

A photograph of a man and a woman in a greenhouse. The man, on the left, is wearing a white and green baseball cap and a red and blue plaid shirt. He is holding a tablet computer. The woman, on the right, is wearing a yellow bucket hat with a blue band, a colorful patterned tank top, and red gloves. She is leaning over and looking at the tablet. The background shows rows of green plants in a greenhouse setting with vertical support structures.

Building the Future of Tech- Enabled Agriculture

DIPIKA CHAWLA,
ANAND VARGHESE,
GRETCHEN WALLISCH

JUNE 2019



The Center for Digital Acceleration helps our clients integrate digital tools and approaches across their portfolio through research, design, and implementation. Our work covers a cross section of sectors including health, governance, agriculture, education, and economic growth.



DAI's Sustainable Business Group (SBG) helps multinational companies to be smarter corporate citizens that promote lasting social and economic development in the countries where they operate while simultaneously achieving strategic goals. Our experts help companies unlock the potential of growth markets by advising them on how to demonstrate their long-term commitment to the country's development, optimize their local supply base and labor force, and become a trusted partner for government.

© DAI Global, LLC

The opinions expressed are those of the author and do not necessarily represent the views of any government or donor agency associated with the content of this paper.

Photography: Kosmos Innovation Center

Design: Jennifer Geib | jennifergeib.com

Contents

Foreword	5
Executive Summary	6
KIC Insights	11
Introduction	12
KIC: Program Goals, Structure, and Brief History	15
Crosscutting Insights and Lessons Learned	17
KIC in Action	30
Conclusion	42
Acknowledgements	43

Through the KIC program, Kosmos Energy and DAI have helped to launch 15 startups and trained more than 400 young entrepreneurs, attracting more than US \$1 million in external seed funding since 2015.



Foreword

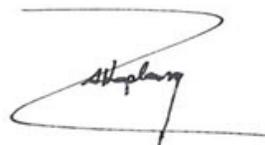
Through KIC, we have seen how corporate actors and development practitioners can work together to help this ecosystem become a driver of socioeconomic development.

Kosmos Innovation Center (KIC) holds a special place in DAI's global portfolio of development projects. It sits at the intersection of two fields DAI believes will drive socioeconomic development in the coming decade and beyond: digital innovation and corporate social investment. DAI's Center for Digital Acceleration (CDA) and Sustainable Business Group (SBG) represent our investment in these two fields, and we are glad to join together to publish this report.

Since late 2015, DAI has worked closely with Kosmos Energy to invest in and demonstrate their commitment to Ghana's long-term sustainable development. Through the KIC program, together we have helped to launch 15 startups and trained more than 400 young entrepreneurs, attracting more than US\$1 million in external seed funding. In 2016, Kosmos Energy was named Corporate Social Responsibility company of the year at the Ghana Oil and Gas Awards, and in 2018 KIC was recognized with the prestigious P3 Impact Award by the US Department of State and its partners.

Across Africa, we are witnessing the rapid growth of a diverse technology entrepreneurship ecosystem. Through KIC, we have seen how corporate actors and development practitioners can work together to help this ecosystem become a driver of socioeconomic development in places like Ghana, and we hope that readers draw upon our experience to help nurture and grow this engine of jobs, technology innovation, and long-term growth.

We would like to thank our partners at Kosmos Energy for the opportunity to take this journey together.



Zachary Kaplan

Vice President, Sustainable Business Group, DAI



Krista Baptista

Senior Director, Center for Digital Acceleration, DAI

Executive Summary

Countries across Africa can boast of making impressive strides, especially in the past decade, toward becoming vibrant economies that attract foreign investment and increase opportunities for their citizens. An exciting facet of this growth is the burgeoning technology entrepreneurship sector that has taken root in urban centers across the continent. In addition to creating jobs and wealth, technology-driven startups are building solutions that tackle barriers to growth and economic opportunity, from financial access to healthcare.

Funded and led by Kosmos Energy since 2015, and designed and implemented with help from DAI, the Kosmos Innovation Center (KIC) in Accra, Ghana is an effort to channel this entrepreneurial momentum in service of the country's agricultural sector. Each year, KIC takes 120 aspiring entrepreneurs through a series of market research tours, capacity-building programs, team-building exercises, and pitch competitions, culminating in seed funding and incubation support to a handful of talented startups that emerge from the program.

With three cohorts under its belt, KIC has seen some early successes. Some of the startups that graduate from the program have gone on to reach thousands of Ghanaian farmers with innovative products. They range from an app that has been called the "Uber for tractors" to wearable devices for livestock that monitor their health and location. Several have gone on to secure further investments and win additional startup competitions, including one that won the 2018 Global Seedstars event in Switzerland. At the same time, some KIC startups have failed or floundered, which is no surprise given that somewhere between 80 and 90 percent of startups fail in their first year. After only three years, it's impossible to tell what the long-term longevity of any of these startups may be.

Nevertheless, KIC has learned useful lessons about what it takes to support young entrepreneurs in an environment like Ghana, and to channel their talents into a sector like agriculture. The program has generated insights into how funders can facilitate the emergence of new innovations and technology products while supporting the growth of aspiring entrepreneurs and early-stage startups. This report captures those insights, while telling the stories of some of KIC's talented young entrepreneurs.

With three cohorts under its belt, KIC has seen some early successes and learned useful lessons about what it takes to support young entrepreneurs in an environment like Ghana and to channel their talents into a sector like agriculture.



INSIGHTS FOR FUNDERS & DESIGNERS

□ **Recruit people, not ideas.**

Unlike most traditional incubator programs, KIC applicants are *not* expected to apply with pre-formed business ideas or partnerships. Rather, KIC prioritizes recruiting passionate individuals who have diverse skillsets, experience, and perspectives. This design choice enables entrepreneurs with complementary strengths to join teams organically as the program unfolds.

□ **Commit to a “full cycle” of support to entrepreneurs.**

KIC’s approach sits in contrast to the growing number of “fly by” pitch competitions, week-long training bootcamps, and weekend hackathons hosted by donors and global venture capitalists around Africa. KIC goes deep and commits a relatively modest budget to a full lifecycle of support to its entrepreneurs, taking them from ideas through to seed funding and beyond.

□ **Embrace—and mitigate—risk.**

Working with youth-led technology startups, especially in a well-established industry like Ghana’s agriculture sector, is inherently risky. Eliminating this risk is not an option—rather, KIC embraces and mitigates this risk in pursuit of long-term goals.

□ **Leverage funders’ brand power, credibility, and technical capabilities.**

Funders have an opportunity to invest more than capital into technology entrepreneurship programs. As Kosmos Energy has demonstrated in KIC, a company can use its brand power to open doors for entrepreneurs, leverage employee time and skills, and shape programs to reflect its ethos. These mutually reinforcing dynamics can demonstrate value to both funders and the entrepreneurs they support.



INSIGHTS FOR IMPLEMENTERS

□ **Invest time and resources to recruit a diverse, high-quality cohort.**

KIC aims to create cohorts with a diverse mixture of skills, experience, and backgrounds, so that entrepreneurs with complementary strengths can form teams. KIC has successfully recruited attendees with varying skillsets and from all 10 regions of Ghana, but achieving diversity in other traits has been an ongoing challenge. For example, attracting women to a program focused on agriculture and technology has been difficult. Similarly, the vast majority of KIC participants are university graduates, so representation from Ghana's low-income communities is low.

□ **Maximize opportunities for entrepreneurs to interact directly with market actors.**

Traditional capacity building—lectures, workshops, and mentorship—does not an entrepreneur make. KIC focuses attention and resources on giving its entrepreneurs hands-on experience in the field. These engagements with users, prospective clients, and agricultural industry experts shape their design and business concepts throughout the program and beyond.

□ **Engage local and sector-specific technical expertise and networks.**

KIC draws heavily on the insights of local experts in agriculture and technology, as well as the local entrepreneurship ecosystem. KIC gives its entrepreneurs the encouragement and the resources needed to tackle long-standing challenges in new ways. This locally driven approach also connects KIC entrepreneurs directly with prospective customers and partners, and opens doors at institutions such as the Ministry of Agriculture, whose support can be critical in a sector in which the government is so deeply involved.

□ **Emphasize soft skills as much as hard skills or sector knowledge.**

KIC matches its technical assistance with training on soft skills such as leadership, team-building, discipline, and others. These skills are indispensable as entrepreneurs go through their journeys, helping them tackle the stresses and overcome the challenges inherent to the startup life.



KIC Insights

Introduction

Since late 2015, DAI's Sustainable Business Group and Center for Digital Acceleration have helped Kosmos Energy design and implement its flagship corporate social investment: the Kosmos Innovation Center in Accra, Ghana. KIC aims to create technology-driven, youth-led startups that can meet the needs of Ghana's agricultural sector. Since its official launch in 2016, KIC has helped create 15 businesses and trained 408 aspiring entrepreneurs. In the process, KIC has gained insights into how to harness the potential of local technology entrepreneurs to drive development. This report summarizes these insights, while also telling the stories of individuals and businesses that have emerged from the KIC process.

The KIC experience is framed by two important, broader trends: first, the evolution of global corporate social investment; and second, the growth of technology entrepreneurship in Sub-Saharan Africa.



◀ The KIC experience is framed by two broader trends – the evolution of global corporate social investment, and the growth of technology entrepreneurship in Sub-Saharan Africa.

THE EVOLUTION OF CORPORATE SOCIAL INVESTMENT

Multinational corporations are increasingly embracing their roles as contributors to global economic development and poverty reduction. Meanwhile, traditional development actors have been trying to channel corporate funds and power to achieve international development agendas. This convergence is crystallized in the UN Global Compact, an initiative engaging almost 10,000 companies to “bring the full weight of the private sector to the [Sustainable Development Goals].”¹

A few interconnected trends drive corporate willingness to be involved in the development sphere. First, consumer tastes are evolving— younger consumers prefer to purchase from companies perceived as socially responsible and are kept informed by activists paying close attention to corporate behavior and misbehavior. Some observers point to high-profile scandals in the nineties around blood diamonds in Sub-Saharan Africa and sweatshops in South Asia as a turning point for consumer awareness of corporate responsibility in the developing world. Second, a new generation of CEOs and investors are driving proactive corporate social responsibility (CSR) strategies, evolving beyond a “do no harm” approach to actively investing in the social and economic development of host communities.

Finally, some governments are requiring companies to invest a certain percentage of profits in development initiatives. These mandates can be sector-specific, as with production sharing contracts between oil and gas operators and governments (which frequently obligate social investment spending). Or they can be broader, as in the case of India’s 2013 law requiring companies to spend 2 percent of average net profits made during the three preceding years on CSR activities.² Even in the absence of legal requirements, companies are realizing that social investments can be a positive differentiator in the eyes of governments, who hold the keys to local resources and markets. Indeed, some companies are now using social investment as one of the primary calling cards for their brands among consumers, investors, governments, and employees.

Kosmos Energy—a medium-sized U.S. energy company active in nine countries and particularly in Sub-Saharan Africa—is one corporation embracing this social investment climate. Kosmos Energy’s first major discovery was in Ghana, and after several years of making smaller social investments each year, the company decided to create a flagship program that would demonstrate to the government its commitment to the country’s long-term economic growth. KIC is the manifestation of that commitment.

1 <https://www.unglobalcompact.org/what-is-gc/strategy>

2 https://www.mca.gov.in/Ministry/pdf/FAQ_CSR.pdf

THE GROWTH OF TECHNOLOGY ENTREPRENEURSHIP IN SUB-SAHARAN AFRICA

A second, equally important trend is the boom in technology entrepreneurship in Sub-Saharan Africa. In the past five years alone, Sub-Saharan Africa has witnessed dramatic growth in the number of local innovation hubs.³ For instance, between 2016 and 2018 the number of tech hubs in operation grew from 314 to 442.⁴ Notably, many of these tech hubs are in cities not historically known as centers of innovation, such as the established hubs of Cape Town, Lagos, and Nairobi. In many cases, these new innovation hubs are launched by local innovators or business-minded individuals, leading to the creation of new startups.⁵ This locally driven momentum is in contrast to sectors such as energy and agribusiness, which dominate many African countries' economies, where know-how and wealth are often owned by foreign entities.⁶

Investment in these startups and innovation hubs is also increasing. In 2017, startup investment in Africa reached US\$560 million, nearly double that of 2015, which was less than US\$300 million. Nearly half this investment went to financial technology (“fintech”) and insurance technology startups working to support financial inclusion.⁷ New market entrants are not the only firms leveraging booming entrepreneurial ecosystems in Africa. Mobile network operators (MNOs) and other private sector stakeholders are increasingly supporting the growing innovation ecosystem. Examples include the launch of MTB-Y’ello in the Congo and Côte d’Ivoire, Ernst & Young’s (EY) business accelerator in Zimbabwe, and the GSMA’s Ecosystem Accelerator.⁸

Donors and other development actors are beginning to take heed of these trends. For example, in addition to some smaller investments, the U.S. Agency for International Development’s (USAID) Partnering to Accelerate Entrepreneurship (PACE) program works with incubators, accelerators, and seed-stage impact investors to take advantage of this boom in entrepreneurship activity. The World Bank’s XL Africa, launched in 2017, provides technical assistance to “the 20 most promising digital start-ups from Sub-Saharan Africa.”⁹ Under its Innovation Partnerships, the U.K. Department for International Development (DFID) makes investments in promising African technology startups in South Africa, Kenya, and Nigeria.

3 <http://documents.worldbank.org/curated/en/896971468194972881/pdf/102725-PUB-Replacement-PUBLIC.pdf>

4 <https://www.gsma.com/mobilefordevelopment/programme/ecosystem-accelerator/africa-a-look-at-the-442-active-tech-hubs-of-the-continent/>

5 <https://www.weforum.org/agenda/2016/05/a-brief-history-of-africa-s-tech-industry-and-7-predictions-for-its-future>

6 <http://blogs.worldbank.org/ic4d/tech-hubs-across-africa-which-will-be-legacy-makers>

7 <https://qz.com/africa/1211233/how-much-did-african-startups-raise-in-2017-partech-disrupt-africa/>

8 <https://www.gsma.com/mobilefordevelopment/programme/ecosystem-accelerator/africa-a-look-at-the-442-active-tech-hubs-of-the-continent/>; <https://www.theindependent.co.zw/2017/12/15/ey-launches-entrepreneurial-programme/>

9 <http://www.worldbank.org/en/news/press-release/2017/04/25/world-bank-group-launches-new-program-to-support-africas-top-digital-entrepreneurs>

KIC: Program Goals, Structure, and Brief History

While the scope and scale of KIC's activities have evolved since its formal launch in early 2016, its primary goal remains largely unchanged: to harness the entrepreneurial capacity of tech-savvy youth in Ghana to encourage innovation in high-priority development sectors. KIC chose to focus on agriculture. The World Bank outlined in a report in early 2019: "As the importance of the extractive sector [in Ghana] has risen, it appears agriculture sector growth has slowed down. The agriculture sector experienced its lowest growth (0.8 percent) in more than two decades in 2011, the same year in which Ghana started oil production in commercial quantities. In contrast, the industrial sector grew by over 41 percent in the same year."¹⁰ Nevertheless, despite the slowdown in the sector, agriculture remains "the most important sector for jobs and livelihoods" in Ghana.¹¹ While Kosmos Energy's corporate social investment in KIC is relatively small compared to the size of Ghana's agricultural sector, KIC is designed to tackle both the challenges and potential of this crucial market.

KIC runs its program on an annual "cohort" basis, taking aspiring Ghanaian entrepreneurs through a full lifecycle of support. The program has two major components. First is the AgriTech Challenge, which recruits roughly 120 young Ghanaians and guides them through the process of forming teams and creating startups from scratch. After ten months of training, team exercises, and market research tours across Ghana's agricultural value chain, the AgriTech Challenge culminates in a three-round pitch competition. After each round, about half the teams are eliminated, until the final six to eight teams compete in the final round to win seed funding and one year at a local incubator. The second component, incubation, takes place over one year as KIC supports these fledgling startups through their first year of operations. As the KIC program enters its fourth year, we are working with Kosmos to formalize an approach for continued engagement with alumni of the program, called the KIC Fellowship.

This report largely focuses on activities and startups emerging from KIC's first two cohorts, from 2016 and 2017. Where relevant, we include details from later cohorts.

10 <http://documents.worldbank.org/curated/en/113921519661644757/pdf/123707-REVISED-Ghana-Economic-Update-3-13-18-web.pdf>

11 Ibid.



The one trait we look for among all the KIC participants is a serious attitude about pursuing entrepreneurship as a career path.

Crosscutting Insights and Lessons Learned

Over the four years that Kosmos Energy and DAI have worked together on the KIC program, a series of cross-cutting insights have emerged in six main areas.

These six areas are key to the replication and scalability of the program model, and insights for funders and implementers are described in more detail in the following pages.

- 1. RECRUITMENT
- 2. UNDERSTANDING THE MARKET
- 3. CAPACITY BUILDING
- 4. TEAM BUILDING, LEADERSHIP, AND INTERPERSONAL DYNAMICS
- 5. PITCH COMPETITION AND SEED FUNDING
- 6. THE ROLE OF KOSMOS ENERGY



Selected participants' businesses receive seed funding as part of KIC's comprehensive package of support.



1. RECRUITMENT

To recruit candidates for the AgriTech Challenge, KIC conducts outreach across all 10 regions of Ghana via media outreach (including both paid and earned media spots on TV, radio, and newspapers), social media, and community events. KIC staff meet with universities, local technology hubs, and other training institutions to inform potential applicants about the program.



Insight: Recruit people, not ideas.

An online application asks potential participants about their experience and interest in three areas: agribusiness, entrepreneurship and business management, and technology. Importantly, entrepreneurs are *not* expected to come in with pre-formed business ideas or partnerships. They apply as individuals and are encouraged to develop business concepts *during* the program, because a major component of the KIC process is learning how to conduct proper market research and create problem statements. KIC staff review all online applications, and around 200 applicants are brought in for in-person interviews.

The goal of the recruitment process is to create a 120-person cohort of aspiring entrepreneurs with a diverse mixture of skills, experience, and backgrounds, so that entrepreneurs with complementary strengths can form teams. Each team will need to draw on its members for different skills (such as finance, marketing, management, or software design), experiences (such as work in corporations, entrepreneurial settings, and field-based agribusiness), and perspectives (informed by gender or regional background, for example). The one trait we look for among all the KIC participants is a serious attitude about pursuing entrepreneurship as a career path. Using both an initial web application and in-person interviews, KIC assesses interviewees' experience building businesses, their life and career goals, and their tolerance for the risk and uncertainties inherent to entrepreneurial life.



Insight: Invest time and resources to recruit a diverse, high-quality cohort.

KIC has successfully recruited attendees with varying skillsets and from all 10 regions of Ghana, which is no small feat. But achieving diversity in other areas has been a challenge. For example, over the past three years, female participation hovered at around 20 percent, reflecting the universal challenge of engaging more women in both the agribusiness and technology sectors. Anecdotal evidence suggests that female participants find the time-intensive schedule difficult to manage, especially when balancing family responsibilities. In 2018, the KIC team conducted targeted outreach through women-focused professional networks and marketing, even producing a recruitment video featuring successful female alumni of the program. Despite these efforts, the proportion of female applicants did not increase. In 2019, KIC is redoubling efforts to attract and retain more female participants, including leveraging strategic partnerships with local women's empowerment organizations and adjusting its communications and messaging strategy.

Women who do participate, however, thrive. Eleven startups have received seed funding from various sources through the KIC pitch competition; of these, 3 (27 percent) were led by female CEOs, 5 (45 percent) were pitched by a female co-founder, and 8 (72 percent) had at least 1 female co-founder.

Another diversity challenge is participant education level. The vast majority of KIC participants are university graduates, so representation from Ghana's low-income communities is low. Many educated Ghanaian millennials simply do not consider careers in agriculture an appealing option, to the detriment of the sector. Even those few who are interested in agriculture struggle to find jobs that feel exciting and forward-looking. KIC aims to draw these youth into agriculture and guide them to address problems that affect rural and low-income communities, such as farmer access to markets, counterfeit agro-inputs, access to mechanization, and access to finance. Many of the startups serve smallholder farmers as their customers, and all contribute to the sector's growth more broadly—which in turn supports the economic empowerment of rural communities.

2. UNDERSTANDING THE MARKET

One of the program’s main objectives is to demonstrate to KIC entrepreneurs—many of whom grew up in cities and have had little direct exposure to the sector—that agriculture is not just an industry of smallholder or subsistence cultivation. Instead, KIC seeks to give participants a firsthand understanding of the complexities of Ghana’s agricultural market, which includes a diverse set of actors, such as aggregators and processors, that are higher up in the value chain. During market research tours, KIC entrepreneurs engage with actors all along the agricultural value chain to learn about ongoing challenges that are ripe for technology-driven innovations. The goal is to encourage KIC entrepreneurs to be driven by market demands and to ask critical questions of both experts and the end users of their products. This user-centered data-gathering informs the product design and business development process throughout the program and beyond. Further, KIC encourages its entrepreneurs to understand the technology usage habits of their users, especially farmers and rural populations. They are encouraged to understand where technology does—and does not—fit into the problems they are trying to solve.



Insight: Engage local and sector-specific technical expertise and networks.

KIC aims to direct the skills, energy, and passion of technology-driven entrepreneurs toward agriculture in Ghana and one key to its success has been ensuring that local staff and leadership largely are drawn from the agricultural sector. This means that they are, first and foremost, experts in the “problem set” (agriculture), while also offering a keen understanding of the “solution set” (technology). Two of KIC’s senior staff on the ground have degrees in agribusiness and decades of experience in the sector, including at organizations such as TechnoServe and Esoko (one of Ghana’s first agritech companies). In addition to their full-time jobs with KIC, they run their own farming operations.

This sector-driven approach to staffing the program ensures that KIC entrepreneurs have the encouragement and resources needed to understand relevant challenges. With their extensive networks in the agriculture sector, KIC staff can connect entrepreneurs directly with prospective customers and partners, often attending sales meetings in person. They are also able to open doors at institutions such as the Ministry of Agriculture, whose support can be critical in this sector.

Further, one of KIC’s first priorities was to tap the burgeoning technology entrepreneurship ecosystem in Ghana. With its local technology talent, educational facilities, and growing network of technology entrepreneurship hubs and incubators—such as the Meltwater Entrepreneurial School of Technology (MEST), iSpace, Kumasi Hive, Impact Hub, and others—Ghana’s ecosystem is relatively well-developed (though eclipsed by neighbor Nigeria). KIC has partnered with many of these institutions. This spirit of partnership with the local technology ecosystem has been critical to KIC’s success, especially early on, when the program was a new entrant to Ghana’s agritech space and needed to establish credibility.



Insight: Maximize opportunities for entrepreneurs to interact directly with market actors.

KIC's ability to jumpstart the design of technology-driven solutions in a relatively short time hinges on providing entrepreneurs with structured and unstructured mechanisms to engage with and understand the market. Entrepreneurs aren't given the "right answer"—instead, they are equipped with critical thinking and research skills through KIC's training curriculum, and given the chance to meet potential users and experts in various settings:

Market research tours: In week-long, intensive study trips, KIC entrepreneurs travel across the country to visit agricultural businesses and stakeholders. There are three of these tours between launch and the final pitch. The primary objective of the first market research tour is for participants to "get their hands dirty," by engaging directly with experts and business people with decades of experience in the field. Entrepreneurs visit factories, farms, warehouses, and processing centers. This is often the first time KIC entrepreneurs encounter such facilities. As a result, the experience forms the foundation for a months-long process of ideation and iteration. A second objective is the process of socialization and team-building that occurs during the tour, as entrepreneurs get to know each other's interests, strengths, weakness, aptitudes, and compatibilities within a structured setting. This experience is a key component of the team formation process.

The AgriTech Exchange: Soon after the first market research tour, KIC hosts the AgriTech Exchange—a two-day workshop where KIC entrepreneurs work side-by-side with seasoned Ghanaian agribusiness experts and technology specialists from companies such as Vodafone, Airtel, Esoko, and Farmerline. In addition to affording access to valuable professional networks, the Exchange aims for participants to work together to identify a dozen or so "problem statements"—clear, concise descriptions of pressing problems that Ghanaian agriculturalists face. The focus is not on solutions—that comes later in the process. Rather, the AgriTech Exchange reinforces the idea that the key to business success is being problem-driven. The problems that KIC entrepreneurs identify are numerous and diverse, ranging from a lack of financing for smallholder farmers to a lack of access to tractors and mechanization.

Minimum Viable Products (MVPs): In 2018, KIC introduced a new step to the KIC process: creating MVPs. This step was introduced so that teams can gather more user data and refine their products and business models before the final pitch. Over eight weeks, the teams build out initial versions of their websites, smartphone apps, SMS services, and other digital product components and test them in the market. To support the MVP phase, KIC gives each of the eight finalist teams a stipend of up to US\$2,000. In addition to providing a learning experience for teams, the MVP phase enables pitch competition judges to assess how well teams can handle relatively small amounts of money before awarding the larger sums of seed funding.¹²

¹² Note that the companies profiled in this report did not receive any MVP funds, since they are from the 2016 and 2017 cohorts and the MVP phase was introduced in 2018.

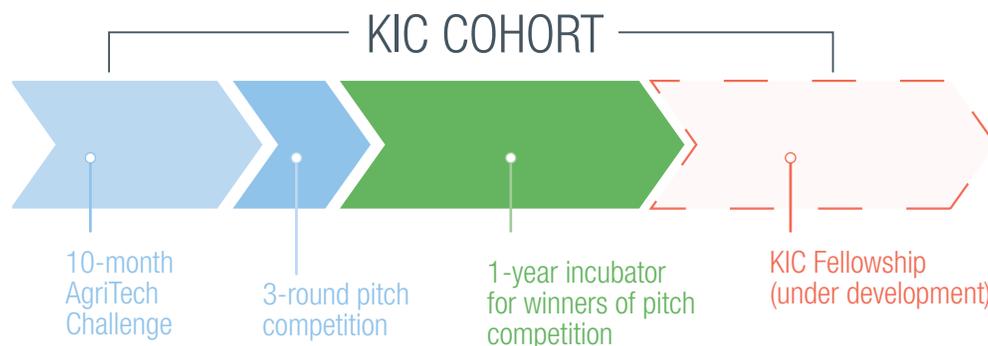
3. CAPACITY BUILDING

KIC builds entrepreneurs' capacities through formal training sessions, site visits, mentorship, and one-on-one coaching from KIC staff. The goal is to give entrepreneurs the skills and resources they need to build technology products that address market needs. When integrated with market research opportunities and the pitch competition, KIC's capacity building efforts become part of a more holistic support system.

While they may vary from year to year, topics typically covered include:

- Ethics and the Foreign Corrupt Practices Act (FCPA)
- Agriculture and ICT
- Research and critical thinking
- Grooming, personal presentation, and time management
- Technology development principles
- Group dynamics
- Leadership and networking
- Visual presentation and slide design
- Verbal presentation and pitching skills
- Product development
- Competitor analysis
- Marketing and sales
- Pricing
- Business sustainability and risk management
- Bookkeeping and finances
- Legal topics

KIC support does not end after the AgriTech Challenge. At the conclusion of the three-round pitch competition, drawing on feedback from the judges, KIC chooses two teams to receive US\$50,000 each in seed funding and enter a year-long incubation program. For KIC's first three years, startups entered the incubation program at the Meltwater Entrepreneurship School of Technology (MEST) in Accra. MEST, a key KIC partner, is a social investment program of Silicon Valley-based Meltwater Technologies. KIC teams that enter the MEST Incubator become registered businesses. During this year of incubation, they are expected to build and launch their products and services, sell to the target markets identified during their ten-month pre-incubation training with KIC, and graduate as sustainable, fully fledged businesses. Now with three cohorts in its network, KIC is launching its own agritech incubator to support startups that emerge from the Challenge.



 KIC provides support to Ghanaian entrepreneurs on an annual "cohort" basis.



Insight: Commit to a “full cycle” of support for entrepreneurs.

KIC combines several entrepreneurship support strategies: a pitch competition, skills training, mentorship, networking, seed funding, and incubation. These elements guide entrepreneurs through the stages of startup formation and launch, including ideation (finding a problem-solution fit), market research and validation (finding a product-market fit), and pitching. Critically, and unlike many entrepreneurship programs and competitions that engage early-stage entrepreneurs, KIC provides one year of full-time incubation support to any of the finalists who wish to continue past the final pitch, whether they receive funding or not. Many startups still benefit from intensive technical assistance and peer support networks as they get off the ground.

This full cycle of support distinguishes Kosmos’ investment from the “fly by” pitch competitions, week-long training bootcamps, and weekend hackathons hosted by donors and global venture capitalists around Africa. Instead of spreading resources thinly, KIC has committed to deep, long-term engagement with the local agricultural sector and to nurturing innovative solutions that, if successful, could transform the sector.



 KIC commits to supporting young entrepreneurs in Ghana through all stages of their business journey.

KIC shows its participants the strength of a balanced team whose members support each other through inevitable challenges while holding each other accountable.



4. TEAMBUILDING, LEADERSHIP, AND INTERPERSONAL DYNAMICS

With capacity building sessions, their first market research tour, and the AgriTech Exchange behind them, KIC entrepreneurs begin to hit their strides—their initial enthusiasm now tempered by a keener, more tactile understanding of the sector’s complexities. Their next step brings them into the heart of the KIC process—finding team members, designing concepts, and pitching them.

About two months into the program, the entrepreneurs begin forming teams of three to five people. For the most part, teams stick together through the end of the program. The most successful teams comprise members with complementary skill sets in business (including management, finance, marketing, and operations), technology (usually web or mobile app development), and agribusiness.

This focus on teams rather than the individual is new to the entrepreneurial culture of Ghana, where in the past a single person would form and drive a business idea. This person may have drawn on advisors and staff for support, but the idea of co-founders who share the burden equally is still relatively new. KIC shows its participants the strength of a balanced team whose members support each other through inevitable challenges while holding each other accountable. However, finding the right match for teammates is not always easy.



Insight: Emphasize soft skills as much as hard skills or sector knowledge

The KIC program has always included typical entrepreneurship training modules such as design thinking, product development, and investor pitches, as well as sector-specific capacity building through market research tours and lectures from local agribusiness leaders. Over the years, however, the “soft skills” component of the program has grown in importance. One of the first activities every year is a two-day bootcamp, in which participants learn leadership skills, team building, discipline, and focus through a combination of physical and mental challenges. This exercise helps build a sense of camaraderie early on, and accelerates the process of participants getting to know each other. Over the ensuing ten months, KIC provides additional training on topics such as leadership, conflict resolution, and human resource management. These skills are indispensable as the entrepreneurs “go through the trenches” together to get to the final pitch. And for the companies that succeed, the journey has only just begun. Many startups fail in their first year, so teammates must support one another to get through the demands of launching a new business.

5. PITCH COMPETITION AND SEED FUNDING

Rather than focus on a single pitch competition at the end of the program, the three-round pitch competition is designed to create strong incentives for learning and iteration *throughout* the entire KIC process. The pitch competition also simulates the “real world” of entrepreneurship, where some companies succeed and others fail.

In the first pitch round, teams focus on articulating a clear problem statement that demonstrates a deep understanding of their target customers and the challenges they are addressing. In the second round, one month later, teams describe their technology-driven solutions, how they will work, and their value propositions to customers. The final pitch goes further into teams’ business models: their market sizes, revenue models, and go-to-market strategies. At each stage, teams are judged not only on product viability, but also on how well they received feedback from the judges and used it to refine their ideas.



Insight: Embrace—and mitigate—risk.

Risk-taking is built into KIC’s approach. Its goal is not to support existing startups, but to help aspiring entrepreneurs develop new startups “from scratch,” building tools for the agricultural sector that may never have been tested in Ghana. This is an inherently risky goal. Further, as it selects and eliminates people at various stages, KIC risks making the “wrong” choice across the program lifecycle. In one instance, a team that KIC eliminated in early rounds of the competition went on to have great business success. Talented individuals may enter the program but end up eliminated due to poor team selection.

Conversely, some startups that receive KIC funding may not make it past the early growth stages. This pattern is to be expected—though estimates vary, between 80 and 90 percent of startups typically fail within the first few years. KIC-funded startups are not immune to the vagaries of a fast-paced technology market.

Out of the roughly 120 entrepreneurs who join each KIC cohort, only a small percentage will receive seed funding at the end of the process. Entrepreneurs leave the program at various stages, and the three pitch competitions are deliberately designed to whittle down the cohort, concentrating KIC’s limited resources on an ever-narrowing group of high-potential teams.

KIC's challenge is to mitigate—not eliminate—the risk associated with the program. The mentorship that participants receive during and after the pitch competition helps accomplish this—but it is not foolproof. KIC has in part mitigated this risk with a portfolio approach that engages companies at different stages of maturity. In 2017, it supported a small group of more established agribusinesses through its Business Booster program, which provided these business with capacity building on accessing growth capital and introductions to investors. Now part of the KIC family, the Business Booster alumni companies provide invaluable mentorship to and sometimes even partner with KIC's early-stage startups from the Agritech Challenge.

Further, regardless of when they exit the program, KIC entrepreneurs receive benefits that can form a foundation for success as professionals and entrepreneurs. The combination of market research tours, capacity building, and one-on-one mentorship imparts technical and social skills. In fact, in both 2016 and 2017, some teams eliminated from the pitch competition decided to continue pursuing their business ideas. AgroCenta, for example, though eliminated in the first round of the 2016 cohort, went on to build a successful business and has outperformed many teams that received KIC seed funding.

This approach to mitigating risk is key to the KIC ethos and stands in contrast to many donor-funded activities that are often forced to demonstrate impact at scale. It has allowed KIC to carefully use its limited resources while reflecting the risky nature of the markets its entrepreneurs will enter.



 KIC provides young entrepreneurs in Ghana with a platform for learning, collaboration and networking.



Many young startups entering a field like agriculture, which has entrenched players and practices, can struggle to gain the credibility needed to break into the market.

6. THE ROLE OF KOSMOS ENERGY

When Kosmos Energy decided to launch a flagship social investment project in Ghana, it allocated US\$3 million over three years. This budget is relatively small compared to most donor-driven projects, but larger than typical corporate social investment projects globally. Kosmos partnered with DAI to design a project that would have significant and lasting impact while aligning with the brand's corporate identity and ethos. The company prides itself on its entrepreneurial and risk-friendly culture, which has worked well with a program like KIC. Kosmos Energy's approach has driven the program in many ways, two of which we highlight here.



Insight: Leverage funders' brand power, creativity, and technical capabilities.

Kosmos Energy's standing in Ghana

Kosmos is well known in Ghana. The first exploration company to discover oil offshore, it has made social investments in the country for more than a decade. It has established itself as a partner to successive national governments their pursuit of Ghana's overall economic growth. This reputation redounds to the benefit of KIC entrepreneurs, who can use the Kosmos name to establish credibility, especially among skeptical potential customers or users. Many young startups entering a field like agriculture, which has entrenched players and practices, can struggle to gain the credibility needed to break into the market. The Kosmos brand has proved an important asset to overcome these barriers.

Further, Kosmos Energy's standing has enabled KIC to draw support from other corporations. In addition to Premier Bank—which funded the 2017 startup Complete Farmer—KIC has received extensive, often pro-bono support from international consulting giant PricewaterhouseCoopers, which conducted several capacity building sessions for the program. KIC's convening power is also critical to recruiting mentors, judges, and other experts.

An unwavering market-driven approach

In line with the entrepreneurial ethos of the company, Kosmos Energy has insisted on a market-driven, sustainable approach to their corporate social investment. As a result, KIC pushes its startups to validate their assumptions, approaches, and products within the dynamic Ghanaian agricultural market through direct engagement with potential customers and experts in the field. Startups that cannot address a critical agriculture problem do not advance past the rigorous pitch competition. That said, the program has yet to precisely determine the appropriate point to step back and force startups to sustain themselves solely on their market viability and business acumen. Setting this exit ramp right will be a key challenge for KIC to address, especially as 2016 and 2017 businesses graduate from the program.

KIC in Action

ENTREPRENEUR PROFILES

The KIC story would be incomplete without an introduction to some of the young entrepreneurs who emerged from the process with both innovative technologies and new entrepreneurial skills. This section captures the stories of a select few of the entrepreneurs, discussing their journeys and their reflections on the KIC experience.



▲ KIC provides young Ghanaians with the skills to become entrepreneurs or advance their careers in other fields

AGRO INNOVA CEO Patrick
Ofosu-Agyemang (L) and Chief
Product Officer Kelvin Kotey Ashie



AGRO INNOVA

Kelvin Kotey Ashie, Chief Product Officer

Kelvin Kotey Ashie, Co-founder and Chief Product Officer of Agro Innova, describes his experience with KIC as a journey of self-discovery and learning. Kelvin finds the synergy between the different KIC-funded startups powerful. He notes that the network of KIC entrepreneurs helps each of them scale and replicate their solutions more effectively than if they had been operating alone. “Solutions do not exist in isolation,” states Kelvin. “One problem that is solved also helps another company or another business to solve another problem.”

Agro Innova builds digital solutions for the poultry sector. In their research, Agro Innova found that poultry farmers often lack formal means of recording and keeping track of farm operations. In response, the startup designed and launched its first product, Akokotakra, a poultry farm management software. Akokotakra enables farmers to record, monitor, and analyze farm inputs, and can connect them to supplier and buyer markets. To reach farmers in areas with limited internet connectivity, the team incorporates a mobile app, SMS, and USSD technologies into their design. As Kelvin describes, Akokotakra software helps improve the economic wellbeing of farmers and other producers throughout the poultry supply chain in Ghana.

“Solutions do not exist in isolation. One problem that is solved also helps another company or another business to solve another problem....As time goes on, more solutions will come.”

Kelvin Kotey Ashie,
Chief Product Officer of
Agro Innova



▲ Agro Innova founders Amos Narh Doku, Chief Executive Officer; Kelvin Kotey Ashie, Chief Product Officer; Moses Gagbah Mallaghan, Chief Operating Officer; and Patrick Ofori Agyeman, Chief Technology Officer

COMPLETE FARMER

Desmond Koney, Chief Executive Officer

With a bachelor's degree in mechanical engineering paired with entrepreneurial ambitions, Desmond Koney, Co-founder and Chief Executive Officer of Complete Farmer, found himself surrounded by likeminded individuals at MEST and KIC. Desmond's Complete Farmer co-founders include Zoussi Ley (CMO), Andrew Quartey (CTO), and Joan Ejeta (COO), all of whom share his passion for making positive impact on the agribusiness industry in Ghana.

Desmond and his KIC partners found that agro-processors and industries need raw materials for production, but struggle for consistent access to quality produce. They also discovered that many Ghanaian business professionals, retirees, and diaspora members were interested in agribusiness—but these individuals lacked the knowledge and experience to start their own farms. In response, Complete Farmer developed a platform that uses crowdfunding to benefit Ghanaian farmers and agro-processors.

Through this platform, agro-processors can place an order specifying the produce they need. The public can then invest in crowdfunding that crop and make a profit when it is sold. With the platform, investors can monitor their farms remotely. They get the satisfaction of “owning” a farm with the ease of ordering an Uber ride. Desmond calls this “reverse-engineering the whole value chain.”

Complete Farmer launched its platform in 2018. The startup sold out all investment offerings within the first month of operation and was profitable within its first year. Desmond and his partners were pleasantly surprised to find their product has gained international attention, attracting investors from the United States and Japan.



“Our users are able to monitor their farms remotely. We want to give people—investors—the satisfaction or the feeling of owning a farm. We want to make it as cool as requesting for an Uber ride.”

Desmond Koney, CEO of Complete Farmer

AGROSEAL

Samuel Avisey, Chief Executive Officer

Samuel Avisey, Co-founder and Chief Executive Officer of Agro Seal, did not set out to be an agribusiness entrepreneur. But he was interested in agriculture and asked himself, “What can you do for your nation? What can you do in order to be relevant in your country, in your society?” This passion eventually led Samuel to MEST, where his background and interests made him an excellent candidate for KIC.

While researching the agribusiness industry in Ghana, Samuel and his KIC teammate identified a market gap: farmers reported not receiving fair market prices for their produce, and processing companies reported that they were unable to consistently find quality produce in the quantities their operations required.

Agro Seal’s solution was to use SMS and web-based technologies to create a platform that connects smallholder farmers with large-scale processors. Agro Seal applies technical expertise in Global Good Agricultural Practice (G.A.P.) certification to teach smallholder farmers how to meet the standards large processors require. To date, 1,000 farmers have registered on the Agro Seal platform, yielding sales of more than 80 tons of produce.



“It is about practicing what you have learned and using it to benefit larger society.”

Samuel Avisey, CEO of Agro Seal

ANITRACK

Tony Marfo, Chief Executive Officer

Tony Marfo, Co-founder and Chief Executive Officer of Anitrack, grew up in Ghana and envisioned someday running a software company. KIC introduced him to his future business partners, Abdul-Hak Saani (Co-founder and Chief Operations Officer) and Winnie Akoko (Co-founder).

During their market research, the team learned livestock farmers have difficulty locating and monitoring their animals and often struggle to access veterinary services. Farmers could benefit from better systems to track, monitor, and identify livestock, as well as strategies to reduce disease and theft.

Through an intensive research and development process, Anitrack built an electronic device called a “rumen bolus” that uses radio signals to track an animal’s location and health. The device has a two-mile tracking radius and lets farmers remotely follow livestock in real time. The rumen bolus monitors animals’ temperatures, pH balances, and overall health. If an animal shows signs of illness, the device helps farmers take corrective action before the illness spreads. Anitrack also connects farmers to veterinary facilities.

Tony emphasizes that while this technology helps farmers monitor the health and locations of their herds, it has other social benefits. The rumen bolus can reduce cattle theft and resulting conflicts, which are common in the region. The device even has the potential to help predict hotspots for conflict between nomadic herdsman and farmers.



“KIC has been very, very supportive.... Right from the beginning, the kind of support that we have from the program has been very valuable. There is no other company doing this—trying to support farmers and entrepreneurs in the agri space.”

Tony Marfo, CEO of Anitrack

GHALANI

Tabitha Nanzala Mayabi, Chief Executive Officer

Tabitha Nanzala Mayabi never imagined that she would become an agribusiness entrepreneur in Ghana. Today, Tabitha is Co-founder and Chief Executive Officer of Ghalani, an organization that enables digital recordkeeping and data management in agribusiness.

While looking for opportunities to study business and entrepreneurship, Tabitha came across MEST and the KIC program, where she eventually met her business partners. They identified two central issues in the agribusiness industry in Ghana. One was the lack of data on farms, which made it difficult for farmers, vendors, and distributors to make informed management decisions. The second issue was that farmers faced obstacles in accessing finance. The Ghalani team realized that if farmers could digitize their records, they could use data to demonstrate their farms were viable businesses and use that information to access finance. Furthermore, farmers could use data from digital records to plan planting cycles, make management decisions, and improve efficiency and productivity.

This revelation led the Ghalani team to develop data management software for the agribusiness space. Ghalani also holds seminars for smallholder farmers on how to calculate input, track crop yields, and map land. Through this business education, Tabitha hopes to empower smallholder farmers. By digitizing farm tasks and framing agriculture as a business venture, Ghalani aims to make farming attractive to young people.





▲
The QualiTrace team received seed funding from KIC in 2017 to develop an anti-counterfeiting, mobile verification platform for agro-chemicals called QualiCheck.

QUALITRACE

Kenneth Nelson, Chief Executive Officer

A self-described risk-taker, Kenneth Nelson, Co-founder and Chief Executive Officer of QualiTrace, has always been interested in small business ventures. Motivated by his experience farming maize for food as a child, he wanted to work at the intersection of business and agriculture.

When he was accepted to KIC, Kenneth found himself surrounded by other young and passionate entrepreneurs, many with backgrounds in food, nutrition, and technology. Through KIC, Kenneth met his business partners, Padiki Bukari (Chief Marketing Officer) and Divine Pupilampu (Chief Technology Officer).

The QualiTrace team discovered that Ghana lacked systems to trace farm inputs such as fertilizers and pesticides. Roughly 40 to 80 percent of agro-chemicals on the market in Ghana are contaminated, often resulting in farmers losing entire seasons' crops. The QualiTrace team was determined to find "a way to make sure that whatever the farmers were putting into the soil was authentic, genuine, and could be traced." Their solution was to develop an anti-counterfeiting, mobile verification platform called QualiCheck. The platform uses an algorithm to generate security codes that QualiTrace sells to input dealers, manufacturers, and distributors. When farmers purchase chemicals, they can check them for security codes and use QualiCheck to verify product authenticity. For each verification, the platform records the farmer's name, location, time, and date, so that when counterfeit code is entered, QualiTrace can identify that vendor and alert authorities.



“Everything starts with the farmer. The food we eat, the medicine we take. So the farmer should be given the first priority.”

Kenneth Nelson, CEO of QualiTrace

RENT-A-FARM

Jude Kafui Sename, Chief Executive Officer

Jude Kafui Sename, Co-founder and Chief Executive Officer of Rent-A-Farm, came to the KIC program with considerable entrepreneurial experience and passion. Through KIC-funded market research, Jude and his team learned that prospective farmers were struggling to find and secure farmland. Rent-A-Farm set out to offer a suite of services related to the land value chain and to help farmers secure farmland. Using geographic information systems, mapping technologies, and web and mobile applications, Rent-A-Farm created an online platform where land owners could connect with farmers who seek to purchase or rent farmland.

About 95 percent of Ghana's farmland is currently not registered, and Jude explains the challenge this presented for Rent-A-Farm. People in rural areas still often use landmarks (such as trees and rocks) to mark their property boundaries. With growing populations, Ghana has seen an increase in land tenure disputes, which can discourage people from pursuing agricultural endeavors. Seeing a business opportunity, Jude and the Rent-A-Farm team decided to offer technical assistance in land registration services. They began working with experienced cartographers to help land owners legally register and acquire titles to their land. These services reduce risk not only for Rent-A-Farm, but also for landowners. As with any seasoned entrepreneur, Jude finds motivation in tackling problems. "Being an entrepreneur is innate," he says. "Even when a challenge comes, I find my way around it and keep moving."



“If I am able to see that the land litigation cases reduced in Ghana’s courts as a result of our innovation, that will mean success for me.... If I am able to see well-structured, planned communities around agriculture, that will mean success to me.”

Jude Kafui Sename, CEO of Rent-A-Farm

TROTRO TRACTOR LIMITED

Kamal Yakub, Chief Executive Officer

In 2016, Kamal learned about the KIC program through a public call for applications. With a background in information technology and one entrepreneurial endeavor behind him, Kamal joined the 2017 cohort of young entrepreneurs.

Through their market research, Kamal and his partner, Immanuel Hada, learned that smallholder farmers often lack access to agricultural machinery such as tractors. TROTRO Tractor's proposed solution is to use USSD applications and SMS technology to connect farmers with machinery. Similar to rideshare services, TROTRO Tractor utilizes mobile money technology to help smallholder farmers benefit from shared agricultural machinery resources. Using this basic mobile phone technology, farmers can request access to farm equipment when and where they need it.

Within their first year of operation, TROTRO Tractor managed three tractors in two different communities. They successfully supported 3,800 farmers, far exceeding their initial targets.

Since being named a winner of the 2016 KIC AgriTech Challenge, Trotro Tractor has gone on to raise more than US\$250,000 in additional investment from various sources.



Conclusion

As Africa's technology entrepreneurship sector experiences unprecedented growth, it will continue to attract interest from development actors, both donors and corporations, seeking to harness this growth to achieve their goals. Despite the program's relatively early stage, the experiences of KIC and its entrepreneurs over the past three years provide an instructive case study on how external entities can support local technology entrepreneurship. While they come with risks, such investments have the potential for truly radical payoffs. Programs like KIC, if successful, present opportunities for locally driven, innovative solutions to large-scale problems—solutions that harness the power of market demand to achieve long-term, sustainable impact.

Programs like KIC, if successful, present opportunities for locally driven, innovative solutions to large-scale problems—solutions that harness the power of market demand to achieve long-term, sustainable impact.

ACKNOWLEDGEMENTS

The authors would like to thank Kosmos Energy and the entire KIC Ghana family for their commitment and partnership. Particular thanks to Lauren Berry, George Sarpong, Joe Mensah, Benjamin Gyan-Kesse, Frederick Phillips, and, especially, all of the KIC entrepreneurs. Thanks also to Kristen Roggemann, Galia Nurko, Zaki Raheem, Claire Miller, Steven O'Connor, and Adam Fivenson for reviewing and editing this report.

This report is dedicated to the memory of Charles Ofosuhen. *Ahoy!*



Center for Digital Acceleration

digital@dai.com | dai-global-digital.com

Sustainable Business Group

SBG@dai.com | dai.com/sbg