DIRECTORY

TECH SOLUTIONS FOR AGRIBUSINESSES

NTF V
Netherlands Trust Fund V Tech programme

International Trade Centre

Ministry of Foreign Affairs of the Netherlands
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The International Trade Centre’s Netherlands Trust Fund V (NTF V) is a four-year partnership (July 2021- June 2025) signed by the Ministry of Foreign Affairs of The Netherlands and the International Trade Centre to support micro, small and medium-sized Enterprises (MSMEs) in the digital technologies and agribusiness sectors. The programme includes both sectors in Ethiopia, Ghana, Senegal, and the digital technologies sector in a multi-country project in Benin, Cote d’Ivoire, Mali and Uganda. As with previous NTF programmes, NTF V is jointly implemented with the Dutch Centre for the promotion of exports from developing countries (CBI). In the digital technology sector, our trade-related technical support is three-fold:

- **At the policy level:** we provide assistance in the development or improvement of public policies and sectoral regulations, with private-sector representatives
- **At the institutional level:** we work with digital business associations and tech hubs to increase their sustainability and impact
- **At the start-up and MSME level:** we develop market access and linkages, and build international competitiveness

The Ministry of Foreign Affairs of the Netherlands (MFA) promotes sustainable and inclusive economic growth in developing countries by helping to improve the business climate and stimulating enterprise. It also enhances sustainable trade with developing countries and supports the construction of good roads, ports and power supply systems. Trade unions, employers’ organisations and farmers’ cooperatives in developing countries receive support to improve the services they provide to their members. MFA helps local authorities to collect taxes effectively and transparently. It also provides finance for businesses in developing countries and supports Dutch companies that produce innovative solutions to local challenges.
The International Trade Centre (ITC) is the joint agency of the World Trade Organization and the United Nations. It is the only development agency that is fully dedicated to supporting the internationalization of Micro, Small and Medium Enterprises (MSMEs) Development. This means that the agency enables MSMEs in developing and transition economies to become more competitive and connect to international markets for trade and investment, thus raising incomes and creating job opportunities, especially for women, young people, and poor communities.

ITC works closely with governments as well as institutional and private sector partners in developing countries across its six focus areas:

- Providing Trade and Market Intelligence
- Building a Conducive Business Environment
- Strengthening Trade and Investment Support Institutions
- Connecting to International Value Chains
- Promoting and Mainstreaming Inclusive and Green Trade
- Supporting Regional Economic Integration and South-South Links.

ITC's mission is to foster inclusive and sustainable economic development, and contribute to achieving the United Nations Global Goals for Sustainable Development. ITC works towards creating ‘trade impact for good’.
The Ministry of Foreign Affairs of the Netherlands (MFA) promotes sustainable and inclusive economic growth in developing countries by helping to improve the business climate and stimulating enterprise. It also enhances sustainable trade with developing countries and supports the construction of good roads, ports and power supply systems. Trade unions, employers’ organisations and farmers’ cooperatives in developing countries receive support to improve the services they provide to their members. MFA helps local authorities to collect taxes effectively and transparently. It also provides finance for businesses in developing countries and supports Dutch companies that produce innovative solutions to local challenges.

https://www.government.nl/ministries/ministry-of-foreign-affairs
The impact of technological transition in the agribusiness sector could be significant for African economies in the upcoming years. This is especially crucial as 70% of the population depends on agriculture for their livelihoods (Biteye, 2016). Furthermore, the global demand for food is increasing rapidly, and it is estimated that production will need to more than double by 2050 to meet the needs of the growing human population.

However, at present, the agribusiness sector in African economies encounters significant challenges. As per the United Nations Food and Agriculture Organization, smallholder farmers in low and middle-income countries (LMICs) face various obstacles, including limited access to agronomic, market, and weather information, lack of financial resources for agricultural inputs and capital investments, inadequate access to infrastructure and modern equipment, fragmented or insufficient access to markets, and more frequent and severe weather events caused by climate change. Therefore, the technological transition presents a compelling opportunity to enhance productivity and contribute to economic growth by generating employment opportunities, particularly for young people who are increasingly moving away from agriculture.

Hence, there is a substantial need for innovation in the agribusiness sector, as it has the potential to unlock opportunities for farmers in low and middle-income countries (LMICs). Innovation offers the tech industry an opportunity to intervene at various levels of the value chain and cater to the diverse needs
of the sector. It is a burgeoning phenomenon that presents both significant opportunities and challenges. Innovation in agribusiness encompasses scientifically driven farm practices, equipment or processing, including bio-engineered/transgenic crops, proprietary breeding, GPS/precision agriculture, water management, improved equipment, conservation-based best management practices, food manufacturing, and related advancements, as stated in the Nations World Water Development Report (2015).

The synergy resulting from innovation in the agribusiness sector presents a significant opportunity to address global food security challenges and achieve the Sustainable Development Goals (SDGs). Innovation across the entire value chain of the agricultural sector can make it more environmentally friendly, efficient, and inclusive. It offers opportunities for youth and women to contribute, aligning with SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth), as well as for climate action in line with SDG 13 (Climate Action). Additionally, innovation can facilitate the achievement of SDG 2 (Zero Hunger) by eradicating hunger, ensuring food security, improving nutrition, and promoting sustainable agriculture.

The International Trade Centre takes pride in supporting these efforts through the Netherlands Trust Fund V Program (NTF V). In this directory, you will find more information about the African innovators along the value chain of the agricultural sector that the NTF V program supports.
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Digital advisory
These solutions intervene at the early stages of the agribusiness value chain and have multiple objectives, such as reducing harvesting costs, improving and automating harvesting processes, and enhancing productivity.

According to the 2021 GSMA report, digital advisory services are gaining the most traction among farmers. Digital technologies addressing the initial challenges in agribusiness can be summarized as follows. Firstly, the Internet of Things (IoT), which is a system of interconnected computing devices, mechanical and digital machines, objects, animals, or people that have unique identifiers and can transfer data over a network without requiring human-to-human or human-to-computer interaction.

The tech industry is working on agronomic algorithms, Artificial Intelligence (AI), and cloud-based data to obtain specific measurements, facilitated by the recent surge of Web3 technologies. Through apps, farmers can access this data, which gets updated regularly, providing them with easy-to-follow and precise recommendations.

Digital advisory services can help farmers achieve the objective of water conservation, improve productivity, and boost yields while reducing costs. Digital advisory tools are also beneficial for managing crop inputs through precision equipment. Such equipment provides farmers with advice on the optimal time and quantity of inputs required to increase efficiency. This can be done through unmanned aerial vehicles (UAVs) and video imaging, combined with IoT-machine communication and AI using machine learning, which enables the collection, storage, and transfer of information about the crop, field, and machine state during field operations, and learning from agronomic data (Tsan et al., 2019).
We provide precision agricultural solutions as a service to small holder farmers. Lack of technical know how, inadequate technical capacities to implement new technologies and lack of access to finance makes it a challenge for our smallholder farmers to be competitive. We seek to make them competitive by making these solutions available to them.

**About the digital solution**

We assist farmers with the precision agricultural technology know how by using unmanned aerial vehicles (drones) as a platform to reduce the financial burden of total acquisition and build capacity.

**How does it contribute to the modernization of agriculture?**

By combining drone data with GPS technology, farmers can create detailed maps of their fields, which can be used to apply fertilizers, herbicides, and pesticides more precisely. This helps to reduce waste, increase yields, and protect the environment.
Agribox propose a unified solution (hardware and software) using existing best practices and future technologies (Artificial Intelligence, Voice Technologies, New Generation TV Decoder, etc.) for Precision Agriculture to improve yield and flow of smallholder production at lower cost!

About the digital solution

AgriBox is an AgriTech solution based on a Smart TV Decoder that embeds a dedicated TV application. This innovative approach brings vocally interactive agricultural digital services and in local languages directly on TV, which are much more widespread in rural areas than smartphones. AgriBox uses the technologies of the future (Internet of Things, Artificial Intelligence) to allow groups of small farmers to easily access with a voice remote control from their TV.

How does it contribute to the modernization of agriculture?

AgriBox makes accessible information and training which are two key factors in improving agricultural productivity. At harvest, AgriBox facilitates access to the market with a promotion and sale space integrated into the platform.
Esoko has been helping enterprises manage rural communities. Traditionally focused on content services for farmers, the Esoko platform has now been expanded to provide a robust data collection service integrated with messaging. We support the digitization of rural based projects and allow businesses to communicate and engage with last mile users using digital channels.

We provide two main services; (1) Surveys and data collection services. (2) The second product is Messaging services that provides hyper-localized agricultural content such as commodity market prices, weather forecasts, climate smart information service and agronomic advisories delivered via SMS, Voice, IVR and Call centres.

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How does it contribute to the modernization of agriculture?

We provide a robust platform that combines modern Technonologies of mobile, web powered by AI to help digitize agricultural value chains & rural supply chains and inform farmers using mobile channels.
About the company: Ignitia empowers intelligent decision-making by providing food system stakeholders with advanced technologies delivered in user-friendly ways to address climate resilience, agricultural productivity and food security in emerging markets.

About the digital solution

We provide accurate weather forecast and climate smart advisories to smallholder farmers to help them make data driven decision making which results in higher productivity, increased income. We are twice as accurate as the next alternative weather forecast provider.

How does it contribute to the modernization of agriculture?

Supporting with data driven decision making by providing weather insights to plan farm operations as well as agribusinesses do logistical planning.
Omshitu-joy is a tech startup company that uses state-of-the-art technology to solve multi-directional community problems through creating job opportunities for youths. So far, Omshitu is engaged in empowering agricultural sector by contemporary technology like Artificial intelligence and cloud computing to reduce more labor cost and increase agricultural productivity.

About the digital solution

We have developed an agritech device that investigate the soil and then give brief soil health status, recommend appropriate crop that best suit for that farmland, suggest appropriate level of fertilize to be applied and provide solid information oriented agriculture consultation ground.

How does it contribute to the modernization of agriculture?

Precision agriculture is a modern farming technique that uses the data of soil characteristics, soil types, crop yield data, and weather conditions and suggests the farmers with the most optimal crop to grow in their farms for maximum yield and profit. This technique can reduce the crop failures and will help the farmers to take informed decision about their farming strategy.
Suqali Mbay mi is a project to digitize the agricultural sector through a soil analysis first, then the implementation of a digital platform to better control the production cycle, and finally to have traceability throughout the agricultural value chain. The goal is to develop a decentralized blockchain solution to improve the sustainability and efficiency of Senegal’s agricultural sector.

About the digital solution

We create a blockchain-based traceability system to control the origin of speculation and monitor fraud risks at the intermediary level thanks to calibration, soil analysis and digitization of exploitable surfaces to set up machine learning to produce predictive data for the production of orientation reports and pedoclimatic advice.

How does it contribute to the modernization of agriculture?

Our tool contribute to the soil fertilization program via our soil fertility control analysis. Once the analysis have been carried out, a report on the spreading will be produced and the implementation will be done on the cultivable area with the help of the agricultural engineers in charge of the management of the farm.
SYSTEMES SERVICES IVOIRE is a Start-up created in June that develops ICT solutions aiming at improving the conditions of other socio-economic domains. The Startup has launched an agritech solution to develop services for small farmers agricultural productivity and their climate change resilience.

About the digital solution
It is a platform aimed for the transmission of climatological and meteorological data, the training of farmers on new agricultural practices related to ICT and innovative methods of service to customers good price policy.

How does it contribute to the modernization of agriculture?
Our product contributes to modernize agriculture by providing tech solutions to farmers, connections stakeholders into digital platforms to ease their use.
Tolbi is an African agritech based in Dakar which promotes a smart, sustainable and efficient agriculture by using satellite images and artificial intelligence. It helps smallholder farmers and agribusinesses to take the best and right decisions in their fields and to adapt their practices against climate change.

**About the digital solution**

We deliver insightful information in real-time with the first cloud-based AI decision-making platform using satellite images and artificial intelligence.

**How does it contribute to the modernization of agriculture?**

Through digitalisation, we allow to the small scale producers and agribusinesses to reduce their operational costs regarding seeds, fertilisers, phytosanitary products and water by using our SAAS platform. We also help them to apply the best agriculture practices in local languages for farmers who don’t have writing and reading skills.
Smart farming
Smart farming eases farmers' work on an everyday basis. It consists of the use and generation of data linked to their performance, allowing farmers to manage their fields in the most optimal way. Solutions linked to smart farming are not exclusive to crop management and can be applied to various sectors of agriculture, such as livestock or aquaculture management.

Here, the solutions applied are related to the automation of labor-intensive activities through specific machinery and mechanization access services. Mechanization access services enable farmers to access agricultural equipment, such as tractors, drones, threshers, tilling machines, and other farm equipment, via digital booking systems. The equipment is usually fitted with IoT-enabled tracking devices to allow owners of the equipment to track the location and performance of their assets (Smart farming, GSMA: 40).

Data collected during the overall period of cultivation allows farmers to learn more about their needs and helps them adapt and develop each action for better productivity and optimized cost. Smart farming is about transforming farming processes to be data-driven and automated in order to optimize farmers’ productivity.

The benefits of smart farming are numerous, including production time reduction, workflow traceability, better and optimized use of labor, and last but not least, surplus production.
Africa Smart Citizens is a startup that provides solutions to the theft of cattle in Africa. Solutions are based on IoT and IA to create strong products for tracking and Smart enclosure.

About the digital solution

First product is a Smart Enclosure, that allow “Intrusion detection” from wall, window, and doors.

The second product is a Smart gps necklace, in a design of an amulet, to put around the neck of the animal. It is a geolocation system, resistant to water and sun, which allows to locate the animal in real time. It sends an alert SMS with gps coordinates.

How does it contribute to the modernization of agriculture?

Theft of livestock is one of the major obstacles to the sheep and meat self-sufficiency program in Senegal and in several African countries. Our solutions will enhance security and productivity in livestock sector.
AgroSfer is a social enterprise that uses technology and field experts to provide agricultural stakeholders with services to increase their productivity and income.

About the digital solution

AgroSfer offers a complete SaaS platform for cooperatives, manufacturers and donors. Their platform technology brings the best of data collection, analysis and value-added technologies to the value chain.

How does it contribute to the modernization of agriculture?

Thanks to AgroSfer, cooperatives can digitize their members’ database, carry out in a simplified way with our mobile interface the mapping of the members’ lands and get rid of the mapping equipment, help cooperatives to plan certain cultivation steps based on a production technique itinerary with tools that allow to digitize the fields and to optimize the field work by facilitating the collection.
AkoFresh is a green agritech startup that is offering sustainable agricultural services leveraging climate smart technologies to improved farming processes and reduce post harvest losses. We offer crop preservation services, farmer training and market linkage for smallholder farmers.

About the digital solution

Our innovation is an IoT enabled solar powered cold storage preservation technology that extends shelf life of perishable crops from 5 days to 21 days to reduce post harvest losses.

How does it contribute to the modernization of agriculture?

We are leveraging renewable energy and climate smart technologies to improve farming processes and reduce post harvest losses.
The startup was formed in June 2020 by Abiye Tadeos and Mekasha Tesfaye. Anabi is incubated at Bluemoon Ethiopia, the first agri-tech incubation program in the area. Anabi envisions to create smart beekeeping solutions in order to sustain bees in the planet’s ecosystem.

About the digital solution
Anabi provides embed sensors on beehives to continuously monitor temperature, sound, and weight. They use smart beehives for decision support and monitoring during the production stage and create transparency across the supply chain.

How does it contribute to the modernization of agriculture?
Data driven agriculture like Anabi will guarantee zero loss in production if not huge increase in productivity. Cost reduction, traceability of produce are also other benefits.
BSB BIO is a new company set up by a group of experts who have experience of 12+ years. They are also experts in various fields such as agriculture, civil engineering, renewable energy and IT. After several decades in the field, they discovered the existing business opportunities in their respective sectors and to optimize their efforts they decided to create a company specializing in biodigester technology and the marketing of organic fertilizer.

About the digital solution

The company’s offer covers several products but initially, the company will mainly focus on the installation of bio digesters, the collection and marketing of organic fertilizer.

How does it contribute to the modernization of agriculture?

The objective of this project is to set up a multi-purpose company which will be active in agriculture (production, hydro-agricultural developments), the promotion of renewable energies, construction and public works, the production and marketing of fertilizers organic.
Debo Engineering is an emerging technologies (AI, IOT, Data Science, Big Data analysis, VR and AR..) agritech startup company that provides innovative solution services and products for agriculture sector. Debo Engineering basis on three values: Innovation, Entrepreneurship and SmartTech. Since established in 2018, Debo Engineering got national and international innovation and entrepreneurship awards winner last five years. Debo Engineering has named as AgriTech African and Ethiopian change makers and featured on more than 50 national and international medias.

About the digital solution
We provide an early crops diseases detection, monitoring and prevention apps services, Smart Coffee Washing and Grading machine and agricultural input and agrochemical e-commerce (Jarmii.com).

How does it contribute to the modernization of agriculture?
By increasing productivity and providing real time services.
In 2013, Hamwe East Africa embarked on a mission to ensure farmers are as connected as the rest of the world through adaption of mobile technologies that enhance access to real-time actionable information and services that can unlock their full production potential. We started implementation of our product roadmap in Uganda with our flagship product mFarmer and have since expanded to Rwanda and Burundi.

**About the digital solution**

Designed to provide complete visibility of the agricultural value chain by aggregating real-time data from the various stages of the supply and production chain.

**How does it contribute to the modernization of agriculture?**

We have successfully deployed digital solutions over the past 7 years while attaining domain expertise in gap analysis, real-time reporting, data collection & dissemination, Human centered design & social impact, capacity building & support.
Legendary Foods Limited is a locally based pan-African brand that produces a line of palm larvae and palm larvae based products that deliver the nutrition of meat at the price point and sustainability of plants with a desired protein source using insect agriculture.

About the digital solution
Legendary Foods tackles the challenge of finding high quality protein sources that is sustainable, accessible and affordable.

How does it contribute to the modernization of agriculture?
Legendary Foods Limited relies on IoT to aid in the efficient and effective rearing of palm weevil larvae. This system allows us to iterate and advance our innovative farm tech and allows us to better predict yields.
We are a company that provides engineering solutions for optimal water use in irrigation systems. We develop software and hardware solutions that aim to enhance the production, productivity and living standards of small-scale farmers who depend on irrigation. We collaborate with farmers, associations and public institutions and enterprises to offer technology-based engineering solutions to the water and agriculture sector.

About the digital solution

iCAD software is one of our digital solutions that is transforming the way irrigation systems are planned and executed - introducing the state-of-the-art in engineering design. It reduces 95% of the time required for design, and helps to address poor planning - the main problem in building irrigation projects. Farmers can benefit from better performing systems with our solution.

How does it contribute to the modernization of agriculture?

Digitalization is a key component of Ethiopia’s own transformation agenda. iCAD software brings the engineering accuracy to irrigated agriculture, which has been known for low performance. It can lower construction time, save investment costs, and improve operational efficiency during use by farmers.
A climate tech company at the nexus of regenerative agriculture and carbon finance. Leveraging technology to advance carbon farming amongst farmers for landscape restoration and create access to carbon finance through our digital marketplace.

**Sabon Terra Soils** (biochar based soil input) is a regenerative soil solution for farming communities available for purchase and delivery on our ecommerce platform and leverages on biochar carbon removal technology (locally designed and fabricated closed loop pyrolysis reactors) to harness the power of biomass to produce it. These are our two agrisolutions: Sabon Terra and Dwee: Terra.

**About the digital solution**

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**How does it contribute to the modernization of agriculture?**

Sabon Terra biochar promotes soil carbon sequestration - building healthy soils and biodiversity for improved yields. It enables farmers tap into the carbon market and secure additional income to grow more food and preserve the environment.
Agri digital financial services
The agricultural financial gap in Africa is the greatest, according to the latest report from Mastercard Foundation Rural and Agricultural Finance Learning Lab and ISF Advisors (2019). The need is critical for more efficiency and less transaction waste. Even though there are various sources of activity financing in Africa, there are still many unmet needs, including labor financing, input financing, asset financing, savings, post-harvest financing, and asset financing.

A recent report from GSMA (2021) stated that partnerships and data sharing are essential to the growth and scale of the sector. Access to finance is still scarce as financial providers lack information on farmers’ activities. This funding gap fosters greater uncertainty in the interaction between farmers and financial providers. As the latter do not know enough about their counterparts, they do not have the incentive for greater cash flow openness. This situation implies that actors in the overall sector need to close the financing gap for smallholder farmers, and this can be empowered thanks to the huge potential to connect farmers through digital tools.

Digital tools like mobile payment facilities can be useful in providing more information to financial access providers. Various business models can help give more information about farmer activities, such as the digitization of saving groups and credit processes or even data collection of the different logistics routines of farmers’ activities. Information brings certainty, which in turn brings more incentive to lend money to farmers. This improvement is critical to sustain an activity that is very important for food security, which is one of the biggest trends in our modern economy.

Furthermore, the surge in mobile payments also has the advantage of facilitating transactions both for B2C and B2B purposes. It is one of the agritech trends that has one of the greatest potentials to scale (cf. GSMA, 2021).
Akello Banker uses data and mobile tech to simplify and ease access to really important and sometimes lifesaving products and services for millions of farmers in Africa.

About the digital solution

A data driven agricultural market linkage platform that enables farmers to plan, hire, share and pay for Agricultural Products and services on credit.

How does it contribute to the modernization of agriculture?

Our data driven and mobile technology allow farmers to access, order for, hire and share farm extension workers, inputs, tools & equipment from verified providers on credit.
Farmerline develops solutions that increase farmers’ access to resources and income. We do this by leveraging innovative financing, technology and a network of partners to help farmers increase yield and make more profit. We provide smallholder farmers with access to high-quality fertiliser and seeds, free education on climate-smart farming practices and connections to local and international markets.

About the digital solution
Mergdata helps to increase farmers’ access to resources and improve visibility throughout supply chains. It is cloud-based mobile and web software that enables organisations to digitally collect and link data from farmers, farms and farming communities. The platform is designed to work with any organization, fully modular, integrable and customizable.

How does it contribute to the modernization of agriculture?
Mergdata is the solution to efficiently secure farmer data management tailored to the smallholder context. Through the following: Scale farmer engagement; Trace produce to source; Report to stakeholders; empower agribusiness.
Grow For Me, is an agricultural technology financing, aggregation, and trading platform. That enables anyone to participate in farming and commodities trading without getting their hands dirty. We also provide input financing to farmers to increase production.

**About the digital solution**

MAP is a USSD platform that enables farmers to sell their harvest directly to warehouses and get paid instantly via mobile money. Enables us to raise funds from individuals, banks, high net worth individuals, fund managers and businesses to finance (trade financing) the purchase of commodities from farmers (commodity aggregation) and sell (commodity trading) at the right price.

**How does it contribute to the modernization of agriculture?**

This platform utilizes technology to provide financial and trading solutions to farmers and investors, improving access to capital and markets. By increasing efficiency and productivity in agriculture, it facilitates the adoption of modern farming techniques and contributes to the overall modernization of the agricultural sector.
Legeberew is an Ethiopian Agri-tech company with a premise to finance small scale farmers across Ethiopia by linking and using crowd sources funds from individuals. Investors and corporates, via its online platform, with a promise of a share in the returns.

About the digital solution
We link small scale farmers with investors on online platform.

How does it contribute to the modernization of agriculture?
Nearly 38 million smallholder farmers lack access to finance, & certified inputs, similarly, trust issue problems between shareholder and farmers while they work together issue problems. We aim to improve trust between farmers & investors by connecting farmers with investors to boost the agricultural economic model.
MobiPay AgroSys Ltd. is a Ugandan-based agro-technology solutions provider that aims to increase digital and financial inclusion services to farmers across Uganda.

About the digital solution

MobiPay operates digital platforms that enable farmers to purchase inputs, access agronomical knowledge on crop diseases and solutions, sell harvested produce, and facilitate internal and external payments for organizations.

How does it contribute to the modernization of agriculture?

Through our products and services, farmers are made financially visible through which they are able to access financing from formal financial institutions. Access to finance means more production and more income.
Saving Grains is an ag-tech/fintech startup that empowers small African aggregators and farmers with innovative credit solutions and tools to increase their earnings by ~85% and 50% respectively, with operations in Ghana and Kenya.

About the digital solution

Each small aggregators we work with buys excess grain from 4-20 farmers in their community and then stores in Hermetic Bags during harvest. They then store safely for 6 months till prices peak, where they sell the safely stored grain to achieve profits of 80-100% and can then pay off their loans, associated fees and grow their businesses.

How does it contribute to the modernization of agriculture?

Our solutions increases farmer revenues and prevent post harvest losses by 25%.
Digital procurement
These solutions are used to improve the operational and managerial processes of a business through digitization. Solutions can range from basic technology usage, such as internet connection, to more elaborate Enterprise Resource Planning. Tech tools can be useful for commodity traceability, crop storage, shelf-life enhancement, logistics optimization, and agricultural produce processing.

There are various examples related to these solutions. First, we can mention basic ICT usage, which is facilitated by ICT service providers that help farmers access internet connection and create a company email, website, etc.

More specifically, ICT tools can provide access to effective storage mechanisms. For instance, RFID and QR codes have been used in agricultural value chains to trace commodities from consumers back to the farm (Disruptive agritech, 2020: 22). Internet of Things technologies are also very useful for operations management. Thanks to farm management software, farmers can track inputs, expected yields, contracts, and ensure traceability. Moreover, they can sort and grade products more quickly and efficiently, which lowers their costs. There are many farms management software targeting agribusinesses and cooperatives to ensure that farm inputs, yields, and pricing are well managed.

Information given by data sharing varies from weather updates to market prices of inputs or finished goods. It increases the frequency and quality of interactions. When combined with knowledge sharing facilitated by digital tools, we can assert that the agribusiness sector is gaining more efficiency.

Data chains are valuable along the value chain, mostly because they allow the connection of farmers to new markets and also because they add information within the sector. One of the most important assets is that thanks to data chains, we can witness an increasing productivity of capital and labor through the reduction of information asymmetries and transaction costs for the exchange of goods.
We facilitate the movement of agricultural commodities in Ethiopia. We streamline communication between shippers, warehouse agents, and carriers and developed a warehouse Stock Management system for Ethiopian Coffee and Tea Authority.

About the digital solution
Our digital freight logistics platform connects shippers with carriers and agents, and allows them to manage everything in one place.

How does it contribute to the modernization of agriculture?
Manage your entire logistics process with a simple-to-use tech platform that gives you real-time visibility and an effective value chain.
We empower smallholder farmers, women and youth in agriculture by developing farmer-centered digital innovation to address challenges faced by these farmers and the entire value chain in Africa.

About the digital solution
FBS Innova is a functional, modular smartphone application that helps smallholder-farmers have on-demand access to Farmer Business School (FBS) tools and information, plan and efficiently manage their crops and diversify their production for increased profitability and improved livelihoods.

How does it contribute to the modernization of agriculture?
Through our digital platforms, smallholder farmers get formalized in their day-to-day farm activities thereby empowering them to make data driven decisions which are key to their business growth.
We are a team of young passionate Africans using internet of things (IoT) and technology to change the lives of smallholder farmers through the provision of platforms which makes agricultural mechanization (Tractor) service available, accessible and affordable to enhance productivity, improve efficiency and reduce post-harvest loss.

TROTRO Tractor Limited (TTL) is a powerful platform that connects farmers and tractor operators. This platform will also allow tractor owners to monitor movement and work progress of their equipment. On our platform, the farmer will be able to request, schedule and prepay for tractor services. The operator on the other hand gets quick requests for tractors (Ploughing) services.

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TROTRO Tractor Limited (TTL) is a powerful platform that connects farmers and tractor operators. This platform will also allow tractor owners to monitor movement and work progress of their equipment. On our platform, the farmer will be able to request, schedule and prepay for tractor services. The operator on the other hand gets quick requests for tractors (Ploughing) services.

How does it contribute to the modernization of agriculture?

TROTRO Tractor is an on-demand platform enabling access to mechanized farming equipment by connecting farmers and nearby tractor owners. TROTRO tractor’s platform allows farmers to request, schedule and pay for tractors, which are deployed to their farms within 72 hours to carry out the necessary tasks, allowing them to significantly increase productivity and efficiency.
Agri E-commerce
Agricultural products are gaining traction on e-commerce platforms, presenting an opportunity for consumers and smallholder farmers to establish closer connections. E-commerce solutions offer a chance to aggregate products and gain direct access to markets, while also reducing inefficiencies in the distribution of farm products by monitoring demand, controlling quantity offers to minimize wastage, and facilitating the direct distribution of fresh produce to customers, thus avoiding the need for multiple intermediaries.

On the output side, Agri e-commerce companies adopt either a Business-to-Consumer (B2C) model or a strictly Business-to-Business (B2B) model, where the company sells to the catering industry, hotels, restaurants, etc., and market retailers, or a hybrid of the two. On the input side, Agri e-commerce companies are connecting farmers to input suppliers via a B2C model.

In the realm of digital marketing, the innovation of e-commerce strategies provides farmers with valuable resources to enhance their communication skills. This is made possible through various tools, such as chatbots and mobile advertisements on social media, which enable farmers to structure their commercial activities and create a distinctive brand presence.
AGRINNOV is a company intervening at the level of the various agricultural value chains with the aim of bringing value to small actors and participating in the reduction of poverty in Africa. Currently, we operate mainly in the food industry to allow young people and women to have access to a new sales market.

Canuro is a marketplace that allows all local food sellers and processors to create an online store for their business for free. Our ambition is to help every local food company to make the transition to digital. To do this, we provide each processor or seller of local food products with an online sales platform and digital marketing support.

**About the digital solution**

Canuro is a marketplace that allows all local food sellers and processors to create an online store for their business for free. Our ambition is to help every local food company to make the transition to digital. To do this, we provide each processor or seller of local food products with an online sales platform and digital marketing support.

**How does it contribute to the modernization of agriculture?**

With Canuro, we support processors in marketing their product through online sales, but also in creating value for each of their products. Thus, this creation of value will allow them to compete on the market and thus contribute to revitalizing the continent’s agricultural sector.
Asbeza Delivery offers a solution for online grocery purchasing and delivery. You can order your preferred choice of groceries, of any kind, give your location and get delivered to your doorstep. Do not hesitate to try our services. We are an online shop found at https://asbeza.net.

Asbeza operates an online grocery delivery service in Addis from listed stores, agriculture unions and supermarkets.

**About the digital solution**

Asbeza operates an online grocery delivery service in Addis from listed stores, agriculture unions and supermarkets.

**How does it contribute to the modernization of agriculture?**

Our Mission is to make your life easier by offering a simple and effortless online grocery shopping experience that meets all your weekly grocery needs. Fresh, quality groceries, priced fairly and delivered with friendly and reliable service. We give you time back to do the things you love.
Aywajieune is the first Senegalese platform that specializes in the listing and distribution of fishery products. It enables fishermen and female fish sellers and processors to sell their products more quickly at competitive prices.

**About the digital solution**

In an environment where consumption patterns are beginning to change with the democratization of the Internet and the development of online sales, providing a solution to these problems by associating new technologies was essential. It is following these reflections that we have created an e-commerce platform specially dedicated to the sale of seafood products which will allow both sellers to sell their products more easily but also consumers to have easier access to products.

**How does it contribute to the modernization of agriculture?**

At a time where digitalization is becoming more and more important, Aywajieune participates in the diversification of sales channels, thus allowing on one hand the limitation of the risks of unsold products and on the other hand better savings on storage costs synonymous with more competitiveness.
Our startup, BioLife Tech, is an agritech company that aims to develop the largest agri-food supply chain in Africa. We believe that our solution can help fight hunger and food insecurity in Africa by providing easy and reliable access to quality food. To achieve this goal, we are working to build a network of local producers and distribution partners across the continent. We have also developed an online platform for consumers to order fresh produce directly from our producers.

About the digital solution

Our solution, e-pineA, is a mobile platform that connects producers to pineapple buyers through a dynamic map that allows to locate pineapple fields and to visualize in real time their maturity status. In addition to connecting with growers, e-pineA also features a virtual store where consumers can purchase pineapple products such as juices, jams, dried pineapples and syrups.

How does it contribute to the modernization of agriculture?

e-pineA is a valuable tool for modernizing the agricultural industry by facilitating direct connections between producers and buyers, enhancing efficiency and convenience, and supporting economic growth in the Benin.
DigitAll Farmer is a company that aims to put digital technology at the service of agricultural development in Benin and Africa. We offer three types of services that are:
- development of technological solutions (web, app, IoT, AI, etc.)
- digital literacy and education for farmers, training
- marketing and communication

ALIMENTS BENIN is an integrated solution to facilitate market access for producers. It is a digital decision support platform for precision farming and better access to markets by providing producers with the following elements
- access to data
- access to advice
- access to the latest consumers

About the digital solution
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How does it contribute to the modernization of agriculture?
Our solution modernizes agriculture by making it more accurate, healthier, more profitable and therefore more attractive to young people. By helping farmers grow better crops with better sales opportunities, we help them reduce post-harvest losses and food insecurity in a world where the fair use of resources is paramount.
Exporters Ethiopia is an online business to business (B2B) service providing platform primarily established focusing on promoting and connecting export products of Ethiopian Exporters, Manufacturers and Suppliers to the international market by creating one stop Global Exposure platform, with 24X7 live showroom, bringing instant inquiries and potential buyers!

About the digital solution

Through our platform sellers can use our subscription based service to , which is 5000 birr per month to register, add their company profile and product then get contact from buyers and sell their products. Buyers can use our sourcing and Agency Service which is 3- 5 % from total purchased amount.

How does it contribute to the modernization of agriculture?

Our country lacks of national Business to Business (B2B) Marketplace for promotion, market linkage creation and quality assurance service provider company. Farmers or exporters can register, add their company profile and product then get contact from buyers and sell their products.
EzyAgric agricultural market ecosystem creates endless farming possibilities that unlock Africa’s vast farming potential, making farming more profitable and accessible to millions of smallholder farmers.

About the digital solution

EzyAgric mobile and web application leverages data and artificial intelligence to provide farmers and agro-merchants (farmer groups, farmer associations, agro-dealers, off takers) with access to genuine agro-inputs and extension services, inputs credit on a Buy Now Pay Later model.

How does it contribute to the modernization of agriculture?

EzyAgric contributes to the modernization of agriculture by providing information on best practices, automation of farm records management, market prices, financial services, and even connects farmers with inputs suppliers and buyers, streamlining their operations and achieving greater success in their farming endeavors.
FAMUNERA LTD is an Agricultural Technology Enterprise formally incorporated as a Private Limited Liability Company in 2018 and operating Famunera, a digital marketplace powering food growers and exporters with supply chain traceability, export market linkages, access to genuine farm inputs and affordable financing while employing farmers as outgrowers.

About the digital solution
Famunera is a digital marketplace powering food growers and exporters with supply chain traceability, export market linkages, access to genuine farm inputs and affordable financing while employing farmers as outgrowers.

How does it contribute to the modernization of agriculture?
Famunera is making it very easy for food growers and exporters to seamlessly conduct supply chain traceability which in return boosts export market linkages and access to affordable financing.
Garden of Eden Organic solutions is a gardening business established to serve as a bridge to close the gaps between underutilized urban spaces and professional gardening service demands. We provide environmental and horticulture solutions and consulting service.

About the digital solution

How does it contribute to the modernization of agriculture?
We provide professionals in cost-effective & organic gardening, career opportunities for urban youth while creating gains regarding health and environmental issues.
ICT4DEV specializes in the development and integration of technological solutions that respond to the daily problems of rural African populations. Its IT department provides you with a competent team to analyze, understand and support you in the development and deployment of your solutions.

Virtual Market is a platform for direct contact between agricultural cooperatives including small farmers and potential buyers of agricultural products at local and international level.

**About the digital solution**

Virtual Market is a platform for direct contact between agricultural cooperatives including small farmers and potential buyers of agricultural products at local and international level.

**How does it contribute to the modernization of agriculture?**

We are a company specialized in the development and integration of tech solutions that respond to the daily problems of African populations, particularly those in the rural world. Thanks to a dedicated and polyvalent team that perfectly grasped the needs of farmers and technologies.
Jinukun is an AgriTech startup. As indicated by its mission “Feeding Africa with its own products”, it puts the quality of products and the local economy at the center of all its activities. Jinukun uses technologies to improve the daily lives of people in Benin. Since its establishment, Jinukun has launched several projects as part of its business.

**About the digital solution**

A B2C and B2B e-commerce platform for marketing agricultural products from local farms and agri-food that integrates a website, a mobile application, mobile shops and delivery services.

**How does it contribute to the modernization of agriculture?**

We provide a management and marketing solution to Beninese producers. They can thus produce and market their products much more easily. The platform allows the farmer to follow the management of his farm both operationally, commercially and financially. The producer can therefore sell his production before harvesting it.

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**BENIN**

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CEO

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- Jinukun Store

= $58,527  
Amount of revenue generated with the solution

x 20,000  
Numbers of farmers supported with the solution
KOOLFARMER is founded on a market garden, training and online sales of ecological fruits and vegetables, organic inputs and reproducible seeds.

KOOLFARMER is an innovative web platform for the marketing of agroecological fruits and vegetables, bio-agricultural inputs and advisory and support services to farmers.

About the digital solution

KOOLFARMER is an innovative web platform for the marketing of agroecological fruits and vegetables, bio-agricultural inputs and advisory and support services to farmers.

How does it contribute to the modernization of agriculture?

By selling affordable local fruits and vegetables through the «farm to table» concept, and providing advice and sale of organic agricultural inputs and reproducible seeds.

Amount of revenue generated with the solution

$2,700

Numbers of farmers supported with the solution

100

Tony Elumelu Foundation 2018, Startuper of the year 2016 (Total Energie Mali), winner of the start-up weekend of Bamako in 2017

Award, certifications or prizes
Lersha promote a one stop digital solution to smallholder farmers. The platform uses a digital enabled youth who serve as a bridge between the farmers and the platform. It aims in making agriculture easy for everyone.

About the digital solution
Lersha is a digital agriculture platform that allows smallholder farmers to access farm input, mechanization service and agro-climate advisory using a mobile application, call center and digitally enabled youth called Lersha agents to serve as a bridge between farmers and the platform.

How does it contribute to the modernization of agriculture?
Lersha facilitate access and timing of the agricultural services to smallholder farmers.
ProXalys is a working capital optimization platform for informal agricultural microenterprises. Since 2021, we have been acting as a wholesaler of food products for agri-food products for informal retailers called «Diallo Boutiquiers». We sell local agricultural products (onions, potatoes, rice) and other consumer products through our marketplace.

ProXalys offers digital solutions to informal agricultural micro-businesses by helping them to digitize their activities with our 3 solutions:

- ProXalys Marketplace which helps agricultural producers to sell their products on our Marketplace
- Proboutik as an application to help for agricultural actors to replace their credits sales book
- ProCash as a single point of sale helping them to collect digital payments

About the digital solution

ProXalys offers digital solutions to informal agricultural micro-businesses by helping them to digitize their activities with our 3 solutions:

- ProXalys Marketplace which helps agricultural producers to sell their products on our Marketplace
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- ProCash as a single point of sale helping them to collect digital payments

How does it contribute to the modernization of agriculture?

Our marketplace allows small producers to sell their products quickly and avoid post-harvest losses.
We are the link between agricultural cooperatives, businesses and households, through our solution SOUTRAMARKET.NET A 3-in-one platform that allows us to facilitate the sale of agricultural products in a smart way and avoid Post-harvest losses.

About the digital solution
SOUTRA Market, is a startup that tries to give a global reach to cooperatives and their products via its digital platform. As well as physical training according to their needs adapted to production and harvesting practices also by connecting cooperatives and B2B, B2C customers (household markets).

How does it contribute to the modernization of agriculture?
Promote empowerment by reducing the digital divide of farmers.
TradeEthiopia is a B2B trade portal that effortlessly links exporters, importers, local and international enterprises. We exclusively serve our subscribing members, and we have supplied over 5000 local and international enterprises with dependable contracts and business assistance. Our membership package is one-of-a-kind and useful in uniting you with any relevant markets.

About the digital solution
TradeEthiopia is an online B2B trade marketplace that is connecting agri product suppliers with buyers. We are targeting farmers, SMEs, unions, exporters and wholesalers to interlink and trade using their platform.

How does it contribute to the modernization of agriculture?
It is an easy-to-use platform linking agricultural products to customers.
Wami Agro is an AgTech company that delivers tech-enabled solutions to promote food security, improved farmer quality of life, and protect the environment. Our mission is to make wholesome food ingredients available, accessible and affordable to factories, FMCG companies, and food distributors while ensuring fair trade. We have trade partnerships with reputable organizations such as Guinness Ghana, OLAM, and Wilmar.

About the digital solution

We offer 3 bundled agricultural solutions and services namely:

- Wami Credit – input finance for smallholder farmers to access agric input & fertilizers on credit and pay back with produce.
- Wami Market – We purchase produce from our farmer network and supply it to our third-party trade partners.
- Wami Info – we provide climate-smart agricultural information to our farmers in their native dialects.

How does it contribute to the modernization of agriculture?

Our proprietary digital platform enables us to tailor the support and assistance we give to each farmer on our platform and connects the various actors in the agricultural value chain (i.e. input suppliers, farmers, and large end markets). Farmers are also able to access climate-smart agriculture tips on their mobile phones in their native languages.
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