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Kilimo Trust

Transforming Lives Through Agribusiness

CASE STUDY

KILIMO TRUST'S CONSORTIUM APPROACH TO VALUE CHAIN DEVELOPMENT

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BACKGROUND AND PROJECT DESCRIPTION

Between 2018 and 2021, Kilimo Trust (KT) implemented the second phase of the Regional East African Community Trade in Staples (REACTS-II) project as a continuation of REACTS-I (2014-2017). Commissioned by the Alliance for a Green Revolution in Africa (AGRA), REACTS-II was designed to directly support smallholder farming households and other value chain actors across three East African Countries (Uganda, Kenya, and Rwanda) to take advantage of structured national, regional, and opportunistic international markets for agricultural products.

REACTS-II was driven by the premise that limited access to guaranteed markets is one of the key constraints hindering commercialization of agriculture by smallholder farmers and general development of agricultural value chains. Often markets targeted (both local and national) are small or not sufficient to drive economies of scale and profitability for smallholder farmers. Moreover, in most cases there is limited movement of produce from surplus areas to deficit areas. As a result, there is surplus production in one country but limited market access while a neighboring country experiences starvation. The same is true within country borders, where there may be pockets of surplus and deficit.

As such, Kilimo Trust's overarching goal with REACTS-II was to increase smallholder farmers' income by tackling identified value chain challenges which hamper smallholder farmers' access to markets. This entailed delivering a market systems approach aimed at addressing the limited coordination of local agricultural value chains, which in turn was leading to minimal or nonexistent trade of smallholder farmers' produce. To this end, Kilimo Trust facilitated the formation of alliances[1] and business consortia[2] as part of its approach: "KT's Consortium Approach to Value Chain Development (KTCA2VCD)".

This case study provides an opportunity to dive deeper into REACTS-II and draw learnings from the implementation of KTCA2VCD. As such, this study contributes to the AMEA Network's learning agenda and future activities by:

- **Using the evidence base from REACTS-II to evaluate the approach.**
- **Using the learnings to contribute to AMEA's Toolbox continuous development.**
- **Transferring the learnings into the next phase of programmes undertaken by AMEA members and partners working with market systems development approaches. The aim is more effective and coordinated programming that leads to systemic change and transformation.**

As a result, this case study report brings about an expansion of our knowledge regarding interventions for cross border trade, human capital investment, facilitation and collaboration. This in turn leads to lessons on sustainability and scalability for future interventions.

[1] Alliance - regional collaboration of programs, projects, public and private sector partners formed for mutual benefit to ensure complementarities or synergies between programs and projects.

[2] Business Consortia - arrangements that enable business operators and supporting actors, who work independently on "spot market basis" in the value chain, to come together and form new and more efficient structured business partnerships.

SPECIFIC OBJECTIVES, PROGRAM SITE AND TARGET GROUPS

The project aimed to increase incomes by 20% for 315,795 smallholder farming households (105,265 direct and 210,530 indirect beneficiaries) and 5% for other value chain actors (SMEs). This was to be achieved through: (i) strengthening and expanding access to input and output markets, and (ii) improving the efficiency of value chain coordination.

The project interventions focused on the maize and bean value chain in Uganda; beans, green gram and potato value chain in Kenya; and rice and bean value chain in Rwanda. The project was implemented in 12 districts in Rwanda, 25 districts in Uganda and 10 counties in Kenya (see Figure 1). Intervention areas were chosen based on the levels of production of target commodities, existence of farmer organizations and off-takers' preferred areas of sourcing.

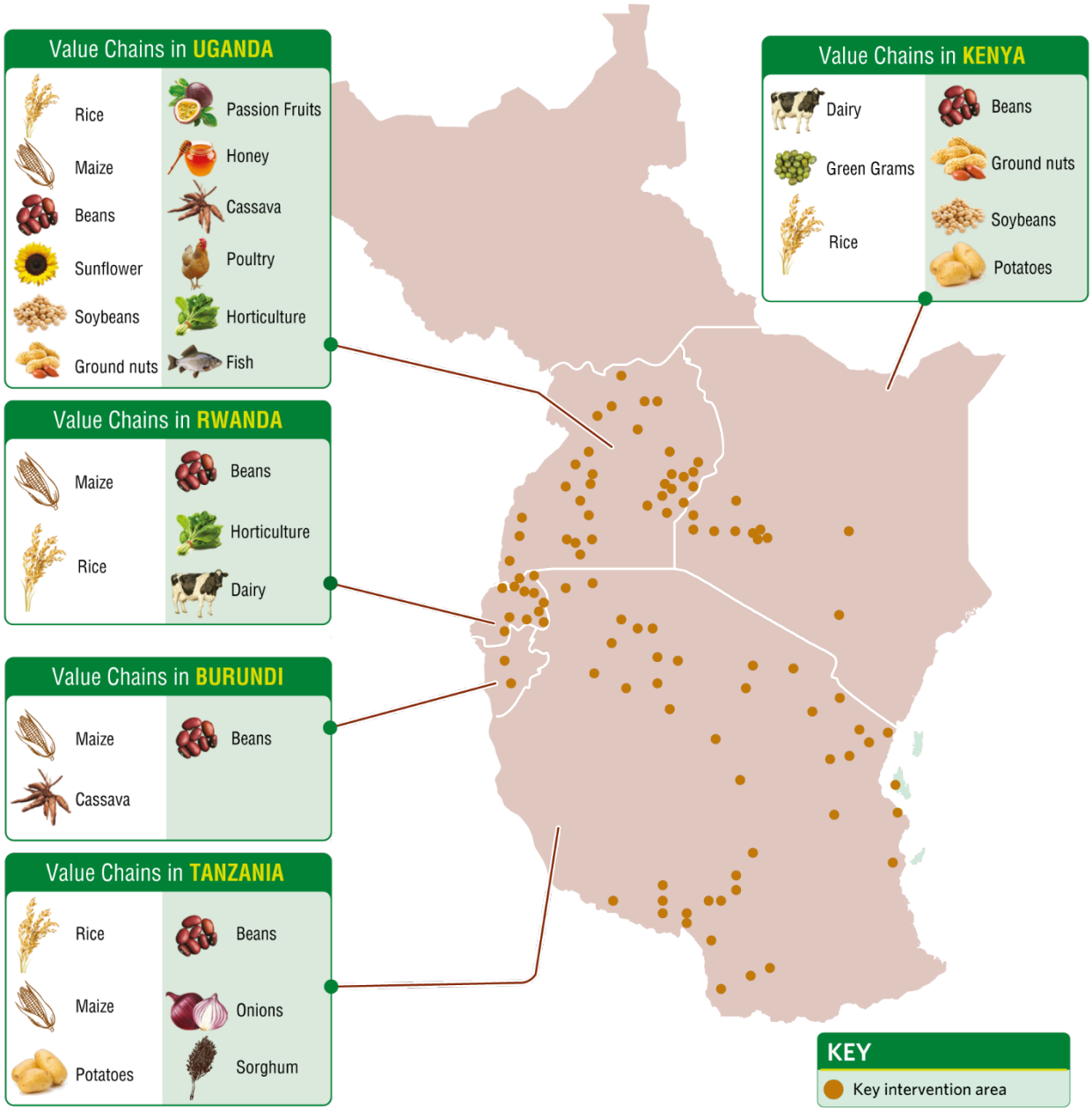

Figure SEQ Figura * ARABIC 1: Areas of implementation of REACTS II

THE CONSORTIUM APPROACH TO VALUE CHAIN DEVELOPMENT

KTCA2VCD is a facilitative model. It focuses on the formation of alliances and business consortia, leveraging market off-takers and aggregators as 'anchor partners' to provide a market pull and crowding-in of value chain partners. In order to facilitate the development of alliances and business consortia and consequently strengthen value chains' ties, the KTCA2VCD approach includes the following steps:

1. Undertaking market assessments to identify opportunities, value chain actors and the market requirements in the areas.
2. Engaging, profiling, and undertaking due diligence on Business Development and other services providers that would invest and be willing to establish linkages with value chain actors
3. Identifying, profiling, assessing, and engaging business-oriented smallholder farmer organizations that are ready and willing to work with identified partners.
4. Documenting and prioritizing the critical constraints which could hinder development of the whole value chain.
5. Developing business cases to crowd in necessary and sufficient private and public partners who would invest in the relevant nodes of the value chain
6. Finally, undertaking capacity building of different actors on identified gaps and mentor established partnerships. This involves the matching of interested business development services (BDS) providers with value chain actors to deliver specific training to address those gaps.

As such, the approach depends strongly on well-prepared facilitators, who are apt in undertaking market assessments, building trust among value chain actors, and convening interested parties. These facilitators are typically from Kilimo Trust (lead facilitators), Government, and private institutions. The approach is also based on the use of profiling tools to inform the facilitation of partnerships, as well in the delivery of training according to value chain actors' needs.

Under REACTS-II, alliances were formed between development partners (through on-going and past projects), private sector and governments. Business consortia included actors such as farmer organizations, off-takers, Business Development Services (BDS) providers and other Business Services providers (e.g. input suppliers, suppliers of production and post-harvest handling technologies, financial institutions).

VILLAGE AGENT MODEL

Additionally, to guarantee increased participation of youth and women while also creating new job opportunities, Kilimo Trust adopted a village agent model for REACTS-II. It aimed to strengthen relationships between the farmers and traders through employment of trusted Village Agents (VAs) who could provide direct services to farmers. KT considers this a self-sustaining model because it is demand-driven and there is a monetary benefit for all players involved. In practice, village agents would purchase produce on behalf of buyers and foster high quality production by offering extension services and inputs. These VAs bring services closer to underserved farmers.

DELIVERY OF THE MODEL

The delivery of the KTCA2VCD was extensive in the three countries. A total of 33 consortia were formed, including more than 200 farmer organizations, over 40 off-takers, and numerous BDS providers (Table 1).

Table 1: Delivery of the model by country

COUNTRY	CONSORTIA	DIRECT BENEFICIARIES	FARMER ORGANIZATIONS	OFF-TAKERS*
Uganda	15	55,123	80	17
Kenya	8	21,818	76	15
Rwanda	10	34,304	45	15

*Unique off-takers in the country. Across the countries there is an overlap of some off-takers

Under this model, farmer organizations and the other value chain actors received services through the consortia that were formed. Farmer organizations would receive inputs and seeds. BDS would also be provided to farmer organizations and value chain partners, in accordance to the diverse consortia agreements. This would guarantee the necessary training for farmers to deliver produce according to the quantities and quality demanded by the off-taker partners, as well as guarantee the preparedness of the value chain as a whole to provide services and markets to farmers. Finally, the approach also included an access to finance component, ensuring financial services were leveraged within the alliances and consortia and timely allocated where needed.

Smallholder Irrigation kit in Tharaka Nithi, Kenya

SELECTION OF FARMER ORGANIZATIONS AND VALUE CHAIN ACTORS (VCA) PARTNERS

When selecting the beneficiaries for the project, Kilimo Trust intended to build on successes of previous and current projects for the targeted value chains, including establishing linkages with USAID, AGRA, and other donors' prior investment. Past achievements were identified by reviewing project evaluation reports and exit/sustainability plans. When selecting farmer organizations for example, these reports informed Kilimo Trust's work to categorize farmer organizations in four levels of performance according to five pre-selected indicators:

1. Attractiveness to financial institutions and use of own financial resources (i.e. savings) for basic farm operations
2. Destination of production to pre-established markets, preferably with a contract
3. Profits and revenues
4. Yield vs. potential yield
5. Post-harvest losses

This categorization also helped indicate the level of effort required to train farmer organizations and the type of training and services that the different consortia would have to focus on.

VCA PARTNERS

In order to find adequate partners for the needs of the farmer organizations, as well as to create long-lasting synergies among actors in the business consortia, Kilimo Trust profiled and assessed several VCAs through a capacity needs assessment tool. KT was able to establish these actors' skills and potential to efficiently participate in the project.

Off-takers were profiled to ensure farmer organizations would have trustworthy business partners. The criteria for the off-takers were:

1. Able to guarantee markets
2. Capable in handling a minimum 1,000MT of produce per season
3. Willing to work with farmer groups to strengthen their supply chain by engaging in formal arrangements
4. Investment in aggregation or processing facilities to build partner confidence
5. Demonstrate a good track record as off-taker working with farmers

BDS providers were also profiled in one-on-one meetings with Kilimo Trust's staff in order to identify the most suitable matches to meet the VCAs' needs. Hereafter, business to business meetings were organized to provide a platform for partners to interact and work with smallholder farmers and SMEs to meet identified gaps.

Financial institutions were also invited for consortia-forming meetings. Those that were ready to work with the REACTS-II VCAs were considered for partnership. Financial institutions embraced the idea, since many could use a consortium setting as a platform to market their services and, some, would be able to achieve their specific goals for farmers outreach.

Ultimately, the project worked with 24 input companies across the three countries (6 in Uganda, 6 in Rwanda and 12 in Kenya), 10 providers of post-harvest technologies (2 in Uganda, 5 in Rwanda and 3 in Kenya), and 21 financial institutions (6 in Uganda, 9 in Rwanda and 6 in Kenya).

VCAs were also asked to highlight the areas which members desired the project to address during implementation.

DELIVERY OF TRAININGS

Upon identification of the gaps that needed to be addressed, REACTS-II created five training manuals and updated another seven (Annex I) which had been used in previous projects such as REACTS I. Manuals were translated into Swahili and Kinyarwanda and trainings were delivered by a combination of actors, including Kilimo Trust's staff, consortia partners' extension staff, village agents, financial institutions, government extension staff, and lead farmers.

The training manuals included topics such as Good Agronomic Practices (GAPS) and safe use and handling of agro-inputs. Specifically to REACTS-II, there were also topics on post-harvest handling, quality, and standards manuals for the targeted commodities. More business- and commercial-oriented topics were also part of the training. Trainers provided manuals with modules on cooperative leadership and governance, product development and branding, business skills, contracting and negotiation, financial literacy, business planning and record keeping, collective bulking and marketing, and trade requirements and procedures.

The manuals were used by both Farmer Organizations and other VCAs (Table 2), however some manuals were used exclusively to address particular needs of VCAs based on the identified gaps.

Table 2: training topics per target group

TARGET GROUP	TRAINING TOPICS DELIVERED
Smallholder farmer level and cooperatives/groups	Cooperative management and registration; financial literacy; record keeping; and business planning support.
Traders, processors, and exporters	Business and financial management, (including record keeping); governance; strategy and business/investment plan development; upgrading for equity financing; branding, labeling, and packaging; post-harvest handling; and quality management systems.

The Training of Trainers (ToT) was based on the objectives for the different training needs. In total, there were five phases of ToTs, each lasting two months. The mode of training was determined by the type of training that was to be conducted. For example, demonstration plots were used for training on GAP. The ToTs included village agents, farmers leaders of farmers groups, and agronomists. In turn, the trainees were required to train other actors from their respective areas/groups they represented (i.e. farmers).

The support for BDS providers and trainers to continue training smallholder farmers and traders was constant for almost the entirety of the 3-year program.

COSTS AND TIMELINE

A typical consortium will have one large buyer/ processor, 1-2 input suppliers, a financial institution, involve about 100 geographically-dispersed village agents, and reach out to 500-12,000 farmers depending on the commodity being traded. For grains, the number of farmers will be on the higher side while for livestock, cash crops, and other high value crops the number of farmers reached will be on the lower end.

The establishment of a single consortium takes place after six months of preparation (e.g. profiling, match-making, updating and translation of manuals) and costs approximately 100,000 USD. This cost caters for profiling VCAs, meetings conducted, and staff time.

Following the establishment of a consortium, BDS is delivered in phases and per topics on a seasonal basis. The BDS (e.g. capacity building training) were conducted more than once within the first year, so that the project beneficiaries could master the training subjects.

For farmer organizations and SMEs who were coached and mentored on BDS, the capacity needs assessments were done within the first 1.5 year and in two phases of eight and seven months each. The customization and updating of training manuals were done based on the needs identified.

The whole approach took 2 years and over the course of the 3 years there were 33 consortia strengthened (from previous projects, such as REACTS) or newly established. VCAs were also supported through BDS. The entire REACTS II project cost was approximately USD 1,4 million. The direct beneficiaries were over 110,000 farmers in 201 Farmer Organizations. This equates to an investment of USD 13 per farmer and USD 7,000 per Farmer Organization over 3 years. This is a relatively modest investment considering the results that were achieved.

Upgraded store for Abiyunze Kinazi, Rwanda

RESULTS

As mentioned, the primary objective of REACTS-II was to increase incomes by 20% for 315,795 smallholder farming households (of which around 110,000 were direct beneficiaries) and 5% for other value chain actors. This was to be done by strengthening and expanding access to input and output markets, and improving value chain coordination efficiency (secondary objectives).

KT tracked increments in gross margins as a proxy for income increment. This is because conducting a full-scale household survey was not possible, as it would be expensive and time consuming. KT believes the gross margin increment translates into increased income for smallholder households due to the increased volumes produced by farmers (compared to the baseline) and to the signing of contracts agreeing on minimum prices. As such, even when prices dropped during COVID-19 lockdown periods, farmers could still count on increased income due to the higher volumes of produce commercialized.

The average gross margin across all countries increased from USD 185.5/MT to 357.2/MT (a 92.6% increment).

Despite not collecting information at farmer level, it is possible to infer that the project has – at least generally – succeeded in increasing incomes of beneficiaries. As we will see in this section, the project was successful in promoting the adoption of technologies that increase agricultural production, in reducing post-harvest losses, and in increasing the use of structured markets. It also strengthened and expanded business development, financial and risk management services, capacity for farmers and other value chain actors, and it strengthened partnerships with governments and development partners' (such as USAID, AGRA) investments in agriculture.

As such, access to (inputs and output) markets was guaranteed, which led to an increase in yields and volume of sales (MT) in the targeted value chains. More than 150,000 MT of produce had been commercialized by the end of the project. This is 27% more than expected, leading to higher returns, illustrated by over 63 million USD in value of produce sold to markets (56% more than targeted).

Together with the figures on the increments in volumes of commodities bulked and collectively sold by cooperatives, the indicators mentioned above were used as proxies for assessing the achievement of Kilimo Trust's objective. As follows, we will expand on the elements that lead Kilimo Trust to believe that the project was successful in its objectives, including the secondary ones.

However, before delving into these elements, it is worth having a look at the overall performance of REACTS-II, which was better than originally expected.

HIGHER PERFORMANCE THAN ANTICIPATED

Insofar as the REACTS-II project performance is concerned, Key Performance Indicators (KPIs) had been identified at the beginning of the project, together with AGRA. By the end of the three years, it was clear that the KPIs were satisfactory at approximately 110% of original targets.

Table 3: Key Performance Indicators (KPIs)

INDICATOR	CUMULATIVE PROJECT PERFORMANCE AGAINST SET TARGETS		
	Overall Target (P)	Cumulative Achievements (A)	Overall Performance (A/P) *100
Number of smallholder farming households benefiting from at least one project intervention	105,625	110,662	105%
No. of SMEs in inputs and output markets supported	100	94	94%
No. of women owned/led input and output market enterprises along the focus value chains supported	14	15	107%
Number of youths owned enterprises supported along focus value chains	16	16	100%
Number of youths providing (VBAs) providing technological services or engaged in trade along focus VCs	500	416	92%
Quantity of inputs (certified seeds and fertilizers) procured (MT) by SHFs	7,235	9,083	125%
Quantity (MT) of produce sold through established business linkages	120,00	152,715	127%
Value of produce (USD) sold to markets	40,560,000	63,125,924	156%
Value (USD) of loan leveraged from financial institutions	1,500,00	1,651,456	110%
Number of SHFs accessing financial services	25,00	23,562	94%
Number of SMEs accessing financial services	10	10	100%
Number of individuals who have received REACTS-II project supported short term agricultural sector trainings	80,000	111,813	140%
Value (USD) of new public and private investment in agriculture sector leveraged by REACTS-II	3,500,00	4,648,931	133%

FORMATION OF ALLIANCES AND BUSINESS CONSORTIA

The formation of business consortia and alliances between government agencies and private sector partners are likely the key element to understanding why REACTS-II was successful in expanding access to input and output markets and improving value chain coordination efficiency.

Through consortia, farmers were connected to input markets and BDS provision. Off-takers were linked to bigger aggregators to ensure that they had enough market for farmers' produce. And BDS providers had a market for their services. Therefore, by forming business consortia and investing in facilitation of relationships built on trust, Kilimo Trust succeeded in linking the main actors that are necessary to create a conducive ecosystem for improved smallholder farmer production and commercialization of produce.

The formation of these consortia also developed relationships where innovation could take place. For example, aggregators from Uganda and processors/off-takers from Kenya had opportunities to visit each other during organized exposure visits. This was a milestone in the advancement of trade between the two countries. Kilimo Trust believes that the exposure visits provided a good environment for networking, trust building, and developing linkages for facilitated cross border trade as well as new stable output markets for some farmers.

Alliances were also key for the success of the project, as they also served to build (or complement) relationships based on trust with key partners such as government agencies and private sector partners. For example, in Uganda, KT worked with the National Agricultural Advisory Services (NAADS) to procure eight tractors for cooperatives (TAABU, Bushika, ZAABTA, Twezimbe, Muhoro, Kyazanga, and Lwamata ACE). From government agencies and on-going projects run by development partners, KT worked with partners like NAADS, ACDP, AVSI, USADF, MAAIF among others, to support project implementation activities. In Rwanda, because of partnerships with government agencies and on-going projects run by development partners, KT and partners such as CIAT, RAB, WFP, NAIS, ENAS, among others, will be able to support project implementation activities.

Kilimo Trust's approach ensured government and strategic partners buy-in and engagement. These further reinforced the institutionalization and chances of continuation of newly formed alliances, consortia and/or still informal farmers groups.

The table below summarizes some key buy-in examples from governments in the respective countries.

Table 4: Examples of government engagement per country

COUNTRY	GOVERNMENT ENGAGEMENT	ROLE
Uganda	Mubende District Production and Marketing Office.	The district helped to identify farmer groups to partner with REACTS-II who would then be profiled and their readiness to partner with the project established. Popularized the maize Ordinance through the radio talk shows to the community and post-harvest handling training. The district qualified extension staff, with facilitation from REACTS-II, reached out to farmers to conduct training.
Kenya	County Governments Agricultural Departments e.g., Nyandarua, Tharaka Nithi, Nandi, Meru, Nakuru, Elgeyo Marakwet, Siaya, Kisumu and Makueni Counties.	The sub county agricultural officers trained REACTS-II supported farmers under the Tharaka Nithi Green Grams Consortium on GAP and business skills. As a result of such partnerships, 25 demo sites were established, 4 field days were held, and 6,742 farmers trained on production and post-harvest practices
Rwanda	Rwanda Agricultural Board (RAB)	The RAB officials in charge of Rice Programs helped to understand the gaps that required immediate attention by REACTS II and proposed strategic partners that would be engaged to ensure successful implementation of the project.

ACCESS TO TRAININGS AND SERVICES

The training and services provided via the consortia formation arguably represent another success factor for REACTS-II. Across the three countries, the project trained 115,267 farmers (61,198 males, 54,069 females, of which 30,290 were youth) and other VCAs in different identified needs through 1,843 training events. A breakdown of the trainings is provided below:

18,009 farmer representatives (10,695 males, 7,314 females, of which 5,255 were youth) attended business skills training. The training centered on changing farmers' mindset to not focus on price, but rather to concentrate on reducing their production costs while targeting the economies of scale for sustainable business relationships. In addition, farmers representatives learnt how to improve their record keeping and negotiate for better contracts with the buyers.

932 farmer representatives (511 males, 421 females, of which 209 were youth) attended group dynamics, leadership, and governance training.

20,512 farmer representatives (11,550 males, 8,962 females, of which 6,306 were youth) attended EAC grain standards, food safety and post-harvest handling training.

71,258 farmer representatives (36,312 males, 34,946 females, of which 17,454 were youth) attended training on agronomy (including climate smart practices such as safe use of agrochemicals).

5,344 farmer representatives (2,734 males, 2,610 females, of which 1066 were youth) attended training on financial literacy.

In partnership with Kilimo Trust, input suppliers trained farmers in production practices and in reducing post-harvest losses. The outcome of these trainings has shown significant improvements in capacities of farmers and agri-cooperatives/SMEs' performance.

In total, REACTS-II established 70 business linkages between input suppliers (seeds and fertilizers) and smallholder farmers for increased access to productivity enhancing, cost reducing, and labor-saving technologies (especially seeds and fertilizers). Across the three countries, REACTS-II worked with 24 input companies/dealers that have been linked to 56,250 farmers. Over 142 demonstration plots were established, 80 business to business meetings/workshops held, and 28 input promotional events/field days organized to facilitate access to quality inputs.

Finally, the project has upgraded 35 storage facilities through matching grants with the cooperatives. As a result, 9,032MT of inputs were procured by 48,832 smallholder farmers and at least 36,400 smallholder farmers accessed proper post-harvest services and technologies through their cooperatives or village agents.

ACCESS TO FINANCE

In addition to the results reported above, the project also supported 23,045 VCAs to access US$ 1,692,552 in financing from 21 financial institutions. Of the VCAs, 37 were SMEs (including cooperatives) which accessed USD 616,011. The remainder was accessed by smallholder farmers. To enable access to finance, the project organized 99 business meetings between financial institutions and different VCAs to establish business linkages, supported 12 SMEs to develop or update their business plans and trained 5,344 farmers on financial literacy and handholding of applicants through the loan cycle process.

Kilimo Trust is confident that actors are very capable of accessing financing on their own now that the project is over. Prior to REACTS-II, most of the hurdles in accessing finance revolved around formalization of businesses, record keeping and having the necessary backward and forward linkages to sustainable supply chains and profitable markets. Kilimo Trust is confident that these hurdles have been addressed.

Financial literacy training also contributed to the reinforcement of capacities of 11 existing SACCOs (Savings and Credit Cooperative Organization) in the three countries, hence reducing dependency on financial institutions which often charge high interest rates.

Kenya grain buyers during the business trip to Uganda

DIGITAL SUPPORT

Several apps have been used throughout the project to facilitate interactions amongst VCAs, especially since the COVID-19 outbreak. Through WhatsApp for instance, participants shared information about what they had to offer (produce, quantity, and location) and what they required. With this information, buyers were able to map out the suppliers. This in turn enabled the different stakeholders to carry out transactions at reduced costs as it did not require physical movements to identify produce on offer.

In addition, Kilimo Trust implemented its UZA EAC App, developed in 2016. For REACTS-II, the app was used for the marketing of commodities and connecting potential business partners. It provided stepwise and simplified information on what was already possible under the East Africa Community Common Market (EACCM) to facilitate cross-border trade and information on prerequisites for obtaining required documents to either export or import to any of the EAC countries. KT notes that once users built strong network connections through the UZA App, often most users end up resorting to the use of other social media to continue developing their personal and commercial relationships. As such, the traffic of the UZA App tends to decrease with time, continuing to be used mostly for the stepwise functions about the necessary documentation for commercialization of produce in EAC countries.

In contrast, another app used during the project implementation, the Ezzy Agric App, still has high traffic of users. The app is mostly used by farmers to access inputs like seeds, fertilizers, and farm tools. It requires the user to download it, register their details and place their order for the inputs they needed via the platform and payment was made using mobile money services. Upon payment, the inputs are delivered at the farmers' desired location.

ADDITIONALITY OF THE VILLAGE AGENT MODEL

Finally, given the facilitative scope of the model implemented, which was strongly based on value chain relationships, it is worth mentioning the additionality of the Village Agent Model integrated to the project by Kilimo Trust.

The village agents earned money and commissions from the agro-inputs sales and services they offered, such as pesticide spraying, shelling, threshing, pulping, hulling, drying, produce buying, and bulking. Village agents offered these services at costs that most farmers were willing to pay.

Through this model, village agents trained over 55,123 farmers on different topics, especially good agronomic and post-harvest practices. Therefore, at the same time that village agents offered affordable services, they also empowered farmers to make informed decisions on agricultural production, post-harvest and market related issues and created new job opportunities, especially for youth and women (who were the primary target). This led to improved quality and production that will likely result in better incomes and livelihoods.

It is worth noting that KT selects VAs based on their previous involvement with commerce/ business in the communities where they operate. That is, becoming a village agent is an additional source of income for the agent. It is not their main source of income, as they integrate the VA activities in their existing business operations. This is a deliberate strategy adopted by KT to strengthen the sustainability of the Village Agent Model. In KT's experience, this results in the continuation of the model years after the end of programs.

CHALLENGES AND MITIGATION

So far, this report has outlined key elements which contributed to Kilimo Trust achieving their objectives. However, it is also useful to acknowledge the challenges faced and the mitigation strategies adopted to provide lessons for future project designs.

COVID-19 OUTBREAK

COVID-19 was a key challenge during the implementation of REACTS-II. The project approach required a significant amount of interaction among different stakeholders both within and across borders, which was affected by the COVID-19 outbreak. For example, restricted movement and even a full lockdown and the prohibition of public gatherings significantly slowed down the delivery of BDS. Training was not conducted, access to agro-inputs was hindered, and there was limited ability for agribusinesses to effectively meet ongoing loan obligations due to economic shocks. National and regional trade was affected due to closure of country borders and of institutions that were a source of market for the agricultural produce.

To mitigate this challenge, farmers were encouraged to adapt the use of digital platforms like Ezzy Agric APP to access inputs and WhatsApp and UZA App to access market/trade (the latter only available in Uganda). The use of digital platforms facilitated quick transactions among the stakeholders.

POLITICAL HINDRANCES

The unstable political environment between some countries hindered and affected the performance of the project. For example, the closure of the Uganda-Rwanda Border and the ban on importation of maize from Uganda and Tanzania by Kenya, led to reduced traded volumes and values. To mitigate these two challenges the following actions were taken:

- **For the closure of the Rwanda-Uganda border, the project explored alternative markets like Kenya and Democratic Republic of Congo (DRC).**
- **For the ban of maize importation by Kenya (due to presence of aflatoxins in maize from Uganda), the project intensified efforts to support Kenyan importers and Ugandan exporters to meet set standard requirements through ensuring proper observance of post-harvest handling practices like proper drying, use of clean equipment and storage facilities throughout the value chain.**

NATURAL DISASTERS

In Rwanda, prolonged dry spells and floods affected bean and rice production which greatly impacted bulking, aggregation, and trade. For instance, floods led to crop and market infrastructure (such as bridges) destruction in rice schemes, which in turn affected production and trade.

To address these challenges, farmers were encouraged to conduct field preparation and planting in a timely manner in order to reduce the drought impact. In addition, REACTS-II introduced agricultural insurance to its beneficiaries through the National Agriculture Insurance Scheme (NAIS).

In Uganda, the fall armyworm and yellow mottle virus posed a serious threat to maize and rice production which resulted in tremendous yield decrease. This led to reduction in volumes harvested, bulked, aggregated, and traded. To address this challenge, REACTS-II partnered with the fall armyworm control project funded by AGRA and implemented by NARO to popularize best practices for fall armyworm management.

SIDE-SELLING

Side-selling of produce by some partners made it difficult to trace transactions. To mitigate this challenge, secretariats of several off-takers intensified record keeping of the transactions. This is meant to be used for future reference. Border crossing documents and bank slips are also being recorded. In addition, efforts were made to establish an online system for traceability of the traders (i.e., managing orders, tracking orders and money transfer) through the off-takers.

LESSONS AND INPUTS FOR FUTURE IMPLEMENTATION

Given the results and challenges, the following lessons were generated for future project implementation:

LOCAL, NATIONAL, AND CROSS-BORDER TRADE

To achieve its objectives, links to local, national, and cross-border trade were crucial for Kilimo Trust's approach. The key lessons in this regard extracted by KT from REACTS-II are:

To enhance cross-border trade

more investments are required towards SMEs support for certification. That is, establishment of quality management and assurance systems, investment in post-harvest handling appropriate technologies (especially drying facilities and aflatoxin testing), and coordination of logistics.

To increase national and regional trade

there is a need to promote multi-sectoral approaches to enhance synergies and collaboration.

The project strengthened value chain actors' associations, which are instrumental in helping their members to participate in local, national, and cross-border trade.

INVESTMENTS IN HUMAN CAPITAL, INFRASTRUCTURE, AND IN DIGITALIZATION

REACTS-II improved human capital (in terms of skills and knowledge) and institutional capacity, especially SMEs (including farmer organizations and individual farmers). It also upscaled the village agency model to improve last mile delivery of production (especially inputs) and post-harvest support services to smallholder farmers, resulting in improved productivity and produce quality.

The project considerably invested in human capital, as illustrated by the employment of facilitators, village agents, and training for farmer organizations (representatives) and their value chain partners, such as input suppliers and off-takers.

Investments in infrastructure and the use of digital technologies added to the human capital investment. Produce quality management systems were strengthened (through upgrading of existing storage facilities with appropriate technologies), resulting in improved product quality. Digitizing agricultural systems was also key to lowering cost of operations and turnaround time.

FACILITATION LEADING TO INCREASED COLLABORATION

In turn, the investment in human capital provided the project, and consequently the business consortia, with highly qualified, neutral and respected facilitators, who are critical for arbitration among business partners involved in (cross border) trade. The project facilitation led to:

- **A** Improved trust among VCAs as evidenced by pre-financing of farmer operations by off-takers.
- **B** Increased appreciation and implementation of multi-sectoral approach among stakeholders which resulted in increased funds leveraged by the project and greater impact.
- **C** A focus on SME (including cooperative) growth, especially on how provision of tailored business development services can ease access to markets for smallholder farmers.
- **D** Building of capacity for supply chain management and addressing emerging challenges.
- **E** Business to business networking such as exposure visits, which were critical for opening and sustaining trade opportunities.
- **F** Increased collaboration among implementing partners to enhance synergies for greater impact in agricultural development.
- **G** Partnerships with non-traditional partners such as revenue authority, bureaus of standards, logistics companies, police and many others should be incorporated in project design for agricultural trade projects

SUSTAINABILITY

For this case study, an assessment of capacity building of VCAs was conducted by Kilimo Trust six months after the conclusion of the project. Interviews were conducted with FBOs, input suppliers, and off takers/traders. As a result, it showed that several strategies have been laid out by VCAs in regard to the project achievements and sustainability plans.

1. The consortium approach has provided a platform for different private and public players to jointly plan for the development of the value chains. In Rwanda for example, off-takers (rice factories) are organizing pre-seasonal planning meetings with cooperatives without project support (all expenses covered by both parties).
2. Engagement of key government agencies in project implementation in all countries (such as RAB, KALRO, County governments, steering committees) provides an assurance that project activities will continue. For instance, RAB is using its own resources to scale up the multiplication of market demanded varieties. Furthermore, the Ministry of East African Community Affairs in Uganda allocated at least USD100,000 to support regional trade interventions. This is coupled with ongoing efforts to secure USD7.7 million from Government of Uganda to scale up REACTS-II activities[3].
3. Promotion of the village agent model in some areas provides assurance that farmers will continue to receive extension and access to productive assets like inputs and post-harvest services because the model is based on commissions. In addition, through support to public extension officers (training on village agency model) provided by the project, the extension officers should be able to effectively backstop the village agents.
4. Most importantly, human capital development through skilling and exposure to critical information will enable the beneficiaries to continue implementing some of the promoted practices and technologies.

[3] The scaling up of REACTS-II activities does not necessarily translate into future Kilimo Trust activities.

Therefore, as far as sustainability of REACTS-II is concerned, the project has provided a strong baseline for long term relationships amongst VCAs. Key structures that are meant to ensure project sustainability were established and actors were still enthusiastic about the developments six months after the end of the project. As mentioned, it takes between 6 to 24 months to complete KT's facilitation role, resulting in consortia and alliances that are able to function without a KT facilitator. The convening power is then relayed to the buyers or processors (or any other stakeholder with a strong investment in the value chain), to continue ensuring trade relations.

Naturally, a few challenges persist. For some beneficiaries, signing contracts and delays in the disbursement of approved finance are two such challenges. There are also issues with recurrent natural disasters, such as the flooding and droughts which affected the implementation of new plans and the use of new skills during REACTS-II. Interviewed FOs, such as TAABU, do believe that the knowledge received will still be applied in the future and that members will be able to benefit even when these challenges occur. However, they also recommend that future interventions focus on formalizing the access to markets by mediating the signing of contracts and supporting FOs and farmers to address climate change risks.

SCALABILITY

Because the approach is based on the formation of alliances among key actors in the value chain as well as in the formation of business consortia, KTCA2VCD has great potential for scale and is only limited by the saturation of the market and value chain actors. However, the quest for scalability faces hurdles in terms of availability of resources (human and monetary) to invest in facilitative models such as this. It also raises questions about national-wide adoption of similar approaches, leading to vibrant BDS ecosystems. REACTS-II sets a good example of scalable approaches, but it needs to be replicated or complemented by similar sector and national-wide interventions.

Regarding M&E recommendations for future projects wanting to replicate or scale up the approach, KT's experience shows that conducting household surveys is an expensive and time-consuming exercise, which most funders avoid. It was thus more prudent to conduct dipstick studies (a 'one-time' exercise undertaken to answer a specific question) that measured the status and progress of indicators of interest to the project. This helped to keep costs manageable while also providing accurate data from the field.

Greengram GAP Training on Demo Plot in Tharaka Nithi, Kenya

CONCLUSIONS

REACTS-II aimed to tackle the limited access to guaranteed markets, which is one of the key constraints hindering local, national, and cross border commercialization of agriculture by smallholder farmers and general development of agricultural value chains. Given the results presented in this case study, it is possible to assert that the project was successful.

REACTS-II demonstrated that structured national and cross border trade is not only for large companies. If farmers (through farmer organizations) and their business partners are provided with quality business development services and tools, they can competitively participate in this space.

Besides illustrating the increase in income of farmers and their value chain partners, the approach also motivated actors to invest in value chain development, which means such collaborative efforts are useful in pooling resources required to improve market linkages and capacities.

It also led to the adoption of digital solutions – which reduced the cost of business and improved profitability for all VCAs – and helped the securing of finance, including via non-traditional sources of financing for farmers (through pre-financing by off-takers). Moreover, the approach also led to resources leveraged from other related projects, which brings about benefits for all ecosystem actors, from different projects.

Finally, the project was also able to identify shortcomings and where future interventions could benefit from the lessons of REACTS-II.

Upscaling low cost and efficient aggregation models such as village agent model and consortia approach have a reasonable potential to improve service delivery and operational efficiency of supply chains, as suggested by REACTS-II. These are valuable lessons for the FO/agri-SME development sector.

ANNEX I

LIST OF TOPICS COVERED UNDER KTCA2VCD MANUALS

TRAINING MANUAL	MODULES COVERED
Post-Harvest Handling (PHH)	Controlling Crop Quality Managing of the Harvest Transporting, Drying, and storing of the harvested crop Threshing and cleaning Sorting and Grading Storage of the Crop
Farmer Business Schools (FBS)	Training for effective behavior change Market oriented agriculture Focusing more on profit than price Setting personal financial targets to drive all investment decisions Record Keeping Visioning and Business Planning Collective marketing Negotiations and contracting
Financial Literacy	Personal financial management Saving Loans Financial Service Providers Investment Agriculture Insurance Financial management at Cooperative level
Grading and Standards	Post-harvest handling Grain receipt and handling process at the store Quality management Why quality management is a responsibility of everyone How to Grade EAC maize grading standards – Allowable limits per grade Warehouse operations and management Pest management in the Store
SACCO Management	General Definition and History of SACCOs SACCO Formation: Key Steps, Best Practices, and don'ts SACCO governance and leadership Regulation of SACCO operations Building resource portfolio of SACCOs Financial products that can be offered by SACCOs Internal controls Record keeping

TRAINING MANUAL	MODULES COVERED
Cooperative Leadership and Governance	What Is A Cooperative Reasons for Formation of Farmer Cooperatives The Principles, Values and Ethics of Cooperatives What Is Cooperative Leadership and Governance Why some cooperatives have failed to grow Pillars of Cooperative Governance Different Farmer Cooperative Governance Organs and their Roles Cooperative Management committees and their roles Conditions For Effective Cooperative Governance Qualities of a Good Leader Causes of conflicts between the Board, Committees, and management Manuals to guide cooperative leadership and governance Succession, planning and continuity
Good Agronomic Practices (GAPS)	Pre-planting operations Crop Calendar Land Preparation Planting Weed Management Pests, insects, and diseases control Water management Harvesting
Record Keeping	Why farmers do not keep proper records Importance of Record Keeping Strategy for Encouraging Farmers – Role of Extension What records to keep / for what purpose Analyzing sales, costs, and profits
Collective Bulking and marketing	What Farmers must know as they market their produce Why should Framers understand the market before they produce? Why is marketing important? Why market focused production is critical in agriculture Understanding your Market How to identify and analyze a market opportunity? Aim at producing at lower costs than others....

TRAINING MANUAL	MODULES COVERED
Business Skills	What is a Business Plan Why a Business Plan is important A Business Plan at a Farmer Level Planning production using a cash flow statement Understanding Economies of Scale
Safe use and handling of Agro-inputs	What are Agro chemicals? Types of Agro chemicals Guidelines before using Agro chemicals Steps in scouting the field Where to buy Agro chemicals How to identify counterfeits How to transport the Agro chemicals Storing Agro chemicals Mixing Agro chemicals Spraying Agro chemicals
Climate Smart Agriculture	Soil Testing Seasonal Weather Fore casts Planting of early maturing/tolerant varieties Use of recommended pesticides and Agrochemicals Water management/Conservation Proper Post-Harvest Handling and Packaging

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