\$3.8M	\$6.2M	E-Granary records	Monthly	EAFF/FOs	
	<ul style="list-style-type: none"> Loan repayment rates 	90%	90%	93%	91%	E-Granary records	Monthly	EAFF	
	<ul style="list-style-type: none"> % of Portfolio at Risk at 90 days 	2.3%	2.3%	1.75%					
Outputs: 2.1 Lines of credit established	<ul style="list-style-type: none"> Amount of credit secured; 	1.02M\$	1.30M\$	1.10M\$	3.42M\$				
Outcome 3: Participating farmers adopt improved sustainable production and post-harvest practices;	<ul style="list-style-type: none"> 100% of product delivered to aggregation centers sold as premium grade; 	13,500MT	18,000 MT	41,100	72,600 MT				<ul style="list-style-type: none"> Harvest and Post harvest equipment available (A); Farmers willing and able to use Interactive voice response services (A)
Outputs: 3.1 Virtual extension modules operable	<ul style="list-style-type: none"> Number of farmers* accessing e-extension services 		2300	6000	8,300				<ul style="list-style-type: none"> Farmers willing to pay for bundled services that include e-extension services.(A)

(*) All indicators marked with * will be disaggregated by gender

Annex 2 Supporting documentation for grant design document

1. *Legal documentation*, including evidence of legal status and capacity, registration and good standing, evidence of the authority of the person who will sign the agreement for the recipient. The recipient must demonstrate that it has been registered and that its registration is current (evidence of good standing no more than 90 days old), that it has the corporate capacity to enter into the Grant Agreement, accept the Grant and carry out the Project, and that the person signing the agreement has the necessary authorization. Different jurisdictions have different laws, so the actual documentation required may vary. As a rule, the recipient must be registered in an IFAD Member State. Legal documentation is not required for United Nations agencies or CGIAR institutions.

Yes No Not applicable

2. *Financial documentation*, including the name/address of independent auditors, institutional audited financial statements and audit reports. Audit reports must be signed and dated on Auditor's letterhead. For recipients that have not previously received an IFAD grant, two years' audited financial statements and audit reports will be required. Otherwise, one year is sufficient. Financial documentation is not required for UN agencies or CGIAR institutions. For those recipients that have not been required to prepare audit reports, or whose audit reports have been qualified, the financial management questionnaire must be submitted (attachment 8 of the Grant Procedures).

Yes No Not applicable

3. *Recipient's procurement procedures*. If the recipient does not have its own procedures, a declaration that it will use IFAD's Procurement Guidelines or other procedures acceptable to the Fund will suffice

Yes No Not applicable

4. *Procurement Plan*. The Procurement Plan, defined in paragraph 6.1(xiii) of the IFAD General Provisions, should be prepared where goods and services worth more than US\$ 200,000 are to be procured under the project (attachment 16 of the Grant Procedures). The Grant Sponsor should review the Procurement Plan to ensure, among other things, that the grant is not used to purchase equipment or other durable goods if it would be economically appropriate to lease the equipment instead and that such goods or equipment are suitable and required for the effective implementation of the project.

Yes No Not applicable

5. Declaration by the recipient (email is acceptable) that it has read and accepted the Project Description and Project Budget. It is mandatory that the recipient has reviewed the Project Description and Project Budget before the Grant Package is submitted for Approval.

Yes No Not applicable

6. Declaration by the recipient (email is acceptable) that it has read and accepted IFAD's Standard Large/Small Grant Agreement. The model Grant Agreement is available on the IFAD website, in attachment 14 of the Grant Procedures.

Yes No Not applicable

CFS Clearance: _____ Date: _____

LEG Clearance: _____ Dates: _____

Annex 3
Eligibility and Due Diligence Checklist
(LEG and CFS to review)

1. **The recipient is:** (check the appropriate box)
- The government of a developing member state of IFAD
 - A non-profit, non-governmental organization in an IFAD member state
 - An intergovernmental organization with more than one IFAD member state as a member.
 - Private sector entity
 - Other

(Governments and government agencies of developed Member States and non-Member States are not eligible. Non-profit, non-governmental organizations in non-Member States are eligible only if a specific waiver is granted by the President.)

- 2.(A) **If the recipient has previously received grant(s) from IFAD, has it provided all necessary progress reports and audited financial reports/statements?**

Yes No n/a

If the answer is no, the recipient is not eligible.

- 2.(B) **If the recipient has previously received grant(s) managed by your division, was its performance fully satisfactory?**

Yes No n/a

If the answer is no, please explain why the recipient should receive a new grant.

3. **Can the recipient provide audited financial statements for the two previous years?**

Yes No

If the answer is no, describe special circumstances that justify giving the grant to this recipient and provide supporting documentation.

4. **Is IFAD the prime beneficiary of the grant?**

Yes No

5. **Will this grant support activities normally supported by other IFAD resources (i.e. IFARB)?**

Yes No

6. **Will this grant support activities that duplicate efforts being financed by other donors?**

Yes No

If the answer to 4, 5 or 6 is yes, the grant does not comply with the IFAD Grant Policy. No waiver is possible. It is the responsibility of the grant sponsor to confirm the eligibility of the recipient and the conformity of the grant with all aspects of IFAD's policies and procedures. If the grant sponsor requests a waiver of any policy or procedure which is subject to being waived, it must be set forth below.

7. **Deviation from IFAD policies and procedures** List any aspects of the grant that do not comply with IFAD's grant policy or procedures.
-

Annex IV**FINANCIAL MANAGEMENT ASSESSMENT QUESTIONNAIRE (FMAQ)**

Project # 2000001808	Date :
Implementing Entity EAFF	
Self-assessment completed by Antonella Cianciotta	Date :
Review completed by Irene Li	Date :

Implementing Entity:

	Topic	Response	Remarks
1.	Organization and Staffing		
	<p>Implementing Entity</p> <p>NOTE:</p> <p>In the case of a Government Department, the FMS should initially focus on the status of the country PFM systems in order to gauge level of fiduciary risks to which the proposed project may be exposed.</p> <p>Once an understanding of the PFM environment has been ascertained, the FMS should switch focus down to project level and focus on the department(s) or unit(s) that will financially administer the project.</p>		
1.1	Which entity is the LPA? What is the entity's legal status?		<p>The implementing entity is the Eastern Africa Farmers Federation (EAFF) which is a no-profit regional farmers 'organization covering 10 East African countries. EAFF is responsible for the implementation of the project and for consolidating reports by monitoring and supervising the implementation of project activities including, but limited to National Farmers 'organizations partners in the following countries: Rwanda, Uganda and Tanzania.</p> <p>The structure of the projects implies having two national farmers 'organizations per each country implementing the activities at national level. This complex structure can potentially increase the level of risk.</p>
1.2	Will financial management of the project be the responsibility of the LPA or be undertaken within the-PIU?		<p>EAFF is responsible for the financial management being also the implementing unit.</p> <p>The project will be implemented at country level by NFOs in 3 countries. The NFOs will be responsible for putting in place the required financial arrangements to ensure that the project funds are used for the intended purposes.</p>
1.3	Has the entity implemented a donor financed project in the past - if so, please provide details?		<p>EAFF is familiar with IFAD funded projects. The grant signed with EAFF for the implementation of SFOAP main phase amounts to EUR 3.7 million. SFOAP is co-funded by IFAD, EC, SDC and AFD. EAFF is the only recipient of SFOAP Programme respecting the provisional implementation period being in the position to finalize the implementation by the completion date, the 21st December 2017.</p> <p>The NFOs have experience in implementing donor funded projects, in particular IMBARAGA, UCA, UNFFE. MVIWARA and TFC are already benefitting from the SFOAP programme.</p>

Topic		Response	Remarks
	Staffing		
1.4	What is the (proposed) organizational structure of the accounting department? Attach an organization chart.		The Finance team of EAFF is composed of the Finance Officer and the Management Accountant. The mission revealed different level of maturity in terms of financial management among the NFOs involved in the e-granary project. The financial department staff is not always adequately staffed. Two levels of financial management capacity have been observed: moderately satisfactory (IMBARAGA, UCA, UNFFE, MVIWATA, TCF) and weak (NCCR). EAFF organigram attached.
1.5	Identify the (proposed) accounts staff, including job title, responsibilities, educational background and professional experience. Attach job descriptions and CVs of key accounting staff.		The EAFF Finance Officer holds degree in Economics and she is a certified public accountant. The Management Accountant holds the Masters' degree on Business Administration, bachelor degree on commerce and he is a certified public accountant. Job descriptions are available and attached to the HR manuals.
1.6	Are written position descriptions that clearly define duties, responsibilities, lines of supervision, and limits of authority for all of the officers, managers, and staff?	Yes	The job descriptions of the EAFF staff are clearly defined in terms of responsibilities and duties and they are attached to the "Human Resources Management Policies and Procedures Manual". The NFOs have clear job descriptions.
1.7	Is the finance and accounts staff adequately qualified and experienced?	Yes	The EAFF finance and accounts staff are adequately experienced and qualified as Certified Public Accountants of Kenya. The level of experiences and qualifications at NFOs is not always adequate.
1.8	Are the project accounts and finance staff trained in IFAD procedures?	Yes	The project accounts and finance staff are trained in IFAD procedures. They participated in the IFAD financial management procedures training held in 2013 as inception workshop before the launch of SFOAP Main Phase. Then the IFAD annual supervision missions on the on-going project have provided specific support. In 2015, the Workshop on Fiduciary issues and e-filing system was organized by IFAD and EAFF finance officer was participating in. The finance staff at NFOs is not adequately trained in IFAD specific procedures.
1.9	Are any Finance Staff appointed on contract? What is the duration of the contracts Indicate key positions not contracted yet, and the estimated date of appointment	Yes	EAFF finance staff have been appointed through renewable 3-year contract. The Finance staff also at NFOs level is hired through renewable long-term contracts.

Topic		Response	Remarks
1.10	What is training policy for the finance and accounting staff?		The organization strongly supports the career development of the finance staff. The policy for training is not formally written and available.
1.11	Is there evidence that finance staff are regularly transferred to other Government departments At what frequency are personnel transferred?	N/A	The EAFF finance department counts on fixed long-term staff, no rotations have been adopted neither transfers to other departments. The finance officer has been regularly working for the organization since 2009.
1.12	Is the project finance and accounting function staffed adequately?		The finance and administrative department staffing is moderately satisfactory. An additional accountant with at least two years of experience is missing to support the finance and accounting activities regarding the e-filing system and the collaboration/interaction with finance people in the field for the follow up with reporting. In addition, the administrative officer is currently dealing with procurement issues. The procurement officer has not been hired.

Topic		Response	Remarks
2.	Budgeting		
2.1	Who is responsible for preparation and approval of project budgets?		<p>At Regional level, the Programme Officers define the activities and priorities, then the proposal is submitted to the finance officer for revision, verification and finalisation.</p> <p>EAFF consolidated budget is based on the approved budgets submitted by NFOs to EAFF following a bottom-up approach. Once the national budgets are submitted, the programme officers and the finance department verify the consistency of plans of work and the coherence in terms of budget availability and allocation before providing the approval and then the finance officer consolidates the AWPB.</p> <p>Regarding the budgeting at NFOs, the level of details included in the budget is not currently meeting the IFAD requirements in terms of project components and categories. In addition, the mission noted a very low level of disbursement in the context of SFOAP implementation at UCA and IMBARAGA.</p>
2.2	Are project budgets prepared for all significant project activities in sufficient detail to provide a meaningful tool with which to monitor subsequent performance?		<p>The overall budget of EAFF comes from the consolidation of the project budgets. The projects budgets are elaborated in compliance with Donors requirements. Regarding IFAD projects, they are detailed by components, categories and activities providing information in terms of unit costs and quality. The implementation progress and annual reports show coherence between the work of plan and budget allocation with the real expenditures incurred in the context of project activities implementation.</p> <p>The punctuality in the submission of requests for IFAD no-objection has notably been improved over years.</p> <p>Regarding the budgeting at NFOs, the level of details included in the budget is not currently meeting the IFAD requirements in terms of project components and categories.</p>
2.3	Are procedures in place to plan project activities, collect information from the units in charge of the different components, and prepare the budgets?	Yes	All departments prepare and submit yearly budgets as per laid procedures.
3	Funds Flow/Disbursement Arrangements		

Topic		Response	Remarks
3.1	<p>Does the Implementing Entity have previous experience of using imprest fund and donor funding SOE procedures?</p> <p>Were there any problems or issues encountered by project staff in the operation of the imprest fund or SoE procedures in the past?</p>	Yes	<p>EAFF finance staff have experience in SOEs procedures from previous and on-going IFAD projects (SFOAP).</p> <p>The Project Accounts of NFO are replenished upon request of resources from the EAFF project account in accordance with approved Annual Work Plan and Budget's (AWPBs).</p> <p>At the beginning of the SFOAP phase, EAFF and the NFOs signed contracts in the same format and wording as is signed between EAFF and IFAD. The only difference is that the contracts do not mention the amount expected in the entire phase of project by each NFO because this varies depending on approved AWPB and emergent issues and activities.</p> <p>NFOs receive funds in one annual instalment, as soon as they have justified at least 70% of the previous year's budget, and it is only when the activities are finished that NFO send a report to EAFF accompanied by the transaction list and copy of supporting documentation.</p> <p>The e-granary sub-agreements with NFOs should include clear details concerning the budget plan detailing the allocation by year, by NFOs, in cash, in-kind contribution, the reporting requirements and the disbursements arrangements.</p>
3.2	<p>Does the Implementing Entity have experience in the management of disbursements from IFAD or other donors?</p> <p>Have there been the major problems in the past in receipt of funds by the entity?</p>		<p>EAFF finance staff have experience in the management of disbursements from IFAD or other donors: EU/IFAD (SFOAP), AGRA, WEEFFECT, FAO -Egranary, CTA-MUIIS, FARA-PAEPARD, SDC, AGRINATURA-FARMAF, UNECA, COMESA, USAID, AGRITERRA.</p> <p>The majority of NFOs have experience in the management of Donors funds, in particular IMBARAGA, UCA, UNFFE, MVIWATA and TFC are sub-recipient of SFOAP programme.</p>
3.3	<p>Does the entity have/need to develop capacity to manage foreign exchange risks?</p>		<p>The project expenditures will be in local currencies, conversely the grant denomination currency is in USD.</p> <p>The fluctuations of the exchange rate might have impact on the project costing. Consequently, the project needs to be aware of this in view of the budget plan and to develop the capacity to manage this risk accordingly.</p>
3.4	<p>Are the beneficiaries required to contribute to project costs?</p> <p>How are payments made for the counterpart funds?</p> <p>If counterpart funds are to be contributed in kind (in the form of labour), are proper guidelines formulated to record and value the labour contribution?</p>	Yes	<p>The beneficiaries will provide in-kind contributions to projects cost.</p> <p>Also, the private sector partner, MODE, will provide contribution in the form of technologies and labour.</p> <p>The estimated in-kind co-financing provided by beneficiaries (EAFF and national farmers organizations partners of the projects) are defined in the design document, table2.</p> <p>There are not specific guidelines for co-financing, but they will be provided according to the final AWPB and included in the project cost table.</p>

Topic		Response	Remarks
3.5	Is part of the project implemented by communities or NGOs? Does the PIU have the necessary reporting and monitoring features built into its systems to track the use of project proceeds by such agencies?		The project will be implemented by national farmers' organizations members of EAFF in three countries: Rwanda, Uganda and Tanzania. EAFF can monitor the level of implementation by means of the submission of reports and related supporting documentations from the members. The level of details provided by financial reports by NFOs is not complete in terms of level of details. The monitoring system is not automatized trough an electronic system for automatically generated reports.
3.6	Describe (proposed) project funds flow arrangements; (attach flow chart and explanation of the flow of funds from IFAD, government and other financiers.		The GASFP funds will be channelled by IFAD to EAFF. EAFF will transfer around 70% of total grant funding to the national FOs. The percentage of funds channelled to each NFOs will be defined and included in the design documents as well as in the sub-agreements with NFOs. For the second and following instalment, the NFOs shall submit to the EAFF a detailed financial report with respect to the use of at least 75%of the immediately preceding tranche. EAFF will submit semi-annually reports to IFAD whereas the NFOs will present quarterly reports to EAFF. Funds flow chart attached.
3.7	In which bank will the Imprest Account be opened?		EAFF will open a new USD bank account specifically for the project. The NFOs partners will open local currency bank account specific for the project.
3.8	Are the (proposed) arrangements to transfer the proceeds of the financing (from the government / Finance Ministry) to the Implementing Entity satisfactory?	Yes	

Topic		Response	Remarks
4.	Internal Controls		
4.1	Segregation of duties - are the following functional responsibilities performed by different units or persons: (i) authorization to execute a transaction; (ii) recording of the transaction; and (iii) custody of assets involved in the transaction?	Yes	The segregation of duties is adequate: there are three levels of control and signatories for every transaction. The CEO signs the contracts, then the contracts are submitted to the Finance Officer who checks the availability of budget and the correctness of selection procedures by providing her clearance. At the end, the management accountant double checks the documents submitted and processes the payment. As result, each voucher presents 3 signatories: CEO, finance officer and accountant. The internal control needs to be strengthened in some NFOs where the different responsibilities and key roles are not clearly defined.
4.2	Are the functions of ordering, receiving, accounting for, and paying for goods and services appropriately segregated?	Yes	The functions of ordering, receiving, accounting for, and paying for goods and services are appropriately segregated. The procurement committee is responsible for the procurement process: the minimum number of offers to be analysed is 20 for consultancies and at least no 3 offers for other services and goods, as per internal manual. The Project Internal Manual will be elaborated and it will include specific session on internal controls and procurements.
4.3	Are bank reconciliations prepared by someone other than those who make or approve payments?	No	The reconciliations are prepared into the financial department.
5.	Accounting Systems, Policies and Procedures		
5.1	Does the entity have an integrated accounting system that allows for the proper recording of project financial transactions, including the allocation of expenditures in accordance with the respective components, disbursement categories, and sources of funds? Will the project use the entity accounting system?	NO	EAFF uses QuickBooks to record financial transactions. This accounting system doesn't offer adequate functionalities to automatically generate Withdrawal Applications and Financial Reports compliant with reporting requirements. The system cannot allow the classification of expenditures by components and by IFAD categories. EAFF is forced to use Excel sheets for the elaboration of reports in line with requirements. This process could be subject to errors. Regarding the NFOs, the accounting systems in place are not harmonized and don't offer properly performing functionalities to have the chart of accounts in line with IFAD requirements and consequently automatically generated financial reports.
5.2	Are controls in place concerning the preparation and approval of transactions, ensuring that all transactions are correctly made and adequately explained?	Yes	The documents are received by the administration department and checked by the finance department.
5.3	Is the chart of accounts adequate to properly account for and report on project activities and disbursement categories?	No	The chart of accounts needs to be customized to have fully compliance with IFAD components and categories.

Topic		Response	Remarks
5.4	Can cost allocations to the various funding sources be made accurately?	Yes	The different sources of funding are clearly discerned at EAFF and NFOs levels.
5.5	Are the General Ledger and subsidiary ledgers reconciled and in balance?	Yes	The General Ledger and subsidiary ledgers are monthly reconciled.
5.6	Are all accounting and supporting documents retained on a permanent basis in a defined system that allows authorized users easy access?	Yes	The accounting and supporting documents are safely archived in the EAFF office. The supporting documentation concerning the transactions occurred at national members level are available and regularly sent to EAFF in the form of copies together with the related transaction list. The e-archive system for the supporting documentation was recommended during the SFOAP supervision mission in 2016, but it is not in place yet.
5.7	What is the basis of accounting (e.g., cash, accrual)?		Cash basis
5.8	What accounting standards are followed?		IAS1, IAS2, IAS4, IAS5, IAS8, IAS12, IAS19, IAS27.
5.9	Does the project have an adequate policies and procedures manual to guide activities and ensure staff accountability?	Yes	EAFF has the accounting procedures manual and it is used for all projects accountability. Moreover, EAFF has adopted the SFOAP manual of Procedures for the implementation of the programme. The mission suggested drafting the Project Internal Manual (PIM) including specific FM procedures at the needed detail level for the specificities of the project. The PIM needs to be shared and cleared by IFAD. A sample of PIM has been shared with the project team, as sample and reference.
5.10	Do procedures exist to ensure that only authorized persons can alter or establish a new accounting principle, policy or procedure to be used by the entity?	Yes	Any change in the accounting procedures must be authorized by the Board and signed by the chairmen of the Board.
5.11	Is there a written policies and procedures manual covering all routine project financial management activities? Are manuals distributed to appropriate personnel?	Yes	EAFF has policies and procedures manual, nevertheless the specific Project Internal Manual will be elaborated covering all routine project financial management activities. The PIM will be distributed and endorsed by NFOs project partners.
Payments			
5.12	Are all invoices stamped PAID, dated, reviewed and approved, and clearly marked for account code assignment?		The practice of applying the stamp PAID on invoices is well-established, even if the system needs to be updated. The vouchers are classified according to the cost centre.

Topic		Response	Remarks
Cash and Bank			
5.1 3	Does the organization maintain an adequate, up-to-date cashbook, recording receipts and payments?	Yes	The cashbook is integrated into the accounting software system.
5.1 4	Are bank and cash reconciled on a monthly basis?	Yes	
5.1 5	Indicate names and positions of authorized signatories of project bank accounts.		Ms Elizabeth Nsimadala, Regional President of EAFF Mr Japheth Magomere – Regional Treasurer Mr. Stephen Muchiri, CEO
Safeguard over Assets			
5.1 6	Is there a Fixed Asset accounting system, with a Fixed Asset Register, fully implemented - as part of an integrated accounting system? Is the system maintained up to date?	Yes	The fixed asset is recorded into the accounting system. In addition, an excel worksheet is regularly updated including specific information such as the location, series number, name of staff using the asset.
5.1 7	Are there periodic physical reconciliation of fixed assets and stocks?	Yes	The period physical reconciliation of fixed assets and stocks are made at least once per year.
Other			
5.1 8	Has the project advised employees, beneficiaries and other recipients to whom to report if they suspect fraud, waste or misuse of project resources or property?	Yes	The EAFF HR manual includes a section about procedures to be followed in case of fraud. The PIM will cover this topic.
5.1 9	Do policies and procedures clearly define conflict of interest and related party transactions (real and apparent) and provide safeguards to protect the organization from them?	Yes	The EAFF policy about the conflict of interest has been elaborated, shared, endorsed and signed by the staff. The majority of NFOs has internal code of conduct.
5.2 0	Do controls exist for the preparation of the project payroll and are changes to the payroll properly authorized	Yes	The payroll is pre-approved and used to guide all projects payments. The possible changes must be proposed by the CEO, then the administration and finance are informed.
6.	Reporting and Monitoring		

Topic		Response	Remarks
6.1	Does the reporting system need to be adapted to report on the project components?	Yes	<p>The reporting system of on-going IFAD projects is in line with IFAD requirements in terms of project components and categories.</p> <p>Nevertheless, the reporting system needs to be improved to automatically generate financial reports because the current accounting system is not fully offering these functionalities., EAFF is forced to use Excel sheets for the elaboration of reports to be compliant with IFAD reporting requirements.</p> <p>NFOs are not fully conversant with IFAD reporting standards in terms of project components and categories, they elaborate financial reports based on the transaction list generated by the accounting software, but the details in terms of projects components and IFAD categories are manually integrated at EAFF level.</p>
6.2	Does the project have established financial management reporting responsibilities that specify what reports are to be prepared, what they are to contain, and the frequency of production.?	Yes	<p>The contract specifies the responsibilities related to the financial management reporting.</p> <p>EAFF will report semi-annually to IFAD and the national farmers organizations will submit quarterly reports to EAFF.</p> <p>The financial reports must include the components, the sub-components, the categories and the activities as defined in the approved AWPBs. The reporting requirements will be included in the sub-agreements with NFOs.</p>
6.3	What is the frequency of preparation of financial statements? Are the reports prepared in a timely fashion so as to useful to management for decision making?		<p>EAFF submits progress reports and annual reports to IFAD regarding the SFOAP implementation in timely fashion and in line with reporting requirements.</p> <p>In addition, the detailed transaction list is submitted periodically for the request of fund.</p>
6.4	Do the financial reports compare actual expenditures with budgeted and programmed allocations?	Yes	<p>The financial reports are composed of the following sections: total budget, annual budget, cumulative expenditures, annual expenditures.</p>
6.5	Are financial reports prepared directly by the automated accounting system or are they prepared by spreadsheets or some other means?	No	<p>The reporting system doesn't provide automatically generated financial reports by project components. It offers automatic reports only by project categories.</p> <p>EAFF is forced to use Excel sheets for the elaboration of reports to be compliant with IFAD reporting requirements.</p> <p>NFOs produce financial reports based on the transaction list generated by the accounting systems not including details according to project components.</p>
6.6	(In case of need of consolidated financial statements) Is the accounting system sufficiently equipped to ensure proper consolidation of entities' financial data?	No	<p>The consolidated financial report is elaborated at EAFF level based on reports submitted by national members.</p> <p>There is not a harmonized accounting system between EAFF and national partners, so that currently it is not possible to have automatic consolidation of reports at all levels.</p> <p>Given the above, the consolidated report is manually elaborated.</p>

Topic		Response	Remarks
	Information Systems		
6.7	Is the financial management system computerized?		The financial system is computerized but it is not performing consistently for IFAD requirements.
6.8	Can the system produce the necessary project financial reports?		The reporting system doesn't provide automatically generated financial reports by project components. It offers automatic reports only by project categories.
6.9	Is the staff adequately trained to maintain the system?	Yes	There is one staff member supporting for the system maintenance.
6.10	Are adequate systems in place to "back up" financial records	Yes	The accounting system has automatic back-up for all records.
7.	Internal Audit		
7.1	Is there an internal audit department in the LPA?	N/A	Internal audit arrangements do not exist at EAFF.
7.2	What are the qualifications and experience of internal audit department staff?	N/A	The mission highlights the need to set up internal audit arrangements i) to ensure adequate scope and quality with appropriately qualified staff and ii) provide effective recommendations of internal audit followed through by the project in time.
7.3	To whom does the internal auditor report?	N/A	
7.4	Will the internal audit department include the project in its work program?	N/A	
7.5	Are actions taken on the internal audit findings?	N/A	
8.	External Audit		
8.1	Who is the external auditor of the entity?		PKF
8.2	Are there any delays in audit of the entity? When are the audit reports issued?	No	The annual audit reports on SFOAP programme have been submitted on time, every year by the end of June. The audit reports have been accepted as compliance with IFAD standards. The auditors delivered unqualified opinion on both institutional and SFOAP financial statements. The audit reports submitted include the institutional audit report, the specific audit opinion on the project and audited financial statements. the external audit reports of the past 3 fiscal years are available for all NFOs visited, except for NCCR.
8.3	Is the audit of the entity conducted according to the International Standards on Auditing?	Yes	

Topic		Response	Remarks
8.4	Were there any major accountability issues brought out in the audit report of the past three years? Were there any issues noted in prior audit reports related to the operation of project imprest accounts or use of SOE procedures?		The audit reports elaborated for the on-going IFAD projects have been accepted as in line with IFAD audit guidelines. The issues brought out also during the meeting held with auditors are the following: i) the procurement is currently managed by the administrative officer. There is not a procurement officer. ii) Weak system of recording cost sharing related to staff and administrative costs.
8.5	Will the entity auditor audit the project accounts or will another auditor be appointed to audit the project financial statements?	Yes	The Kenyan law doesn't impose any rotation of auditor company. The same audit entity will be contracted for the final audit report on SFOAP programme and for the new project. Rotation of auditors after a number of years may be proposed, but frequent changes are not desirable in view of factors such as cost, the need for continuity and institutional memory, and shortage of qualified independent auditors in the recipient's country. An evaluation of the auditor's performance should also be done periodically.
8.6	Has the project prepared acceptable terms of reference for an annual project audit?	No	EAFF is dealing with the finalisation of TORs for the new project annual audit. They will be shared with IFAD for comments. The TORs related to the annual audit reports of SFOAP programme have been shared and they are acceptable. The TORs for the auditors must be compliant with IFAD audit requirements and standards.

Appendix IV (continued)

FIDUCIARY RISK ASSESSMENT FRAMEWORK

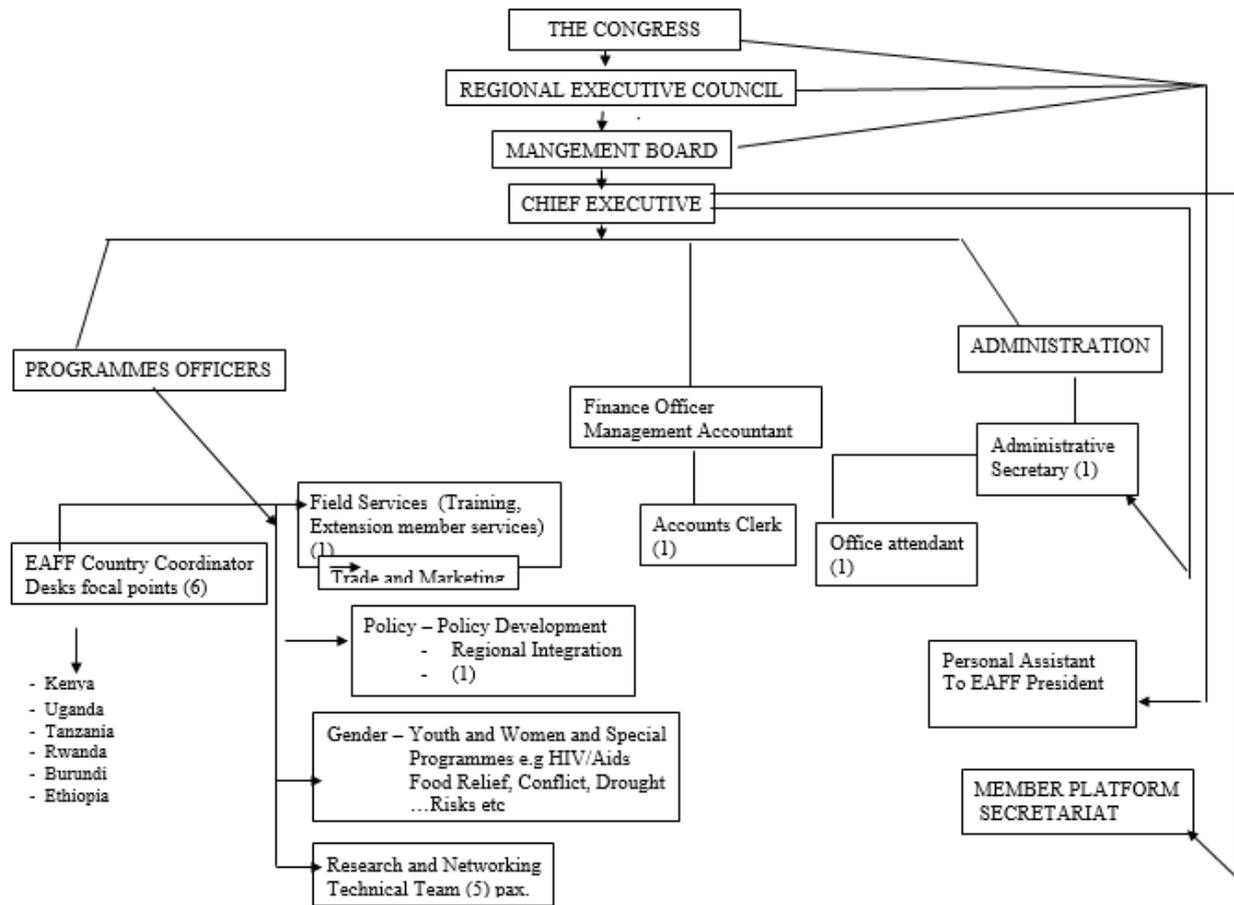
<p>EAFF Background</p> <p>SFOAP Main Phase</p>	<p>The main phase of SFOAP (2013-2017) is the continental programme in Africa initiated by the four regional networks of FOs in sub-Saharan Africa (EAFF, PROPAC, ROPPA and SACAU). It is funded by the European Commission (EUR 15 million), the Agence française de Développement (EUR 1 million), the Swiss Agency for Development and Coordination (EUR 2 million) and IFAD (EUR 1.9 million), for a total of EUR 19.9 million.</p> <p>The grant signed with EAFF for the implementation of SFOAP main phase amounts to EUR 3.7 ml. EAFF is the only recipient of SFOAP Programme respecting the provisional implementation period being in the position to finalize the implementation by the completion date (21 December 2017).</p> <p>The EAFF financial management performance is rated as satisfactory according to the 2016 IFAD supervision mission. The fiduciary arrangements in place are considered adequate for a proper management of funds. The finance officer and the accountant are conversant with IFAD formats and requirements.</p> <p>The disbursement rate is assessed as satisfactory. So far, EAFF received four disbursements totalling EUR 3.5 million corresponding to 96% of total Grant amount of EUR 3.7 million. The effective expenditures as of 30 of April 2017 amount to Euros 3.4 million representing 92% of total Grant.</p> <p>EAFF has been regular in submitting audit reports on time. The quality of audit is satisfactory as compliant with IFAD requirements and standards. The auditors delivered unqualified opinion on both institutional and SFOAP financial statements.</p> <p>Nevertheless, the complexity of the implementation arrangements due to i) two different levels of implementation: EAFF at regional level and then national farmers 'organizations members at country level; ii) the broad geographical coverage and iii) the compelling fiduciary requirements for EC funded projects classify the programme as risky according to internal IFAD procedures.</p>
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Control Area	Initial Risk Assessment	Proposed Mitigation	Final Risk Assessment
Implementing Organization	H	<p>The implementing entity is the Eastern Africa Farmers Federation (EAFF) which is a no-profit regional farmers 'organization covering 10 East African countries. EAFF is responsible for the implementation of the project and for consolidating reports by monitoring and supervising the implementation of project activities including, but limited to National Farmers 'organizations partners in the following countries: Rwanda, Uganda and Tanzania. EAFF is responsible for the financial management being also the implementing unit.</p> <p>EAFF is familiar with IFAD funded projects. EAFF is currently implementing an IFAD project: Support to Farmers 'Organizations in Africa Programme (SFOAP) Main Phase.</p> <p>FM risk assessment of the proposed project and its fiduciary arrangements has been carried out. Overall the FM risk is rated as Medium.</p> <p>The level of risk can be mitigated if the entity effectively and efficiently undertakes the following tasks: 1) applying adequate accounting system for automatically generated financial reports (at regional, national and consolidated level) and e-filing; 2) strengthening the finance and administration departments by recruiting an additional accountant with at least two years of experience to support the central office and by providing specific training on procurement; 3) maintaining adequate awareness of the internal controls; 4) providing adequate training in particular to NFOs partners, also through a start-up workshop; 5) setting up clear Project Implementation Manual in compliance with IFAD requirements and standards and 6) elaborating the sub-agreements with NFOs which should include clear details concerning the budget plan detailing the allocation by year, by NFOs, in cash, in-kind contribution, the reporting requirements and the disbursements arrangements. submitted and cleared by IFAD.</p>	M
Staffing	M	<p>The Finance team of EAFF is composed of the Finance Officer and the Management Accountant.</p> <p>The finance and administrative department staffing is moderately satisfactory.</p> <p>An additional accountant with two years of experience and education background in accounting is missing to support the finance and accounting activities regarding the e-filing system and the collaboration/interaction with finance people in the field for following up with reporting. In addition, the administrative officer is currently dealing with procurement issues.</p> <p>The level of risk can be mitigated by hiring an additional resource and ensuring that the administrative officer would attend specific training on procurement eventually obtaining an official certification.</p> <p>At national level the financial department staff is not always adequately staffed, in particular NCCR. The risk can be mitigated improving the capacity of the staff through specific trainings on IFAD procedures and possibly including additional resources.</p>	M
Budgeting	M	<p>The overall budget of EAFF resulted from the consolidation of the project budgets. The projects budgets are elaborated in compliance with Donors requirements. Regarding IFAD projects, they are detailed by components, categories and activities providing information in terms of unit costs and quality. The implementation progress and annual reports show coherence between the work of plan and budget allocation with the real expenditures incurred in the context of project activities implementation.</p> <p>EAFF consolidated budget is based on the approved budgets submitted by NFOs to EAFF following a bottom-up approach. The multi- level budgeting and the multi sub-recipients structure is rated as medium risk.</p> <p>The risk can be mitigated by planning a timely elaboration of NFOs budgets with the required details (project components, categories and activities) and including this information as annex of sub-agreements between EAFF and NFOs.</p>	M
Funds Flow & Disbursements	H	EAFF finance staff have experience in SOEs procedures from previous and on-going IFAD projects (SFOAP).	M

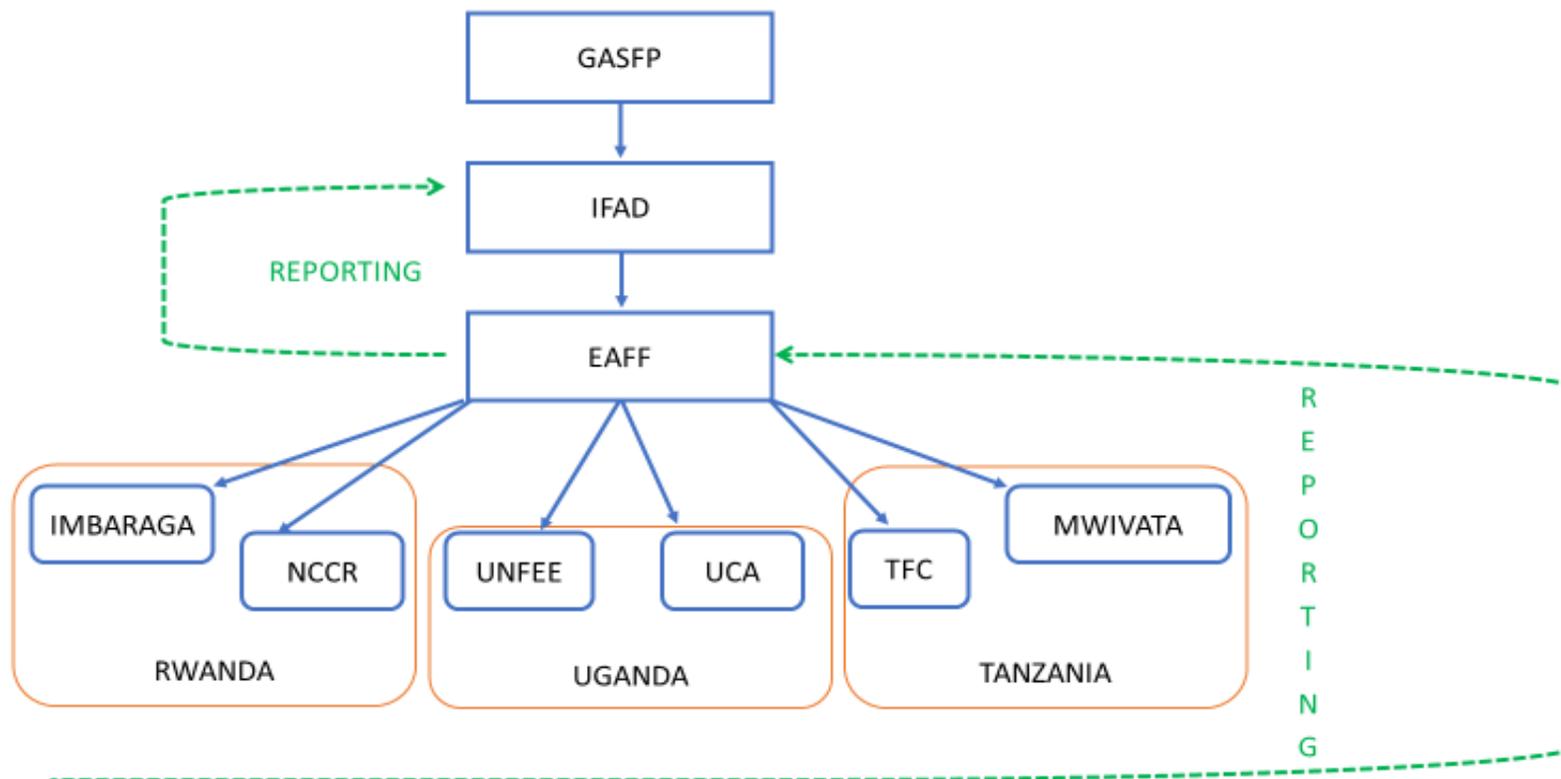
		<p>The specificities of the disbursements and funds flow arrangements have been assessed as high risk considering the following issues: i) the project expenditures will be in local currencies, conversely the grant denomination currency is in USD, so the fluctuations of the exchange rate might have impact on the project costing; ii) the beneficiaries and the private sector partner (MODE) will provide in-kind contributions to projects cost; iii) the project will be implemented by national farmers' organizations members of EAFF in three different countries: Rwanda, Uganda and Tanzania. EAFF will transfer around 70% of total grant amount to the national FOs. The percentage of funds channelled to each NFOs will be defined and included in the design documents as well as in the sub-agreements with NFOs.</p> <p>For the second and following instalment, the NFO shall submit to the EAFF a detailed financial report with respect to the use of at least 75% of the immediately preceding tranche together with transaction list and supporting documentation. EAFF will open a new USD bank account specifically for the project and the NFOs partners will open local currency bank account specific for the project.</p> <p>Funds flow chart attached.</p> <p>The proposed action to mitigate the risk are as follows: i) the sub-agreements with NFOs shall be elaborated and cleared by IFAD including the details in terms of total budget for the entire period of project implementation, the disbursements conditions, the reporting and audit requirements, ii) the project needs to develop the capacity to manage this risk; iii) the project shall define specific guidelines for co-financing to be included in the design document and agreements; iv) EAFF will submit semi-annually reports to IFAD whereas the NFOs will present quarterly reports to EAFF; v) the project shall implement a standardized and computerized reporting system among members by requiring the same level of details as per IFAD standards. However, the project is decentralized to 3 countries and 6 sub-grantees. The project is pilot in nature. due to these reason, there will remaining some risk in this subject.</p>	
Internal Controls	M	<p>The segregation of duties of EAFF is adequate: there are three levels of control and signatories for every transaction. The functions of ordering, receiving, accounting for, and paying for goods and services are appropriately segregated. The procurement committee is responsible for the procurement process.</p> <p>The project's internal controls shall be designed to ensure effectiveness and efficiency of operations, reliability of reporting and compliance through dynamic processes at EAFF and NFOs level. Roles and responsibilities will be aligned to project objectives.</p> <p>The internal control at NFOs shall be improved.</p> <p>The project implementation manual (PIM) including also the financial management manual will detail the control framework based on best practises. These manuals should be endorsed by EAFF and the NFOs prior to the first disbursement.</p>	M
Accounting Systems, Policies and procedures	M	<p>EAFF uses QuickBooks to record financial transactions.</p> <p>This accounting system doesn't offer adequate functionalities to automatically generate Withdrawal Applications and Financial Reports compliant with reporting requirements. The system cannot allow the classification of expenditures by both project components and IFAD categories.</p> <p>EAFF is forced to use Excel sheets for the elaboration of reports in line with requirements. This process could be subject to errors.</p> <p>The accounting systems in place at NFOs level are not harmonized and don't offer properly performing functionalities to have the chart of accounts in line with IFAD requirements and consequently automatically generated financial reports</p> <p>The project will procure a new performing accounting software that will be customized according to IFAD requirements at EAFF central office and at NFOs level. The accounting software and chart of accounts will be set up to ensure separate project accounts to monitor implementation progress and disclose their use in the project. The structure of the Chart of</p>	M

		<p>Accounts should be conformed closely to the project cost tables to enable comparison of actual project costs during implementation with those estimated during the project preparation.</p> <p>The accounting and supporting documents are safely archived in the EAFF office and the supporting documentation concerning the transactions occurred at national members level are available and regularly sent to EAFF in the form of copies together with the related transaction list.</p> <p>The e-archive system for the supporting documentation was recommended during the SFOAP supervision mission in 2016, but it is not in place yet. EAFF should implement a computerized e-filing system and support NFOs in this process.</p>	
Reporting & Monitoring	M	<p>The reporting system of on-going IFAD projects is in line with IFAD requirements in terms of project components and categories.</p> <p>Nevertheless, the reporting system needs to be improved to automatically generate financial reports because the current accounting system is not fully offering these functionalities., EAFF is forced to use Excel sheets for the elaboration of reports to be compliant with IFAD reporting requirements.</p> <p>The NFOs are not fully conversant with IFAD reporting standards in terms of project components and categories.</p> <p>To ensure that funds reach intended beneficiaries, EAFF will submit semi-annually reports to IFAD whereas the NFOs will present quarterly reports to EAFF including information by project components, categories and activities. The template of the financial reports compliant with IFAD standards shall be shared with NFOs and specific training provided.</p> <p>The project shall implement a standardized and computerized reporting system among members by requiring the same level of details as per IFAD standards.</p>	M
Internal Audit	H	<p>Internal audit arrangements are not in place.</p> <p>The mission highlights the need to set up internal audit arrangements at EAFF i) to ensure adequate scope and quality with appropriately qualified staff and ii) provide effective recommendations of internal audit followed through by the project in time.</p>	M
External Audit	M	<p>The annual audit reports on SFOAP programme have been submitted on time, every year by the end of June. The audit reports have been accepted as compliance with IFAD standards.</p> <p>Regarding the NFOs visited, the external audit reports of the past 3 or 2 fiscal years are available for all NFOs visited, except for NCCR.</p> <p>The complexity of the project implementation arrangements determined by the multi recipients/multi-country structure is rated as medium risk in terms of external audit.</p> <p>Rotation of auditors after a few years may be proposed, but frequent changes are not desirable in view of factors such as cost and the need for continuity, but an evaluation of the auditor's performance should also be done periodically.</p> <p>The annual audit report shall be aligned with IFAD standards. The consolidated project audit report will include institutional audit, specific project opinion and audited project financial statements for EAFF and NFOs along with the management letter with opinion on internal control systems and recommendations for improvement.</p> <p>IFAD will provide its feedback on the quality of the audit report and will ensure follow up on audit observations through supervision missions.</p> <p>The TORs for the auditors must be compliant with IFAD audit requirements and standards the they will be shared with IFAD for clearance.</p> <p>Audit reports shall be submitted within 6 months of year end (end of June).</p>	M

Table 1. EAFF Organization Structure

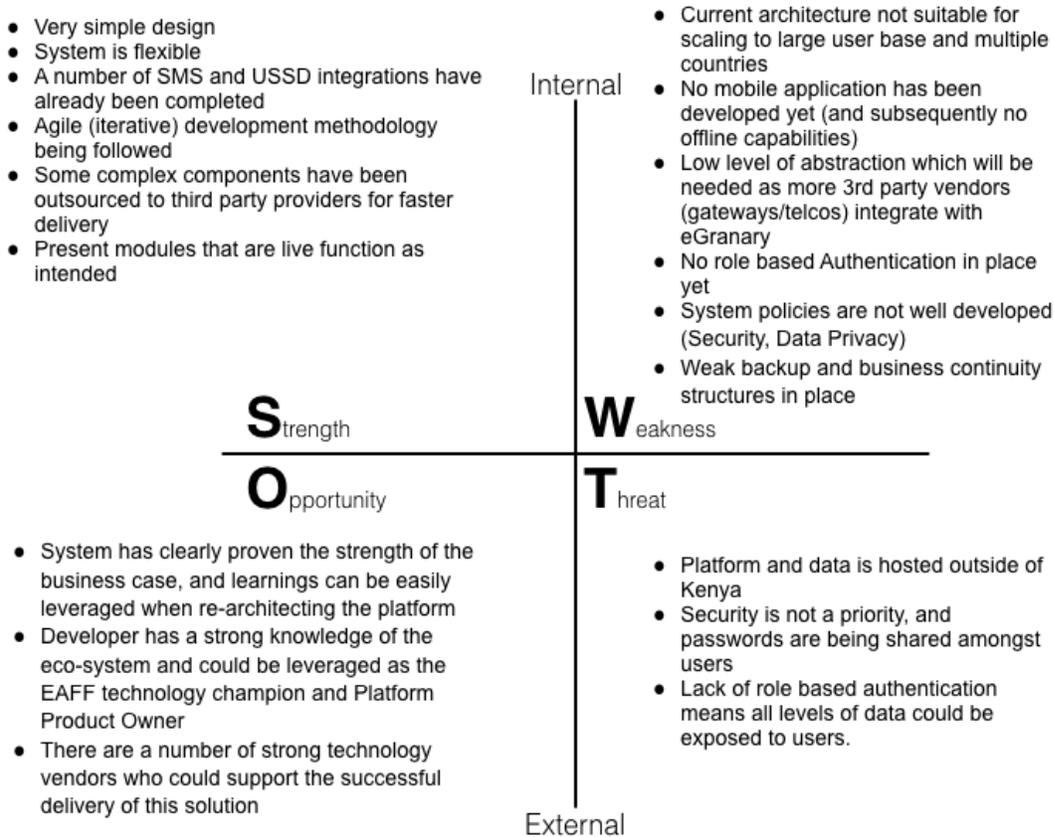


Tab 2. Funds flow chart



ANNEX V – WP 1 Technology Development

Current eGranary System Assessment



eGranary Recommendations

Overview

The eGranary platform at present has been deployed and tested in Kenya. Primary hosting of the solution is on shared cloud infrastructure (Heroku, based outside of East Africa). The main modules that have been tested in the field are Farmer Self Registration, the ability for farmers to further Self Report on Planting data and Harvest Data, and outbound communication to farmers via SMS. Administrative

Annex 5: Working Paper on Technology

modules that have been tested include List Views of various data elements stored in the system, e.g. farmer profiles, and reports that aggregate system data, as well as disaggregates by gender, age, location, crop, farmer group and season e.g. Total number of female farmers registered. Other elements of the solution like forward-contracting, insurance, and repayment have been conducted manually and offline. Payment integrations have already been developed and tested, but they have not been field tested with live users as yet. In order to achieve the above digitally, a number of SMS and USSD integrations have also successfully been developed and tested in the field.

Strategy

A consolidated technology strategy needs to be in place for the eGranary platform (suggestions for this strategy will be outlined in para 7-10) in place for the eGranary, although some elements are addressed in a number of documents. Through a demand driven request by EAFF, technology recommendations are made by the Developer with consultation from MODE, this will be . A clear technology strategy document will define the capacity of eGranary to scale as well as achieve sustainability, and is a key component to being able to achieve successful outcome of this project. After a review of the existing technology documentation the mission suggests that a clear technology strategy is developed, and the existing elements strengthening; most especially a clear roadmap to guide the planning and delivery of platform capabilities in a phased(agile) manner. The mission also suggests that EAFF contract a qualified technology vendor, who is able to sufficiently staff a team in order to deliver against the updated product roadmap. Intellectual Property and Business Continuity

An IP agreement/contract exists, and is to be provided by EAFF. From discussions it was stated that the IP presently sits with the solution developer, and will be handed over to the EAFF once the development is concluded. The mission recommends that a clear IP agreement and contract should be drafted for further development of the platform between EAFF and the appointed technology vendor. This agreement should include that EAFF have access to source files and backups of the platform code, as well as the system data, throughout the development and deployment lifecycles - this would be needed in order to mitigate the risk of any unforeseen disaster (and form part of a business continuity strategy).

Intellectual property and business continuity

At present there is IP agreement with a handover clause. The mission recommends that a clear IP agreement and contract should be drafted for further development of the platform once a technology vendor has been appointed. The mission recommends that a clear IP agreement and contract should be drafted for further development of the platform. This agreement should include that EAFF have access to source files and backups of the platform code, as well as the system data, throughout the development and deployment lifecycles - this would be needed in order to mitigate the risk of any unforeseen disaster (and form part of a business continuity strategy).

Architecture

The present system architecture has been sufficient for delivering a proof of concept in Kenya, able to demonstrate some elements of digitization such as Farmer Registration and Self Reported Farmer Data; this architecture would however not be sufficient in it's current state to deliver an enterprise level solution. The mission suggests a redefined architecture that includes system capacity to handle high transaction rates, has failover systems and offsite backups in place, as well as the necessary in-country infrastructure to ensure the Data Strategy can be delivered upon.

- 1) Data

Annex 5: Working Paper on Technology

A data strategy needs to be developed and enforced. All data is hosted on cloud services outside of East Africa. The mission recommends a data strategy be developed in order to ensure compliance with Data Privacy, Protection and Security regulations on both a regional and national level. This strategy should identify all the data sources, the ownership of data being transmitted between systems, as well as the regulatory requirements for where and how data may and may not be transmitted and stored. Important data categories include personally identifiable data and fiscal data as these are more strictly regulated on a national level.

Security

A security policy needs to be developed and put in place. Data breach or loss of personally identifiable and fiscal data can be damaging to a project, and can result. The mission suggests that a security policy be defined in order to ensure that all data which is being transmitted and handled within the system is done so in a pragmatic and secure manner. Once a policy is drafted and security measures are in place, a third party security audit, including penetration testing, should be considered.

Staff Capacity

There is presently one contracted developer working on the development of the eGranary platform. The mission suggests that in order to achieve delivery of an enterprise level solution within the required timeframe that a technology vendor be procured to deliver on the requirements. The internal staff capacity within EAFF is also not sufficient to manage and maintain the eGranary platform at a regional or national level. In this regard the mission further suggests that a consultant be leveraged to act as technology champion for the EAFF and assist in management of the technology vendor. Additional administrative staff for the platform operationalization will be needed at a Regional and National level to manage day-to-day platform activities.

System Module Evaluation

Current

Data Capture - The module has been developed and tested, and is functional. It allows users to capture data, including registration via a USSD interaction. Data is validated in terms of format, and stored in the eGranary Database

User Management - This module is only partially developed and has not been fully deployed. Once completed it will support basic role-based authentication for system users

Payments - This module is only partially developed and has not been deployed to a live environment.

Mobile Application - This has not yet been planned or developed.

Identified gaps

Estimated level of effort - to deliver on the below architecture is 281 Developer Days. This is however only a high level estimate. It is also important to note that many of these activities can be delivered in parallel, which is also a strong motivation for the appointment of a strong technology vendor who can provide sufficient and diverse development resources.

Infrastructure as a Service - At present the infrastructure is not sufficient to deliver an enterprise level solution. A number of changes have been suggested to the architecture to ensure maximum system availability, reliability, and redundancy.

Common Components - The mission recommends a revised solution design, with more abstraction in order to deliver a multi-country platform. Common components refer to the system capabilities that will remain generic in all countries. These should be clearly defined and developed as the core of the eGranary platform (see diagram “Suggested: Solution Design”)

Data Infrastructure - There are various regulations governing where and how data may be stored, and these differ in each of the intended deployment countries. This data infrastructure component refers to the needed technology infrastructure that is able to support the Data Strategy which needs to be developed for this platform. E.g. Personally Identifiable data of Ugandan nationals may not be stored outside of Uganda. eGranary will need to ensure their infrastructure is able to operate within the confines of data regulations nationally and regionally. Aside from this all administrative tasks should be exclusively performed over SSH tunnels. Database replication between servers should be exclusively performed over SSH tunnels. Web applications should only be accessible over HTTPS. Mobile applications should only access back-end services over HTTPS

Enforce security policy - eGranary will need a defined security policy, in terms of data access, password management as well as encrypted data flows. This is not a module in itself but rather an approach that needs to be adopted during the development of all system modules. Encryption Standards such as -SSH tunnels should leverage protocol version 2 with at least 1024-bit AES encryption. Web and mobile applications should use SSL RSA 2048 bits / SHA256 with RSA. Password stores for services such as Mobile money, or other sensitive data should be 128-bit AES encrypted. General application data does not need to be encrypted on disk.

Backup & Disaster Recovery Infrastructure - eGranary will need to ensure that the technology infrastructure design is able to support a robust backup and disaster recovery policy. When dealing with financial data, as is the case with eGranary, it is recommended that a Point in Time recovery policy be developed; meaning in case of any system failure, data can be recovered up to the point in time of failure - translating into minimal data loss. The same architectural design can be used to support a robust failover system, meaning data is replicated to a secondary system instance, and in case of failure at the primary data centre the system will switch to operating from the secondary failover data centre - this ensures high availability (see diagram “Suggested: Failover and PITR”)

User Management - This model is partially developed, but after the working sessions with system stakeholders an updated user management module will be needed. There will be more actors than EAFF staff interacting with the system, and these will also be connecting from various devices - the User management module will have to manage the access levels and capabilities available to users or user groups.

Farmer Organization Management - Aside from system users, there will be a number of Farmer Organizations that should be registered on the eGranary system. These Farmer Organizations will need to be managed on the system, and farmers should be linked to their respective FO's

Communication - A communication module will need to be considered as a micro-service within the eGranary platform. This module should manage both incoming and outgoing communication, and be able to take into consideration the originating country of requests - making sure that the current in country providers are used for transmitting messages

Delivery & Grading - There is a requirement for the eGranary platform to track and manage the delivery and grading of goods at aggregation points. This module needs to be clearly defined, and may differ from country to country. It will ideally be made available through a mobile application interface, but usability should be considered in cases where only workstations are available.

Aggregation and Contracting - There is a need for the eGranary platform to support the aggregation of delivered produce, as well as support a digitized contracting process. This process was mapped out for the context in Kenya, but will need to be revised in more detail for each of the new countries where the solution will be operating. It is recommended that a more standardized(generic) approach to aggregation and contracting be followed in the platform, leaving the more nuanced aspects of each country to be delivered through manual processes - as trying to digitize the entire value chain process completely for each country will be a complex and costly exercise not delivering an equivalent value to the system stakeholders.

Scoring & Loan Module - There are various levels of scoring that can be considered when trying to provision a loan to a farmer. After various discussions it was agreed that simple farmer scoring can take place within the eGranary system. An example of this scoring would be; a farmer is eligible for 20% advance on the value of goods delivered that meet a high grade. These fixed scores can be applied when considering what a farmer is eligible for, these loans should be managed within the eGranary system

Extension Services - The extension module will be used to curate and manage agronomic content. This content should be planned and scheduled within the extension module, and message distribution should be handled by the communication module.

Customer Relationship Management - eGranary should be able to track interactions with farmers in a very simple way. If customers interact through call centers or via in-app messaging, a CRM profile should exist for each farmers profile

Data Analytics & Reporting - The intent of this module is not to act as a Business Intelligence module, but rather as a way to aggregate or disaggregate system data to inform decision making, and as a means to generate actionable insights for further business development and forward contracting. Initially this module can be substituted by direct database queries.

Audit Trails - As the eGranary will be dealing with financial data, it is critical to have a strong immutable audit trail. (Immutable means a record that once written cannot be altered) This approach ensures non-repudiation and allows the administrator to trace any system activity to a registered system user. With a platform such as eGranary, it will not be possible to “lock down” the system so tightly that no room for fraud will exist, but with a strong audit trail, all actions can be made traceable and thus without hampering a users experience we can mitigate the risk of fraudulent system actions.

Virtual PABX and call centre - eGranary is a new and innovative approach and as such there will be a steep learning curve for users and farmers alike - a call centre will ensure that agronomic and technology challenges to not hamper the growth and success of the platform. As opposed to setting up a traditional PABX system a fair amount of time and budget can be saved by leveraging virtual PABX services

Android Applications - During the mission it became evident that there would be a strong need for an android application that could support both *Verification Agents & Collection Center Agents*. The exact needs for these applications still needs to be clearly defined, but farmer registration, farm reports, delivery and grading capabilities will be the most critical in field support tools. It is also important to ensure that an *Application Upgrade Path* is considered in the budgeting, both in terms of cost and time - this ensures that the application is updated as needed.

Budget Evaluation

i. Current

- Technology budget was not clearly defined
- Very little detail existed for the cost-drivers of the ±\$380,000 defined as “Component 1: eGranary Platform set up and Operationalize”
- Various key platform aspects were not budgeted for
 - Detailed development requirements were not mapped to the budget
 - Ongoing hosting and maintenance costs were not defined
 - Device costs (for mobile devices in the field) were not included
 - Staffing costs (for delivering the roadmap and for supporting the platform) were not included
- The amount of \$380,000 would not be sufficient to deliver a scalable, secure platform required to provide the services intended in a multi-country strategy.

ii. Action

A new technology budget was drafted based on development estimates, as well as maintenance, staffing and management requirements for the system. Please see the attached .xls for details, or the section “Draft technology budget” for more detail.

Staff Capacity Evaluation

Current

At present the EAFF as well as partner FO’s do not have sufficient staffing capacity (with the relevant skill set) to support the deployment and scale up of the eGranary platform

Action

- It is recommended that the EAFF appoint a technology champion for the eGranary, who will be primarily accountable for the delivery of the eGranary roadmap (See “Draft terms of reference for eGranary Product Owner”)
- It is further recommended that the EAFF appoint at least one technology administrator per country of deployment. These individuals will be responsible for managing the in-country deployments and act as a first line of support for any technology issues (and trainings)

Technology Development

Current

- At present the EAFF, through MODE, have one contracted software developer working on the development on the eGranary.

Action

- In order to support the targets for deployment, scale, and robustness that will be needed in the eGranary platform it is recommended that the eGranary appoint a strong technology vendor to support the development and delivery of the technology roadmap
- This technology vendor should report to the eGranary Product Owner and be primarily responsible for the delivery of the eGranary technology roadmap

Annex 5: Working Paper on Technology

- Additional ad hoc consultants may be appointed for specific technology integrations in country where the technology vendor identifies the need.

Issues & Mitigations

Issue Matrix – Technology		
Issue	Possible Mitigation	Responsibility
Strategy	Design workshop - A design workshop should be held to finalize all eGranary modules and outline how they will functions (workshop should be facilitated by a design professional). Outputs to include mapping of all business processes as they will relate to system requirements in the form of a business requirements document and draft development roadmap.	EAFF
	Appointment of technology vendor to deliver the platform strategy	EAFF
	Roadmap - The roadmap and business requirements document will be used to inform the TORs which are drafted in order to procure a technology vendor.	EAFF
	Platform technology and architecture - The design should be finalized with the collaboration of the appointed technology vendor. A final technology roadmap should be co-created and agreed upon.	EAFF
	Agile development - An iterative development process with regular feedback loops should be adopted - allowing the eGranary team to pivot quickly on design decisions should the market context or stakeholders change.	EAFF
Architecture and Design	Network Architecture - A logical and physical plan for network architecture should be developed and agreed.	EAFF
	Software Architecture - needs to be agreed, and evaluated to ensure it is able to deliver on the eGranary business requirements.	EAFF
	Software dependancies - Software dependancies should be outlined, any accosted costs and risks should be considered when selecting the software to be used the develop the granary system.	EAFF
	Continuity & Disaster Recovery - In order to ensure business continuity and a speedy recovery of system operations due to an unforeseen disaster - clear mitigation strategies need to be defined and adopted.	EAFF
Infrastructure	Infrastructure-as-a-Service - An evaluation of infrastructure service providers - see national table	EAFF

Annex 5: Working Paper on Technology

	Procurement - Based on vendor evaluation an Infrastructure-as-a-Service vendor will need to be contracted. It would be beneficial if this vendor could provide infrastructure services in all designated countries (simplified interactions, billing, and management)	EAFF
	Data Centre - Infrastructure service agreement should include a Primary Data Centre (responsible for daily transactions), Secondary Data Centre (acting as a Failover in case of PDC downtime) as well as Offsite Backups (being required in case of total DC failure).	EAFF
Data Strategy	Intellectual property - Create clear IP agreement and contract to be signed between EAFF and Technology Vendor.	EAFF
	Terms and Conditions - Based on in-country evaluations of data privacy regulations - relevant Terms and Conditions need to be drafted for Stakeholders making use of the eGranary system.	EAFF
	Backups & Recovery - As the eGranary system will be dealing with financial transactions in later phases, it is recommended that a PITR (Point in Time Recovery) process be in place, ensuring that in case of a disaster, no transactional data is lost. In the unlikely event of a critical failure across both Primary and Secondary Data Centers, and off site backup can be used to recover data (backed up nightly)	EAFF
Platform Security	Data transmission - All administrative tasks and database replication should be exclusively performed over a secure connection. Web and Mobile applications should only be accessible over secure protocols.	EAFF
	Encryption Standards - Enterprise level encryption standards should be considered for both web and mobile applications. All sensitive data (including credentials for mobile money accounts) should be encrypted.	EAFF
	Password Policies - The system should automatically enforce password policies to ensure weak passwords are avoided, and that passwords are regularly updated.	EAFF
	Access Control - Access to various modules of the system, as well as data should be restricted and controlled through a roll-based authentication system - ensuring that sensitive information is not accidentally exposed. Clear definition of system roles and access needs to be established	EAFF

Annex 5: Working Paper on Technology

	Audit Trails - All essential system transactions should have a digital audit trail to enforce accountability and non-repudiation. Any financial transactions should be stored as immutable records, without the ability to be altered once captured.	EAFF
	Security Audit - A third party security audit should be procured once the platform development is completed - This is to ensure a high standard of data security - this can be done through Non-destructive Vulnerability Scanning.	EAFF
Staff Capacity	<p>Recruitment - Develop TOR and recruit for a consultant to act as technology champion on behalf of EAFF, managing the appointed technology vendor and acting as the product owner for the eGranary platform development (owning the roadmap).</p> <p>Additional skillsets that would be required can be acquired through the technology vendor, such as, Development Team (DevOps, Backend, Frontend, Application), Infrastructure Admin, Database Admin and Integration Engineers.</p>	EAFF

Annex 5: Working Paper on Technology

eGranary current and planned status (Background/Findings)

* (P) Planned, not built

Overview

Current roadmap as provided:

- Build out the user management features (this is roles and permissions for various users) → This is currently live on our staging site and is being iterated on.
- There are various improvements to the loans module we want to make in order to make it functional
- A proper integration with our payments gateway. We have a preliminary version built but are working to make it production ready
- Planned android app for field agents to enter farmer data and capture new inputs such as geo coordinates and photos

Scope of work:

- I believe Anthony has sent you the scope of work. But we are iterating on it as the needs arise and as we get feedback from the on the ground team.

Resources

Currently the main developer is Al-Karim Lalani (alkarim.lalani@gmail.com), Currently working part-time with a plan to transition to full time as the application develops and resources are made available.

Skills include full stack web development (mainly ruby on rails, javascript, ember js, python), telecom level apps (USSD/SMS) and some mobile development (android).

M-Pesa integration is contracted to Samwel Chege (chege@heswittsystems.co.ke). However the assumption is that once the integration is complete he will not be developing for eGranary until he is re-contracted. Skills include systems development.

Product Design

Product Definition Document

- No consolidated document exists

Product Roadmap Document - Planned

In Phase one the system should be able to support these functionalities

- Farmer should be able to post individually or as a group using USSD
- Warehouses should be able to verify what farmers post. (P)
- The system should be able to send alerts to the Users.
- The system should be able to filter such alerts based on different parameters
- Maintain all the information about the Farmers in one central repository

Phase two;

- Payment gateway integration (P)
- Loan management module (P)
- The platform should enable us to do aggregation of commodities based on grade, location and time

Annex 5: Working Paper on Technology

- The aggregation should also include whether its verified or not (P)
- Farmers Credit scores (P)
- Enriched farmer profiles - Bio data, GPS location, Photo, Other economic activities the farmer is engaged in (P)

Phase three

- All directories
- Advance warehouse receipt features (P)
- More advanced data models (P)
- E-extension module (P)
- Other advanced features (P)

USSD & SMS input Validation

- We have a framework for validating all USSD inputs. We don't have an automated testing framework for USSD on live phones, but since the USSD is served via an API, its very easy to set up a endpoint tests. But the actual testing is currently manual.

Multi language capability/Language library

- We currently haven't set up i18n, but we have a USSD framework that can be easily extended to support this

Aside from USSD Farmer interaction, is there an app interface planned for system users?

- Currently what is planned is an app for data collection for field agents (third party solution)

Is profiling of off-takers and buyers done manually? Or digitally through an agent app?

- We currently don't support this

Is there a plan for the content and knowledge management backend?

- No plan

Hosting & Maintenance

Define where product is hosted (identify the cloud service)

- Currently the product is hosted on a PaaS called Heroku (in AWS US East Region 1 but will probably move this to the Europe Region) and we have a separate server for processing payment information that is hosted on AWS in the EU region

Are there databases being replicated in country (Kenya, Rwanda, etc)

- We are using Heroku Postgres for data hosting (<https://www.heroku.com/postgres>). However we are still on the Basic plan.

Cost of hosting

- Roughly \$30/month

Who manages thIS platform?

- Al-Karim Lalani

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System Users

Who is able to view data? and according to what role-based authentication rules?

- Currently there aren't any roles. But the user management which is almost ready has the following roles:
 - Admin: Can see all
 - eGranary Core Team: Can currently see all but we might limit them with respect to financial data
 - Updater: Can only see farmer data and crop data + dashboard
 - Viewer: Can only see the dashboard

System Role	Responsible Entity	Job Title	Key Person
• 'viewer' => 'Read Reports'	EAFF	eGranary Project Lead	Robert Kubai
• 'updater' => 'Updater'	EAFF	eGranary Project Lead	Robert Kubai
• 'admin' => 'Admin'	EAFF	eGranary Developer	Al-Karim

Data Strategy

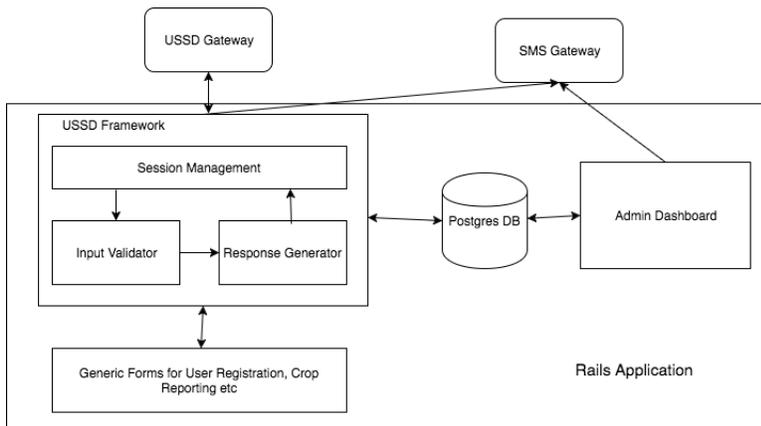
Identify the various data sources and origin?

- Currently it's either collected via the USSD or uploaded via an excel file for field agents (manually uploaded by developer)

Who owns what? Is access secure?

- Data is not secure because most people are sharing passwords and can access all user and crop data. But this will be rectified shortly when user management gets pushed out.

Software Architecture



Network Architecture

Not presently mapped out due to hosting with a cloud service.

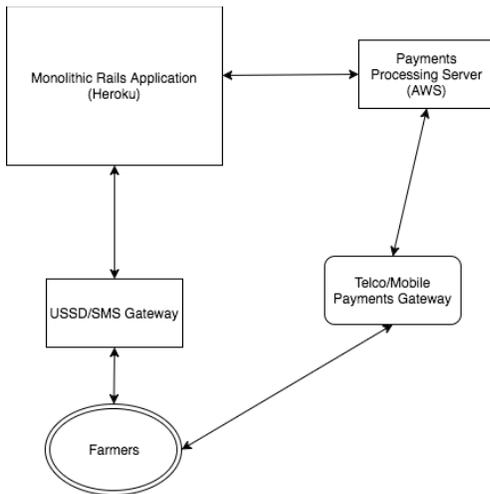
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Payment service architecture not developed, but planned as a python web app behind an Apache server and will have a persistent VPN connection to a Safaricom server.

Physical Infrastructure

No presently mapped out due to hosting with a cloud service.

Logical Representation of Infrastructure



Third Party Providers and Software Dependencies (By Country)

Providers

- USSD Providers (AfricasTalking for both Kenya and Uganda)

Software

- Heroku Postgres for a PostgreSQL 9.6 Database Server
- Heroku for PaaS (application server, load balancer etc)
- Ruby on Rails for application development
- Several Ruby libraries
- Dropbox for file storage (excel upload of data)
- Heroku Addons: Logentries for logging, Sendgrid for emails, Rollbar for bug tracking, Memcachier for memcached, NewRelic for application performance monitoring

Payments Server (P)

- Django
- Apache NGINX

Systems Integration (By Country)

Internal

- The entire logic of receiving incoming USSD requests and returning USSD message responses is deployed in our monolithic Rails app and integrates with our USSD gateway via RESTful APIs.
- We will have a payments server which will integrate with our Rails App via RESTful APIs. (P)

External

- SMS Gateway (Africas Talking) - Connects via RESTful APIs
- USSD Gateway (Africas Talking) - Connects via RESTful APIs

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- M-Pesa - We will have a payments server which communicates over HTTPS requests using the SOAP protocol (P)

Access Control

User accounts on production servers

Rails App:

- Currently there is one developer who has full access to the app server.
- No additional plans have been made due to lack of staffing plan.

Payments Server:

- We have one contractor for the M-Pesa integration who has access to the server for the time being.
- Al-Karim also has access to this payments server.

Access levels on accounts

Administrator accounts:

- Rails App:
 - Individual admin account
 - SSH access, auth managed by Heroku
 - Accounts have full database access but not server access since it's hosted on a PaaS
 - Accounts have full access to environment variables
 - Owners of the accounts are accountable for the security of their accounts
 - No changes currently planned
- Payments server
 - Individual admin account, each owner is responsible for their accounts
 - SSH access via public private keys
 - Key management is done via AWS IAM (Identity Access Management)
 - Accounts have SUDO privileges
 - It is planned that when the payments contractor is finished with his contract, we will revoke access and expire his keys via IAM (P)

Database Servers (By Country)

Database user accounts on production servers are categorized as:

- All Rails admins will have full access to the database
- Payments server has access to payments gateway, but data will be stored on the rails app (P)
- Logs will be stored on Logentries (3rd party service) but will expire after 7 days currently (we can purchase a premium plan to make this longer) (P)
- Currently the database has nightly backups, but I believe we need to upgrade our database server for failovers → this is a planned upgrade (P)

Disaster recovery, backup, plan/system/policy

Outline the backup policies (frequency, location, security)

- Nightly backups of the data

The recovery process etc

- It's a simple process of taking the app into maintenance mode, doing a pd_dump from the backup, and then taking the app back online

Point in time recovery (dealing with financial data)

- No policy has been planned for this yet

Data Security

Communication Flows

Rails:

No SSL certificate in place as yet - We do plan to get an SSL certificate for the app so we can do everything over HTTPS

Payments server:

Authentication that only allows the Rails app to communicate with the server (P)

All communication over HTTPS (P)

Encryption Standards

Rails:

SSL certificate is planned (P)

Passwords are hashed with salts

Application data is not encrypted in the DB

API Keys will be stored on the servers as environment variables

Payments Server:

Will act as a micro-service and not store any data on the server (P)

- API Keys (for M-Pesa) will be stored on the servers as environment variables (P)

Non-repudiation and Audit Trails

Not in place or planned at present.

Security Policy and Process

Not in place or planned at present.

Vulnerability Scanning

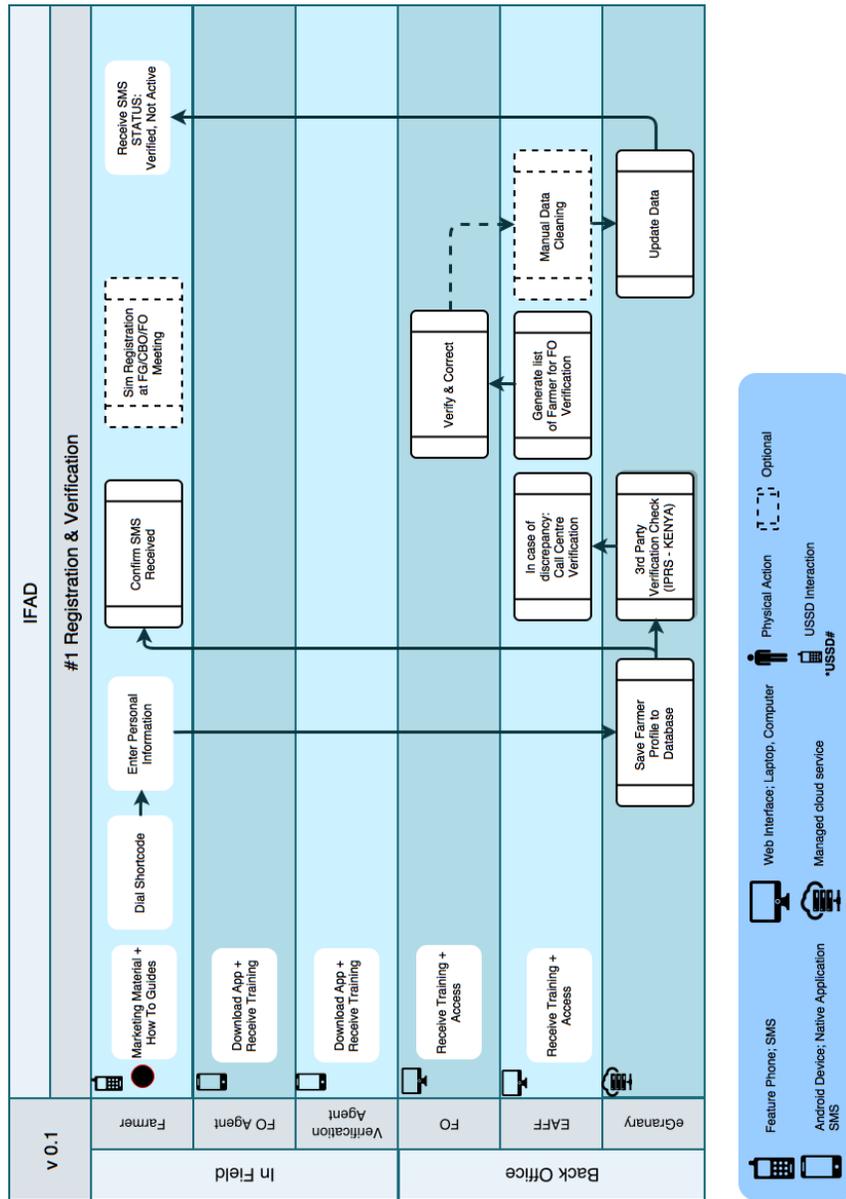
- Since Heroku manages the server, we assume we are getting best in class vulnerability scanning there.
- For the payments server this is not in place and was not planned.

Patch Management Policy

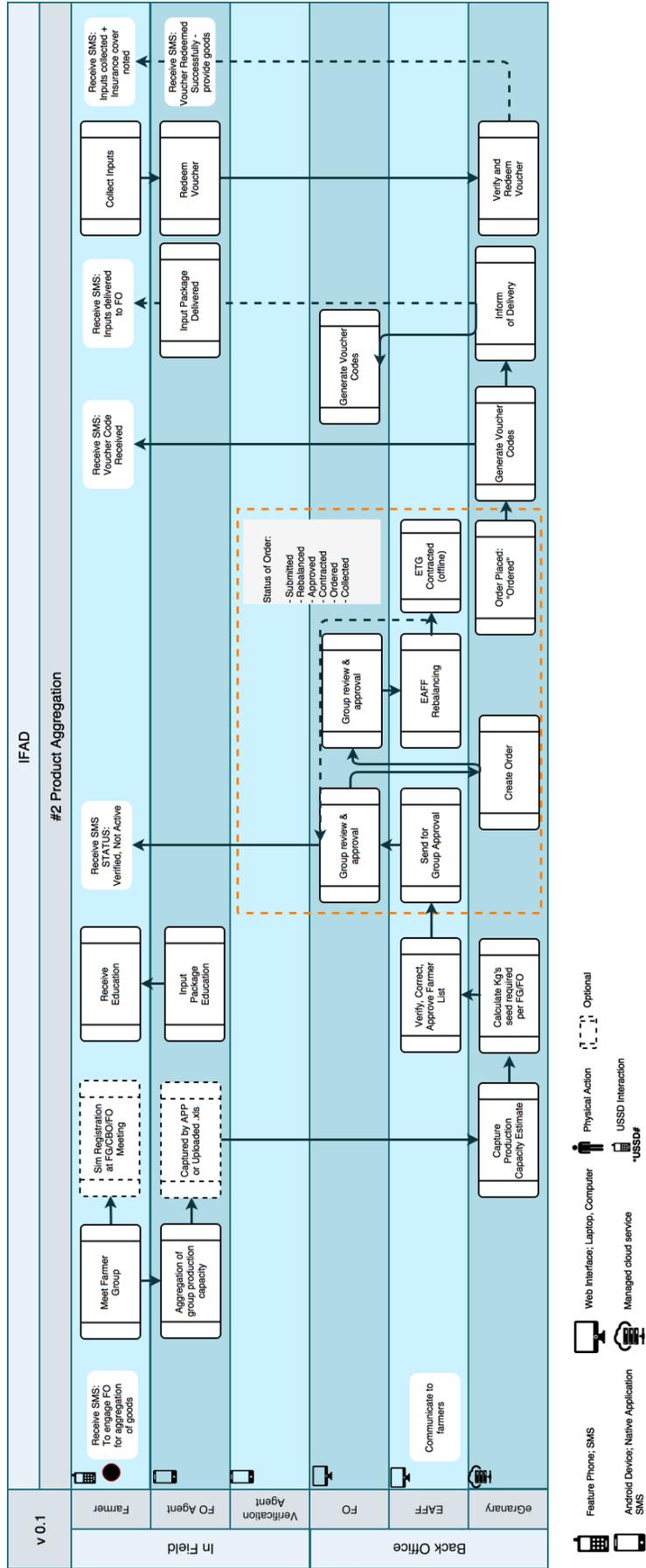
No policies were planned.

Proposed Business Processes

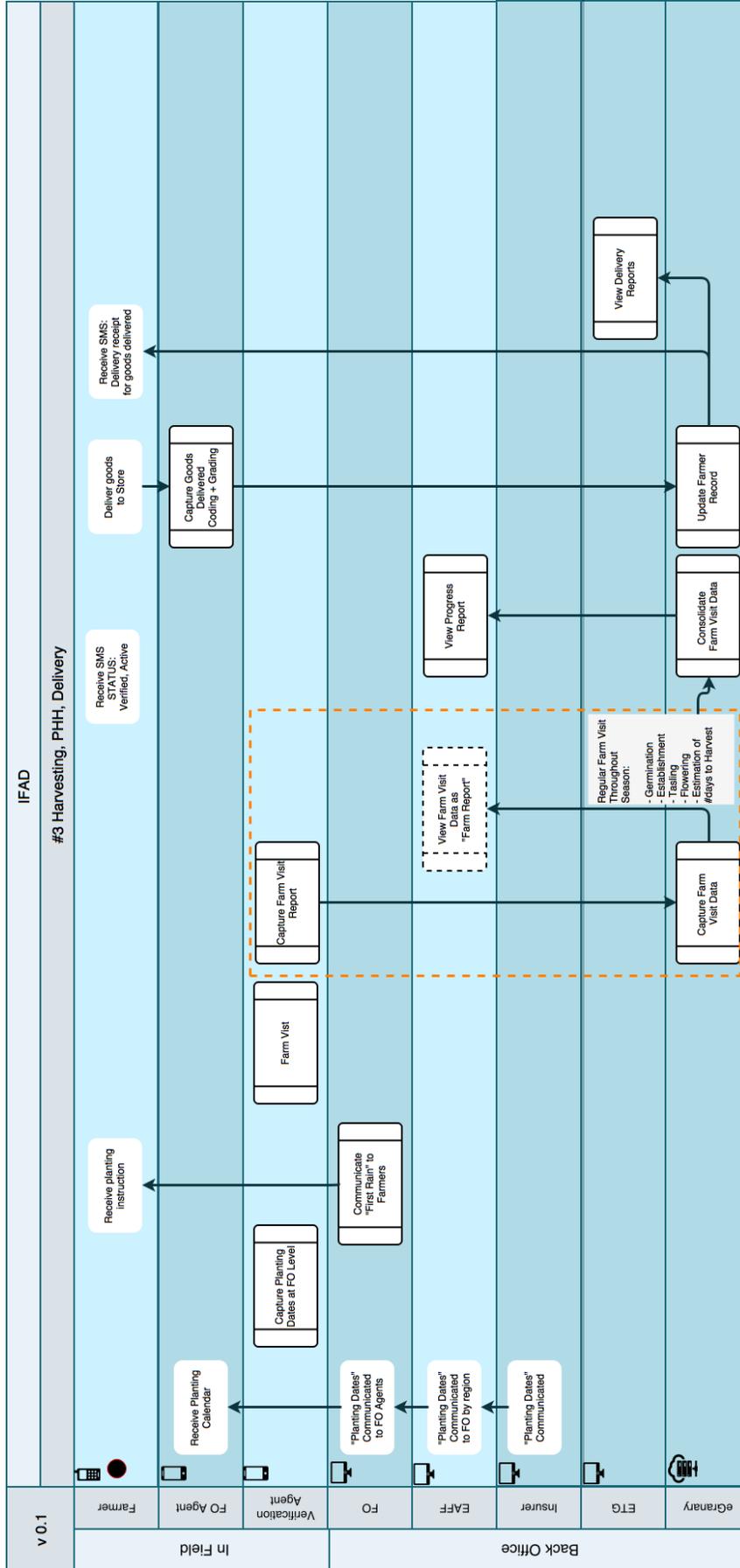
These processes have been co-created with the IFAD team, MODE, and EAFF, to outline some of the key system modules and elements that need to be considered when defining the scope of work and system requirements.



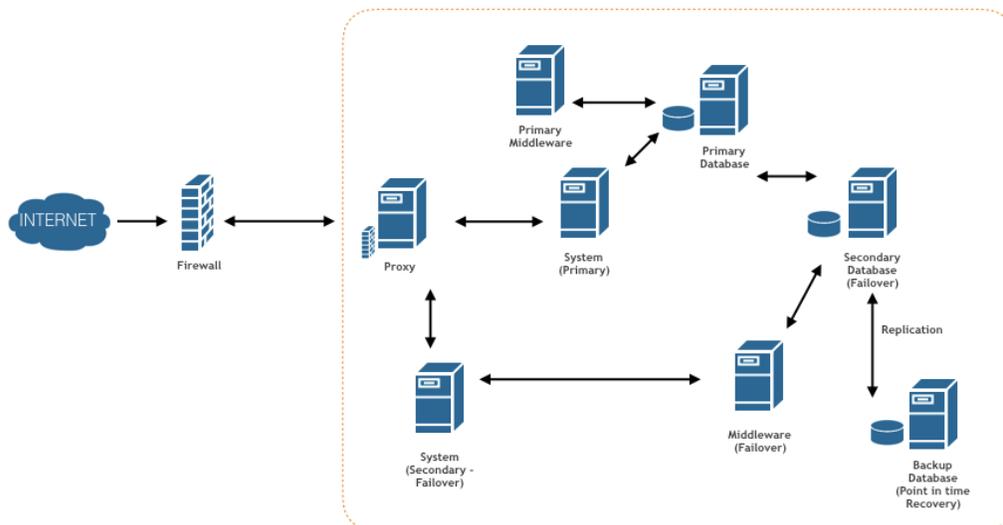
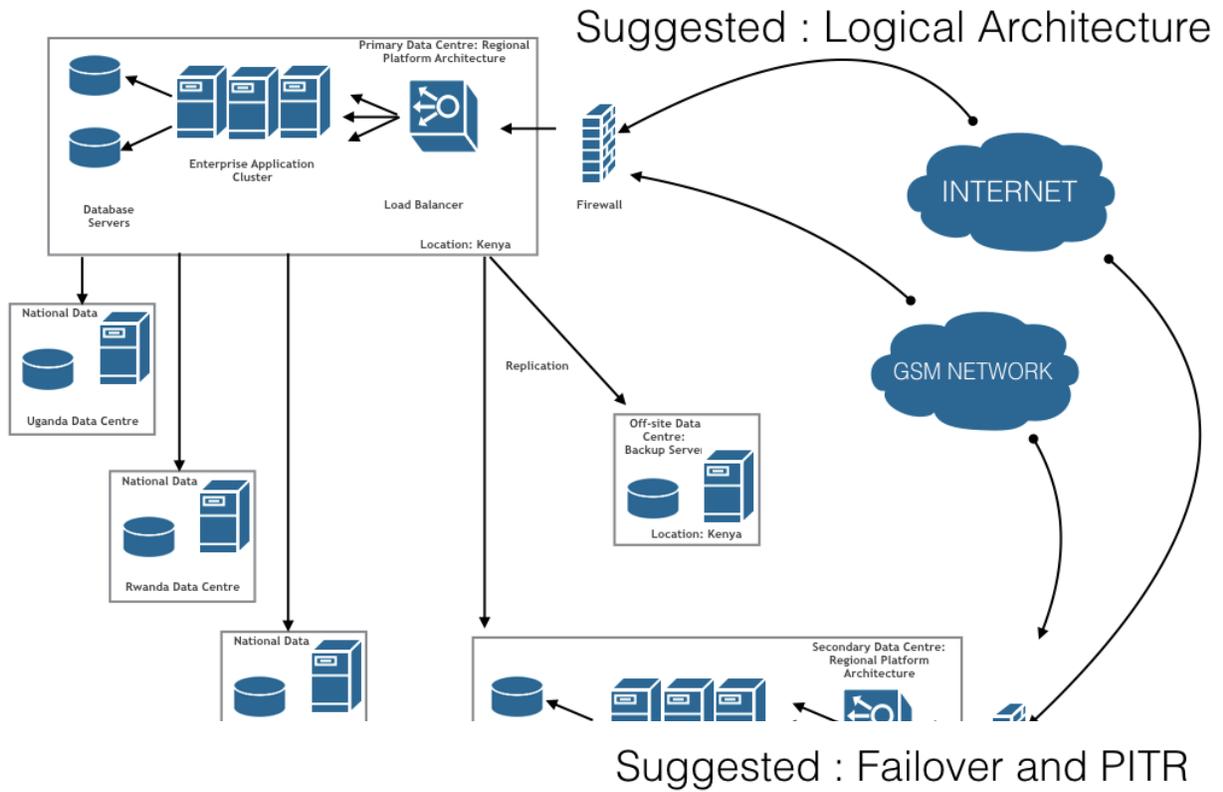
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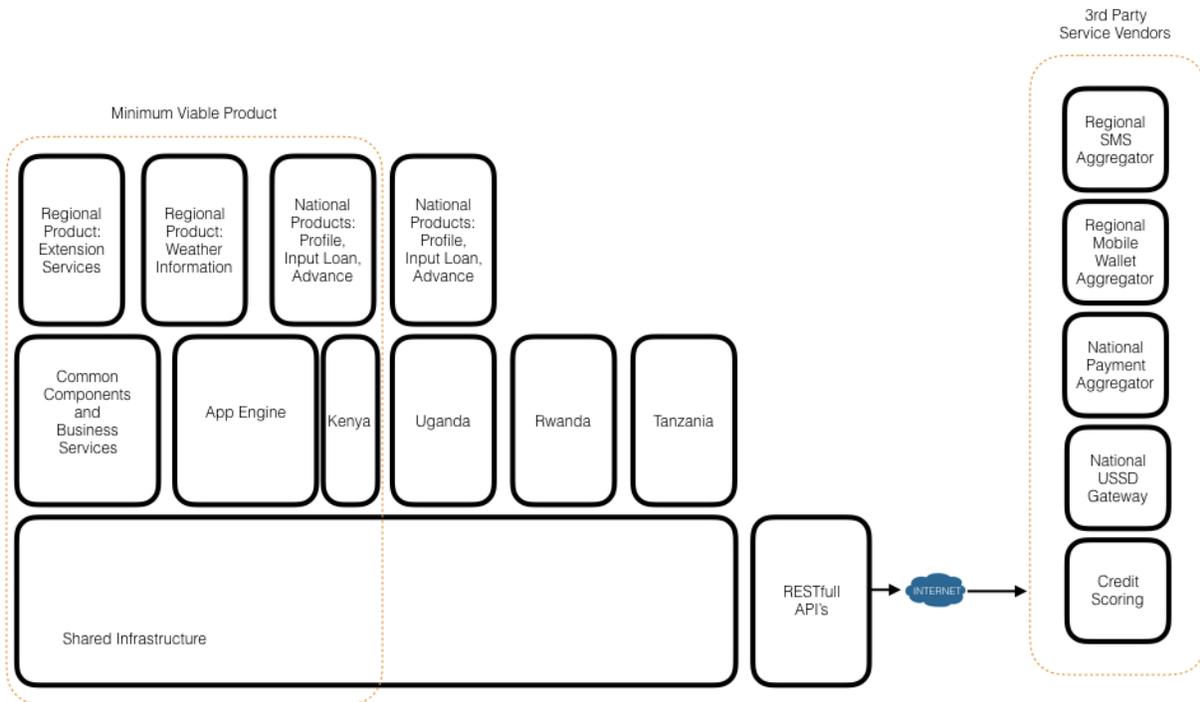
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Proposed System Architecture



Suggested: Solution Design



Draft Terms of Reference (ToR) for eGranary Product Owner

Responsibilities

1. Overall responsibility for the delivery of the eGranary product roadmap
2. Must have the ability to research and propose new features based on eGranary strategy and key differentiators
3. Support the delivery of the eGranary value proposition
4. Create and evolve service level agreements and features for system stakeholders
5. Establish and evolve new opportunities and license models for eGranary usage. Strengthening the links with other existing systems within the same eco-system
6. Champion the eGranary Platform-as-a-Service to potential partners, development communities and technology partners who could leverage and contribute to the value eGranary delivers
7. Regularly report to the CEO on key performance indicators for the team, including financial indicators, service level agreements and the Platform-as-a-Service roadmap
8. Be responsible for the execution of the service delivery process for all eGranary participants – specifically focused on the design, delivery and channel support processes.
9. The Product Owner is also responsible to guide system users through the service delivery process to assure that a solution is implemented which is aligned with the users’ expectations.
10. Meet with the system stakeholders and engage in a detail user requirement analysis (co-creation) exercises at a national level. The output of this co-creation process is to provide the technology vendor with a detailed specification document outlining the system needs, sketching the context of the environment in which the solution will be used and the detail work flow and business process design needed to ensure successful delivery.
11. Be accountable for quality assurance of new features delivered on the eGranary platform, including service design, development and implementation;
12. Meet on a regular basis with system stakeholders during the delivery of the solution to make sure that expectations are managed (timelines, deliverables, specifications and cost)
13. Must have good system level thinking capability and the ability to translate user requirements into an actionable specification document; for technology vendor (development team) to deliver against
14. Will work closely with the technology vendor (development team).
15. A good working knowledge of ICT systems, process thinking and program flow design will be a requirement.
16. Will be responsible for the design and improvement of business processes and associated Quality Management Procedures(this process will be overseen by the CEO).
17. Provide ‘second-line support’ together with the technology vendor team;
18. In addition to the responsibilities mentioned above the eGranary Product Owner will be required to travel internationally (mostly to destinations in East Africa) on a regular basis in order to support the in-country administrative teams.

Key Skills

- Good understanding of enterprise and mobile technology
- Experience in delivering solutions in developing market context
- Strong communication and presentation skills
- Ability to support and guide a third party technology vendor
- Ability to develop clear and concise system documentation
- Experience with agricultural value chain products would be beneficial
- Strong negotiation skills beneficial

Annex 5: Working Paper on Technology

Draft Technology Budget (5 Years, xls version attached)

RESPONSIBLE PARTY	COMPONENTS	Cat	TRK	Coding	Category	Unit	Year 1		Year 2		Year 3		Year 4		Year 5		TOTAL		
							Unit Costs	SubTotal	Unit Costs	SubTotal	Unit Costs	SubTotal	Unit Costs	SubTotal	Unit Costs	SubTotal			
Component 1 eGateway Platform																			
Subcomponent 1.1 - Core Platform Development (Global/Regional)																			
Regional Level																			
EAFP	Technology Staffing					per year	1.00	34000.00	34000.00	1.00	34000.00	34000.00	1.00	34000.00	34000.00	1.00	34000.00	34000.00	123,000
	Call center agents (multi language)					Staff	6.00	10000.00	6000.00	4.00	10000.00	40000.00	4.00	10000.00	40000.00	4.00	10000.00	40000.00	143,000
EAFP	Contractors					ad hoc	1.00	2500.00	2500.00	1.00	2500.00	2500.00	0.00	2500.00	0.00	0.00	2500.00	0.00	7,500
	Integration Engineers					once off	1.00	1000.00	1000.00	1.00	1000.00	1000.00	0.00	1000.00	0.00	0.00	1000.00	0.00	3,000
Technology Vendor - Their elements all relate to the actual development of the technology platform and functional components	Platform Components					days	20.00	500.00	1000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	10,000
	Setup of Infrastructure as a Service					once off	1.00	1000.00	1000.00	1.00	1000.00	1000.00	0.00	1000.00	0.00	0.00	1000.00	0.00	3,000
	Common Components					days	20.00	500.00	1000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	10,000
	Data Infrastructure					days	20.00	500.00	1000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	10,000
	Enforce security policy					days	20.00	500.00	1000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	10,000
	Backup & Disaster Recovery Infrastructure					days	20.00	500.00	1000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	10,000
	User Management					days	20.00	500.00	1000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	10,000
	PII Management					days	8.00	500.00	4000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	4,000
	Communication					days	15.00	500.00	7500.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	7,500
	Delivery of goods					days	5.00	500.00	2500.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	2,500
	Coaling of goods					days	5.00	500.00	2500.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	2,500
	Sorting Module					days	10.00	500.00	5000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	5,000
	Extension Services					days	20.00	500.00	10000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	10,000
	Customer Relationship Management					days	15.00	500.00	7500.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	7,500
	Data Analytics & Reporting					days	20.00	500.00	10000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	10,000
	Adult Data					days	10.00	500.00	5000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	5,000
	Virtual PAID and call centre set up					days	4.00	3000.00	12000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	12,000
	Multi language capability (including translation)					days	10.00	600.00	6000.00	0.00	600.00	0.00	0.00	600.00	0.00	0.00	600.00	0.00	6,000
	Disaster Recovery (Backups & Rest in Line recovery Plan)					days	8.00	500.00	4000.00	1.00	500.00	500.00	1.00	500.00	500.00	1.00	500.00	500.00	6,000
	Android Application					days	20.00	500.00	10000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	10,000
Verification Agents					days	20.00	500.00	10000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	10,000	
Calculator Center					days	20.00	500.00	10000.00	0.00	500.00	0.00	0.00	500.00	0.00	0.00	500.00	0.00	10,000	
Association Update Path					days	10.00	500.00	5000.00	10.00	500.00	5000.00	10.00	500.00	5000.00	10.00	500.00	5000.00	25,000	
EAFP	Hardware					once off	3.00	1000.00	3000.00	0.00	1000.00	0.00	0.00	1000.00	0.00	0.00	1000.00	0.00	3,000
	Maintenance					per year	1.00	20000.00	20000.00	1.00	20000.00	20000.00	1.00	20000.00	20000.00	1.00	20000.00	20000.00	180,000
EAFP	Infrastructure as a Service					per year	1.00	30000.00	30000.00	1.00	30000.00	30000.00	1.00	30000.00	30000.00	1.00	30000.00	30000.00	180,000
	Channel Costs					per year	1.00	10000.00	10000.00	0.10	10000.00	10000.00	0.10	10000.00	10000.00	0.10	10000.00	10000.00	31,000
EAFP	VOIC & IVR					per year	1.00	10000.00	10000.00	1.00	10000.00	10000.00	1.00	10000.00	10000.00	1.00	10000.00	10000.00	25,500
External Provider to be appointed	Security Audit & Penetration Testing					lamp/year	1.00	10000.00	10000.00	0.00	10000.00	0.00	0.00	10000.00	0.00	0.00	10000.00	0.00	10,000
	Subtotal Regional Level							222500.00		108000.00		0.00	108000.00		0.00	108000.00		910000.00	
Subcomponent 1.2 - National Platform Modules (New country deployment)																			
Regional Level																			
Technology Staffing per Country																			
EAFP	Equipment per Country					Staff per year	1.00	12000.00	12000.00	2.00	10000.00	20000.00	3.00	10000.00	30000.00	3.00	10000.00	30000.00	120,000
	Computer Capex					once off	2.00	1000.00	2000.00	2.00	1000.00	2000.00	3.00	1000.00	3000.00	0.00	1000.00	0.00	6,000
EAFP	Mobile Service (agents)					once off	45.00	200.00	9000.00	45.00	200.00	9000.00	45.00	200.00	9000.00	0.00	200.00	0.00	27,000
	Mobile Service (Collection Centers)					once off	15.00	200.00	3000.00	15.00	200.00	3000.00	15.00	200.00	3000.00	0.00	200.00	0.00	9,000
Technology Vendor	Setup In-country Infrastructure					once off	1.00	1000.00	1000.00	1.00	1000.00	1000.00	0.00	1000.00	0.00	0.00	1000.00	0.00	3,000
	Service Provider - eGateway Module					days	10.00	500.00	5000.00	10.00	500.00	5000.00	0.00	500.00	0.00	0.00	500.00	0.00	15,000
Technology Vendor - Their elements all relate to the actual development of the technology platform and functional components	Service Provider					days	15.00	500.00	7500.00	15.00	500.00	7500.00	0.00	500.00	0.00	0.00	500.00	0.00	22,500
	Contracting					days	15.00	500.00	7500.00	10.00	500.00	5000.00	0.00	500.00	0.00	0.00	500.00	0.00	17,500
EAFP	Terms & Conditions Acceptance					days	3.00	500.00	1500.00	5.00	500.00	2500.00	3.00	500.00	1500.00	0.00	500.00	0.00	6,500
	Integrations					once off	1.00	10000.00	10000.00	1.00	10000.00	10000.00	1.00	10000.00	10000.00	0.00	10000.00	0.00	30,000
EAFP	UIE Integration					once off	1.00	5000.00	5000.00	1.00	5000.00	5000.00	0.00	5000.00	0.00	0.00	5000.00	0.00	15,000
	Payment Gateway Integration					once off	1.00	10000.00	10000.00	1.00	10000.00	10000.00	0.00	10000.00	0.00	0.00	10000.00	0.00	30,000
EAFP	API Key Integration					once off	1.00	2000.00	2000.00	1.00	2000.00	2000.00	0.00	2000.00	0.00	0.00	2000.00	0.00	6,000
	Maintenance					per month	1.00	3600.00	3600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3,600	
EAFP	Infrastructure as a service (in-country infrastructure used)					per month	1.00	3600.00	3600.00	2.00	3600.00	7200.00	3.00	3600.00	10800.00	3.00	3600.00	10800.00	43,200
	Hardware (S&S & S&S) License Fee					per month	1.00	1500.00	1500.00	2.00	1500.00	3000.00	3.00	1500.00	4500.00	3.00	1500.00	4500.00	18,000
EAFP	Channel Costs					per month	1.00	1500.00	1500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,500	
	UIE account set up (once off per country)					once off	1.00	600.00	600.00	1.00	600.00	600.00	0.00	600.00	0.00	0.00	600.00	0.00	1,800
EAFP	S&S & S&S Credit (in-field devices)					per annum	60.00	120.00	7200.00	60.00	120.00	7200.00	0.00	120.00	0.00	120.00	0.00	21,600	
	S&S number of S&S per annum					per annum	10000.00	0.01	100.00	20000.00	0.01	100.00	200.00	0.01	100.00	20000.00	0.01	300.00	
EAFP	VOIC & IVR (Number of IVR Voice Calls Initiated)					per annum	10000.00	0.10	1000.00	10000.00	0.10	1000.00	10000.00	0.10	1000.00	10000.00	0.10	1000.00	6,500
	UIEID (Number of UIEID Interactions paid for per annum?)					per annum	10000.00	0.10	1000.00	10000.00	0.10	1000.00	10000.00	0.10	1000.00	10000.00	0.10	1000.00	6,500
EAFP	Subtotal National Level							88320.00		102200.00		0.00	102200.00		0.00	102200.00		404,300	
	Subtotal subcomponent 1.2																	0	
Subtotal Component 1																		1,040,300	

Annex 6 WP #2 ICT Design and Deployment

I. Overview of ICT Issues Related to the Deployment of eGranary

- 1. Technology deployment: the human side of the equation.** While the previous technology section analyzed issues related to the development of the eGranary platform, this section will focus on enablers, barriers, and risks related to the uptake of the platform amongst its various users. Most ICT for development initiatives do not fail because of a technology shortcoming, which can usually be resolved with adequate resourcing, but because of low adoption, processes that don't scale, or business models that are not sustainable. Drawing on sector best practices for deploying ICT with smallholders and carefully analyzing success factors will help to mitigate these risks. Key issues can be organized along three dimensions: 1) product design, 2) solution deployment, and 3) business model. While a preliminary analysis of these issues is presented here, ongoing research and assessment should be conducted during the initial design phase and throughout the program lifecycle to address the human side of ICT deployment, which often determines whether a digital solution succeeds or fails at scale.
- 2. Solution assessment.** eGranary is a highly innovative solution that is appropriate for the smallholder market it seeks to serve. Rapid growth in mobile network coverage in rural areas paired with increasing mobile access among smallholder populations has led to an alignment between the agricultural, telecommunications, and financial services sectors that has accelerated digital agriculture innovation. There is large variety in mobile solutions that are designed specifically for agriculture in East Africa, which is home to many of the world's most pioneering ICT initiatives. Most smallholder farmers and agricultural services providers in the region have some experience using mobile technology in their farming activities and, increasingly, for purposes that go beyond simple information access or data collection. Kenya, Rwanda, Tanzania, and Uganda also have some of the highest adoption rates of mobile money globally. Given the current level of access to and comfort with using mobile technology, there should be sufficient market readiness for an advanced solution like eGranary to take hold.
- 3.** The eGranary solution includes many of the core elements that underpin successful mAgri initiatives. The eGranary uses both sides of the mobile channel to enable dynamic two-way information flows to and from farmers, which helps ensure farmer priorities are heard and promotes greater adoption. By leveraging direct-to-farmer and intermediated mobile channels, the eGranary can balance the cost effectiveness and reach of basic SMS and voice services with the rich content and more advanced functionality smart devices offer. Direct-to-farmer registration promotes scalability while mobile-enabling field agents provides a mechanism for verifying the accuracy and authenticity of data. The eGranary's ability to facilitate financial transactions enables on platform deal completion, maximizing value for stakeholders. The platform's transaction orientation also provides the incentive and means for farmers to adopt advisory recommendations. Allowing flexibility for on-platform and off-platform transactions through traditional bank as well as mobile money channels allows farmers to choose which channel is most economical and convenient.
- 4.** In addition, using mobile technology to facilitate the delivery of bundled services maximizes the impact eGranary can deliver to farmers by opening access to interdependent insurance, financial, advisory, and market services. The provision of a central data repository and a shared messaging and transaction platform permits diverse service providers to collaborate to holistically meet farmer needs. Using a shared technology platform makes it more likely that the eGranary can achieve sustainability by generating revenues from each service line while reducing technology costs for individual service providers. While the potential value of using technology to facilitate bundled services delivery is widely recognized, few initiatives today do so. In an IFAD commissioned study, only four of 108 digital agriculture initiatives reviewed provided access to a comprehensive suite of financial, advisory, inputs, and markets services.⁸ If eGranary is successful in doing so, it would deliver deep impact for farmers and could revolutionize market and financial access for smallholders across the region.

⁸ IFAD's Policy and Technical Advisory unit commissioned an internal study on digital initiatives for agriculture in January 2017.

5. Finally, from an implementation and business model perspective, eGranary exhibits numerous characteristics linked to scale and sustainability. As a farmer owned and operated organization, EAFF and its NFO members have farmers' trust and the capillary field networks needed to promote eGranary's uptake with risk-averse smallholders. Because EAFF's mandate is to serve farmers in perpetuity, it also has the incentive to scale and maintain the solution once project funding has ended.
6. While the eGranary's design incorporates many characteristics of successful mAgri initiatives and presents tremendous potential for addressing the barriers that exclude smallholders from markets and financial services, it also presents numerous risks. These risks emerge in large part due to the complexity inherent in providing integrated services and from its highly innovative nature. Identifying, addressing, and monitoring these risks early will help to mitigate them. The following pages outline strengths and weaknesses of the current design and make recommendations for product design, implementation approach, and business model.

II. Country Summaries

3. **Current experience with eGranary deployment.** The mission began by examining EAFF's experience deploying the platform in Kenya. As detailed in the Aid Memoire, EAFF negotiated national level agreements with market, inputs, and insurance providers and then began to pilot services with a small group of producer organizations. Approximately 50% of the processes related to eGranary services delivery have been tested off-platform (i.e. manually), while less than 20% of key business processes have been tested digitally. In the first season, farmer registration, the submission of planting and harvest data, and data analysis for contracting were digitized. Other elements like bulk input orders, input financing, crop aggregation, sales, payments and insurance registration and pay out were done manually. In the second season, which is currently in progress, some components of the digital credit solution have been developed but have not yet been live-tested with farmers. The plan is to use the platform to coordinate crop aggregation and to test input loan repayment in the current season.
4. This gradual approach to digitization occurred for multiple reasons. First, financial services providers communicated that they would require farmer production and sales data before making loans. In addition, many farmers were not using certified seeds or fertilizer and had low production levels. EAFF sought to first increase productivity before introducing additional financial products. In addition, in the first season a drought prevented EAFF from testing the aggregation and purchasing components since most farmers were not able to harvest. However, the drought enabled EAFF to learn valuable lessons and test the insurance product. For example, they learned that deducting the entire loan repayment at the time of harvest meant that, because insurance was bundled in the inputs loan, farmers would not pay for insurance until the end of the season after an event had occurred. Based on this learning, EAFF is now doing loan repayment installments throughout the season and including payment for the insurance premium up in the first installment. Because of these circumstances, EAFF took a slower, more phased approach to digitizing services.
5. However, this phased approach to digitization delivered numerous benefits. Manually testing the delivery of new services allowed EAFF to better understand the process flow of the new services and provided insights on which processes to digitize and which to conduct offline. These insights also informed modifications to product design before they were hard coded into the platform. Finally, it reduced the number of new technologies and procedures farmers and groups needed to learn at once.
6. **Country contexts.** The mission also analyzed plans for scaling the solution to Rwanda, Uganda, and Tanzania. Working with its member NFOs, EAFF has been providing farmer groups training on structured trade. In Uganda and Tanzania, EAFF helped facilitate cross-border trade, assisting unions in Tanzania to sign 14 MoUs with buyers and to negotiate eight agreements between cooperatives and off-takers in Uganda. Previous efforts to build farmer group capacity to engage in structured trade will make it easier to introduce eGranary. In part to due this training, most NFOs bring some experience implementing and facilitating forward contracts; a few also offer inputs financing and advance

Annex 6: Working Paper on ICT Design and Deployment

payments, either on behalf of or through their member organizations. Although capacity levels vary considerably between NFOs and their members, those producer groups with some experience in structured trade will be familiar with processes such as business to business meetings, production planning, and group product aggregation, making it easier for them to successfully adopt the eGranary.

7. National Farmer Organizations are familiar with the eGranary concept and most have some experience implementing digital initiatives. For example, in Uganda, UCA and UNFFE are implementing a digital project funded by the Dutch government in which they have deployed 186 mobile-enabled field agents to profile farmers. Under the project, they have built staff capacity in ICT. For example, UNFFE now has a Manager of Information and Communication, an ICT Admin, and a Resource Center Attendant. In Tanzania, NFOs and multiple local partners have sponsored ICT initiatives, though most were small scale. In Rwanda, NFOs emphasized government support for digital agriculture.
8. NFO agreements with off-takers, input suppliers, and financial services providers vary from country to country. EAFF has negotiated contracts with companies for regional services provision including fintech company, MODE and mobile aggregator, Africa Is Talking. In addition, existing contracts with regional players such as ACRE Africa and ETG for the eGranary in Kenya may be extended to additional countries and EAFF is currently in negotiations to do so. A financial services provider has not yet been secured for any of the countries and must be addressed as a key risk to the program delivery.
9. In general, NFOs described the ideal scenario under which their groups plan annual production, offer input financing, and do collective marketing. In this scenario, the business process flow that cooperatives and farmer groups take to engage in structured trade in each country and value chain were relatively similar with differences primarily revolving around inputs provision and finance and advance payments (see Image 1 below). However, the extent to which groups are actually engaging in structured trade is low; most NFOs estimated that fewer than 20% of their groups do so today. In addition, few groups offer the end-to-end services eGranary plans to offer covering production planning, bulk input orders and distribution, inputs financing, advisory services, aggregation, storage, and collective marketing and loan repayment. According to NFOs, groups have the most experience with production planning and collective marketing. Bulk input orders, input financing, and the provision of advisory services in general, outside of rice in Rwanda, were much less common. No NFOs mentioned provision or linkage to insurance services. Currently, SACCOs are the most common source of financing for farmer group members and most groups had relationships with SACCOs, using them to pay farmers at sale and linking their members to input and non-agricultural financing through the informal collateral they gain via association to their group. However, the strength and capitalization of SACCOs also varies from country to country and is strongest in Rwanda and weakest in Uganda.
10. Outside of business processes, a number of other variations exist across the selected countries that will need to be accounted for in the platform's design and rollout strategy. These include the legal status of NFO and their members, national ID systems, and levels of input subsidization. Table 1. below provides a SWOT analysis detailing additional similarities and differences between countries.
11. **Regulatory analysis.** EAFF will need an in-depth analysis of the regulatory framework related to financial services provision, digital financial services, mobile money, data privacy, and the capture and storage of personally identifiable information and geo-located data.

Table I. SWOT Analysis

	Cross-Cutting	Rwanda	Uganda	Tanzania
Strengths	<ul style="list-style-type: none"> Field mobilization structure Trust and loyalty of SHF Strong institutional relationships Experience in selected crops Experience w/ structured trade Large member base in selected value chains 	<ul style="list-style-type: none"> Farmer promoter structure IMbaraga manages multiple donor projects NCCR rice coops offering PHH and collective marketing Imbaraga FOs able to meet WFP quality standards (96%) 	<ul style="list-style-type: none"> Familiarity w ICT via MUIIS ICT staff embedded in NFOs 186 digital field agents Strong field presence UCA starting company to buy and sell inputs & outputs Strong NFO partnership Extension link farmer structure Advance payments experience 	<ul style="list-style-type: none"> Cross border trade experience Youth enterprise model Strong management commitment to eGranary Some experience with ICT Annual group meetings to plan production/finance/marketing
Weaknesses	<ul style="list-style-type: none"> Lack of data/record keeping Nascent tech capacity Weak ICT infrastructure Small NFO budgets Small % of coops can meet structured trade requirements 	<ul style="list-style-type: none"> Imbaraga non-profit status Lack of legal status for FOs, which cannot take loans NCCR has limited staff capacity and experience managing grants Unsecured cash inputs loans SHF promoters volunteer status 	<ul style="list-style-type: none"> Farmers have been slow to sign up for MUISS services UNFFE's ability to mobilize FOs not as strong as UCA's FOs lack legal status Large field staff but not paid on-time or at all 	<ul style="list-style-type: none"> Many stores don't meet standard of licensing board No field staff at TFC level and few field staff at unions History of corruption has affected farmer trust
Opportunities	<ul style="list-style-type: none"> Demand for cross border trade Institutional demand from WFP/Nat'l Strategic Reserves High mobile penetration Farmer familiarity w/ mAgri Gov't support for coops Selected VCs are gov't priorities 	<ul style="list-style-type: none"> Gov't. support for digital Strong SACCO infrastructure East Africa Exchange and East Africa Grain Council linkage Farmers have nat'l land title ID Buyer interest in contracting FOs PASP overlap w maize/beans 	<ul style="list-style-type: none"> Central bank guarantee fund Synergy w ENSIBUUKO Potential linkage DFCU, Opportunity, or Centenary Synergies w PRELINOR and REACTS Donor prioritization of agfin 	<ul style="list-style-type: none"> Selected VCs well organized Synergy w REACTS SHF demand for extension Good gov't extension coverage Warehouse receipt system
Threats	<ul style="list-style-type: none"> Off-takers not willing to commit to floor prices in contracts Limited storage infrastructure Unpredictable policy landscape Impacts of climate change Fake inputs/ weak input markets Low input usage Price volatility Side selling Low usage of insurance 	<ul style="list-style-type: none"> Highly regulated market requires strict compliance Uncertainty on input subsidy FOs rarely provide inputs Shortage of certified seed 	<ul style="list-style-type: none"> Lack of unique ID system SACCOs are weaker and less liquid than in other countries Lack of accurate market info Political environment Imbalance in trading relationships with buyers 	<ul style="list-style-type: none"> Low enforcement of contracts Government policies prevent trade, e.g. export bans High cost of inputs Delays in inputs delivery Low bulk input procurement Exploitation of smallholders by mid-sized farmers undermines collective marketing

III. Product Design Considerations

12. **Human Centered Design and Business Process Mapping.** As discussed in the introduction, the eGranary concept and core solution components already incorporate many design principles of best-in-class mAgri solutions. Nevertheless, there is an opportunity to further refine the design, which today lacks the detail needed to develop an in-depth product roadmap and deployment strategy. Furthermore, each country and value chain introduces distinct opportunities, constraints, and processes. The eGranary solution will need to take these differences into account to meet the distinct needs of individual country contexts. Although EAFF has conducted participatory value chain selection with NFOs and had discussions with various stakeholders in the three expansion countries, there has not been in-depth field research or prototyping with farmer groups and farmers themselves.
13. Conducting human centered design with users and stakeholders at each point of solution delivery and usage will provide insights to inform choices such as which mobile channel to use for different components, how to design training and marketing materials, and how to phase the introduction of products. EAFF should engage a human centered design expert or firm to lead this process and conduct research with end-users, gather requirements, and design marketing and training materials. In addition, there is a need to conduct in-depth business process mapping for each value chain in each country to document requirements. This activity should be conducted at the NFO, regional, and primary group levels to document the gap between the current process occurring in the field and the one envisioned. It should also document where additional capacity building and non-tech facilitation such as access to storage or equipment will be needed. Business process mapping will also enable EAFF to make decisions about which components to digitize and which to conduct off platform. The IFAD team recommends conducting these activities in all three countries in parallel within the first six months of grant implementation. Doing so will ensure the program has the detailed input needed to architect a flexible solution and craft a phased deployment strategy, ultimately reducing both cost and risks.
14. **Mobile enabled intermediaries.** Today, the eGranary overly depends on self-reported data from farmers and does not include a mechanism for entering data into the system outside the USSD channel. This introduces the opportunity for fraud in processes such as inputs distribution. In addition, data quality and accuracy is of utmost importance given that the data collected will be used for financing decisions, to negotiate contracts, and order inputs. Given the complexity of the eGranary solution, there is also a need to provide greater support to farmer groups to understand eGranary services, their benefits, and how to use them. Although EAFF plans to develop an android application and train and equip data verification agents, the strategy and scope for engaging field agents is unclear. In discussions with EAFF and NFOs, the mission identified the need to increase the number of field agents, particularly in the pilot. Agents will promote the adoption of eGranary with groups, conduct data verification for services providers, and build the capacity of groups to engage in structured trade and use digital financial services. Through an analysis of eGranary field activities and the NFO field structure, the team identified that the number of mobile-enabled field agents should be increased to a ratio of no more than 1:550 farmers receiving the full services suite, or approximately 60 agents. The project should budget for these agents directly given the issues NFOs have had with paying field agents consistently and on-time. Through the pilot, EAFF can evaluate the ideal ratio of mobile-enabled field agents to farmers and assess how to incorporate agents into the business model.
15. **Digital Financial Services (DFS).** Another aspect of solution design that requires further analysis in the project design phase is the financial services component. Digital financial services are a highly specialized area and have specific regulations in each country. EAFF should include budget for a DFS expert or firm to engage in regulatory analysis, product design, and user research. This individual or firm can assist EAFF and MODE in negotiations with financial services providers as well as lead the development and testing of the credit scoring component. Given the complexity and importance of the financial services module, it is advisable to include budget for an extended initial engagement and then a retainer to provide support as distinct credit products are rolled out in new markets.
16. In conversations with EAFF and MODE representatives it became clear that the relationship between MODE and eGranary needs further clarification. This is also true for the role of MODE vis-à-vis other potential retail lenders, especially in relation to credit scoring.

17. In each country, NFOs identified SACCOs as a critical player in delivering financial services to their farmer members. Because of the synergistic relationship between SACCOs and primary farmer groups and cooperatives, the trust and reach they have with farmers, and the fact that they often provide access to non-agricultural financial services (which reduces the need for farmers to side sell), their role should be analysed carefully. Although they are too dispersed and will not have sufficient capital to be a lender for program, they may be able to play a role in cash management, accepting and disbursing payments. Mobile money fees have long been a barrier to digitizing agricultural payments. In addition, mobile money agents rarely have sufficient liquidity to support agricultural payments, which leads to far greater outflow of cash than cash-in transactions can support. SACCOs could provide an alternative to mobile money payments or offer a complementary channel by registering as a mobile money agent who has greater liquidity. Regulations and the level of sophistication of SACCOs vary by country and will need to be considered as part of the analysis on determining whether and how to incorporate SACCOs into eGranary.
18. **eExtension services.** Because eExtension services are phased for development and deployment later in the program, there is the least clarity around the design of this module. The mobile advisory services market in East Africa is crowded and farmers have typically shown low willingness to pay for these services. EAFF will need to carefully evaluate how to differentiate its mobile advisory service and maximize its value to farmers. Lessons learned from other initiatives show that farmers demand dynamic information such as weather and market prices more often than production techniques, with the exception of pest and disease control. Linking the information delivered to the market-based services, aligning messages to the cropping calendar, and customizing to the specific needs of farmers are all ways to increase value of these services. For example, by providing input application recommendations for the specific input varieties delivered in a region at the time of planting or providing planting and post-harvest recommendations based on real-time weather conditions and forecasts. Similarly, linking information on market standards with reminders about contract commitments and the benefits of collective marketing may also promote behavior change. While studies have shown voice based services to be more effective in driving behavior change and more accessible for less literate users, there are higher cost implications, making the targeting of messages even more important. A behavior change and communications specialist could assist in packaging content for digital delivery and in developing strategies for cost-effectively driving farmer adoption of good agricultural practices.

IV. Deployment Considerations

19. **Program Complexity.** eGranary is a highly complex project that plans to test multiple dimensions of a solution in parallel. Currently, the project spans six farmer organizations, three countries, four value chains, and at least six distinct digital products. In addition, NFOs may bring multiple 3rd parties such as input suppliers and off-takers to the platform. Each variation has implications for product design and deployment approach. For example, working across countries requires a different approach to know-your-client verification, different formats for unique identifiers, multiple versions of training and marketing materials, and distinct platform functionality. In addition, because many farmer groups in the selected value chains are not currently engaged in forward contracting and value chain finance, the eGranary project is driving innovation at multiple levels. Introducing business and process innovations while simultaneously digitizing these innovations, increases the number of changes farmers and farmer organizations must adopt. This also implies that eGranary test a new approach and the digitization of that approach simultaneously, making it more difficult to isolate drivers of success and failure.
20. **Mitigating complexity risks.** There are multiple actions EAFF can take to reduce this complexity and manage associated risks. Where possible, signing regional agreements to reduce the total number of partners engaged during the pilot is preferable. Having fewer partners will reduce the number of processes that must be accommodated in the platform and trained on in the field. Phasing product rollout will reduce the potential to overwhelm users with new features and minimize change management needs. EAFF's current approach of deploying new products manually and slowing digitizing their various components should be continued in initial stages of pilot in a new country. This will allow farmer and farmer groups to build their capacity and familiarity with mobile technology before

Annex 6: Working Paper on ICT Design and Deployment

introducing more advanced services. A phased product roll out also allows farmers to increase their production and sales, which is a prerequisite for deploying credit products.

21. Currently the proposal plans to roll out eGranary concurrently in the three countries. Given that eGranary services have not been fully tested in Kenya, this not advisable. Country and value chain deployment should also be phased to ensure that the solution is successfully tested in one context before scaling to another context and introducing new variables. Given crop rotation cycles, EAFF and the IFAD team agreed that two value chains be tested initially in each country with additional value chains included only once the first two value chains have been fully digitized and are operating smoothly. EAFF should develop criteria for country prioritization as well as defining key indicators that must be met before expanding services to new value chains and countries. Research conducted in the first six months will inform the prioritization process. However, based on the capacity of groups to engage in structured trade, the existing partnership between NFOs, and their current experience with digital initiatives, the mission and EAFF agree that Uganda will likely be the first country of deployment. Finally, creating a joint country project management team will further reduce drivers of complexity so there are three points of contact as opposed to six separate organizations. The mission and EAFF discussed these points and agreed to the phasing plan as outlined in Table 2.
22. **Targeting farmer groups and users.** Another risk mitigation strategy is to narrow the number of groups included on the eGranary in the initial pilot. Current group targets exceed the number of groups with the capacity to deploy advanced eGranary services. EAFF and the mission agreed that EAFF will revise the targets in the final proposal. EAFF plans to do a comprehensive mapping of farmer group capacity and will use the outputs of this exercise to target those groups who have an existing ability to meet off-taker standards and negotiate forward contracts as well as access to storage and equipment necessary to delivery on these contracts. Taking this approach will allow groups to focus on digitization of existing processes rather than simultaneously adopting a new approach to working with their members. Once the system is working well with these more experienced groups, it can be expanded to those with lower capacity. Many of IFAD's country programs are already working to build group capacity to engage in structured trade and are building infrastructure, such as local collection centres. Linking to these programs will provide a pipeline of farmer groups that can be on-boarded onto the platform once they have developed the necessary capacity.
23. **Standard operating procedures and robust quality assurance systems.** In the eGranary proof of concept in Kenya, issues such as quality assurance and data validation are addressed manually by calling or meeting with farmer groups. As the eGranary scales to multiple countries and hundreds of thousands of farmers, it will need robust systems and standard operating procedures to consistently deliver quality assurance, platform support, data verification, monitoring, and other critical processes. For example, the current data cleaning and validation approach will not be sufficient for financial services providers.
24. Other areas where standard operating procedures need to be developed include technical support, training, monitoring and evaluation, content management, survey development and data analysis, and financial services delivery. A third party services provider or consultant conversant in digital initiatives can assist EAFF and NFOs to develop standard operating procedures and audit their compliance to provide recommendations for increasing eGranary's efficiency, quality, and security.

Annex 6: Working Paper on ICT Design and Deployment

		Table 2. Phasing Plan				
		Year 1	Year 2	Year 3	Year 4	Year 5
Technology Development	Months 1-6	Technology Set Up Vendor selection, roadmap and architecture, tech infrastructure, 3rd party services procurement, core platform development	eExtension Services Develop advance payment credit product and customize platform for Rwanda as needed	Layer on more advanced functionality	Layer on more advanced functionality	Layer on more advanced functionality
	Months 7-12	Input Credit Credit product development and mobile money integrations	Advance Payment & Production Loan Credit products; TZ customization	Ongoing Platform Maintenance and Development	Ongoing Platform Maintenance and Development	Ongoing Platform Maintenance and Development
Country 1	Months 1-6	eGranary Set Up/Planning eGranary set up, staff onboarding, FO, WH, and buyer mapping, content development, contract FI	Input Loan (15,120) eExtension (50,000)	Production Loan (15,120)	Continuous scale up	Continuous scale up
	Months 7-12	Farmer Registration (50,000)	Advance Payment (15,120)	Scale up using eGranary revenues		
Country 2	Months 1-6	eGranary Set Up Regulatory and legal compliance, eGranary registration, value chain analysis, financial modeling	Farmer Registration (20,000)	Advance Payment (6,000)	Scale up using eGranary revenues	Continuous scale up
	Months 7-12	Design and Planning Staff onboarding, FO, WH, and buyer mapping, content development, contract FI	Input Loan (6,000) eExtension (20,000)	Production Loan (6,000)		
Country 3	Months 1-6	eGranary Set Up Regulatory and legal compliance, eGranary registration, value chain analysis, financial modeling	Design and Planning Staff onboarding, FO, WH, and buyer mapping, content development, contract FI	Input Loan (10,400)	Production loan (10,400)	Continuous scale up
	Months 7-12		Farmer Reg & eExtension (35,000)	Advance Payment (10,400)	Scale up using eGranary revenues	

Annex 6: Working Paper on ICT Design and Deployment

25. A robust data verification system that complies with national regulations on data privacy and meets commercial bank requirements will need to be developed before deploying any data collection activities, including registration. This system should include detailed standard operating procedures for collecting, cleaning, verifying, and analysing data and outline the roles and permission levels of different staff. It should also have a mechanism for validating self-reported data, including manual back-checking of a small percentage of forms and on-system automated validation. The platform should include validation logic on the back-end and provide automated reports of suspected erroneous data such as outliers or inconsistent answers. In addition, the front-end mobile interface should minimize the use of free text where possible and also include validation logic when using smart devices. One area of particular concern, due to likelihood for error, is the free text entry of location. Mobile equipped agents using smart devices should be employed to collect and digitize key information such as input orders, group production plans, and aggregation quantities, quality, and sales that are used for commercial transactions. The system should automatically compare agent records with self-reported data and flag areas of discrepancy. Using advanced features of an android app, agent devices should allow farmers to sign for input receipt as well as confirming their product delivery and grading score. Farmers in turn should receive SMS notifications on the same for their records and to reduce fraud at all levels.
26. Finally, the proposal currently lacks a detailed monitoring and evaluation plan. Given the innovative nature of the program and the potential for it to inform other GAFSP, IFAD, and development initiatives, the mission recommends conducting a robust evaluation in at least one of the three countries. In addition, ongoing internal M&E should be conducted throughout the project to ensure early learning informs subsequent product and country rollouts to maximize the likelihood of success. This will require a substantial M&E budget allocation. In addition, EAFF should create advanced, automated, disaggregated analytics and share these with key stakeholders and IFAD. In the design phase, EAFF should work with stakeholders to design these reports and provide direct access to reports when appropriate. These analytics should also be embedded in EAFF and NFO project management processes and enable easy access for project staff to ensure that data is available to inform day-to-day project and long-term strategic decisions.
27. **Human Resources.** The current proposal does not adequately budget for the skills and expertise needed to develop and execute robust standard operating procedures and systems. For example, an M&E and Data Manager with training in data analytics and expertise in designing evaluations and overseeing data quality operations should be hired. In addition, each country should hire a Data and Systems Admin based primarily in the office to oversee data collection and assure quality while a Data Verification Field Officer will need to verify the authenticity of data in the field. Many of these positions require advanced university degrees and multiple years experience in the technology field and must be budgeted competitively. Through discussions with EAFF staff it was determined that a joint project team at the country level could free up budget to hire more experienced staff. In addition, EAFF and the IFAD mission identified a need to increase the number and type of staff engaged at both regional and nation levels to execute key functions such as data validation and monitoring and evaluation. There is also a need to engage more consultants including a solution architect, digital financial services expert, human centered designer, and other expertise. These roles are outlined in Tables 3 and 4.

Annex 6: Working Paper on ICT Design and Deployment

Table 3. Staff Resources						
Location	Title	No.	% Time	Hire Status	Skills Required	Responsibilities
Regional	eGranary Product Owner	1	Full time	New Hire	Technology, business	Manage roadmap, technology vendors, and country admins
	Data Analyst	1	Full time	New Hire	Econometrics, statistics	Ensure data quality, analyze data, create and run reports
	Project Manager	1	Full time	New Hire	Project Mgt.; Biz Dev	Manage eGranary rollout, secure partnerships, manage
	M&E Officer	1	50%	New Hire	Research, M&E	Manage M&E firm, lead internal M&E, knowledge management
	Finance Field Accountant	1	50%	Current Staff	Accounting	Financial management of eGranary project
	Trade Officer	1	30%	Current Staff	Agribusiness	Support B2B meetings and negotiations with value chain actors
Country	Project Coordinator	3	Full time	New Hire	Project management, business	Manage country implementation and eGranary national stakeholders
	Field Verification Officer (1 for RW, 2 for UG/TZ)	5	Full time	New Hire	Project management, enumeration	Manage field agent performance, participate in B2B negotiations, lead ToTs, and oversee data verification
	Call Center Operator	3	Full time	New Hire	Customer service	Tier I support and product education
	Data Analyst & Systems Admin	3	Full time	New Hire	Statistics, savvy with IT	Administer system, create reports, oversee data validation, M&E
	Agronomist	3	20%	Current Staff	Agronomy, training	Lead ToTs, develop trainings, record IVR, manage content

Table 4. Consultancies		
Location	Expertise	Activities
Regional	Solution Architecture	With EAFF, vet and hire technology staff, oversee vendor selection and set up of technology infrastructure, and participate in user requirement gathering and roadmap development
	Agricultural Value Chain Analysis	Analyze opportunities and challenges within select value chains and ensure profitability ratio for crop can sustain eGranary operations while ensuring income increase for farmers
	Financial and Business Model Analysis	Build out financial model and articulate hypotheses to be test by phase
	Human Center Design	Assist EAFF, NFOs, and solution architect to conduct ecosystem and business process mapping, user requirement gathering and translate to product design, and develop marketing and training materials
	Evaluation	Design and oversee the execution of external evaluation and internal M&E plan
	Digital Financial Services	Analyze regulatory environment and identify implications for product design; with EAFF, MODE, and HCD expert design DFS, including credit scoring algorithm; assist in development finlit materials
	Curriculum Development and Farmer Training	Design and develop ToTs, training materials, and finlit content
	Agronomy	Source, vet, and architect content for mobile extension services
Country	Legal (retainer with local law firms or regulatory expert)	Analyze regulatory landscape up related to Mobile Money, Digital Financial Services, data privacy and security, cooperative contracting, etc.; assist with eGranary registration

V. Business Model Considerations

28. **Escalation of business model focus.** Sustainable business models remain elusive for most digital agriculture programs; most rely on donor funds and fail to scale once donor-funding ends. Getting the business model right will be paramount to scaling the solution. Given the importance of the business model to long-term scale and sustainability, the mission recommends EAFF identify and report on key business metrics, such average revenue per farmer, alongside logframe indicators to enable mitigation of business risks. We also recommend EAFF prioritize developing and rigorously testing the business model in the pilot phase to ensure the solution is designed to maximize scalability and sustainability. These activities should include a detailed analysis of the profitability of different value chains and eGranary products as well as calculating the potential return to farmers. In addition, EAFF should clearly articulate the revenue share arrangement between field agents, NFOs, and EAF. Engaging a business and financial model expert during the design phase and including a retainer that allows for an annual analysis as new products and countries are deployed, will help EAFF articulate and evaluate business case hypotheses and pivot as results come in.
29. As discussed in the introduction, eGranary exhibits numerous strengths related to the business model. Its transaction orientation and delivery of bundled services create multiple opportunities for generating revenue. Furthermore, it currently minimizes costs by leveraging the direct-to-farmer channel for most platform interactions. Using USSD, which is a much more affordable channel compared to SMS, also increases cost-effectiveness. In addition, many platform interaction costs are borne by the farmer, which a farmer is likely to pay if they see value in the platform. Given that the number of monthly interactions will be in the hundreds of thousands even in the pilot, this approach will significantly reduce eGranary costs. EAFF is also in discussions with MODE to create a closed user group via its Virtual Mobile Network Operator if the number of users exceed 100,000. Finally, EAFF has already established a separate business unit that will be responsible for the eGranary business line and sees the business as a key avenue for increasing its own commercial sustainability. While this separation of activities makes sense from a business perspective, EAFF will need to balance the interest of farmers with the business's for profit orientation. A clear strategy needs to be articulated for navigating the tension between profit and impact and shared with IFAD.
30. **Digital Financial Services.** Based on learning from the experience with drought in season one of the proof of concept, EAFF has adjusted the input loan terms. Farmers now pay back the input loan in the course of the season and full repayment is a requirement for accessing an advance payment on the delivery of goods. The insurance premium is included in the first instalment to ensure farmers pay for the services before an event occurs. While this approach was designed to reduce EAFF risk associated with non-payment and mirrors One Acre Fund's offering, it increases the likelihood that farmers will side sell in order to pay back the loans or to free up liquidity for non-agricultural activities. The team recommends EAFF and the DFS consultant revisit the input loan design, potentially splitting into a prepayment prior to inputs delivery that would cover insurance and a small portion of the inputs cost and deduct final repayment at harvest from the farmer's pay-out as initially planned. This design improves the probability that farmers take loan, deliver all of their product to their group, and repay the loan in full.
31. **eExtension.** The uncoupling of digital extension services pricing from the broader services bundle presents a risk that this component will not be adopted. Most mobile information services on the market today lack a path to profitability when delivered as a standalone product. Across the globe, users have a low willingness to pay for information and the benefits of an information service alone do not justify the costs for farmers.⁹ However, bundling information services with digital agricultural products that tackle other smallholder farmer constraints (e.g. finance, market access) provides a more compelling value proposition to the farmer. Given that eGranary already offers these services, information services costs can be bundled into brokerage fees, interest, and input prices. There is also an opportunity to incorporate corporate sponsorship or advertising to cross-subsidize the costs of information services delivery. If EAFF decides to charge the farmer directly for eExtension, it should experiment with different incentive mechanisms for increasing farmer willingness to pay such as discounting the insurance premium or loan interest rates based

⁹ Jadhav, A. Nkonu, M. and Clause, V. 2013. "Mobile Market Information for Agri VAS Operators: A Quick Start Guide"

on subscription to the service due to the reduced risk the farmer presents when adopting the best practices eExtension services promote. In early phases, multiple approaches to pricing can be tested before committing to a single approach.

32. Mobile-enabled agent sustainability and cost of user acquisition. The project currently proposes an access to usage ratio of 70% to 30%; including the following targets: a) register 90,000 farmers, b) deliver the full services suite to 31,500 farmers, and c) provide mobile information services to 10,000 farmers. Given the high costs of outreach to register farmers, we recommend that the project aim to deliver information services to all farmers in the project. In addition, as detailed in the product design and deployment sections, there is also a need to include additional field agents. EAFF and the mission agreed to farmer to agent ratios as detailed below in Table 5. These field agents should not be paid staff but rather enterprise based, perhaps following the model and experience of TFC in Tanzania with youth services enterprises. These agents are critical to product uptake and quality assurance but represent a key cost-driver, particularly as the model scales. As a result, in the pilot, the cost of incentivizing agents should primarily be borne by the project due to the history NFOs have of not paying field staff on time. However, testing a brokerage model in which agents earn a commission and revenue share of eGranary services, should be tested early in the pilot to analyse whether the approach is viable and sustainable and if not, what other alternatives exist.

Location	Agent: Farmer Ratio	No.	Role
Uganda	<ul style="list-style-type: none"> Agents to SHF registrations: ~1:1,750 	30	Conduct ToTs with primary cooperative farmer leaders, oversee registration, conduct data verification, participate in B2B meetings, oversee input disbursement and product aggregation and sale
Rwanda	<ul style="list-style-type: none"> Agents to SHF credit users: ~1:550 	10	
Tanzania		20	

Competition. In East Africa, the technology provider space is crowded with multiple digital agriculture initiatives. Although the eGranary is highly innovative, there are a few other mobile solutions offering bundled services entering the market and it's likely the provision of more comprehensive solutions will increase in the future. While EAFF is uniquely positioned to drive uptake with farmers and convene diverse services providers, giving it a clear edge to competitors, the entry of other services providers will, at a minimum, create noise. Furthermore, proliferation of pilots in East Africa makes it difficult to identify which platforms offer robust, scalable, sustainable solutions and many initiatives stand up digital products that do not meet basic quality requirements. While this competition is a threat, it also presents an opportunity for EAFF to become a preferred platform that other actors can leverage rather than building their own (often poor quality) solutions. To do so, EAFF will need to consolidate its position in the market with a robust, enterprise level technology platform and accompanying processes and operations. It will also need to illustrate scale and viability early. Thus, it will be important to balance the need to focus on phasing the deployment for success with the need for a speedy go-to-market strategy.

Annex 7: Financial Management Country Notes

A. RWANDA

IMBARAGA		
1	Staffing	The finance department is not led by the Finance officer. The accounting officer is currently responsible of the financial management supported by the cashier. The position of finance officer is currently vacant.
2	Budgeting	The budget is prepared in line with the needs highlighted by the programme manager upon verification of the accounting officer. The level of details included in the budget is not currently meeting the IFAD requirements in terms of project components and categories.
3	Funds Flow/Disbursement Arrangements	IMBARAGA has experience in SOEs procedure as benefitting from the on-going SFOAP programme. Nevertheless, the capacity to deal in compliance with IFAD requirements in terms of reporting and procedure needs to be straightened.
4	Internal Controls	The authorization, custody and records keeping roles are given to different people to prevent fraud or errors. The president and the project coordinator conjointly approve every voucher. The roles and responsibilities within the organization shall be well defined and it should be not allowed the swap of responsibilities between two relevant positions such as the programme manager and the general secretary as happened in the past. The position of Finance and Administrative officer is currently vacant.
5	Accounting Systems, Policies and Procedures	IMBARAGA uses the SAGE software. This system provides cost allocations to the various funding sources, but it doesn't allow for the proper recording of project financial transactions in terms of allocation of expenditures in accordance with project components and IFAD categories. Basis of accounting: cash. The manual of procedures imposes clear selection procedures for contracts whose values is > 100 000 RWF. IMBARAGA is conversant with the quotation method and the procurement documents are properly filed. However, the internal manual of procedures including also financial management and procurement needs to be updated.
6	Payments	PAID stamp.
7	Cash and Bank	The projects expenditures are made only through bank transfers. The bank reconciliation is done according to the deadlines for submission of reports.
8	Safeguard over Assets	The fixed assets are recorded in excel spreadsheet and it is not integrated into the accounting system.
9	Other	There are no written policies on conduct.
10	Reporting and Monitoring	The periodic financial reports are elaborated based on the transaction list generated from the accounting system. The details in terms of project components and categories are manually included at EAFF level in view of the consolidation.

Annex 7: Financial Management Country Notes

		The supporting documents are properly organized in the archive in hard copy. The photocopies of the documents are regularly shared with EAFF as pre-condition for disbursement.
11	Information Systems	The financial management system is computerized by using SAGE system. Nevertheless, manual operations are needed to integrate the financial figures into the detailed SOEs template provided by EAFF. The system in place to “back up” financial records is not automatized; the back-up is assured by using external hard disk.
12	Internal Audit	N/A
13	External Audit	The external audit reports of the past 3 fiscal years are available. The audit reports show qualified opinions concerning one issue not solved over years concerning missing supporting documents for a plot of land apparently part of organization property.

NCCR		
1	Staffing	The financial department is composed of the accounting officer and the cashier. The finance officer is currently performing as executive secretary. The team needs to be strengthened in terms of capacities to properly perform activities related to financial management and procurements meeting IFAD standards.
2	Budgeting	The preparation of the projects budget is responsibility of the programme manager. The accounting officer is in charge only for budget monitoring. The level of information included in the budget sample revised by the mission is not complete as per IFAD requirements.
3	Funds Flow/Disbursement Arrangements	NCCR has not experience in IFAD disbursement procedures. The organization is currently managing 2 small Donors funded projects. The mission remarked weak capacities in terms of reporting and monitoring features needed to track the use of project proceeds.
4	Internal Controls	The segregation of duties is assessed as weak: for every transaction, there are two levels of signatories and control: the executive secretary and the accounting officer. The executive secretary is also covering the role of finance officer. In addition, he has the bank signatories together with the President.
5	Accounting Systems, Policies and Procedures	NCCR uses the accounting software SAGE that provides segregation by source of funds. Currently the system doesn't provide functionalities aligned with IFAD standards. The supporting documentation are filed in hard copies in the office archive.
6	Payments	PAID stamp.
7	Cash and Bank	The cashbook is not integrated into the accounting system. It is registered and updated in Excel spreadsheets. The cash and bank reconciliation are prepared on monthly basis.
8	Safeguard over Assets	The register of asset is regularly updated
9	Other	The internal code of conduct has been shared with members.

Annex 7: Financial Management Country Notes

10	Reporting and Monitoring	The reporting format and related level of information is tailored according to Donors 'requirements. The financial reports are not automatically generated, they are elaborated using excel worksheets. The mission assessed weak knowledge about the international Donors standards for financial reports such as the project components and categories of expenditure.
11	Information Systems	The financial system is computerized but it is not performing consistently for IFAD requirements.
12	Internal Audit	The mission analysed reports elaborated by the Internal control committee, nevertheless such reports are manually written and in national language. The internal audit committee is composed of 3 people who are members of the confederation, so that not consistently "independent".
13	External Audit	The institutional audit reports are not available. In the past, no external audit verifications have been carried out.

B. UGANDA

UCA		
1	Staffing	The financial department is led by the finance officer who is supported by one general accountant, 2 projects accountants and the cashier. Job descriptions and HR manual are available. The staff is recruited through renewable long-term contracts.
2	Budgeting	The project officer is responsible for the elaboration of budget, then the finance department carries out the needed verifications in terms of funds availability and correctness of selection process. In this regard, the procurement manual is available and defines the procedures by including a minimum number of quotations for assessment (no3). The minutes of procurement committee are not available.
3	Funds Flow/Disbursement Arrangements	UCA has experience in IFAD funded project being beneficiary of SFOAP programme. The finance officer is aware about the procedures for disbursement regarding the expenditure level to be reached for being entitled to request new tranche of funds. The supporting documentation is available in hard copy and in the context of SFOAP, it has been shared in form of photocopy.
4	Internal Controls	The segregation of duty is in place: for every transaction, there are 3 different signatories so that three levels of control (accountant, finance officer, cashier and then authorization of the secretary general).
5	Accounting Systems, Policies and Procedures	The accounting system in place is NAVISION. The system allows clear distinction by source of funding. The system currently can automatically generate transaction list, but it has not the needed functionalities to generate financial reports compliant with IFAD requirements in terms of project components and categories. Nevertheless, as per discussion, the system can be customized to include specific parameter in line with IFAD requirements. The chart of accounts should be revised to respond to IFAD standards.
6	Payments	PAID stamp
7	Cash and Bank	The transactions are processed only by means of bank transfers and cheques.
8	Safeguard over Assets	The fixed assets register is not currently integrated into the accounting system. The reconciliation is made according to specific need of requests.
9	Other	The organization has an internal code of conduct.
10	Reporting and Monitoring	The periodic financial reports are elaborated based on the transaction list generated from the accounting system. The details in terms of project components and categories are manually included at EAFF level. The supporting documents are properly organized in the archive in hard copy. The photocopies of the documents are regularly shared with EAFF as pre-condition for disbursement.
11	Information Systems	The financial management is computerized but it doesn't allow the generation of needed financial reports in terms of details requested by IFAD.
12	Internal Audit	N/A
13	External Audit	The external audit reports of the past 3 fiscal years are available. The audit reports show unqualified opinions. Nevertheless, the management letter provides several recommendations concerning the internal control. The mission underlined the need to follow up on the implementation of these recommendations.

UNFFE		
1	Staffing	The financial department is composed of the finance officer, 2 accountants, 1 compliance officer. The cost sharing related to the staff in charge for donors funded projects is based on the percentage of time allocation and it is available. The Job descriptions and HR manual are available. The staff is

Annex 7: Financial Management Country Notes

		recruited though renewable long-term contracts. The mission noted that the financial department is entirely composed of women.
2	Budgeting	The budget is originated by the project managers and then verified by the budget committee. The used budget format includes the planned activities, unit cost, quantity and total costs.
3	Funds Flow/Disbursement Arrangements	UNFFE has experience in IFAD funded project being beneficiary of SFOAP programme. The finance officer is familiar with IFAD procedures for disbursement. The supporting documentation is available in hard copy and in the context of SFOAP, it has been shared in form of photocopy.
4	Internal Controls	The segregation of responsibilities is well-defined. The functional responsibilities of authorizing the transaction, recording it and custody of assets are performed by different persons.
5	Accounting Systems, Policies and Procedures	The accounting system in place is NAVISION. The system allows clear distinction by source of funding. The system currently can automatically generate transaction list, but it has not the needed functionalities to generate financial reports compliant with IFAD requirements in terms of project components and categories. Nevertheless, as per discussion, the system can be customized to include specific parameter in line with IFAD requirements. The chart of accounts should be revised to respond to IFAD standards.
6	Payments	PAID stamp
7	Cash and Bank	The cashbook is integrated into the accounting system and the reconciliations are prepared on monthly basis. The expenses made by cash are regulated according to the petty cash policies which provides a maximum threshold of 500 000 Ugandan shilling for cash transactions.
8	Safeguard over Assets	The fixed assets register is available but not currently integrated into the accounting system.
9	Other	The policies against fraud, mismanagement of funds and conflict of interest are included into the HR and financial manual and are endorsed into the organization core values.
10	Reporting and Monitoring	The periodic financial reports are elaborated based on the transaction list generated from the accounting system. The details in terms of project components and categories are manually included at EAFF level. The reporting on SFOAP is submitted semi-annually. The supporting documents are properly organized in the archive in hard copy. The photocopies of the documents are regularly shared with EAFF as pre-condition for disbursement.
11	Information Systems	The system is computerized and there is a staff member responsible for the system maintenance.
12	Internal Audit	N/A
13	External Audit	The external audit reports of the past 2 fiscal years are available, the 2016 audit report is about to be finalized. The auditors gave unqualified opinions on the past audit report. In addition, also the specific opinion on the on-going projects have been produced and are available.

C. TANZANIA

MVIWATA		
1	Staffing	The financial department is composed of 5 people (2 women and 3 men): the finance officer, and 4 accountants. Each accountant has different responsibilities: i) cashier, ii) reporting, iii) ledger update and voucher elaboration, iv) reconciliations and transaction system. The job descriptions are available and attached to the contracts. To date, MVIWATA declare not having received any training in IFAD procedures.
2	Budgeting	The elaboration of budget is based on consultations with farmers groups member of MVIWATA. Then the finance officer proceeds with the verifications in terms of allocation and funds availability. The budget is submitted for clearance to the Board composed of 9 elected people from the farmers groups per each zone of membership. The final approval is a responsibility of the general Assembly. The staff is familiar with the format for budget of Donors funded projects.
3	Funds Flow/Disbursement Arrangements	MVIWATA has experience in IFAD funded project being beneficiary of SFOAP programme. The finance officer is familiar with IFAD procedures for disbursement and the needed documents. The supporting documentation is available in hard copy and in the context of SFOAP, it has been shared in form of photocopy.
4	Internal Controls	The segregation of duties is in place: the cashier prepares the voucher, the finance officer checks the correctness of procedures, the executive direct approves the transaction and the programme officer is responsible for submission of the requisition of expenditure.
5	Accounting Systems, Policies and Procedures	The accounting system in place is SAGE. The system allows clear distinction by source of funding. The system currently can automatically generate transaction list, but it has not the needed functionalities to generate financial reports compliant with IFAD requirements in terms of project components and IFAD categories. The categories of expenditure are currently aligned as per internal procedures. Nevertheless, as per discussion, the system can be customized to include specific parameter in line with IFAD requirements. The chart of accounts should be revised to respond to IFAD standards. The financial management manual is currently under revision for updates. In addition, the organization has also the operational and procurement manuals. The procurement committee is responsible for the selection and the related minutes are available.
6	Payments	PAID stamp
7	Cash and Bank	The cashbook is integrated into the accounting system. Cash and bank reconciliations are prepared on monthly basis.
8	Safeguard over Assets	The ledger is integrated in the system and it allows a basic registration. More details concerning the fixed asset are recorded in a Excel document.
9	Other	The HR manual includes a section of mismanagement of funds and conflict of interest.
10	Reporting and Monitoring	The periodic financial reports are elaborated based on the transaction list generated from the accounting system. The details in terms of project components and categories are manually included at EAFF level. The financial reports compare actual expenditures with budgeted and programmed allocations. The staff is familiar with different Donors requirements in terms of reporting as the organization is currently managing 8 donors funded projects (Irish Aid, SDC, IFAD, EC, USAID WeEffect, Transec). The supporting documents are properly organized in the archive in hard copy. The photocopies of the documents are regularly shared with EAFF as pre-condition for disbursement.
11	Information Systems	The financial management system is computerized. The maintenance is ensured by external service providers. The back-up system of financial report is regularly made by means of hard disk.
12	Internal Audit	The internal audit is ensured by outsourced people contracted to carry out internal control analysis. The person in charge of this task is a former employee of the audit company Deloitte, and he operates as external consultant. The internal audit reports are available.
13	External Audit	The external audit reports of the past 2 fiscal years are available, the 2016 audit report is about to be finalized. The auditors gave unqualified opinions on the past audit report. Nevertheless, the management letter provides several recommendations concerning the

Annex 7: Financial Management Country Notes

	internal control. The mission underlined the need to follow up on the implementation of these recommendations.
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TFC		
1	Staffing	The financial department is adequately staffed. The department is led by the director of finance and administration. The accounting section includes the chief accountant, the accountant and the cashier. The job descriptions are included in the HR manual and attached to the contract. The staff is recruited through long-term contracts renewable based on performances assessment. The organization has developed policies for trainings and a section for carrier development.
2	Budgeting	The elaboration of budget is based on consultations with members for definition of activities and budget allocation. Then the finance officer proceeds with the verifications in terms of allocation and funds availability. The budget is submitted for clearance to the Board. The final approval is a responsibility of the AGM,
3	Funds Flow/Disbursement Arrangements	TFC has experience in IFAD funded project being beneficiary of SFOAP programme. The finance officer is familiar with IFAD procedures for disbursement and the needed documents. The supporting documentation is available in hard copy and in the context of SFOAP, it has been shared in form of photocopy.
4	Internal Controls	The segregation of duties is in place: the head of department carries out verifications, then the transaction is signed by the CEO, the accountant and the cashier.
5	Accounting Systems, Policies and Procedures	TFC has recently upgraded the accounting system in place by choosing the system IGNITE. The objective of this change was also to be able to easily customize the parameters and the chart of accounts in line with Donors specific requirements. The implementation of this system is ongoing so that the staff is not in the position to provide feedback on the real applications.
6	Payments	PAID stamp
7	Cash and Bank	The cashbook is integrated into the accounting system. Cash and bank reconciliations are prepared on monthly basis.
8	Safeguard over Assets	The fixed assets register is computerized.
9	Other	TCF has clear regulation of staff conduct and in addition, within the organization, there is a unit responsible for conflict prevention management (CPM).
10	Reporting and Monitoring	The financial reports are generated from the accounting system (practice in place with the previous accounting system). Nevertheless, the details included in the financial reports follows internal reporting requirements. The information in terms of project components and IFAD categories were not generated by the previous system. The mission highlighted the need to carry out assessment on the new system as soon as it is operational. The financial reports compare actual expenditures with budgeted and programmed allocations. The staff is familiar with different Donors requirements in terms of reporting as the organization is currently managing 6 donors funded projects. The supporting documents are properly organized in the archive in hard copy. The photocopies of the documents are regularly shared with EAFF as pre-condition for disbursement.
11	Information Systems	The financial management system is computerized
12	Internal Audit	The organization organigram includes also the office for internal audit. This position has been vacant for the last year and half. However, the Board has deliberated the launch of the recruitment process.
13	External Audit	The external audit reports of the past 2 fiscal years are available, the 2016 audit report is about to be finalized. The auditors gave unqualified opinions on the past audit report.

Annex 8: Economic and Financial Viability

ANNEX 8: ECONOMIC AND FINANCIAL VIABILITY OF THE E-GRANARY

Table 1 Projected Profit and Loss of E-granary

		Phase (pilot) Jan-jun 2017	Phase 1 July 2017-june 2018	Phase 2 July 2018-June 2019	Phase 3 July -Dec 2019	TOTAL
		USD	USD	USD		
Farmers Registered on eGRANARY platform cummulative	Total Number	0,000	50,000	20,000	105,000	
Active & Qualified (eventually 30%)	Access credit to grow from 20% in yr1 to 25% in yr2 and plateau at 30% from yr3	0,000	10,000	20,000	1,500	
Transactions per year/farmer	Number of loans per farmer	1	1	1.5	1	
No of transactions	total Number for active farmers	0,000	10,000	30,000	1,500	
Transaction size (yield 1.5t=0.7 acre) expected income \$470	We are lending minimum 20% of the expected income	100	100	100	100	
Sales income (yield 1.5t=0.7 acr, \$20 per 90 kg bag= \$0.3per kg)	Total sales revenue	50,000	5,500,000	3,500,000	4,175,000	
Total loan book		0,000	10,000,000	15,000,000	1,150,000	2,250,000
Total Loan Revenue	Interest is 2% p.m or 24% p.a	2,000	20,000	60,000	78,000	70,000
Total Sales Revenue		3,500	35,000	105,000	25,250	78,750
<u>Other revenue (extension)[1]</u>						
Total Gross Revenue		5,500	55,000	65,000	103,250	1,848,750
Bad debt	Provisioned at 12% p.a.	-6,000	-20,000	-60,000	-89,000	-75,000
Salaries		-31,000	-246,000	-246,000	-18,000	-741,000
Other opex		-75,000	-75,000	-55,000	-30,000	-303,000
Capex		0	0	0	0	0
Ware housing costs [2]@3%		-13,500	-135,000	-405,000	-425,250	978,750
Marketing[3] and Advertising Expenses(18% of sales revenue phase 2 & 3)		-	-	0	0	0
Total running costs		-25,500	-276,000	-566,000	-1,062,250	-1,429,750
EBITDA		0,000	1,021,000	1,010,000	1,590,000	1,581,000
Interest(Cost of funds)	expected projected at 6% p.a.	-3,000	-30,000	-90,000	-124,000	-170,000
PBT		-503,000	1,051,000	1,091,000	1,530,000	2,798,000

[1] We have not made a provision for revenue out of extension services, because we wanted to see if the main revenue stream can generate enough resources to break even but also we want to introduce the extension product in phase II and then properly price it.

[2] These costs will be borne by the farmer associations.

[3] This cost shall be borne by the farmer organizations.

Engagement with MODE (draft information for MoU)

Following detailed agreements during start up an MoU using the following information would be expanded to include details of the relationship moving forward.

Background on Financial Partner - MODE

Mobile Decisioning Holdings Ltd (MODE) (www.mo-de.com) is a Kenyan based company, founded in 2010. It has expanded its operations to over 31 countries globally serving a total of more than 30 telecom partners. MODE business has a captive base of over 250 million users in Africa, Latin America and Asia. MODE operates from offices in 8 countries with over 150 employees and cooperates with large telco's like Tata, Reliance, Airtel, MTN among others. The company disturbed the market of microcredits by introducing nano-credits (0.05 – 10 USD), offered via the mobile phone. MODE has expertise in providing advance credit on future income like future salary, future phone credit acquisition and future utility payments. MODE has won a number of awards for their activities; providing access to credit for low-income households. Among the awards was The East Africa Entrepreneur of the Year (of the All Africa Business Leaders Awards), IBM Global Entrepreneurship award and the Most innovative Service award (MTN). In its 2015 financial year, MODE was able to lend out >500M USD and is therefore bringing this expertise to this partnership.

Terms of MODE Engagement

MODE's engagement in the eGranary is affirmed by their management team. MODE will assist the eGranary project by offering secure financing and assisting in the development of the loan products needed to facilitate the eGranary operations.

MODE Role and Responsibilities

MODE will be available to offer consulting and technical expertise to the eGranary project and assist the project in the following ways:

- i. Relationship with MODE in the provision of financial services and especially given tightening regulatory framework in operational countries relating to tele-communications and financial services (usage of FSP licenses);
- ii. Assist in rolling out of the credit systems (both at production and harvest time) to solve liquidity constraints faced by farmers,
- iii. Provide the credit facility to EAFF members at a competitive rate, they will do credit scoring to determine award of loans and shall create credit collection system that will de-risk both themselves from exposure and the cushion the farmer from default.
- iv. MODE will provide the IT- and payment-infrastructure and the credit to farmers. Funding for this will come from a number of banks (MODEs current bank guarantee costs are 5-9% p.a.; while cash loans vary from 15- 20% p.a.) that MODE has relationship with.;
- v. Similarly, a contract will be signed with MODE for the business technology and facilitating access to credit

Contract between EAFF and NFOs / Sample

Eastern Africa Farmers Federation

P.O Box 13747-00800 Tel: +254-204-451-691
Nelleon Place, Rhapta Road E-mail: info@eaffu.org
Westlands, Nairobi, Kenya http://www.eaffu.org

"PROJECT TITLE:

Work-plan and Budget for YEAR for ORGANISATION

This is a Contract Addendum made the day of and year of between **STEPHEN MUCHIRI** on behalf of the **Eastern Africa Farmers' Federation**, herein referred to as "**EAFF**" and *********, on behalf of the ********* herein referred to as *********.

1. This contract consists of the following supporting documents
 - (a) Annex 1: Description of activities and budget breakdown for *****
 - (b) Annex 2: Detailed budget breakdown for activities under this contract (attached as separate excel file)
2. The effective date of this contract is *****.
3. The contract completion date is *****.

This Contract is drawn in duplicate with one copy for EAFF and one for *****.

Nairobi, Kenya

*****;

For Eastern Africa Farmers' Federation (EAFF)

For *****

Stephen Muchiri
Chief Executive Officer

Chief Executive Officer

Annex 9: Examples of Agreements with different parties

Background

This is a Contract signed between the Eastern Africa Farmers' Federation (EAFF) and the ***** for activities related to the ***** Program in ****. The Addendum outlines the activities to be undertaken by ***** in *****.

Activities in 2014

EAFF is contracting ***** to conduct various activities related to the *****Program (SFOAP). The activities under this contract include:

Activities under Component 1 -

1. *****
2. *****
3. *****
4. *****

Activities under Component 3 -

1. *****
2. *****

Other supporting activities: ***** will participate in other related activities including:

5. Annual Regional Review and planning meeting:
6. Knowledge management workshop:

Deliverables of the contract

***** will submit an Semi-Annual Narrative and Financial report to the EAFF secretariat by *****and ***** of YEAR

The templates for both reports are attached.

Budget and payment schedule

- i. Budget: The budget for the activities under this contract is EUR *****
- ii. Payment schedule: Two payments will made:
 - a. 1st payment: *****), equal to 11% of the contract amount, to cover 50% of Activity 1, explained in Annex 1
 - b. 2nd payment: *****) equal to 89% of the total contract amount to cover all the other planned activities
- iii. Acknowledgement of receipt of funds: ***** will acknowledge receipt of funds as soon as possible, and also note the exchange rate at which the funds have been received.

Project management details

The contact details of the EAFF project management team are presented in Table 2 below:

Table 1: EAFF project management team

Position	Required details	Response
Policy Officer to manage the contract	Name	Mainza Mugoya
	E-mail address(es)	mmainza@eaffu.org
	Telephone contact(s)	+254731671465
EAFF Finance Manager	Name	Joyce Wanjiru
	E-mail address(es)	accounts@eaffu.org
	Telephone contact(s)	+254204451691

Annex 9: Examples of Agreements with different parties

Annex 1: Contract Budget

Budget summary for the activities under this contract is EUR ***** The detailed budget is attached separately in excel format.

Activities under Component 1:			
No.	Activity	Description	Budget (EUR)
1			
2			
3			
4			
	Sub-total for Component 1		
Activities under Component 3:			
6		•	
7			
	Sub-total fro Component 3		
	Total of Component 1 and Component 3		
	Administration costs (7%) of the total of both components		
	TOTAL		

Annex 9: Examples of Agreements with different parties

	RFO	NFO	NFO
CRITERIA	EAFF		
Contractual agreements	At the beginning of the project phase,a contract is signed between EAFF and the RFO in the same format and wording as is signed between EAFF and IFAD.The only difference is that the contract does not mention amount expected in the entire phase of project because this varies depending on approved AWPB and emergent issues and activities.For each year,a contract addendum is signed and this shows allocated amount and activities for which this has been provided.		
Conditions for disbursement	The NFO'S prepare one AWPB but should receive funds in two instalments based on activities .The implementation period is divided into two parts,and funds for the first part disbursed.For the NFO to qualify for the second instalment of funds,they must account for at least 75% of the previous tranche.However,the NFO'S have been receiving funds once due to short implementation periods a a result of delayed funds.		
Reporting requirements	The NFO'S should send a report for every tranch of funds received together with a payment request for the next tranch.In the last quarter of every year,EAFF organises a planning meeting bringing together the finance and project officers of all NFO'S .In this meeting 1.The NFO'S elaborate their AWPB 2.Finance officers provide all supporting documents to the EAFF accountant.This ensures accuracy and timeliness in receipt of the supporting documents. 3.In the event that an NFO does not provide sufficient supporting documents,then the accountant visits the organisation.Further disbursements to this organisation is put on hold.		
Cordination and monitoring of NFO	EAFF has simplified the MOP for ease of use by the members.EAFF has also designed budgeting and reporting templates that are descriptive and easily references to the supporting documents.EAFF does not ask members for a special bank account.EAFF does not ask for special audits on SFOAP but the heads on NFO' sign statements of responsibility supporting the reports submitted before they sign the next contract addendum.The reason EAFF does not compel the NFO to open a dedicated account is because funds received are not significant and are for few activities.This would mean the account is left dormant for long periods of time.Visits are organised to NFO's that are facing challenges.Email and telephone correspondences are made for backstopping challenges the NFO'S may be faced with.		

Statement of Responsibility

Re: Grant Number: _____

Project Name: _____

On behalf of (name of Recipient), I hereby confirm that all Statements of Expenditure submitted in connection with the above-referenced Grant are true, fair and complete in all material respects that all of the proceeds of the Grant have been spent for Eligible expenditures as defined in paragraph 6.1 (viii) of the Grant Agreement between EAFF and (name of Regional Farmer Organisation) and that neither (name of Recipient) nor any of its employees or agents have engaged in corrupt, fraudulent, collusive or coercive practices with respect to the Grant.

The total amount received from the "name of RFO" for Grant is as below:

Activity name	Amount received as per budget	Amount spent
TOTAL		

I declare under penalty of perjury that the foregoing is true and correct.

Date:

Signed:

Chief executive Officer