Leveraging Green & Digital Technologies

to Create Decent Jobs for Youth in Agriculture

Case Illustrations

INCLUDE
KNOWLEDGE PLATFORM ON INCLUSIVE DEVELOPMENT POLICIES

CHALLENGE FUND FOR YOUTH EMPLOYMENT

Introduction

Transforming food systems has become a pressing priority for many African countries striving for sustainability, equity, and resilience in the face of climate, demographic, and economic pressures. Recent forums, such as the 2023 African Union Summit on Food Systems and Africa Climate Summit, have emphasised the urgent need to create just food systems that deliver not only nutritious food and sustainable production, but also inclusive economic opportunities.

Digital and green innovations are widely recognised as key enablers of this transformation. By improving efficiency, sustainability, and market connectivity across the agricultural value chain, these technologies have the potential to unlock new forms of employment. Yet a critical question remains:

How can agribusinesses make use of digital and green technologies to contribute to decent jobs for youth in Africa?

This report explores how agribusinesses are putting digital and green technologies into practice to unlock jobs for youth, especially for young women and smallholder farming households. It dives into the challenges, opportunities, and best practices from two cases: **ThriveAgric** in Nigeria and **Startup Bootcamp** in Senegal. As such, this report aims to inform and inspire agribusinesses and other actors working in agri-food systems by showing what works, and what more is needed, to ensure that youth are not left behind in Africa's agricultural transformation.

This case study is part of a broader action-oriented research collaboration between the INCLUDE Knowledge Platform and the Challenge Fund for Youth Employment (CFYE) on Green Jobs and the future of work. The first phase of this research project explored how green and digital technologies can drive more meaningful and dignified employment in a transforming agri-food sector. In addition, focus group discussions and in-depth interviews with CFYE-supported agribusinesses, youth content creators and experts in the agri-food sector served to identify how youth and agribusinesses can take advantage of the opportunities and overcome challenges linked to the adoption of green and digital technologies.

Key Challenges for Agribusinesses

Despite the optimism surrounding digital and green technologies in agriculture, agribusinesses continue to face a range of **structural and behavioural challenges** that complicate their adoption, thereby hampering the creation of inclusive employment opportunities for young people. Before diving into the best practices from the case study, this section presents the main barriers agribusinesses face in promoting the adoption of green and digital technologies.

On the structural side, persistent digital **infrastructure gaps**, such as limited internet connectivity and unreliable electricity access in rural areas, restrict consistent use of digital tools. Agribusinesses and farmers alike face **high upfront costs** for developing, adopting and maintaining digital technologies, with **limited access to affordable financing**. At the same time, government support systems or business exchange networks to promote the development and scaling of new technologies are often lacking.

Behavioural challenges are the key barrier for agribusinesses that are providing and aiming to scale the use of digital and green solutions in agriculture. **Resistance to change** remains common, especially among older farmers who are more comfortable with traditional practices and may distrust unfamiliar technologies. Digital tools are not always designed with **local realities** in mind (e.g. cultural norms, limited access to irrigation and inputs), and **language barriers**—especially in multilingual or low-literacy contexts—can limit uptake. This poses a challenge for designing user-friendly applications and platforms that are used directly by farmers or youth. Meanwhile, **trust and cultural norms** continue to shape how new models of work and collaboration are received within rural communities, when agribusinesses are introducing them. For example, agribusinesses introducing youth as private extension agents or digital advisors often encounter initial resistance from older farmers who may question the authority, experience, or legitimacy of younger, less traditionally credentialed intermediaries. In some communities, longstanding social hierarchies and expectations around age, gender, and expertise can make it difficult for youth—especially young women—to be accepted in advisory or leadership roles, even when they are technically trained.

INFO BOX **Barriers to scale technology for youth employment**

The experience of agribusinesses highlights several systemic barriers that they must navigate when scaling digital and green technologies for youth employment in agriculture. These barriers are not new, but they continue to hinder uptake, specifically in early-stage environments:

- The high upfront cost of precision agriculture tools remains a key constraint, particularly for smallholder farmers who cannot afford to pay in one instalment—posing challenges for agritech startups that lack sufficient capital to offer flexible financing.
- Infrastructure limitations, including weak electricity grids and patchy connectivity in rural areas, further restrict the effective use of IoT and solar-powered solutions.
- Language and literacy issues also complicate user engagement, especially when AI-based systems are not yet adapted to local linguistic and cultural contexts.
- Cultural resistance and unfamiliarity with digital tools among some farmer groups require intensive field engagement and ongoing support.

These challenges underline the importance of awareness creation among farmers on the benefits of technology and the need for human-centred design and locally-rooted implementation models, as well as cross-sector collaboration to support inclusive technology adoption. Agribusinesses that are championing innovative technologies and digitally-enabled services to increase sustainability and productivity of the sector need to create an understanding of the barriers to adoption faced in their business ecosystem and then subsequently develop models and pathways to address them. Specifically, when decent employment creation for young people is an intended outcome, it is crucial to ensure that technology adoption strategies are designed with youth inclusion and entrepreneurial potential in mind.

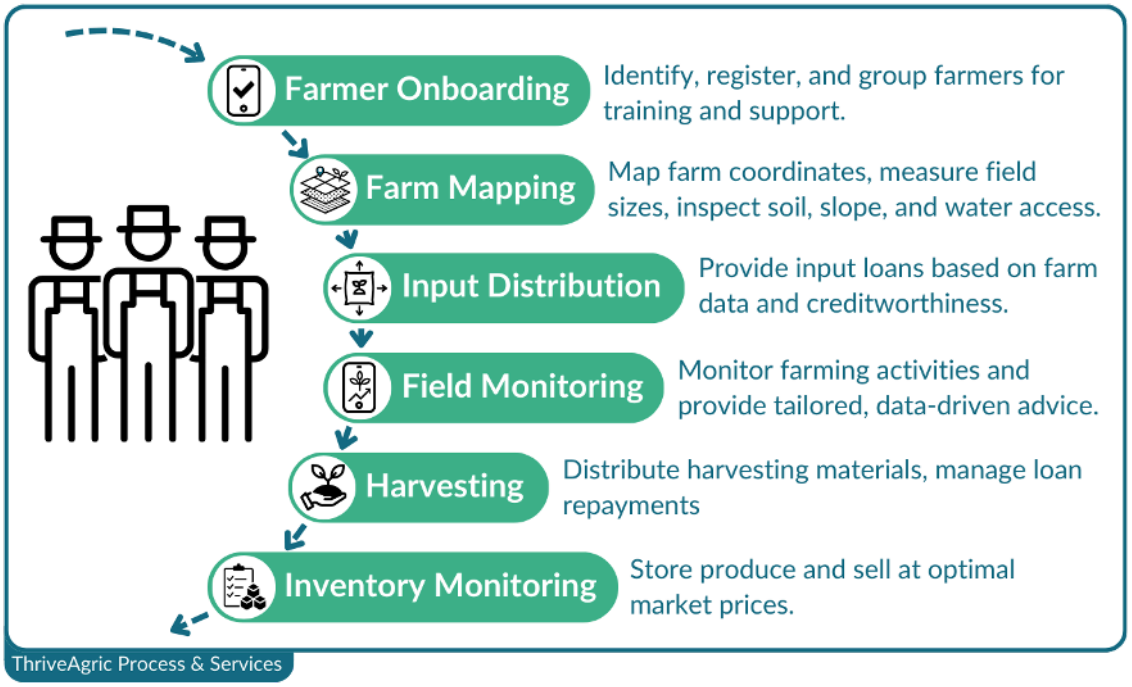
Case Illustrations

In order to distill practical lessons the research project includes a case study zooming in on two agribusinesses that are promoting digitally-enabled and sustainable farming practices in Africa with an intentional focus on improving youth employment outcomes. ThriveAgric, a Nigerian agribusiness with operations in multiple countries, offers insights from a mature agri-tech ecosystem where youth are directly employed to deliver digitally-enabled services. In contrast, Startupbootcamp Senegal (SBC) supports early-stage agricultural ventures in a more nascent digital landscape, working through partnerships and ecosystem support to reach farmers and youth. As such, these cases capture different moments along the innovation and scale spectrum: ThriveAgric as a **scaling pioneer**, experimenting with replicable models for inclusive digital innovation at larger scale, and SBC as an **ecosystem enabler** working in a more constrained environment, still in the pilot-phase. Together, they illustrate how digital and green technologies are being used at different stages of maturity, under varying market conditions, and through distinct youth employment approaches—from direct hiring to indirect ecosystem strengthening. This contrast allows the research to highlight different sets of challenges and context-specific lessons that CFYE partners and other ecosystem actors can apply.

Case Illustration: ThriveAgric

Who is ThriveAgric?

ThriveAgric, a technology-driven Nigerian agribusiness, provides a compelling example of how digital and green technologies can be harnessed to create meaningful youth employment and transform how smallholder farmers benefit from the agricultural sector. At the heart of its business model is a dynamic AgriTech ecosystem that unites financial service providers, input suppliers, transporters, insurance, technology, smallholder farmers, and off-takers. ThriveAgric's Agricultural Operating System (AOS) enables the company to achieve both backward and forward integration across the value chain by controlling and optimising different stages of its supply chain. The digital technology helps to connect suppliers of inputs (e.g., seeds, fertiliser) and outputs or distributors, and ensures better support to producers through digitising farmer engagement, production monitoring, and data collection.



Their integrated approach, grounded in digital innovation and community-based delivery, has enabled ThriveAgric to scale rapidly from reaching 4,500 smallholder farmers in 2017 to over 823,000 by 2023. Their success lies in making agricultural resources accessible through tailored, tech-enabled services that adapt to the real needs of rural communities.

ThriveAgric's use of digital technologies and focus on youth has contributed to job creation and improved agricultural outcomes. They reached 10.000+ youth providing them with skills building, career growth initiatives and linking them to employment opportunities. Still, measuring the specific impact of these technologies remains challenging. The impact evaluation manager at ThriveAgric explained that it is difficult to quantify exactly how many jobs have been created or how much yields have improved as a direct result of digital tools alone. However, despite these limitations in measurement, ThriveAgric has embedded several

strategies to ensure adaptability of its business model and navigate the challenges of implementing digital technologies in agriculture. Infrastructure limitations, such as poor internet connectivity and unreliable electricity, remain major barriers, compounded by the high costs of initial investment and research and development. Resistance to new models also slows adoption, as many farmers remain skeptical of digital solutions, and gender-based barriers continue to limit women's access to agricultural resources.

Below, we highlight a number of key lessons learned from ThriveAgric's experience, highlighting what works and where challenges remain in scaling such innovations across the sector.

Best practices for youth-led, digitally-enabled agriculture

The implementation and adoption of digital & green technology is one of the key drivers to increase youth employment potential in the agricultural sector. Participants throughout this research mentioned how a tech-driven business model has helped change perceptions around agriculture, making it more appealing for youth and increasing their participation in the sector.

> ***"When young people see someone their age using digital tools to make farming easier and more efficient, it changes how they see agriculture. It's no longer just about hard labour—it becomes something innovative and exciting to be part of."***
> *— Olawale Olaoye, Head of Agronomy & Climate-Smart Projects, Thrive Agric*

✔ *An **agent-based employment model** positions youth as the vital bridge between digital innovation and smallholder farmers.*

ThriveAgric's AOS software plays a central role in connecting young people with new employment opportunities in agriculture by enabling youth to work as field agents with the software installed on mobile devices to on-board farmers, conduct soil testing and provide advice to farmers based on the reports of in-house agronomists.

The company's agent-based employment model deploys two distinct types of agents. The so-called Climate Champions, are full-time, salaried employees who work closely with farmers to promote climate-smart agriculture and manage activities linked to carbon credit initiatives with international partners. In contrast, the second type of agents facilitate the buying and selling of agricultural inputs and outputs through ThriveAgric's digital marketplace, or use Point-of-Sale devices to provide financial services in rural, underbanked areas. These agents operate on a commission basis, which provides flexibility and the potential to increase earnings based on performance.

KEY INSIGHT **Digital Tools for Additional Carbon Credit Income**

Through the introduction of climate-smart agriculture and agroforestry projects, ThriveAgric is also opening a pathway for farmers to earn carbon credit income. Carbon credits are tradable certificates earned by reducing greenhouse gas emissions, which can be sold on voluntary or compliance markets to generate additional income. A major challenge is preventing double-counting of carbon credits, requiring strict project delineation and digital monitoring. Digital software enables rigorous tracking and validation of practices—an essential requirement in the international carbon credit market. Youth Climate Champions, trained in both tech and climate-smart practices, act as trusted intermediaries who monitor compliance, document outcomes, and ensure accountability.

✔ ***Community-based recruitment*** *of youth ensures trust and alignment with cultural norms.*

Collaborating with youth from communities where ThriveAgric promotes technology adoption ***addresses language and localisation challenges*** *that frequently arise, which was highlighted as one of the main barriers by agribusinesses that participated in the focus group discussions and key informant interviews of this research.*

ThriveAgric operates in linguistically and culturally diverse regions, requiring translation of digital content and training materials. Where technology is not yet fully translated, bilingual field agents bridge the gap. By training and recruiting local youth, they leverage existing knowledge of the language, terrain, and community dynamics. This approach ensures ease of digital tool adoption because the direct link to farmers enables real-time information sharing on the use and benefits of their digital solution as well as data collection and monitoring.

KEY INSIGHT **Emphasis on Partnerships**

"Don't do anything without community leaders and stakeholders—this goes a long way to creating a sustainable business model."
— Samirah Bello, Head of Strategic Partnerships, ThriveAgric

Through partnerships, ThriveAgric has built localised training programs, facilitated community-based recruitment, and implemented gender-sensitive approaches to ensure broader participation. **This collaborative effort fosters trust**, making digital solutions more acceptable and accessible. As a result, more farmers, particularly women and young people, are equipped with the tools to increase their yields, manage risks, and connect with markets.

✔ ***Flexible recruitment methods****—ranging from online platforms to field-based outreach in rural areas—and* ***tailored training and career growth*** *enable ThriveAgric to engage local youth more inclusively.*

ThriveAgric's youth employment model is grounded in context-specific, demand-driven training that equips local youth with the digital, agronomic and social skills needed to support farmers in increasing their productivity and adopting climate-smart practices. Upon recruitment youth undergo multi-layered onboarding that includes receiving online training in

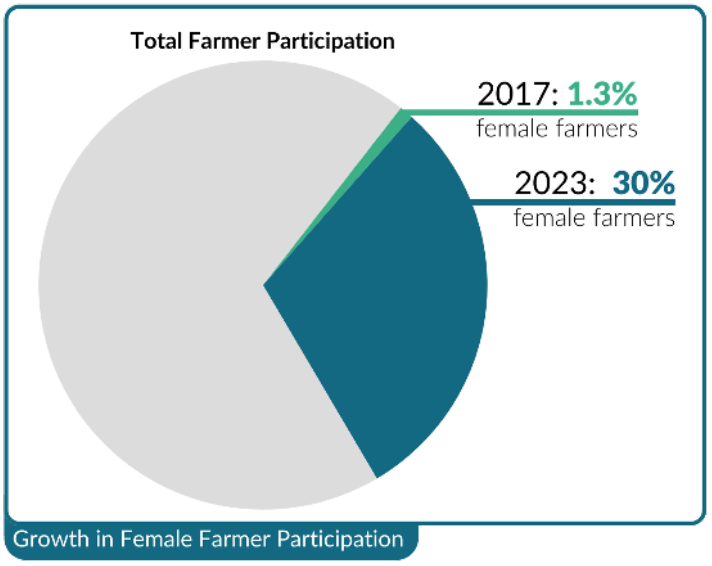
digital literacy, navigation of Thrive's AOS platform, data collection, and tailored knowledge based on their roles in agroforestry, climate-smart agriculture, or financial services. These trainings are delivered via customised dashboards within AOS, making digital tools accessible even to youth with limited formal education. Additional leadership and 'mindset training' is crucial for retention and motivation, and refers to a deliberate effort to shift how youth perceive themselves, their potential, and their role within the agricultural sector and their communities. By framing youth's roles as part of a broader mission to modernise farming and support their communities, ThriveAgric helps youth find purpose and pride in their work.

✔ ***An intentional gender inclusion strategy*** *helps navigate cultural sensitivities and ensure women's participation through women-led training and outreach, especially in areas where male-female interactions are limited.*

> *"We understand and recognize the importance of gender inclusion. So, we are always planning this in all of our projects. When we need to do training, it's our female agents that go to the field, go to their houses, and deliver the training."*
> *— Samirah Bello, Head of Strategic Partnerships, Thrive Agric*

This gender-responsive approach to advancing women's inclusion builds trust and ensures accessibility. The company also partners with women's groups and community-based female leaders to deepen engagement and support long-term inclusion.

These efforts contributed to 30% of their farmer participants and 40% of their workforce being women in 2023. ThriveAgric further boosts visibility and empowerment of women as champions of digital innovation in agriculture through public campaigns, such as their International Women's Month initiative, which highlights successful women across the agricultural value chain.



✔ ***Fostering a youthful, tech-enabled organisational culture*** *plays a central role in attracting and retaining young talent.*

A core insight emerging across interviews with ThriveAgric staff is ***the pivotal role that youth play in driving technological innovation in agriculture****. Youth are not only more inclined to engage with digital tools—they are also best positioned to learn and adapt quickly to new technologies. This alignment between the digital nature of ThriveAgric's business model and the digital fluency of youth has become a foundational strategy for scaling innovation in rural agriculture.*

With 80–90% of its workforce under the age of 35, the company fosters an environment where youth feel both represented and empowered. By embedding technology at the core of its operations—ranging from agricultural service delivery to internal collaboration via digital platforms like Google Workspace—ThriveAgric creates a flexible and dynamic workplace that resonates with digital-savvy youth. The company promotes remote and non-traditional work structures, enabling employees to work at their own pace and take ownership of their tasks. In addition, youth are meaningfully involved in decision-making processes, particularly in the design and iteration of Thrive's digital tools. Through beta testing, feedback sessions, and regular meetings with staff and community agents, young employees influence the development of user-friendly technologies that align with the practical needs of farmers.

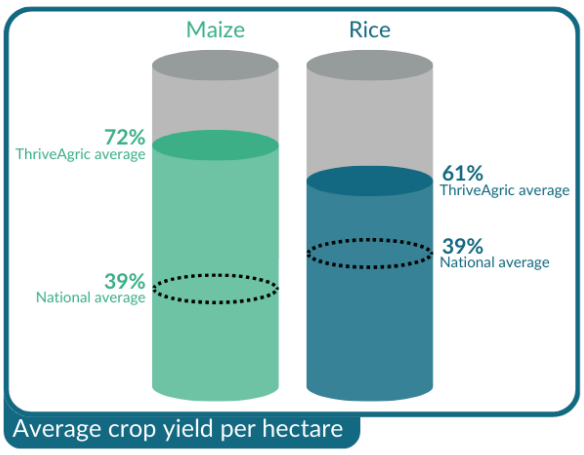
INFO BOX **Design and Adoption of Green & Digital Technology**

"We are building technology for people who are not highly literate, so simplicity is key. The moment the solution becomes too complex, adoption becomes a challenge."
— Musa Ismail, Impact Evaluation Manager, ThriveAgric

Key Design Principles:

- **Iterative testing:** Continuous feedback loops refine tools before scale-up.
- **Modular tools:** Dashboards and features are tailored to project-specific needs (e.g., carbon credits, post-harvest loss).
- **Community-driven development:** Pilots are run in selected communities based on feedback from local agents.
- **Integrated services:** Tools combine input distribution, extension support, market access, and impact tracking.
- **Modular tools:** Dashboards and features are tailored to project-specific needs (e.g., carbon credits, post-harvest loss).

ThriveAgric tackles scepticism toward digital technology and climate-smart practices not just through training—but through proof. By combining technical support with visible, measurable outcomes, the company helps farmers see the value of adopting new practices. These include the use of drought-resistant seeds, precision input use, and improved post-harvest handling. A proprietary food waste index tracks post-harvest losses, and in 2023 alone, farmers using ThriveAgric's tools achieved 25% higher crop yields than national averages — contributing 6.5% to Nigeria's national grain reserves. These tangible benefits spark organic uptake: when farmers witness neighbours increasing revenue (on average by $4,200 annually), word spreads quickly.

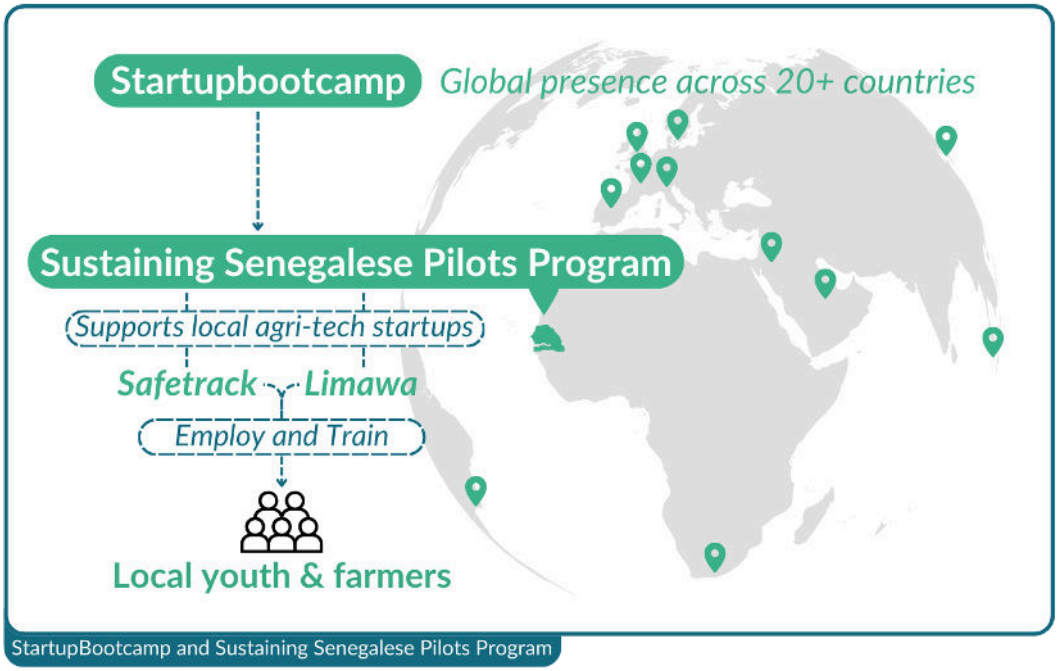


Case Illustration: StartupBootcamp Senegal

Who is Startup Bootcamp?

StartupBootcamp (SBC) Senegal is a country branch of the global network of startup accelerators, which was launched in 2017 in South Africa and scaled to Senegal in 2021. As a startup accelerator, SBC Senegal plays a catalytic and enabling role within the CFYE supported Sustaining Senegalese Pilots (SSP) program by bridging the gap between startups, funders, cooperatives, and young people. Within the project, SBC helps early-stage agritech startups to co-develop and scale their digital and green technologies aimed at increasing the productivity and resilience of smallholder farmers in a selected region. SBC currently has two start-ups in their project portfolio:

> *Safetrack offers a precision agriculture sensor installed directly on the field that leverages an integrated Internet of Things (IoT) platform to provide real-time data on soil conditions. Using recycled smartphones and low-energy sensors, their system enables data-driven recommendations for irrigation and fertilisation, also in rural areas.*
>
> *Limawa provides solar-powered refrigeration systems to address one of the most critical post-harvest challenges: food wastage. These refrigeration units extend the shelf life of perishable products thereby reducing waste.*



SBC supports employment creation by helping agri-tech startups to grow and employ youth as freelancers or technicians. SBC also improves conditions for young farmers by providing access to Safetrack's and Limawa's technology and service-offering and providing technical skills training in climate-smart agriculture. The youth employment impact here is therefore *indirect*, distributed across startups and farmer groups they support, not centralised within SBC itself.

The emphasis is on **improving existing farm-based jobs and creating enabling conditions for rural youth entrepreneurship and cooperative-based work**.

This case study highlights lessons for ecosystem actors, like SBC, and agribusinesses, like Safetrack and Limawa[1], seeking to improve youth employment outcomes **at the pilot-to-growth stage**. Because these agribusinesses are still refining their technologies and testing their models with smaller farmer groups, the youth employment potential of this pilot project should be carefully evaluated. The following lessons—*based on the experience of SBC's business development coach and Safetrack's co-founder*— focus on both the enabling role of SBC to improve youth employment outcomes, and the challenges faced by Safetrack to promote the adoption of digital and green technology in rural Francophone West Africa.

Lessons for youth-led, digitally-enabled agriculture

✔ ***The role of facilitators is critical*** *in a fragmented, rural and early-state ecosystem.*

Facilitators, like SBC, can help establish partnerships between the ecosystem actors for integrated service-delivery to young farmers, including access to digital technology and training on smart and sustainable farming practices. SBC further supports the identification, recruitment and training of youth and links these to employment opportunities at agribusinesses, like Safetrack and Limawa. In addition, facilitators provide crucial business development support to local digital and green start-ups. The co-founder of Safetrack reported that SBC helps them bridge funding gaps and scale their impact by facilitating outreach to cooperatives, local agronomists, municipalities, and even competitors to create a supportive environment for technology adoption

> *"We don't talk about technology first—we ask farmers about their problems, go to the field, and see what they really need. That's when the solutions make sense. Partnerships are everything—we need local governments, NGOs, and other agribusinesses to work together."*
> *— Seydina Mouhamed Sene, Co-founder COGNX SafeTrack Senegal*

✔ ***Training on local farms through startups supports hands-on experience*** *as technicians and agronomists and skills development.*

In the SSP project, youth are recruited from local universities and reached via LinkedIn campaigns. After the selection of applicants to the program, they are trained in a series of intensive workshops on farmer engagement, IoT installation, smart irrigation and data monitoring to support the adoption of technologies in underserved areas. In order to support outreach to 1200 young farmers within this pilot project, SBC has trained a cohort of 30 young people in partnership with the two startups.

[1]*The findings are only based on SBC's and Safetrack's experience because the case study does not include an interview with key formants from Limawa.*

While Saftrack and Limawa continue to grow, the capacity of both start-ups to offer long-term employment is still very limited. To find job opportunities for all youth that have participated in the training, SBC is reaching out to similar startups across Senegal. At the current stage, Safetrack only creates short-term employment opportunities for youth in both tech and agricultural support roles. They employ freelance technicians and agronomists for installation, data collection, and maintenance. This highlights the need to invest in sustainable livelihood opportunities instead of just short-term employment.

✔ ***Local cooperatives and grassroots actors are instrumental*** *in introducing and supporting the use of digital and green technologies among smallholder farmers.*

Instead of engaging farmers individually, SafeTrack and Limawa, collaborate with cooperative leaders who serve as trusted intermediaries within rural communities. These cooperatives often organise and manage multiple youth-led farming plots, making them an effective entry point for both outreach and implementation. Through these cooperatives, SafeTrack installs IoT sensors that collect real-time data on soil conditions and water needs. The resulting recommendations, on when and how much to irrigate for instance, are shared with farmers either via cooperative dashboards or through appointed local "champions" who help translate and disseminate the advice. This shared model helps reduce costs and makes advanced technology more accessible to smallholder farmers.

✔ ***Addressing funding gaps and enabling more direct market linkages*** *is required to support digital technology adoption among smallholder youth.*

The fact that smallholder farmers often cannot afford to pay the upfront costs of digital or green technologies, like sensors and equipment, poses a challenge for agritech startups that lack capital to offer flexible financing. Start-ups, like Safetrack and Limawa, therefore rely heavily on partnerships with donors or local authorities to pre-finance technology installation or provide results-based financing models to farmers. To address the market access challenge that farmers face within the project, SBC helps them navigate certification, find buyers, and position their products for sustainable markets (e.g., natural fertiliser-only contracts with major retailers). Without this holistic approach, the impact of technology alone remains limited.

✔ ***Adoption of digital and green technologies in agriculture cannot be assumed****—it must be intentionally designed and locally grounded.*

Starting small, demonstrating results, and communicating through accessible channels like WhatsApp and voice notes has proven effective in building trust among young farmers.

> ***"We do a small training on smart agriculture, show them videos of how the solution works, and explain everything in a simple way. When they see it's not complicated—that it works through WhatsApp or voice messages—they are amazed. They see it's something they can actually use."***
> — Seydina Mouhamed Sene, Co-founder COGNX Safetrack Senegal

Recognising that many farmers do not read or write French, SafeTrack is also piloting AI-powered voice message systems in Wolof and other local languages with which farmers can request agronomist advice verbally. This voice-first approach is a promising innovation for reaching low-literacy users in rural areas. However, some limitations remain. While digital tools can tell a farmer how much water to apply, not all farmers have the infrastructure, such as drip irrigation systems, to act on these recommendations. This highlights a broader lesson for other agribusinesses: effective digital solutions must be paired with enabling physical infrastructure to ensure real adoption and impact.

While early donor support has enabled experimentation, the **long-term viability of initiatives**, like the SSP project, **will depend on deeper investments in local adaptation, farmer engagement, and flexible financing models**. Critically, the extent to which this model will continue to generate meaningful youth employment at scale remains an open question. As technology becomes more autonomous, it is uncertain whether youth will still be needed as intermediaries beyond the farmer engagement phase, or if new roles will emerge. This makes it imperative for future research and programming to closely monitor not just direct and indirect impact, but long-term employment creation and ecosystem development.

Key Insights & Lessons Learnt

This concluding section synthesises the key insights and lessons that emerged from the research. Recognising the private sector's pivotal role in driving youth employment in agriculture, the study was conducted in close collaboration with agribusinesses leading the adoption of green and digital technologies to build a more resilient, sustainable, and productive food system in Africa. A final sensemaking session—bringing together agribusinesses, CFYE country leads, and youth representatives—helped to ground these findings in practice and ensure that the recommendations are actionable and relevant for those working to create and improve youth employment opportunities across the sector. Based on these case illustrations and the sense-making session, the following actionable insights emerged.

1. **Digital & green technologies do not directly guarantee youth employment improvements, but they do enhance how farmers interact with opportunities in the value chain.**
   Rather than replacing traditional agricultural work with digital jobs, these technologies often enhance how farming is done, leading to indirect improvements in youth employment. Innovations like precision farming sensors, digital advisory platforms, and solar-powered cold storage improve access to tailored advice, inputs and markets. **Youth employment creation and improvements of decent work standards often occur indirectly** as a result of farmers managing their fields more effectively and better access opportunities within the value chain. This can increase income and unlock new employment opportunities downstream, such as hiring seasonal workers, starting new agri-businesses, or engaging in value addition.

2. **Technology alone will not lead to change without a focus on co-design with farmers, integrated service delivery, and trust-building mechanisms.**
   Digital advisory services, freelance agri-tech support, and mobile-based extension work offer promising pathways for youth employment. Many young people are already delivering pest diagnosis, climate-smart farming tips, and digital literacy support to farmers in their communities. However, for these roles to be sustainable, farmers and cooperatives must recognise their value and be willing to pay for these services. Adoption of digital and green technologies hinges not only on technical innovation, but on **building trust within communities**, **designing for low-literacy and low-connectivity** environments, **ensuring affordability**, and **demonstrating clear benefits** to farmers. Co-designing solutions with end-users, simplifying service delivery, and creating awareness on potential of new technology and practices are just as critical as training the youth who deliver them.

3. **Technology is changing young people's perception of their role within agriculture, bridging the gap between technology and farmers.**
   Technology plays a vital role in challenging the widespread perception of the agricultural sector as a last-resort option. Rather than drawing youth directly into farming, technology is helping young people reimagine their role in the agricultural value chain, for example as drone pilots, data analysts, service providers, or digital extension agents. Where agriculture was once seen as labourious and low-status, technology has made it feel innovative, entrepreneurial, and empowering.

This is especially the case when youth see technology solving real world problems and when farmers shift from subsistence to market-oriented production. Often youth view technology as a means to gain independence by establishing their own agribusiness venture rather than just another job.

4. **Youth employment outcomes depend on how intentionally agribusinesses engage and include young people.**
   While tech-savvy young people play an important role for businesses as a link between the technology and farmers, recruiting and retaining them remains a challenge for some businesses. This research shows that youth employment experience depends on the opportunities to grow professionally, contribute meaningfully, and earn fairly, which determines whether they stay and thrive in the sector. Young people want to be recognised for the value they bring, not just used as temporary or cheap labour. When they are offered real responsibilities, supportive and flexible work environments, and fair remuneration, they are more likely to remain engaged within the sector. In addition, youth inclusion in agri-tech depends on relevant, hands-on training that aligns with local needs. This should go beyond digital literacy to include knowledge on agronomy, environmental sustainability, and enhancing soft skills.

5. **Ecosystem support and multistakeholder partnerships are essential to address structural barriers that limit the full potential of technology adoption.**
   The full potential of digital and green technologies to support youth employment cannot be realised without addressing persistent structural barriers. Many young people—particularly those in rural areas and young women—face limited access to devices, connectivity, and tailored training, as well as a mismatch between academic curricula and practical job requirements. Furthermore, high start-up costs and regulatory hurdles such as licensing further restrict opportunities for farmers and agribusinesses. At the same time, meaningful youth engagement rarely happens without coordinated ecosystem support. Agribusinesses that succeed in creating decent work for youth often benefit from partnerships with donors, governments, cooperatives, and training institutions in order to offer tailored and also more holistic support to youth and farmers.

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