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Background
AgriFI Kenya Challenge Fund (AgriFI) seeks to support productive and market-integrated smallholder agriculture through the provision of financial support to agri-enterprises. The aim is to contribute to improvements in the capacity of smallholder farmers/pastoralists to practise environmentally sustainable and climate-smart agriculture as a business in inclusive value chains. AgriFI’s objectives are aligned with the Government of Kenya’s aspirations for the agriculture sector as embodied in its Vision 2030, the Big 4 Agenda, and the Agricultural Sector Transformation and Growth Strategy (ASTGS).

This is one of a series of 6 case studies commissioned to extend key lessons and recommendations from grantee level review and analysis. A previous research phase explored high priority impact areas including gender, youth, nutrition, and climate smart agriculture (CSA) with a view to supporting effective design, targeting and implementation of AgriFI. These case studies test some of the logic and understanding of that research, illustrating effective strategies, issues of concern, and areas with potential for increasing positive impacts.

The suite of case studies include two (of 8) Call 1 grantees, three (of 12) Call 2 grantees, and one non-grantee as a counterfactual. Grantees from the COVID-19 Response and Recovery Call and Call 3 have not been included due to insufficient progress with project implementation at the time of fieldwork. Grantees were selected for inclusion on the basis of VC (i.e. broadly representative of the wider portfolio), geography (i.e. reasonable geographic spread), and relevance to key impact areas (i.e. strong learning potential). Fieldwork was conducted in late June and early July 2021 in compliance with COVID-19 guidance and restrictions.
Introduction to Paves Vetagro Ltd

Paves Vetagro Ltd (Paves) is an animal health and agriculture input supplier, operating mainly in West Pokot and Turkana counties of northwest Kenya. Paves was established in 1999 when the company’s founder and CEO, a veterinarian by profession, saw a gap in the market after NGOs leading animal health care initiatives left the area without a sustainable exit strategy. In 2006, the company diversified from supplying veterinary and animal health products and incorporated agricultural inputs into its supply chain. Shortly afterwards, Paves extended its reach from brick-and-mortar outlets and began providing a mobile service, transporting and providing agrovet goods and services to 13 counties. Currently, the company has 7 physical outlets as well as 7 trucks.

Paves has a network of in-house and external paravets and veterinary professionals who offer advisory and clinical services to livestock owners, partners, and community animal health workers for pest and disease surveillance, reporting and control. Paravets are not qualified veterinarians but are described as “the eyes and ears of the veterinarian at the community level”, providing basic animal health care and animal production advice to people in their communities. Beyond agrovet input supply and service provision, Paves provides a range of training opportunities focusing on good livestock husbandry. The company works closely with the Ministry of Agriculture, Livestock, Fisheries, and Cooperatives (MOALF&C) conducting field days, providing extension services, and facilitating animal disease surveillance as part of their education and training programs.

Most of Paves’ customers are smallholder farmers (SHF) and pastoralists; approximately 40,000 are currently integrated into the company’s supply chain. Paves also supplies larger farmers, other agrodealers and stockists, and farming cooperatives, as well as governmental and non-governmental bodies / organisations. Through Paves’ extensive reach, particularly through targeting “last-mile” customers / beneficiaries, the company aims to promote the distribution and uptake of certified inputs. To this end, Paves is continuing to develop its own brand of animal health products which include locally produced high quality feed, drugs and chemicals such as dewormers, parasitic injections and antibiotics. The company’s objective is to reduce and eventually eliminate the use of inferior counterfeit products available on the market.
Project Overview

Paves aims to expand its presence in northwest Kenya, particularly as a reliable last-mile agrovet input supplier to SHFs and pastoralists. Bolstering input supply in quantity and quality to remote areas, Paves plans to compete with informal market players – impacting positively on the business as well as customers’ livelihoods. With funding from AgriFI, Paves is working to mitigate challenges associated with quality input provision, cold chain supply, and climate induced insecurity in remote ASAL regions. Specific project objectives include:

- Establishing two input distribution and training centres with solar powered cold chain facilities for storage and distribution of vaccines, thereby improving access to sustainable and affordable livestock inputs and services for pastoralists.
- Developing targeted training modules and capacity building programmes to equip pastoralists and community-based animal health workers to practice good animal husbandry and proper use and disposal of animal health drugs. (Jointly developed by the project manager, company vet and West Pokot County Ministry of Livestock staff).
- Establish a 4WD mobile sales unit to deal with difficult terrain and improve access to inputs in the most remote areas.
- Mobilise farmer groups to engage in fodder production as an income-generation opportunity and to ensure availability of feed during the dry season.

Progress with Implementation

- Paves has established two agrovet input supply distribution and training centres; one in Konyao and another in Ortum. Both centres are fully operational and have cold chain facilities powered by solar energy.
- Provided capacity building trainings on Good Agricultural Practices (GAP) to a total of 4,043 farmers.

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>Youth (15 – 35 years)</td>
<td>1,049</td>
<td>714</td>
<td>1,763</td>
</tr>
<tr>
<td>Adult (&gt;35 years)</td>
<td>1,324</td>
<td>956</td>
<td>2,280</td>
</tr>
<tr>
<td>Total</td>
<td>2,373</td>
<td>1,670</td>
<td>4,043</td>
</tr>
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- Trainings focus on four value chains: dairy cattle, beef cattle, sheep, goats and poultry. The trainings also emphasize climate smart agriculture (CSA) practices such as breed improvement, pasture production and storage, use of manure on farms, and establishment and use of certified seeds.

- Established a pasture demonstration farm in Meriese, West Pokot County. Paves cleared and fenced the land, ploughed and planted pasture (Rhodes grass, Chloris gayana) and is currently preparing to build a feed store.
- In the process of developing a mobile application (80% complete) that aims to improve farmers’ access to quality inputs and professional cropping and animal health services.
Impacts Summary

Paves’ impact is evidenced through their reach to “last-mile” communities, where there are virtually no other formal suppliers of agrovet products/services. This is achieved using the company’s fleet of 7 trucks which transport stock from Nairobi to its 7 outlets as well as agrodealers and agents in the region, for which Paves absorbs costs. From here, an additional ~2,390 agrodealers mobilize these supplies to endline SHFs and pastoralists up to 400km away.

In each of its 7 outlets, Paves has installed cold chain facilities which extend the reach of temperature sensitive animal healthcare products, especially vaccines.

Ultimately, consistent and reliable access to high quality agrovet inputs and supplies allows rural SHFs and pastoralists the tools to boost their agricultural productivity - leading to positive socio-economic impacts at both the household and community levels.

With funding from AgriFI Kenya, Paves have set up two additional agrovet input distribution and training centres, in Konyao and Ortum. These centres have significantly extended Paves’ reach into last-mile ASAL regions, saving farmers and/or agrodealers from having to travel to outlets further away. Both centres have been equipped with cold chain facilities which are powered by solar energy, mitigating the risk of unreliable grid electricity supply in rural towns.

The Ortum centre is now able to serve farmers and agrodealers in Pokot South and Pokot Central sub-counties. Additionally, the centre serves approximately 30 agrodealers that use it as a sourcing hub for their stock, extending the reach of Paves sourced products by a further 100km.

The Konyao centre (the most northern of Paves’ outlets) now serves farmers and agrodealers in Pokot North sub-county as well as beneficiaries in Eastern Uganda; the outlet is only 8km from the international border. 50 agrodealers operate from the Konyao centre, serving beneficiaries within an estimated radius of 300km of the shop.
To further extend its last-mile reach, Paves is developing a customer service web-based mobile application which intends to link SHFs and pastoralists with animal healthcare and agronomic professionals/stakeholders for virtual interactions. The app will incorporate customer satisfaction ratings which will feedback into Paves’ marketing strategy and extension service links. Additional features include capacity to store farm records and communications concerning product offers, coupled with updates on weather and disease outbreaks. The app will also include access to training materials relevant for livestock farming, crop farming and farm infrastructure.

The app will be free to end-users; however, for sustainability in its management, a subscription fee may be required of listed service providers. In future, there are hopes the app will be adapted to include an e-commerce platform for sale of Paves’ goods and services.
Key Learnings

CSA

The Northern Rift region of Kenya consists of 15% high potential agricultural land and 85% Arid and Semi-Arid Land (ASAL). Farming in these geographies presents major challenges related to extreme climatic conditions, erratic water supply and unreliable access to inputs and services. SHFs and pastoralists usually farm/keep cattle, sheep, goats, camels and donkeys. Where possible, common crops grown include maize and beans – other miscellaneous crops include sunflower, pyrethrum, sorghum, finger millets, groundnut, potato, and vegetables such as tomatoes and onions. Though food security is a major challenge in ASALs, many SHFs/pastoralists already practice key

Impacts of COVID-19

The COVID-19 pandemic affected Paves’ ability to meet training targets within timelines. To continue with capacity building initiatives, Paves began running trainings with smaller groups and hired larger spaces in adhering to national health and safety guidelines, which ultimately increased the cost of their training activities. Navigating public perception of the pandemic was also a challenge, as much of the public were not observing recommended precautions. As extension, training and expanding the mobile supply chain are central to Paves’ marketing and growth strategy, the reduction in trainings and personnel movement significantly reduced their marketing capacity. Additionally, internal and external livestock/livestock product markets were curtailed impacting both the earning and spending potential of SHFs and pastoralists - which in turn had a negative effect on Paves’ turnover. To adapt to government enforced COVID-19 guidelines, Paves implemented a shift system for staff and reduced working hours. These restrictions also affected livestock marketing and offtakes, limiting cashflow within rural economies.
elements of CSA, drawing on traditional knowledge. Nonetheless, the risk of failing rains still has major implications on annual cropping cycles and pastoralists migrating between Kenya and Uganda for their livestock.

Paves’ approach to working in ASAL regions reflects some of the principles highlighted in AgriFI’s CSA research paper which emphasises the use of localized approaches to building resilience and mitigating climate risks. With this in mind, Paves intends to use its demonstration farm as a learning opportunity towards addressing fodder insecurity and cross-border livestock migration during periods of drought, by teaching pastoralists to grow and conserve their own fodder. Not only does fodder production mitigate climate/environmental risks in pastoralism, especially in ASAL regions, but it is also an important component in developing a traceability system for livestock production – a growing requirement in both local and export meat markets. By developing reliable and consistent livestock fodder, culturally traditional pastoralism could evolve towards holding grounds / feedlot systems which provide an enabling environment for traceability through improved feeding, disease control and record keeping.

Additionally, Paves supplies a growing number of farmers who are applying an integrated farming approach to their agriculture. These include the use of by products to increase soil fertility and even generate power. The case study team visited a dairy farming family, a beneficiary of Paves’ training, who demonstrated their integrated farming system.

**Mr. and Mrs. Serem – Dairy Farmer, Kapenguria**

The Serem family has a herd of four dairy cows, and four calves which were produced through AI technologies taught through Paves. The family purchases all the required inputs for their cattle from Paves, and also grows pasture for fresh feed and hay production which they mix with other dairy feeds to produce the “Paves’ recommended Total Mixed Ration (TMR).” The Serem family received training from Paves on dairy cattle management and has been encouraged to seek professional veterinary services instead of consulting traditional health attendants, following an event when they nearly lost one of their cows due to mis-practiced expulsion of a retained placenta after the birth of a calf. Through training, they have also implemented an integrated farming approach that capitalizes on by products of dairy and poultry production.

The family produces biogas from cattle manure which is used in cooking for and heating their household. The waste material from this process is then applied to cropping fields which are irrigated using gravity fed irrigation. As the CSA paper highlights, drought, flooding and erratic rainfall continue to be key issues of concern in Kenya and therefore initiatives focusing on water conservation, harvesting, storage and irrigation are of particular importance. **Though this is an individual story, it captures the relevance of capitalizing on local geography and tailoring farming for increased productivity – with CSA in mind.**
With six young children, the farming can provide the family a consistent supply of fresh, nutrient filled milk as well as selling enough to cover other basic household necessities such as food, clothes, healthcare and school fees.

The Serem family is one of approximately 200 dairy farmers that Paves has integrated into its supply chain. Such dairy farmers include individuals, cooperative societies, schools and institutions.

**Youth & Technology**

In addition to its last-mile reach for ASAL communities, Paves’ new App may have important impact on women and youth. As emphasized in AgriFI’s youth paper, there is significant commercial value in SMEs prioritizing investment towards inclusion of youth and women. Access to extension services from easy-to-reach platforms – with timely and reliable technical information – is becoming a critical agent of change in the transformation of subsistence farming to modern commercial agriculture. **Incentivising the participation and retention of both women and youth through technology is key to the future of rural farming economies.**

Proximately, the App aims to bring rapid, engaging and easily digestible information to youth, targeting acknowledged behavioural trends. Ultimately, it is hoped that this will help curb high rates of rural-urban migration amongst growing and diasporic youth populations with waning interest in farming. The gender paper also points to access to technology as a barrier for women entrepreneurs who often experience cultural constraints in time, mobility, and assets. An App like this could, in many cases, provide a way around these limitations through low-cost virtual interactions requiring limited, or no, travel.

Though uptake of this approach may be limited by the older, less tech-savvy smallholder farming demographic, it will be applied alongside traditional extension services; considering the nature of the sector, the need for physical visits by animal health technicians/paravets/vets cannot be ruled out. However, streamlining this process will increase overall efficiency of service provision within the sector. **With information and communication at their fingertips, livestock owners will be able to troubleshoot issues more easily and independently, allowing the system to prioritize the limited time of skilled experts.**
The youth paper highlighted the need for SMEs to consider succession in farming as a key factor that may influence their future operations. This sentiment extends to the succession of smallscale, often family owned, agribusinesses where uptake from younger household members will likely depend on the level of innovation assumed by the business.

**Gender**

As a company, Paves has equal opportunity employment policies and emphasizes the value of women and youth as valuable members of their growing team. Of their current 98 full-time employees, 35 are women and 59 are youth. Several leadership roles are held by women within the company, including the position of project manager for AgriFI, the Financial Director, in addition to store managers for their different outlets.

Complimenting intra-company policies, Paves’ trainings target mixed-gender groups and encourage women to venture into agri-business. Specifically, Paves endorses poultry farming as a pro-women business, by increasing access to high quality inputs and medications such as vaccinations against Newcastle disease. Rose Chelimo Cheprot is one such farmer:

**Rose Chelimo Cheprot – Poultry Farmer, Tartar**

Rose is one of ~600 poultry farmers that Paves has integrated into its supply chain. She sources her day-old chicks, chicken feed and veterinary drugs from the Paves outlet in Kapenguria and is able to produce between 100 and 200 chickens every 4 months; predominantly sold to a local market at farm gate prices. Paves plans to develop market linkages for farmers and is working with the County Livestock Marketing Council who operate all livestock sales yards within the county. This will include the marketing of poultry, enhancing opportunities for women. In addition to supplying inputs, Paves also facilitates good husbandry practice training with its paravets which Rose reported attending. Training workshops are usually scheduled between 10am and 1pm, allowing women to complete household tasks in the morning before attending and get home in time to prepare lunch. Trainings are held in convenient locations to encourage participation amongst women and reduce time and cost of travel. Rose’s income from poultry has increased significantly since joining the Paves VC; before she would make an average of KSh 1,000 / € 8 per month from poultry and with improved practices she now reports earning between KSh 5,000-20,000 / € 39-154. As a widow who struggled to meet her family’s basic needs, she now reports being entirely independent and comfortably pays fees for 3 children in secondary school.
Rose states that she knows many other female farmers who are interested in pursuing poultry farming but are constrained by a lack of start-up capital. To kickstart her poultry enterprise, Rose received her initial chicken stock through the Village Enterprise Fund (VEF) and feed stock from Paves. Paves partners with VEF to assist low-income farmers with cash transfers, training and mentorship to create sustainable livelihood opportunities.

To achieve impact, AgriFI’s gender research paper encouraged the programme to support SMEs operating in VCs which provide good opportunities for women, of which poultry is one. Though Paves is working to support the inclusion of women in such VCs, **the company has also cautioned that men are infiltrating business models that have been championed for women’s empowerment.** Paves have witnessed this in small scale poultry farming as well as in the production of secondary crops like groundnuts and other horticultural crops. Beyond this, there are growing reports of men abdicating on financial responsibilities in their families when they realize women are earning a decent income, or in delaying or not repaying loans taken from female family members. Despite concerted efforts towards female empowerment in smallholder farming, these can still be disrupted by cultural and social gender norms; illustrating the importance of sensitization activities with men to promote awareness of the full range of benefits to households and communities stemming from women’s empowerment in farming and agribusiness. **Research suggests that as “gatekeepers” to gender equality, where men are included in this conversation, they are more likely to be supportive of women’s empowerment initiatives.**