Project Completion Report

Project Title: **AgriHack Talent: Focus on Pitch AgriHack (2016 – 2020)**

Organisation: **CTA (with support of various partners)**

Project Coordinator: **Ken Lohento**

Date: 30/10/20

This project completion report was prepared by **Ken Lohento and Folake Koutchade, with support of Giorgio Bellinzas (Consultant)**.

From 1983 to 2020, the Technical Centre for Agricultural and Rural Cooperation (CTA) was an international institution of the Organisation of African, Caribbean and Pacific States (OACPS) and the European Union (EU). Its mission was to advance food and nutritional security, increase prosperity and encourage sound natural resource management in African, Caribbean and Pacific countries. In its project portfolio (2016–2020) of 73 projects, CTA focused on digitalisation, youth entrepreneurship and climate resilience as its priority intervention areas.

CTA came to the end of its mandate as the Cotonou Agreement between the EU and the ACP countries, the legal and financial framework within which CTA functioned, ended on 31 December 2020. As part of CTA's orderly closure, all major projects created project completion reports which are now being made available to the wider public to share lessons learned. These reports specify sections on results, financial information, lessons learned and references.

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The project partner as the new Data Controller shall have the responsibility to comply with the applicable legislation on the protection of personal data, which it is for project partner to verify, and the obligations such applicable law imposes on the Controller.

CTA will no longer bear any responsibility for the processing operations, not towards the data subjects, nor towards the data protection authority.

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Members of the Project Coordination Team:	Other members of the CTA AgriHack team, at different moments, included: Tobias Hiemstra, Oluwabunmi Ajilore, Marc Ghislain Bappa Se, Arsene Birindwa, Folake Koutchade, Nawsheen Hosenally, Marion van Boven, Hermann Tossou, Noldi Stals, Armelle Degrave
Key partners:	African Development Bank (AfDB), Alliance for a Green Revolution in Africa (AGRA), Women in Tech Africa, VC4Africa, Suguba, Greentec Capital Partners, Wennovation Hub, BongoHive Etrilabs, Yeesal AgriHub, etc.
Title of the Action:	Accelerating ICT agripreneurship by youth in ACP countries (AgriHack Talent)
Start date and end date:	The project started under another name earlier; the period covered by this report is 2016 – 2019
Targeted beneficiaries:	Young digital agripreneurs
Final beneficiaries:	Farmers and various agricultural stakeholders
Target region(s):	All ACP Countries
Countries in which the activities take place:	Various (about 60 countries covered in total)

Figure 1: CowTribe, 2016 finalist and 2018 winner explaining the service they offer to a female livestock farmer

1.2 Executive summary of the activities implemented

CTA's AgriHack Talent initiative aimed to strengthen youth-led digital innovation and entrepreneurship in agriculture in African, Caribbean and Pacific countries. It was a key part of CTA's strategy to encourage youth's meaningful involvement in agriculture and promote youth employment and agricultural transformation through innovations.

Co-designed with young innovators and partners, the AgriHack Talent project included:

- competitions to develop information and communication technology (ICT) applications for agriculture (hackathons) when there is a need
- a start-up competition (called Pitch AgriHack) targeting young companies already offering e-agriculture services
- capacity building, mentorship and incubation opportunities
- promotional and networking opportunities
- facilitation of access to grants and investments to scale-up services offered.

The project was launched in 2013 when a regional agricultural hackathon was organised in the framework of the international ICT4Ag conference that CTA organised in Rwanda. It was probably the first initiative of its kind at the international level targeting Africa. The hackathon targeted East Africa only, leveraging on the stronger development of digitalisation in that region. Hackathons were then organised annually until 2015.

From 2016, the project focused on start-ups that already owned digital solutions as many prototypes were already in existence and needed support to grow. This was the launch of Pitch AgriHack. Four editions of Pitch AgriHack were organised. The 2016 edition covered all ACP countries, the 2017 edition focused on West Africa and the last two editions organised in 2018 and 2019 again covered all ACP countries. For these last two editions, CTA put young women's digital entrepreneurship at the core of the project and 50% of finalists and winners were women-led businesses.

Networking opportunities offered to the best companies included their participation in events such as the AgriStartup Summit in France, the African Green Revolution Forum (AGRF) in different African countries, the Pan African Agribusiness Conference and Expo, the Salon International de l'agriculture in France, African Development Bank (AfDB) events such as the African Youth Agripreneurs (AYA) Forum, European Development Days in Brussels. They also took part in events which specifically supported their investment research strategies. These included two editions of the United Nations Development Programme (UNDP) Social Good Summit, organised in collaboration with CTA in Geneva, Switzerland, the Exco 2019 Forum organised in Italy by the Government of Italy and the European Union, and the World Investment Forum in 2018 in Geneva, Switzerland. The finalists' WhatsApp group and the email discussion list (in English and French) served as key networking and capacity-building spaces and community of practices.

Training on investment readiness and financial management were organised for the benefit of all finalists since 2017. CTA also offered many winners dedicated mentorship support. This was the case when contracts were signed with the African Agribusiness Incubators Network (AAIN), the international consultancy firm Ernst and Young and the Dutch company VC4Africa, which provided mentorship to winners or selected participants in 2016, 2018 and 2019, respectively. These strategies have yielded very positive results: for example, the mentorship of Sooretul (a 2016 winner from Senegal) by Ernst and Young and the growth strategy that they developed were instrumental in helping the company win a US$100,000 grant from the BMCE Bank of Africa.
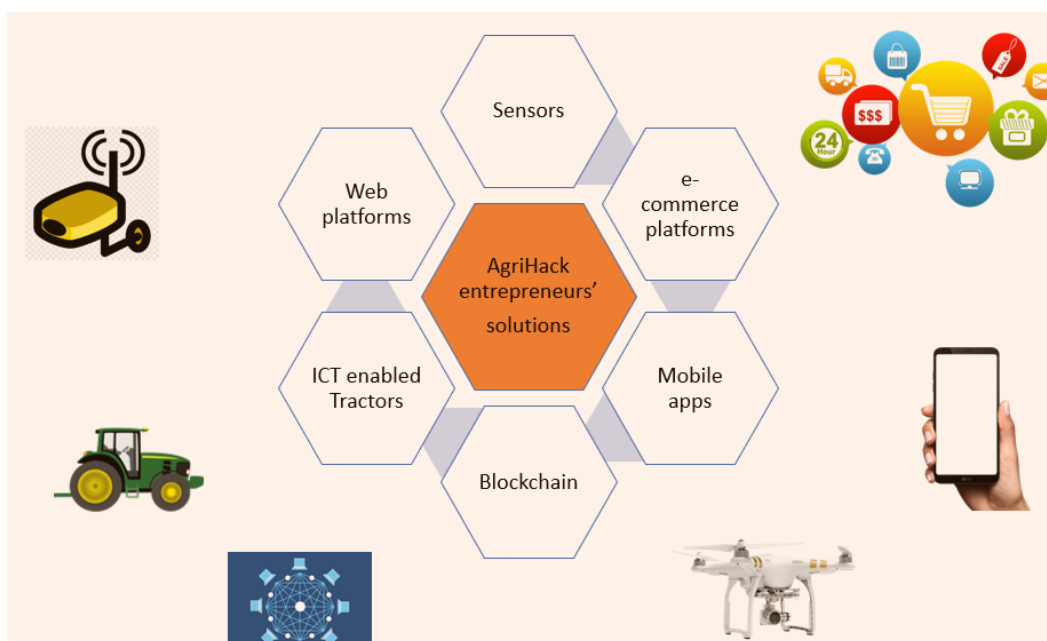
Figure 2: Technologies and services offered by start-ups involved in AgriHack Talent

Two publications were produced by the project – *Innovate for agriculture* (in 2016, in collaboration with Ashoka) and *ICT Agripreneurship Guide* (2017) – and one in collaboration with the project (*Business models and key success drivers of agtech start-ups*) to support young digital entrepreneurs' capacity building and promote best role models.

More than 1,500 young innovators and entrepreneurs (representing about 800 young companies) from 60 countries took part in the initiative between 2013 and 2019. About 30 ICT hubs and incubators from about 20 countries were involved, including Wennovation Hub from Nigeria, Yeesal AgriHub from Senegal, Mlab East Africa from Kenya, Outbox Hub from Uganda, BongoHive from Zambia and SlashRoots from Jamaica. Key institutions involved included ministries in charge of ICT and agriculture, AfDB, Alliance for a Green Revolution in Africa (AGRA), Suguba Africa, OCP Group, the World Bank, CARDI, SACAU, VC4Africa, Microsoft, Devlab (Americas), Greentec Capital Partners (Germany), ProHaus Group (USA) and Telesur (Suriname). Many of these partners have supported the initiative by providing funding or networking and promotional support. The support provided by the AfDB, one of the key historical partners of the project, was made through funding provided to the institution by the Government of the Republic of Korea as part of Korea-Africa Economic Cooperation.

Key impacts observed included the following. Best start-ups involved raised more than €2.5 million in investment and grants from various national and international parties. More than one million users (mostly farmers) were reached by services they provided. The end-of-project survey undertaken in 2020 to assess the project's impacts found that, on average, winners reported that they had increased their number of employees by 116.3% since they started engagement with the project (some of them have four times more employees). They serve clients including government, civil society, the private sector and international organisations. More details on the findings of that survey are provided in the outcomes and impact sections of this report.

The AgriHack initiative has contributed to strengthening CTA's positioning on youth entrepreneurship as well as its leadership in the ICT4Ag field. The project's activities were instrumental in the awarding to CTA of the World Summit on the Information Society Award Prize in 2015 (in the e-agriculture category) for its youth and ICTs activities (under the umbrella of the general ARDYIS programme of which the AgriHack project was a spin-off).

Pitch AgriHack has also been used to identify start-ups some institutions can work with in specific projects. For example, in Burkina Faso Yam-Pukri used the competition as a channel to identify start-ups it can work with in the framework of the *Ideal Burkina project* (Innovation, Développement Agricole et liens vers le marché) in 2018/2020. Pitch AgriHack was also implemented in Ethiopia in the framework of the project *AgriTech Movers Ethiopia*, implemented by the incubator IceAddis in 2019–2020. Other organisations organising similar events based on the project's experience include FAO, BongoHive in Zambia and the Ministry of Agriculture in Côte d'Ivoire.

Many start-ups that won Pitch AgriHack also won other international awards. The project attracted international recognition as a pioneering, impactful activity; it was showcased three years in a row at the African Green Revolution Forum (AGRF) in the presence of African leaders and heads of states.

Detailed outputs and results provided in this report focus on the years 2016–2020. The annual Pitch AgriHack was not organised in 2020 because of CTA's impending closure, although support continued to be provided to young digital entrepreneurs.

Figure 3: Pitch AgriHack 2018 finalists with heads of states and agribusiness leaders at AGRF 2018

1.3 Project background

Agriculture in African, Caribbean and Pacific (ACP) countries is generally affected by the weak integration of new ICTs. These technologies can be used to help address many of the food and nutrition security issues affecting these regions.

Youth constitutes a large share of the population of ACP countries (for example, two-thirds of the population of sub-Saharan Africa are under 25 years of age). These youth are facing critical unemployment and underemployment conditions. Fortunately, agriculture, which is still the largest job provider in Africa in particular, presents several streams of opportunities for them. It is the first sector that could provide employment to the 10 to 12 million youths who enter the job market in sub-Saharan Africa each year (*African Economic Outlook 2012*). Moreover, it has become critical that more young people are involved in the sector to mitigate the trend of ageing workforce witnessed in the sector. This is also essential to increase productivity and alleviate the food security issues facing and threatening ACP countries.

It has been demonstrated that the use of ICTs in agriculture improves its image and perception among youth and helps better engage them. Young people are spearheading the development of ICTs in all regions of the world and can be encouraged to harness their innovations to

support higher performance of agricultural value chains. Linking ICTs and youth in agriculture has thus become a winning strategy. It can be achieved notably by encouraging them to develop relevant digital platforms that can facilitate integration and adoption of innovation in the sector. This strategy has also the potential to leverage income generation streams for youth. Indeed, the agricultural sector is one of the areas in which ICT applications are increasingly providing opportunities for them, as was illustrated in the report *Digital opportunities: Innovative ICT solutions for youth employment* published by ITU (2014) and in various CTA activities.

CTA developed the AgriHack Talent project, which includes Pitch AgriHack, to foster youth innovations and entrepreneurship in agriculture and accelerate their businesses for job and growth creation within the entire agri-food sector. It aimed at responding also to:

- the lack of support for young entrepreneurs to develop their ICT4Ag businesses
- the weak business model of ICT4Ag start-ups and
- the weak adoption of ICT in agriculture.

Figure 4: Former CTA Director Michael Hailu, partners and finalists at Pitch AgriHack 2018

1.4 Impacts and outcomes

The expected results of the project were:

- increased revenues and growth for winning start-ups
- creation of new jobs, particularly for youth
- increased networking for digital entrepreneurs
- at least 200,000 agricultural actors reached between 2018 and 2019, to complement about 800,000 reached previously

- improved business operations, productivity and increased revenues for farmers and agricultural stakeholders benefiting from effective services offered
- increased knowledge and capacity on effective digital agriculture young digital start-ups
- increased engagement of young female entrepreneurs into digital agribusiness
- strengthening CTA's value proposition and credibility on ICT4Ag and youth agripreneurship.

Most of these results have been achieved and, in some cases, exceeded. Results have contributed to the achievement of CTA's key strategic goals and expected results, especially in terms of profitable smallholder value chains; enhanced capacity for knowledge management; stakeholders securing new business partnerships; adoption of new practices or innovations by agricultural actors; and establishment of new agri-businesses.

1.4.1 Impacts

Increased revenues and growth for winning start-ups

One of the questions included in the end-of-project survey made in 2020 to assess impacts addressed how the start-ups think the programme contributed to the development of their companies. Fifty-two finalist businesses (out of about 120 total respondents) and 25 winners provided an answer. Results from finalists are included in Figure 4.
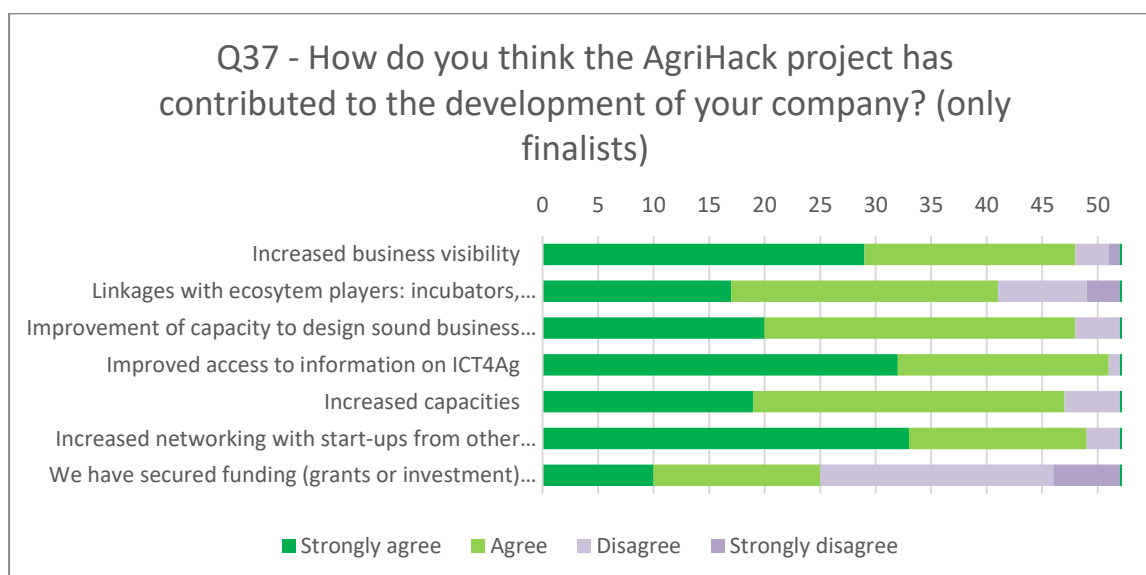
Figure 5: How do you think the AgriHack programme has contributed to the development of your company? (only finalists)

Key results included the following:

- 96% of winners agreed or strongly agreed that the project helped them to improve their capacity to develop sound business models (92.3% of finalists agreed or strongly agreed)
- 67.3% of winners agreed or strongly agreed that, apart from CTA grants, the project helped them benefit from funding from other partners (48.07% of finalists strongly agreed); these figures are very positive as the project is not focused on helping start-ups to raise capital
- 100% of winners agreed or strongly agreed that the project helped to access ICT4Ag information (98.06% of finalists agreed or strongly agreed on this)
- on average, winners reported that they had increased their number of employees by 116.3% since they started engagement with the project

- 84% of winners agreed or strongly agreed that the AgriHack provided linkages with the business ecosystem and investors.

Another question was related to the change in turnover for the start-ups from their year of engagement in the project to the survey date. The percentage of those who reported an increase in their annual turnover was 73.3% for the winners, 66.1% for finalists and 59% for all businesses that responded.

Figure 6 presents winners' responses to that question.
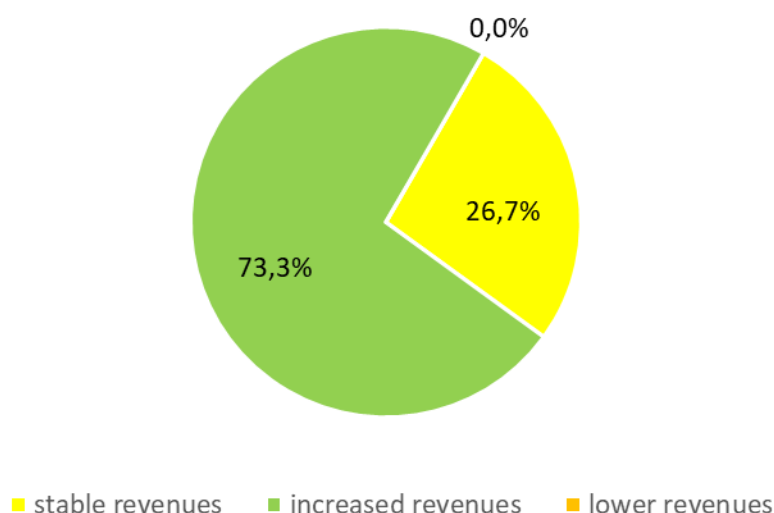
Figure 6: Reported variation of turnover since first participation in the project (winners' responses)

These are clear indications that the AgriHack project has brought about or contributed to the growth of digital agriculture businesses that have been involved. As might have been expected, those who won or benefited the most have performed better than the others.

Annual revenues generated by winners ranged between US$14,000 and US$700,000.

Figure 7 provides additional indications on grants and investment capital raised by AgriHack project start-ups.
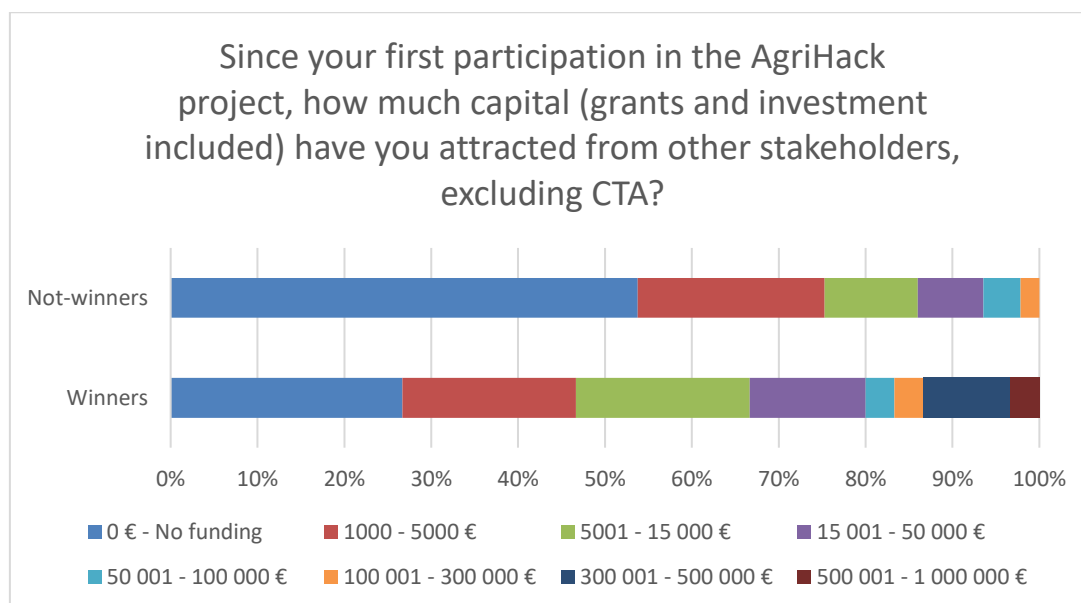
Figure 7: Grants and investments obtained by AgriHack winners and non-winners

Winners raised more than non-winners, with one respondent having raised between €500,000 and €1 million.

A conservative estimate of the amount of funds raised by the best start-ups involved is about €2.5 million over the life of the project.

Creation of new jobs, particularly for youth

On average, for all businesses involved in the project, the number of employees increased by 22.6%. Figure 8 compares the performances of winners with that of other participants (finalists and non-winners).
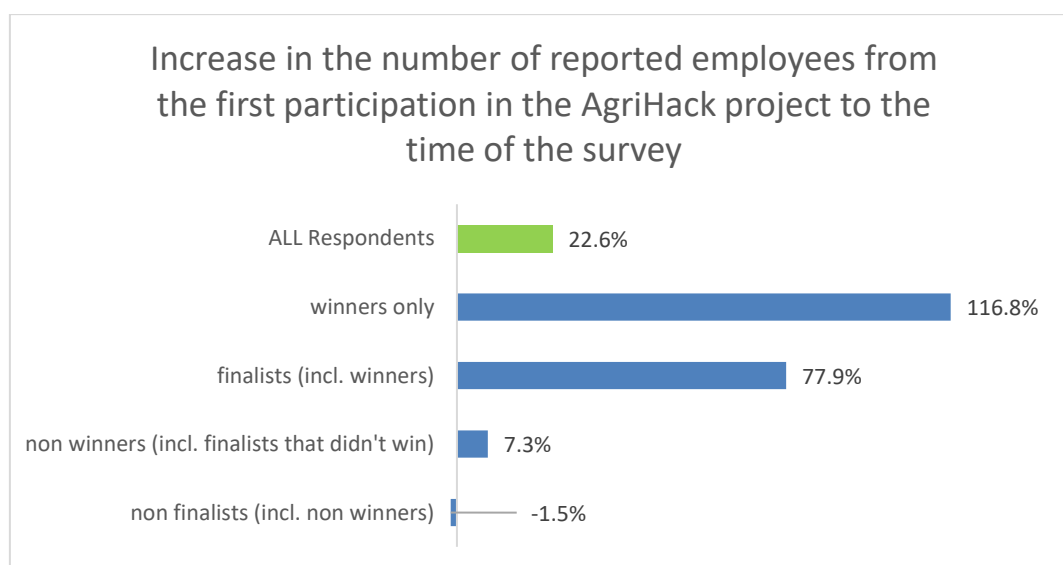
Figure 8: Increase in number of employees reported (winners, finalists and others)

The numbers include part-time and full-time employees. Most of the employees are youth, including women, as illustrated in the Figure 9.
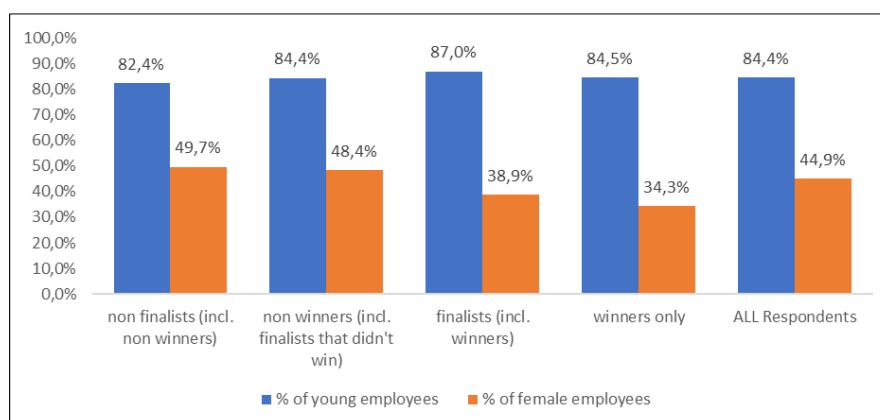
Figure 9: Percentage of current youth (18–35) and female employees in companies participating in the AgriHack project

Improved business operations, productivity and increased revenues for farmers and agricultural stakeholders benefiting from effective services offered

By a conservative estimate, at least one million farmers and agricultural stakeholders have been reached by services the best start-ups have been offering since 2013. An example of statement illustrating start-up's reach:

> *"We have reached 700,000 [users] now and have received feedback from Orange that it is the highest revenue-generating mobile agri platform they have had on their network across the countries they are in."*
>
> – Naledi Magowe, co-founder, Brastorne Enterprises 'Magri platform', Botswana (winner, 2016)

Other examples are given in the report. A specific evaluation has not been made on the impact of the services offered by the start-ups for their clients. However, from the following quotes that the winners of Pitch AgriHack shared in their grant implementation reports, we can state that customer satisfaction, business growth and increased revenues have been achieved.

- Customer of Smart-Farm, Nigeria

  "The training helped us learn a better way of controlling weeds on our farms. This has reduced our cost of production because we are able to use only what is needed instead of spraying blindly and wasting chemicals". Iya Bose – Leader, Women Farmers Association of Lanlate Town

- Customer of Fenou Packaging/Fenou Packaging (Benin)

- Story shared by Illuminum Greenhouses, Kenya

Meet Tony Koskei. A young energetic man from Nandi located north of Nairobi at about 300 km from the capital. Tony was researching online about agribusiness and wanted to venture into it. From the web, he wrote to us on his interest and we scheduled a meeting to discuss his needs. Three months later, we had built our greenhouse at Tony's farm and began implementing our extension services to ensure he harvested and earned an income. By installing our sensors on his farm and giving him access via the portal, Tony was able to plan forward for his harvest to secure markets and apply correct fertilisers as advised by the dashboard. Tony was based in Nairobi and would visit his farm every week to find out what was happening in his greenhouse. However, after he started using the dashboard, he reduced these visits to only monthly since he could see via the data his irrigation cycles, fertigation cycles, temperature and humidity cycles. At the end of the season, Tony had earned about US$7,500 from his greenhouses and reinvested in year two by taking up more greenhouses from us. By reinvesting, Tony knew he had enough data in his dashboard from season one for him to replicate in season two. Tony now has four greenhouses, all automated, and now owns a truck that he uses to deliver produce to the market in the northern towns of Eldoret and sometimes to the city of Nairobi.

1.4.2 Outcomes

Increased engagement of young female entrepreneurs in digital agriculture

The AgriHack Talent project has promoted women's engagement in digital agriculture.

The project and CTA communication team promoted best founders or female winners involved in the project during the International Girl and ICT Days or during the International Women Days. Examples of articles written to promote these entrepreneurs included:

- *FarmDrive: A Young Woman in ICT4Ag – A Case Study*, published on the occasion of the 2015 International Girls and ICT Day (article on Peris Bosire, the co-founder of Farmdrive, national AgriHack activity winner in 2015 in Kenya and one of the regional finalists of the 2013 hackathon)
- *The Future Google of Agricultural Land Information* (article celebrating services offered by Rose Funja, CEO of Agrinfo, one of the regional winners of the hackathon organised in 2013; article published on the International Youth Day 2015).

In 2016, only four women were among the 25 finalists of the AgriHack competition (16%), and in 2017 only one female start-up founder was among the 25 finalists (4%). As a result, CTA decided in 2018 to proactively encourage women's participation in the activity. The theme of the 2018 competition was "Women entrepreneurs innovate for agricultural transformation in ACP countries". For the first time for Pitch AgriHack, actions were taken in some countries to raise awareness of the activity and encourage women to participate. As a result, more than half of the 325 youth-led businesses that applied (a record for the competition) were led by women. Eventually, 26 finalists were selected, including 14 women-led companies.

In 2019, half of the finalists were women-led companies and a special female category was established among available prizes.

This proactive strategy increased both the involvement of women entrepreneurs in the project and the number of women winners. Figure 10 shows the proportion of female founders or co-founders of start-ups participating in the project between 2016 and 2019.

Male/female representation among co-founders of finalist start-ups (2016–2019)

49
27%

130
73%

■ Number of women   ■ Number of men

50%
OF FINALISTS ARE
WOMEN-LED START-UPS
(11 out of 22 start-ups)
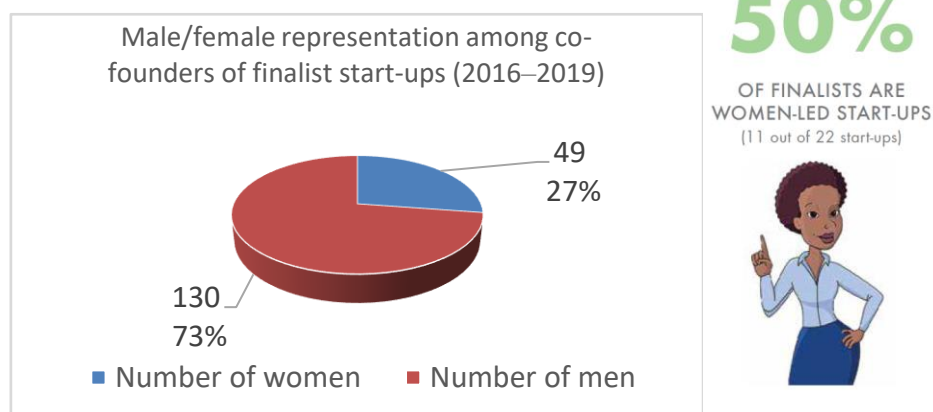
Figure 10: Male/female representation among leaders of finalist start-ups, 2016–2019 (left) and in 2019 (2019)

Increased networking, knowledge and capacity on effective digital agribusiness operations

The 2020 end-of-project survey included a question about the most notable achievement of the project according to start-ups. This was an open-ended question and responses were modelled (using keywords) as illustrated in Figure 11.

Q41 - In your opinion, what is/are the most notable achievement(s) of the AgriHack programme since its launch in 2013? How do you appreciate its contribution for the development of this type of business?

training	35%
networking	46%
financial support	16%
youth support	12%
community building	13%
visibility	13%
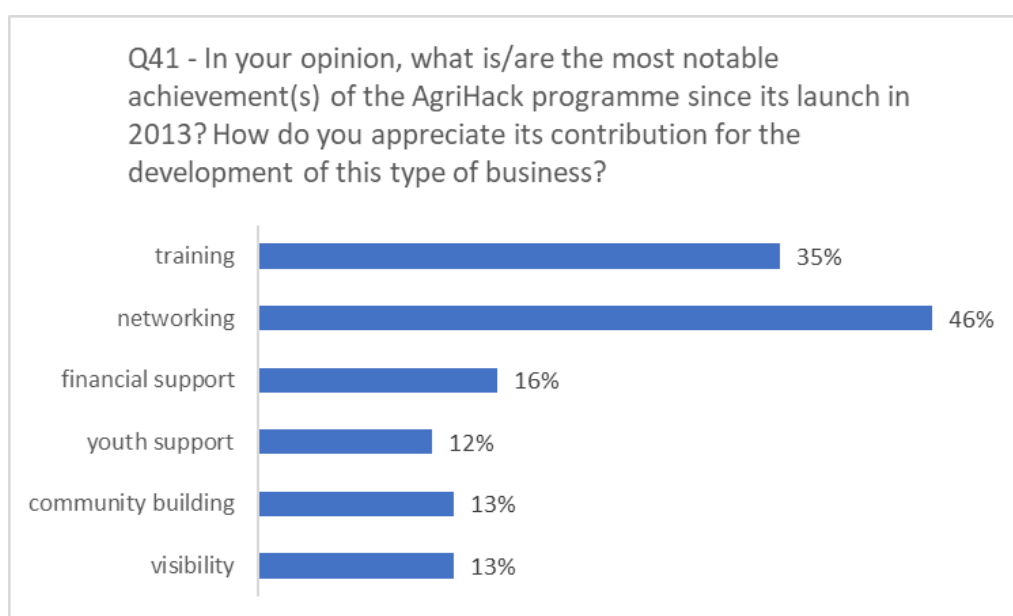
Figure 11: Opinions of respondents on the achievements of the AgriHack Project (analysis of open-ended question)

Key achievements reported are capacity building and networking. Examples of comments shared by respondents are the following:

> *"AgriHack is a great programme, came at the right time. It has helped youth to find strength to pursue what they believe in. AgriHack has helped entrepreneurs to develop strong business model, exposed us to the right information needed to be investment ready and exposed us to a superior market."*
>
> – Mayowa Ogundele, AGROPLEXI, Nigeria

"AgriHack helped me understand business model and structure. This understanding made it possible to manage the business profitably. I also got connected with brilliant minds who have since remained friends and acquaintances and we add value to each other"

– Modupe Oyetoso, Ankora Global Services, Nigeria

"Je crois que le CTA à travers son programme AgriHack a contribué à la naissance de plusieurs solutions digitales pour l'agriculture en motivant les jeunes mais aussi en contribuant au renforcement de leurs capacités"

– Donald Tchaou, Tic Agro Business, Benin

"It was instrumental in increasing our brand visibility. Agri research institutions reached out to us because of CTA support and became our customers."

– Taita Ngetich, Illuminum Greenhouses, Kenya

Other comments shared (in 2018 and 2019) by winners on their growth and results included:

"Collaborating with the AgriHack Talent project of CTA has been an incredible journey and has been impactful particularly to our growth strategy, exposing us to a valuable network and capacity building. It is crucial for digital enterprises such as us to be empowered in the same way for maximum impact and transformation... Though not fully operational, [our] service is technically available in DRC and Guinea, we are still waiting to finalise the commercial agreement. We have reached 700,000 [users] now."

– Naledi Magowe, co-founder, Brastorne Enterprises 'Magri platform', Botswana

"CTA support (training, visibility and networking) played a crucial role in our life. It has obviously contributed to the growth of our annual revenue, the expansion of the business and has helped us today to turn to diversification perspective. Thanks to CTA and Suguba support, we deployed our services in all of four regions of Côte d'Ivoire and we are improving farmers lives. Today farmers who used our services are able to manage agricultural practices, to increase their yield and income and most importantly they are more resilient. While deploying our services, we employed 13 youth and trained them; they are able today to work and have a decent life."

– Sausthène GUY EHUI, co-founder of ICT4DEV

"The online platform helped fishermen to overcome their challenge to get a regular clientele because it helps them to be more visible and sell their products faster. The result is eminent: registered fishers who sold their products via our platform claim today that they increased their income by 25% and this positively affects their families' livelihoods. The enterprise training and the different mentorship organised thanks to CTA helped me a lot. I am able to lead the performance of our business. This is important because it contributes to reinforce my capabilities to manage as a CEO. All the support from CTA and Suguba, as well as the mentorship, contribute to our revenue improvement."

– Malick Birane, CEO of Aywajieune

1.5   Outputs and key activities

1.5.1   *Organisation of Pitch AgriHack competitions*

Figure 12: Appreciation of the AgriHack activity by the President of AGRA

Four Pitch AgriHack editions were organised between 2016 and 2019 in collaboration with various partners. Table 1 presents some details about each of these editions.

Table 1: Key features of the four Pitch AgriHack competitions

Edition of Pitch AgriHack	No. of start-up applicants	Key partners	Venue
2016 All ACP edition	152 applications received from 29 ACP countries	AfDB (main financial partner), CABI, Wennovation Hub and other incubators, Mlab East Africa, BongoHive, DevLab, **Training partners**: Various Consultants and Prohaus Group	Kenya, in parallel to the AfDB/CABI e-agriculture workshop
2017 Special West Africa edition	130 applications, 11 West African countries.	AGRA, Suguba Africa, Wennovation Hub and various incubators **Training partner**: ProHaus Group (USA)	Abidjan, at AGRF
2018 Theme: Women innovators and entrepreneurs All ACP edition	325 start-ups	AGRA, AfDB (main financial partner), Wennovation Hub, Jokkolabs, Yeesal AgriHub and various incubators **Training partner**: Suguba Africa	Rwanda, at AGRF 50% of women-led company finalists
2019 All ACP edition	326 start-ups	AGRA, OCP Group, World Bank and various incubators **Training partner**: GreenTec Capital Partners (Germany)	Ghana At AGRF 50% of women-led company finalists

Figure 13: Thirty-four entrepreneurs, including 2017 finalists and other guest start-ups trained on investment readiness (AGRF 2017, Abidjan)

The process of the competition generally includes the following steps:

a) Virtual launch of the competition – call for participation
b) Application on the platform of a service provider (VC4Africa)
c) Local mobilisation of young women innovators/entrepreneurs

d) Virtual selection of semi-finalists (at least 50 companies) by judges including CTA staff, partners and experts (incubators, investors, experts in ICT, agriculture and business) from various parts of the world

e) Virtual selection of finalists (usually 25 companies) by mostly new judges (incubators, investors, experts in ICT, agriculture and business) using more-stringent criteria

f) Organisation of the final of the competition during an international event (face-to face event) –about 4/5-day activities, including

   o Two days of training, mainly on investment readiness, with exchanges on effective digital agriculture business modelling
   o One day for networking and attendance of the partner event
   o Due diligence and/or advice on financial management in parallel
   o One day of public pitching
   o Announcement of winners at closing ceremony of the partner event. At Pitch AgriHack 2019, several innovations were made in this respect. For example, at the closing ceremony, three of the winners announced directly presented their services to the audience; this was a very moving and appreciated moment.

Figure 14: Profish (Ghana) pitching at the closing ceremony after winning their award (2019)

The Alliance for a Green Revolution in Africa (AGRA) was one of the two key partners of the AgriHack Talent project since 2013 (the other being AfDB), and the finals of three editions (2017–2019) were held at AGRF. This gave the competition a unique visibility as the winners were announced at the closing ceremony, in the presence of African and international political and agribusiness leaders. In 2018, winners were announced in the presence of four African heads of states. AfDB financially supported the competition in 2016 and 2018.

Applications are launched in two general categories (in 2019, these categories were also determined using the level of revenues generated).

- Early Stage Platform: This category is open for e-agriculture platforms (mobile applications, hardware including a software, etc.) that are at an early stage and are generating revenues between €0 to €20,000 annually. The platforms targeted include prototypes with functional features that demonstrate a good potential for success.
- Mature Platform: This category is open for e-agriculture platforms (mobile applications, hardware including a software, etc.) that are at a more advanced stage and are generating annual revenues of more than €20,000.

Cash prizes generally ranged from €5,000 to €15,000. Special prizes were generally planned, with the reward provided by CTA or by partners involved in the competition. Examples of these special awards included: Data Analytics Awards, OCP Group Award, Greentec Capital Award and Suguba Award.

Figure 15: 2018 Pitch AgriHack finalists received business and ICT4Ag books

Figure 16: Appreciations of the value of the business books offered

The start-ups that won Pitch AgriHack from 2016 to 2019 were:

- **Benin:** Fenou Foods/Fenou Packaging
- **Botswana**: Brastorne Enterprises
- **Côte d'Ivoire**: ICT4Dev
- **Ghana:** Farmart Limited, AgroCenta, CowTribe Africa, Agro Innova, ProFish, TechShelta Company Ltd
- **Jamaica**: Develop Digitally
- **Kenya**: Kuza, Illuminum Greenhouses Kenya, Savanna Circuit Tech, Arinifu Technologies Ltd
- **Nigeria**: FarmAfriQué, eFarms, Farmignite Company, Ankora Global Services, FoodLocker Limited, Trackball Global Technologies
- **Senegal**: Daral Technologies, Sooretul, BAYSEDDO/Bio-Agripoles Sarl, Aywajieune
- **Togo**: Clin Sarlu
- **Uganda**: MOBFiT Ltd, Jaguza Tech
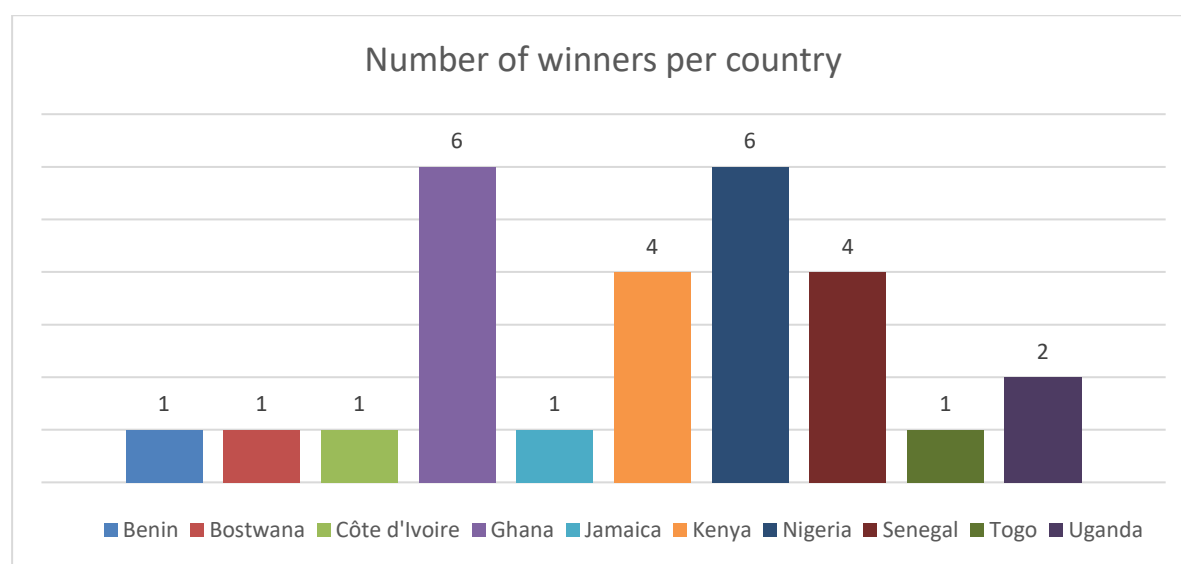
Figure 17: Number of winners per country

Winners came from a total of 10 countries.

Figures 18 and 20 show the types of service offered by finalist start-ups in 2019. The general picture is largely the same across the years although crop production was the primary sub-sector targeted in earlier years.

Crop production (35.93%)
Livestock (44.67%)
Fisheries/Fish farming (9.7%)
Forestry (9.7%)

Main agricultural sub-sectors targeted by Pitch AgriHack finalists in 2019

Advisory services (49.04%)
Market linkages (35.93%)
Financial access (9.7%)
Supply Chain Management (5.33%)

Main digital agriculture use cases illustrated (services offered) in 2019 by finalists
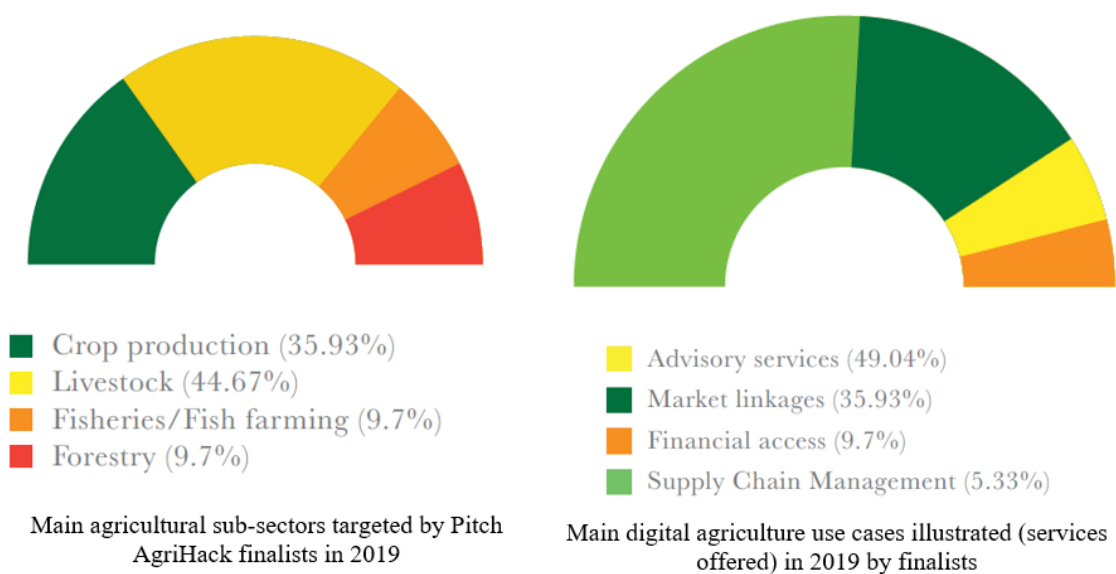
Figure 18: Services offered by finalist start-ups in 2019

Figure 19: Pitch AgriHack 2019 winners

Figure 20: A selection of 35 AgriHack supported companies

1.5.2 Implementation of grants by winning start-ups

The majority of winners received cash prizes of between €5,000 and €15,000 to further develop their services or pilot new services; the exceptions were Kuza and FarmAfriQué, which were pledged in-kind support by a partner. The implementation of the grants was monitored by CTA, sometimes with the assistance of consultants. For example, in 2016 and 2019 contracts were signed with two service providers to help in this.

All except one of the 25 start-ups that received grants are still operational and almost all of them have grown their services.

The following paragraphs present some examples of activities and achievements by some individual companies.
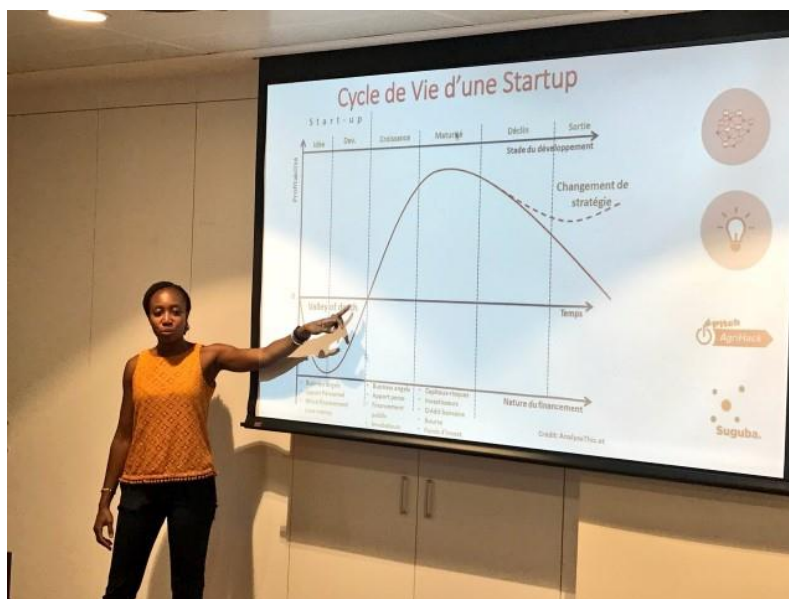
Figure 21: Suguba Africa representative delivering training on investment readiness (2018)

Insights from 2016 winners

Sooretul (Senegal) https://shop.sooretul.com/

Sooretul, led by a woman founder, is a business offering various digital services to women farmers and women agricultural cooperatives in Senegal. They notably operate an e-commerce platform through which they sell processed products produced by women. The products include processed cereals, fruits and vegetables, milk and derivatives, meat (livestock and poultry), fishery products, catering and oilseeds/legumes. They won a CTA grant in 2016 (€15,000). Some key results they achieved in 2016/2017 include:

- Expansion of the suppliers' database: They involved three new networks of women processors from three regions of Senegal whose products included in the platform. These organisations Plateforme des Organisations Professionnelles de l'Agroalimentaire; Plateforme des Acteurs de l'Agroalimentaire de la Casamance; and Plateformes des Acteurs de l'Agroalimentaire de la région de Saint-Louis.

- Improvement of the e-commerce platform and building of a more effective logistics system: In order to improve the product delivery, they bought a car that facilitates deliveries in the suburbs of Dakar and transport of catering equipment, another flagship activity of Sooretul.

- Distribution partnership: A contract was finalised in July 2017 for a period of 4 years with Premium Local Product, a company based in Singapore, to market Sooretul's products. After a test period, €14,000 were generated through that partnership. Sooretul also engaged in partnership discussions with distributors in Burkina Faso and Mali.

Since 2017, Sooretul has continued its growth, opening a new store in 2020. In 2019, they won a US$100,000 grant from the BMCE Bank of Africa to fund their growth; according to the founder of Sooretul, Awa Caba, this was a result of coaching provided by Ernst and Young on behalf of CTA. In 2019, CTA facilitated their involvement in the project ICON implemented by Ashoka and they have offered paid services to this initiative.

Brastorne Enterprises/mAgri (Botswana)

The winner of the early-stage category of Pitch AgriHack 2016 edition, [mAgri](#) (developed by Brastorne Enterprises) is an unstructured supplementary service data (USSD) application that gives farmers access to relevant information and to a mobile marketplace. It can be used on any phone, including basic feature phones. In 2017, Brastorne Enterprises signed an exclusive contract with mobile telecom operator Orange and the app is now integrated in services accessible via the telecommunication operator's platform. This has facilitated the development of their reach. In 2016/2017, with a CTA grant aimed at marketing and advertising strategies to widen their audience, they carried out outreach campaigns on the ground to create brand awareness, which favours acceptance of their services in the local communities for further service providing. mAgri attended various events co-organised by CTA to help them market their products and network with key players. Their services are still growing.

Daral Technologies (Senegal): Using ICT to support livestock management

Daral Technologies is an ICT4Ag company aiming at facilitating livestock management in Senegal. They aim to centralise livestock data, combat livestock theft and help livestock keepers to manage the health of their livestock through sensitisation and training. Upon receiving their grant as runner up of the early-stage category of [Pitch AgriHack 2016 programme](#), they bought radio-frequency identification (RFID) livestock identification materials to use in their service offerings.

Initially they have been only offering GSM (Global System for Mobile Communications)-based alert services for livestock owners. In collaboration with the Senegalese government, they organised awareness-raising of the community in regions they cover, as well as training sessions for veterinarians on the use of the chips. They created a website, [http://daraltechnologies.com/,](http://daraltechnologies.com/) to increase their visibility (previously they only had a Facebook page). Daral's business model involves strong collaboration with the local government, which controls livestock management. The start-up is still developing its business capacity. For all these reasons they faced challenges for deploying and commercialising the RFID livestock management services and regular livestock health alert information dissemination. They are still operating their services, however.

Insights from some 2017 winners

eFarms (Nigeria) www.efarms.com.ng

Through its Farmers Academy, [eFarms](#) trains, equips and empowers passionate young graduates in Nigeria who are interested in farming but lack the skills, experience and funds to farm successfully. For existing smallholder farmers, the enterprise acquires funds through crowdsourcing from both high-and low-net-worth individuals (farm investors) via their web

platform and supply the needed inputs to farmers, which helps to boost the expansion of quality farming. According to the CEO:

> *"eFarms got more visibility since the company won the AgriHack competition. It has become easier for the company to do business with the investors since then" (**Divine-Love I. Akam**)*

With CTA funds, in 2018 eFarms engaged with a total of 1,076 smallholder farmers and 365 youth farmers in different locations in Nigeria. The enterprise also noted an increase of its cultivable lands from 50 to 100 hectares, which contributed to an increase in the number of farmers (50 to 145) they work with. eFarms also trained 200 graduate farmers in four batches and provided 50 "farmternships" for students enrolled in higher education.

Moreover, the enterprise raised about €400,000 from 420 farm investors, 594 users and 1,395 subscribers from 2018 to 2019.

In terms of partnership, apart from CTA, in 2018 eFarms were working with six partners:

- Syscomptech Communication Limited – data and communication
- Nigerian Agricultural Insurance Corporation (NAIC) – insurance
- Leadway Insurance Company – insurance
- Technoserve – farmer-based organisation providing training on good agriculture for smallholder farmers
- SolarCreed – solar-powered irrigation
- GibonX – poultry products offtaker.

eFarms also employed two additional full-time staff (farm engagement and farm training officers) and three contract staff.

The company invested more in infrastructure and customised its online platform to be more effective in delivery to its clients. They also invested more in poultry based on demand of farmers, who argued that climate change affects their crops more than their livestock.

Other achievements of eFarms in the period of the CTA grant include:

- articles published in Techpoint.africa, Bella Naija, AgroStrides 30 under 30, Innovation Village
- winning on the First City Monument Bank One Million Naira Grant Award for the Best Financial Services Platform (Savings Category)
- Being recognised as among the Top 50 Entrepreneurs in Nigeria 2017 by Diamond Bank Building Entrepreneurs Today (BET7)
- Being appointed 2019 Africa Innovation Fellow – Top 25 Africa Female Led Businesses selected.

AgroCenta (Ghana)

One of the most successful 2017 Pitch AgriHack winners is AgroCenta from Ghana (https://agrocenta.com/), which operates a market-linkage platform. Their annual revenues increased in 2018 from US$200,000 to US$750,000, an increase of 275%. They also won other international awards, such as Seedstars World 2018 (they won US$500,000) and the Sankalp Award in 2020.

Insights from some 2018 winners

CowTribe (Ghana) https://www.cowtribe.com

CowTribe, co-led by a female entrepreneur, is a smart logistics platform in Ghana. Its mission is to leverage the power of mobile technology to deliver life-saving animal vaccines and preventive veterinary care to farmers. CowTribe enables farmers to order animal vaccines

using their mobile phones, with a small one-time subscription fee. Using this information, CowTribe then aggregates orders and works through a network of trained village agents to deliver vaccines to farmers at their farms. By early 2020, CowTribe had registered over 30,000 farmers, processed over 9,000 orders and expanded vaccine coverage in more than 158 villages. The CTA grant helped them develop their services and recruit female members of village loans and savings associations (VLSAs) as agents to increase access to vaccine for women livestock farmers. They thus contributed to breaking down the gender imbalance in access to input services in livestock rearing, helping to improve the survival, health and productivity of farm animals in Ghana. They redesigned and launched a new sales app that allows Sale Officers to register farmers and create plans. They have also open two new shops.

Figure 22: New shop for CowTribe, Ghana

Since 2019, they have registered 12,305 smallholder farmers, 6,819 of whom are in active payment with a conversion rate of 55.4%. In the same period, they onboarded 143 members of VLSA's (including 52 women) who assisted them in delivering animal health services to farmers. Some 38.5% of farmers onboarded are women. The staff of CowTribe has also grown (Table 2).

Table 2: Number personnel of CowTribe (Ghana) in March 2020

Staff status	Number of males	Number of females	Total staff
Full-time	17	6	23
Part-time	6	1	7
Total	23	7	30

Key investments and partnerships

CowTribe has won many grants. In 2018, after winning Pitch AgriHack, they secured a US$300,000 grant from Draper Richards Kaplan Foundation, an American foundation, to strengthen their activities. They secured a new partnership with the Global Alliance for Veterinary Medicine (GALVmed), the leading global alliance for animal health products. This ~US$1,000,000 programme (spread over 5 years) will allow them to extend their supply chain upstream, developing closer and more efficient relationships with manufacturers. The

GALVmed partnership has great implications for their future success. They also signed a contract with the Government of Ghana under its flagship programme, Rearing for Jobs, a livestock-farmer-based economic development programme. CowTribe is involved as a key partner to develop a centralised database system for farmer identification, livestock identification and traceability. This project is expected to reach 2 million farmers over the 5 years of its lifetime. They also partnered with the organisation Nexleaf to implement a remote temperature monitoring system in each fulfilment centre. CowTribe has also signed a contract to implement the Women Rear Project with CARE International. This project, funded by the International Development Research Centre, Canada, aims at empowering women smallholder farmers and entrepreneurs by addressing the social, technical, cultural and economic barriers that women face in vaccine development, delivery and use.

Figure 23: European Union and AfDB officials present CowTribe's representative with the trophy won by the company

Clin Sarlu (Togo)

Clin Sarlu created a platform, e-Agribusiness.com, through which they offer various market linkages and advisory services, leveraging on mobile phone technology, interactive voice response, etc. They have now reached more than 100,000 actors (cooperatives, seed companies, other actors in the value chain and individual farmers) spread across the agricultural sector of Côte d'Ivoire and Togo. They also offer service to the Government of Togo, helping them to develop a finance and profiling services to 6,000 farmers, in the framework of a project funded by the AfDB Mécanisme incitatif de financement agricole.

They also started drone services, in collaboration with Africa Goes Digital, a network of drone operators supported by CTA. They received training from Chinese stakeholders and launched a drone academy across West and Central Africa. The company also created a department on precision agriculture to provide services to stakeholders in terms of disease detection, mapping by drone, using drones to apply nature-friendly pesticides. Twenty-five young people from five countries (Benin, Cameroon, the Central African Republic, Côte d'Ivoire and Togo) signed up in the academy. Finally, they launched a new market-linkage service using WhatsApp.

Figure 24: Clin Sarlu achievements
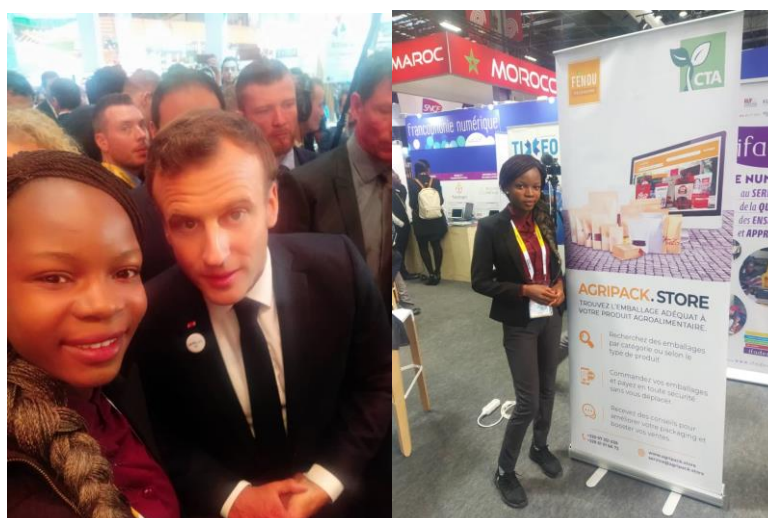
Figure 25: Sonita Tossou (Fenou Foods), 2018 Pitch AgriHack winner, attended an exhibition in France and met French President, Emmanuel Macron

Insights from some 2019 winners

FoodLocker, Nigeria (Winner of Data Analytics prize of Pitch AgriHack)

FoodLocker is an omnichannel food retail company that uses modern retail technologies to enable large buyers to procure foodstuff (farm produce and groceries) efficiently from smallholder farmers and consumer-goods companies. The company uses deep learning, a component of artificial intelligence, to forecast foodstuff demand and communicates the demand information to smallholder farmers such that they can produce to specifications.

FoodLocker's clients include food processors, for example Amayi Foods, a Nigerian company that transforms vegetables such as scotch Bonnet (pepper) and red Bell pepper and spices such as turmeric, ginger and garlic. They produce a ready-to-eat paste called Poi sauce, among others. Contacts are in course with other companies including So Fresh, Olam and Nestlé. Other clients include large cooperatives, hospitality businesses and schools with restaurant and boarding house facilities.

FoodLocker recently launched two web platforms: (1) ambassador.foodlocker.com.ng, which allows individuals and businesses to refer customers to FoodLocker and (2)

www.foodlocker.africa, which is the main engine for production management and large-order fulfilment.

The company released a mobile app in December 2019, one month earlier than planned. It also launched an "SMS to Web" service, which is currently deployed for farmer management on the web platform www.foodlocker.africa. It is being used to collect farm performance data from farmers whose projects it helps to finance. The same technology is being developed and adapted to facilitate B2C orders.

Figure 26: Achievements of FoodLocker, 2019 Pitch AgriHack winner

The company won the Impulse incubation Diamond Award in 2020. The company's involvement in this incubation programme, launched by Mohamed VI Polytechnique University and OCP Group, was facilitated by CTA. Impulse was a partner of CTA for Pitch AgriHack 2019.

Jaguza Tech

Jaguza Tech is a Ugandan agritech company started and incorporated in 2017 that aims to transform the livestock farming sector. It is an online and offline cloud-based livestock management system that incorporates the use of sensors, drones, livestock collars and GPS trackers to gather real-time information about location, speed, body temperature and stress levels of livestock. In January 2020, Jaguza Tech opened a demonstration farm in Mubende, a district in north-west Uganda. The aim of the farm was to test their system on an actual livestock farm and to organise information events aimed at local farmers and veterinarians. The company installed and tested its device on 800 cows and 1,000 goats. The demonstration was a success.

An increase in the company's customers was followed by the acquisition of new investments. The company acquired a Microsoft Azure server to improve system performance and security. The company also acquired a USSD and SMS messaging package to reach those farmers that lack internet connectivity.

Current partners include Nile One Ltd, a Ugandan company that focuses on blockchain technology, and the International Livestock Research Institute, which selected Jaguza Tech to work on an innovative project to improve livestock health and productivity.

Figure 27: TechShelta, Ghana, 2019 Pitch AgriHack winner

1.5.3 Collaboration with other organisations to organise Pitch AgriHack activities

Various partners used the AgriHack model in projects or activities they implemented. For example:

- In Côte d'Ivoire, two prizes in line with the Pitch AgriHack concept were awarded by CTA during a digital competition organised by the Government of Côte d'Ivoire during their national agriculture fair, SARA 2019.

Figure 28: Winners rewarded by CTA at SARA 2019

- The Ideal Burkina project (Innovation, Développement Agricole et Liens vers le marché; ideal.yam-pukri.org/), supported by CTA, has organised a Pitch AgriHack Burkina as a tool to identify innovators and start-ups they can work with, notably to support farmers and agriculture entrepreneurs involved
- The AgriTech Movers project implemented in Ethiopia by the incubator IceAddis created a Pitch AgriHack category in the Green Innovation and Agritech Slam 2019 (innovation-slam.com/) that they organised in partnership with GIZ.

1.5.4 Provision of support for mentoring, capacity building, business networking and access to finance

CTA, via the Pitch AgriHack project, provided consistent and important support to winning start-ups and other best participants to attend important events to network. Each year, more than a dozen start-ups were supported to attend events such as:

- CTA-organised international events
- European Development Days
- Global Forum for Innovation in Agriculture in South Africa and in Abu Dhabi, United Arab Emirates
- Agristartup Summits organised in France under the leadership of a Pitch AgriHack partner
- International 2019 Exco Forum in Italy, organised by the Government of Italy and the European Union
- UNDP Geneva Social Good Summit (impact investment event) in 2017 and 2018, where CTA was co-organiser and supported many start-ups
- World Investment Forum in 2018 in Geneva
- AGRF events
- Salon de l'Agriculture in France organised by the Government of France
- The Pan African Agribusiness Conference and Expo 2016 and 2017 organised by the AAIN in Ghana and Senegal
- Yalesi 2016 (Agribusiness, Leadership and Entrepreneurship Summit on Innovation) Summit in Senegal

Attending at least two pan-African international events was one of the official benefits won by Pitch AgriHack winners. Attending these events supported their networking and building

professional networks. In many cases they were offered the opportunity to exhibit and got new clients and partners at those events.

Excerpts included below illustrate participation in events and benefits gained by some companies.

In my experience the events have been very helpful; we may have not met an investor at the Social Good Summit (SGS), but we met a very valuable contact as I have told you, from Orange. We are actually ironing out the details of our launch in Madagascar for the next coming months and once we move to that country it will be easier for us to get to other countries through the partnership and we will actually be in Paris to secure the deal next week. He has taken the role of facilitating business expansion and he has been diligent in doing so; so, for me that's a tangible outcome from attending the SGS

– Naledi Magowe, co-founder, Brastorne Enterprises 'Magri platform', Botswana (2018 insights)

"Daral Technologies et Sooretul, deux jeunes start-ups sénégalaises lauréates du Pitch AgriHack 2016 organisé par le CTA, participent au Salon international de l'Agriculture, en France, du 26 février au 3 mars. Les start-ups ont été invitées par le CTA et le Secrétariat d'état à l'innovation et à l'économie numérique (France), en collaboration avec la Chambre d'Agriculture de Vendée (France) et les organisateurs du concours français AgreenStartup avec lesquels le programme Pitch AgriHack a initié un partenariat. »

« De la Ferme Digitale à l'ouest Africain » (article on CTA's website)

Figure 29: Greentec Capital Partners during training offered to Pitch AgriHack finalists (2019)

"The Social Good Summit Geneva is an initiative of the United Nations Development Programme (UNDP) Geneva office that brings together high-level decision makers to forge partnerships for the implementation of the Sustainable Development Goals (SDGs). CTA organises an AgriTech and Food safety session during the summit.

"An invitation-only event, the Social Good Summit Geneva offers unique and valuable networking opportunities. 250 participants are due to attend, including innovative start-ups, impact investors, development finance actors, Fortune 500 representatives, development agencies and more than 20 developing-country entrepreneurs, sourced through well-known and established global accelerators, pitch their products and services in sectors such as access to health and education, financial inclusion, food production, climate change and agritech.

"CTA sponsors four e-agricultural start-ups to take part to the summit. These four entrepreneurs are involved in the Pitch AgriHack initiative, which aims to accelerate youth e-agriculture entrepreneurship for growth and job creation. Three of them are winners of Pitch AgriHack 2018 (CowTribe Africa, Illuminum Greenhouses Kenya and Fenou Packaging), the last one is a previous participant. These start-ups have the opportunity to pitch their business solutions, create partnerships and business opportunities."

- [CTA supported start-ups at Social Good Summit Geneva 2018](#) (An article published in 2018 on CTA website)

In 2019, CTA, in collaboration with VC4Africa, organised a mentorship programme for the benefit of some semi-finalists of Pitch AgriHack.

Figure 30: Online mentorship offered to selected Pitch AgriHack semi-finalists

It is worth mentioning the case of TroTro Tractor from Ghana, a finalist in 2017. While they did not win Pitch AgriHack, they managed, during AGRF 2017, to have business exchanges with AGRA and won a large project grant. They also won in 2019 one of the grants of the Impulse incubator programme (see above).

1.5.5   Social media and online interaction spaces

Key tools that the project put in place for capacity building and networking include the WhatsApp group gathering finalists and the email discussion list (Dgroups) of the project. These two interaction spaces acted as communities of practice. Facilitated thematic discussions were organised on the Dgroups platform (in both English and French); these addressed various topics such as blockchain and digital entrepreneurship in agriculture. Opportunities were also shared. The Dgroups spaces gathered all participants in the competition (generally at least two members per company); the anglophone group comprises more than 1,300 members, while the francophone one comprises 440 members. Overall, the project supported more than 1,500 young digital innovators and entrepreneurs operating about 800 young companies (about half of them are still operational to date).

The Twitter account of the project had more than 20,000 followers and played a key role in the promotion of project's activities and youth companies. These spaces were updated almost daily since 2014.

1.5.6   Publications

The project developed or supported the development of three main publications: a CTA Handbook, *An ICT agripreneurship guide*; a Success Stories, *Innovate for agriculture*; and a Technical Report, *Business models and key success drivers of agtech start-ups*. These documents are available in electronic format for free download on CGSpace (https://cgspace.cgiar.org/handle/10568/42211).
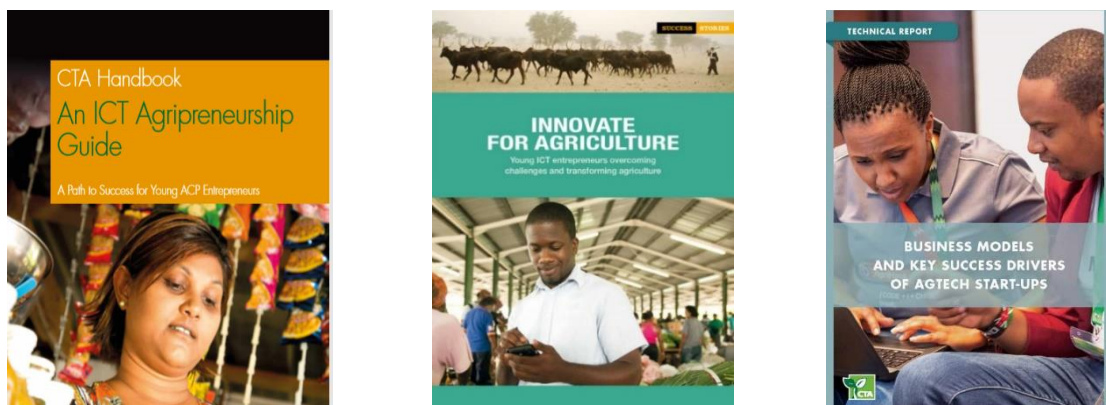
Figure 31: Three AgriHack project publications

1.6   Key success factors

The partnership with various key players involved in the AgriHack Talent project (see list of partners in the section) has been a success factor of the programme. Success factors for start-ups are presented in the CTA Technical Report, *Business models and key success drivers of agtech start-ups*, and are illustrated in Figure 34.

Figure 32: Key success factors of start-ups
(Source: https://hdl.handle.net/10568/106010)

1.7 Financial overview

The financial overview focuses on 2018–2020 as this was the last approved period of the budget of the project. The budget covered some follow up activities of the 2017 edition, organising 2018 and 2019 editions of Pitch AgriHack and capacity building, and networking activities in 2020. The total budget approved was €662,290. Of this, it was planned that €227,100 would be covered by partners, notably the AfDB.
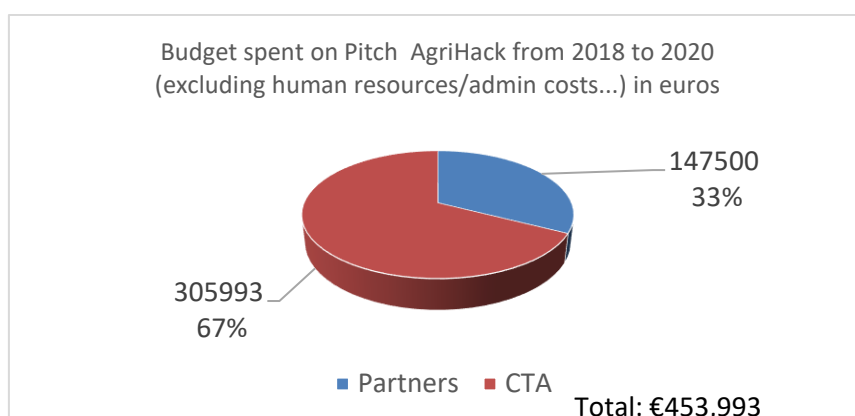
Ultimately, CTA mobilised €388,100 and spent €305,993. Activities planned for 2020 were not implemented because the emergence of COVID-19 (networking workshop as a side event to the Smart Africa 2020 conference planned in Guinea and field activities by a consultant to visit some start-ups).
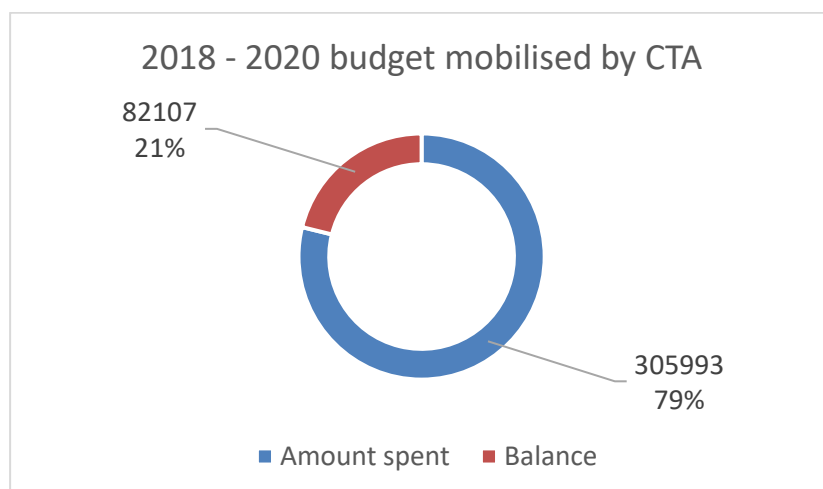
Out of the €227,100 planned to be mobilised from partners, about €120,000 were provided by AfDB; €20,000 by the OCP Group; €5,000 by Greentec Africa partners (plus pro bono delivery

of a training); and €2,500 by Suguba (plus pro bono delivery of a training). More resources were to be spent by the AfDB on the networking event planned in Guinea which was cancelled because of the COVID pandemic.

Ultimately, partners mobilised €147,500 in total (pro bono contributions, including in-kind contributions of AGRA are not costed). Incubators also supported sometimes activities on a pro bono basis. Wennovation Hub (Nigeria), for example, coached some Nigerian finalists and regularly promoted the project.

Budget spent on Pitch AgriHack from 2018 to 2020
(excluding human resources/admin costs...) in euros

147500
33%

305993
67%

■ Partners ■ CTA

Total: €453,993

Figure 33: Total budget spent on Pitch AgriHack from 2018 to 2020 by CTA and partners

This figure ultimately illustrates that the AgriHack project was truly a collaborative endeavour.

NB: For the four editions of Pitch AgriHack, CTA and partners spent an estimated €700,000. For the entire AgriHack project since 2013 (period not covered by this report), about €1 million were spent.

2   Lessons learned

2.1   Changes that occurred during the period covered by the report

No major changes occurred in the project implementation framework itself. However, the project has been constantly innovating in its operational mechanisms.

For example, in 2018, it was decided to increase the involvement of women in the competition by proactively selecting 50% of women-led companies among finalists. Only 4% of women were among finalists in 2017 (1 out of 25 finalists' representatives). In 2018 and 2019, at least 50% of winners were women-led companies, although selection of winners was not gender targeted. For the 2018 edition, "Women entrepreneurs innovate for agricultural transformation in ACP countries", activities were organised in various ACP countries to encourage young women innovators to apply, collaborating with a pan-African women's technology association (WomenInTech Africa).

For the 2019 edition, a Data Analytic Prize and a Public Choice Award were created; the winner of the Public Choice Award was selected during a public vote among participants of the pitching session. That same year, for the first time, three winners were selected to pitch for two minutes each at the closing ceremony before receiving their awards.

2.2   Constraints and problems encountered

No major problem occurred. Some challenges were, however, observed:

- It required a lot of time and it was difficult to monitor performance of the start-ups that were awarded prizes because CTA does not have a presence in the countries where they operate. To address this challenge, contracts were signed with regional consultants to interact with prize-winners. Results did not, however, meet expectations. Travelling to all countries or having national consultants/organisations offer this service requires a lot of resources, which the project did not have. In addition, in 2019, the COVID-19 pandemic prevented the regional consultant from visiting start-ups. However, the project was able to collect performance data via social media and the interaction spaces of the project (WhatsApp, Twitter, mailing lists). In some cases, reports submitted were not very satisfactory. It is also very difficult to validate performance data for all start-ups. We have used triangulation methods to validate some of the results shared with us.
- Reach against impact. It is also very difficult to know if users reached have been actually impacted. Indeed, some users reached just use services irregularly. This is not a problem for Pitch AgriHack or CTA alone, but a situation observed in all digital agriculture service provision, including those offered by international telecom operators or governments. However, reach figures give a good idea about the potential of the digital platforms and companies operating them.
- Most start-ups faced various challenges to implement or grow their services. These include poor connectivity in rural areas, lack of local support by ecosystem players and governments, weak access to finance to grow services; staff management; and difficulty in implementing effective business models.

2.3   Sustainability measures

A key sustainability measure put in place has been the collaboration with other players in the implementation of the project. Players targeted included international development organisations, governments and private sector/venture capital firms.

Another key sustainability measure was the capacity developed in the companies (via training and networking opportunities offered). This has proved successful in that only one of the 25 Pitch AgriHack winning companies that received funding from CTA since 2016 is no longer operating.

In the context of CTA's closure, we have been discussing with some partner incubators involved in the programme so that they continue supporting companies operating in their regions.

Figure 34: Connecting Pitch AgriHack start-ups to FAO

In addition, the project has been discussing with partners such as AGRA and FAO to continue supporting or working with start-ups identified by the project. For example, during the 2020 edition of AGRF, FAO and CTA, in collaboration with Generation Africa (an international programme supporting young agripreneurs), organised a match-making session connecting some Pitch AgriHack participants with FAO projects.

3 Annexes

3.1 List of partners

- AGRA
- Africa Projects Development Centre
- African Agribusiness Incubators Network
- African Development Bank
- African Journal of Food, Agriculture, Nutrition and Development
- Agribusiness TV
- Agristartup Summit
- Blolab (Benin)
- BongoHive (Zambia)
- Centre for Agricultural Bioscience International
- CIPMEN (Niger)
- CTIC (Dakar)
- Devlab (Americas)
- East African Trade and Investment Hub (USAID project)
- Ecohub (Togo)
- EIC Corporation
- Etrilab (Benin)
- FAO
- GreenTec Capital Africa Foundation
- GreenTec Capital Partners (Germany)
- ICEAddis (Ethiopia)
- Ihub (Kenya)
- Impact Dakar
- Impact Hub Accra
- Impact Hub Bamako
- Jokkolabs
- Mlab East Africa
- OCP Group
- ProHaus Group (USA)
- Suguba Africa
- UNDP Social Good Summit
- Wennovation Hub
- Woelab (Togo)
- WomenInTech Africa
- World Bank
- Yeesal AgriHub (Senegal)

Figure 35: Pitch AgriHack 2018 partners

3.2   List of knowledge products

3.2.1   Articles and videos on winners

Articles on Pitch AgriHack winners

Many articles were facilitated by CTA to promote winners and their services; the articles are available on CTA's corporate website, in *Spore* magazine (online and print) and on Pitch AgriHack website. They were also promoted on social media via the AgriHack project Twitter account or CTA social media spaces. Examples are:

Company name	Title of articles	Link	Name of the platform	Winning year	Country
Brastorne enterprises	For farming fortune, dial mAgri	https://bit.ly/2SgujE5 http://bit.ly/mAgri-Application	mAgri	2016	Botswana
	mAgri and the woman driving innovation	https://bit.ly/2GDgvBx			
ICT4DEV	Offrir des solutions TIC pour répondre aux besoins spécifiques des agriculteurs ivoiriens	https://bit.ly/2HGxJhn	Virtual Market	2017	Côte d'Ivoire
	Offering ICT solutions to meet the specific needs of Ivorian farmers	https://bit.ly/30ttYCz			
Farmart Limited	Linking farmers to markets with just a click	https://bit.ly/2HMVG6T	Farmart Ghana	2017	Ghana
AgroCenta	Online platform improves the livelihood of small farmers in Ghana	https://bit.ly/2SkjyRe	AgroCenta	2017	Ghana
CowTribe Africa	Ghana: Digital vaccine delivery service	https://bit.ly/3n762ih	CowTribe	2018	Ghana

Company name	Title of articles	Link	Name of the platform	Winning year	Country
ProFish	ProFish, une solution attrayante pour les pêcheurs ghanéens	https://bit.ly/2SdkrLB	Lojaanor	2019	Ghana
TechShelta Company Ltd	TechShelta: Greenhouse farming solutions powered by digital technology	https://bit.ly/36miYKZ	Greenginie	2019	Ghana
Illuminum Greenhouses Kenya	Kenyan farmers optimise water use with mobile phones	https://bit.ly/2HJaVxy	Smart Mobile Farming	2018	Kenya
Savanna Circuit Tech	Maziwaplus - Des solutions pour les producteurs laitiers kenyans	https://bit.ly/2G9DeoG	M+ Milk Collection Application	2019	Kenya
Arinifu Technologies Ltd	Smart Brooder: Providing hope for Kenya's poultry sector	https://bit.ly/2SfhmdJ	Smart Brooder	2019	Kenya
eFarms	Of financiers, "farmternships" and a failed catfish farmer	https://bit.ly/3jnLccb	Web platform	2017	Nigeria
Farmignite Company	Farmignite: lighting a passion for agriculture	https://bit.ly/3jmJ3NA	Farmignite.com	2018	Nigeria
FoodLocker Limited	A Nigerian start-up unlocking the potential of large markets for smallholder farmers Artificial intelligence: matching food demand and supply	https://bit.ly/3olVrG8 https://bit.ly/3ioPoIw	FoodLocker	2019	Nigeria
Trackball Global Technologies Nigeria	Trackball Global Technologies - Helping urban farmers Trackball Global Technologies - Aider les agriculteurs urbains	https://bit.ly/2HEjgm6 https://bit.ly/3jiRGcg	AgriCo	2019	Nigeria

Company name	Title of articles	Link	Name of the platform	Winning year	Country
Sooretul	With Sooretul local products are just a click away	https://bit.ly/3jo5CBJ	Sooretul	2016	Senegal
BAYSEDDO/Bio-Agripoles Sarl	Bayseddo: a digital platform to boost agriculture in Senegal	https://bit.ly/3cSoC91	BAYSEDDO 2.0	2017	Senegal
Aywajieune	Aywajieune, developing online fish trading in Senegal Senegalese start-up revolutionises fish sales	https://bit.ly/33mKs1d https://bit.ly/2GqVVUD	Aywajieune.com	2017	Senegal
Clin Sarlu	e-Agribusiness: A vital resource for Togo's agriculture sector	https://bit.ly/3n7xFHQ	e-agribusiness	2018	Togo
Jaguza technologies	Jaguza Tech: Livestock management simplified Monitoring livestock vitals with machine learning technology	https://bit.ly/36oA1fw https://bit.ly/2ERwoEX	Jaguza Livestock	2019	Uganda
Develop Digitally	Farm Credibly, une start-up jamaïcaine lauréate du concours Pitch AgriHack 2018 Farm Credibly, a Jamaican start-up among the 2018 Pitch AgriHack winners How blockchain technology helps young Caribbean farmers access finance Building Jamaica's creditworthiness with blockchain	http://bit.ly/FarmCredibly_FR https://bit.ly/36oDUkO https://bit.ly/2GyRiri https://bit.ly/33mQWNB	Farm Credibly	2018	Jamaica

Videos

At least 22 videos were promoted on CTA's YouTube channel to promote winners and their services.

Company name	Title of the video	Link of the video	Name of the platform	Winning year	Country
Fenou Packaging	FenouFood Packaging du Benin sera aussi de la partie à la finale de #PitchAgriHack 2018	https://bit.ly/2Sdyh0v	Agrihub	2018	Benin
Brastorne Enterprises	How to overcome the ICT gender gap Naledi Magowe, co-founder of mAgri (Botswana), winner of CTA's 2016 Pitch AgriHack	https://bit.ly/3onctnD https://bit.ly/34C2LPu	mAgri	2016	Botswana
CowTribe Africa	Discover CowTribe of Ghana, Finalist of #PitchAgriHack 2018	https://bit.ly/3onHW8Y	Shepherd Platform	2018	Ghana
Agro Innova	2018 Pitch AgriHack Finals: Agro Innova- Ghana: AgroInnova from Ghana, #PitchAgriHack2018 finalist	https://bit.ly/3l4TNkc https://bit.ly/2EOdFZp	Akokotakra	2018	Ghana
ProFish	Profish (Ghana) - Pitch AgriHack winners 2019	https://bit.ly/3lbl9VM	Lojaanor	2019	Ghana
TechShelta Company Ltd	TechShelta Company Ltd (Ghana) - Pitch AgriHack winners 2019	https://bit.ly/2HPcY3r	Greenginie	2019	Ghana
Sooretul	Awa Caba CEO of Sooretul (Senegal), winner of CTA's 2016 Pitch AgriHack	https://bit.ly/3jBPGfc	Sooretul	2016	Senegal
Develop Digitally	Jamaica's Farm Credibly makes farming profitable with blockchain technology 2018 Pitch AgriHack Finals: Develop Digitally-Jamaica	https://bit.ly/33j5M7J https://bit.ly/3iHi2TS	Farm Credibly	2018	Jamaica

Company name	Title of the video	Link of the video	Name of the platform	Winning year	Country
Illuminum Greenhouses Kenya	2018 Pitch AgriHack Finals: Illuminum Greenhouses- Kenya	https://bit.ly/3l1pT09	Smart Mobile Farming	2018	Kenya
Savanna Circuit Tech	Savanna Circuit Tech (Kenya) - Pitch AgriHack winners 2019 Savanna Circuit Tech Ltd of Kenya, finalist of #PitchAgriHack 2018 and women-led	https://bit.ly/3n8qCOX https://bit.ly/2SbhLOu	M+ Milk Collection Application	2019	Kenya
Arinifu Technologies Ltd	Arinifu Technologies Ltd (Kenya) - Pitch AgriHack winners 2019	https://bit.ly/36sa277	Smart Brooder	2019	Kenya
Farmignite Company	2018 Pitch AgriHack Finals: Farmignite Company Nigeria	https://bit.ly/2EPxRKu	Farmignite.com	2018	Nigeria
FoodLocker Limited	FoodLocker Limited (Nigeria) - Pitch AgriHack winners 2019	https://bit.ly/3jep041	FoodLocker	2019	Nigeria
Trackball Global Technologies Nigeria	AgriCo (Nigeria) - Pitch AgriHack winners 2019	https://bit.ly/33gsmOk	AgriCo	2019	Nigeria
BAYSEDDO/Bio-Agripoles Sarl	BaySeddo connecting Senegalese farmers to crowdsourced investor funds	https://bit.ly/33kWVCK	BAYSEDDO 2.0	2017	Senegal
Clin Sarlu	Finale de Pitch AgriHack 2018 - e-Agribusiness Togo	https://bit.ly/3d96EPR	e-agribusiness	2018	Togo
MOBFiT Ltd	Charle Batte CEO of MOBFiT (Uganda), winner of CTA's 2016 Pitch AgriHack	https://bit.ly/3cPHTYy	MOBFiT	2016	Uganda
Jaguza Tech	Jaguza Tech (Uganda) - Pitch AgriHack winners 2019	https://bit.ly/33gFFOH	Jaguza Livestock	2019	Uganda

General articles and videos on the project

Other articles and videos on the overall Pitch AgriHack competition produced and promoted by CTA include:

Title of articles	Link
Annonce des gagnants du concours Pitch AgriHack 2016! Les start-ups du Botswana, du Sénégal et d'Ouganda se voient décerner des prix en espèces et plus encore	https://bit.ly/33mCcOX
De nouvelles opportunités en 2018 pour les lauréats de Pitch AgriHack 2017	https://bit.ly/3jko3Hl
Winners of the 2016 Pitch AgriHack contest announced!	https://bit.ly/3l0oas7
Supporting young e-agriculture start-ups	https://bit.ly/3igUEg4
Great opportunities for young entrepreneurs	https://bit.ly/3jmybiT
New opportunities for Pitch AgriHack 2017 winners	https://bit.ly/3hQvapl
Young Pitch AgriHack entrepreneurs awarded during presidential summit	https://bit.ly/2FUWDJo
It is necessary to increase support for innovative entrepreneurship in Africa	https://bit.ly/2SWavGC
Young women take the lead in Pitch AgriHack	https://bit.ly/34hElua
Ground-breaking digital innovation sought for Pitch AgriHack 2019	https://bit.ly/2GMBZf5
Pitch AgriHack 2019: Finalists announced	https://bit.ly/2SK7qZX
Pitch AgriHack boosts agri start-up development	https://bit.ly/3l206rN

Title of videos	Link
Pitch AgriHack 2019	https://bit.ly/2I7Xmbk
Highlights of the Pitch AgriHack competition 2019	https://bit.ly/30M39to
CTA's Pitch AgriHack 2018 Highlight Video	https://bit.ly/33DmoqU
East Africa AgriHack - Hackathon - Youth in agriculture - By CTA	https://bit.ly/3d7lAoN
Retour sur Pitch AgriHack 2017	https://bit.ly/3iDMuOU
Looking back at Pitch AgriHack 2017	https://bit.ly/3lu5Yaq
Senegal: Sooretul, an e-commerce platform for local agricultural products	https://bit.ly/3jJCHZ9
Pitch AgriHack West Africa 2017	https://bit.ly/36HIwm7

3.2.2 Other interesting links

The following articles (selection) were published in media or other organisations' websites:

- Start-ups, Investors, Politicians and a lot of Agriculture – One Week in Kigali https://bit.ly/34OGPyn (Greentec capital partners)
- Pitch AgriHack 2019 winners awarded a total of €60k in prizes https://bit.ly/3nxpHYH (Venture Burn)
- Winning Start-ups from Botswana, Senegal and Uganda earn investments at Pitch AgriHack! https://bit.ly/2Fd8wdB (iHub)
- Greentec Capital at the AGRF and Pitch AgriHack 2019 https://bit.ly/36NxJXm
- Jaguza tech wins Pitch AgriHack 2019 https://bit.ly/3iG8icR (Agridigitale)
- Farm Credibly, a Jamaican start-up among the 2018 Pitch AgriHack winners https://bit.ly/34DbOzI (Farm Credibly)
- Two Nigerian Agritech Start-ups Win Cash Prizes at the 2019 Pitch AgriHack Competition https://bit.ly/2GxABNH (Tecknext)
- Two Ugandan women led start-ups make it the 2018 Pitch AgriHack finalists https://bit.ly/33LohCe (Newz Post)
- Senegal: Sooretul, an e-commerce platform for local agricultural products https://bit.ly/3jJCHZ9 (AgribusinessTV YouTube channel)