



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

ENGAGING YOUTH IN AGRICULTURE

through Information and
Communication Technologies



USAID


FROM THE AMERICAN PEOPLE

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ABBREVIATIONS

AI	Artificial Intelligence
ICT	Information and Communication Technology
IPM	Integrated Pest Management
GFSS	U.S. Government Global Food Security Strategy
GSMA	The GSM Association (commonly referred to as 'the GSMA' or Global System for Mobile Communications, originally Groupe Spécial Mobile) is an originally-European trade body that represents the interests of mobile network operators worldwide
GDP	Gross Domestic Product
NGO	Non-governmental organization
SMS	Short Message Service; a text messaging service component of most telephone, Internet, and mobile-device systems



Digital Development for Feed the Future — a collaboration between USAID’s Global Development Lab and Bureau for Food Security — is focused on integrating a suite of coordinated digital tools and technologies into Feed the Future activities to accelerate agriculture-led economic growth and improved nutrition. Feed the Future is the U.S. Government’s global hunger and food security initiative.

This case study is part of a series highlighting the integration of digital technologies into agricultural programs. Over the past 10 years, and particularly over the past five, the use of mobile phones and Internet-based, digital tools in farming activities has risen dramatically. This is largely due to the widespread adoption of mobile phones in developing and emerging markets, coupled with the spread of 3G and 4G connectivity. What has emerged is a broad set of digitally based applications that have driven greater financial inclusion, more precision in agriculture, better data collection and analysis, and more effective information dissemination. Agricultural organizations and programs are increasingly embracing these tools to advance their goals. Each of the first six case studies highlights specific organizations and their approaches to adoption of digital tools, including ways that these tools affect organizational culture, operations and programming. This case study takes a slightly different approach, highlighting insights from a meta-analysis of efforts to engage youth in agriculture via information and communication technologies (ICTs).

EXECUTIVE SUMMARY

Globally, the average age of farmers is 60 years old, and young people are increasingly pursuing non-agricultural careers rather than following in the footsteps of their parents and grandparents (World Farmers’ Organization, 2017). Worldwide, populations are becoming younger, particularly in Sub-Saharan Africa, where 10 of the youngest countries in the world are located (Hutt, 2016). Youthful populations offer a great opportunity for many countries as the entrepreneurial and innovative energy of young people can help revitalize and enhance local economies. This is particularly true in the agricultural sector, where new technologies and innovative farming practices have the potential to enhance the sector’s productivity and effectiveness. However, young people do not automatically gravitate to farming. To see agriculture as a profitable and exciting career path, young people need education, technical training, and resources (such as land and finance).

Information and communication technologies (ICTs) are already bringing new vibrancy and potential to agricultural practices around the world. Young people

are more ready and eager to master these new technologies and apply them to agriculture to increase productivity and solve challenges. At the same time, these technologies can help demonstrate to youth that agriculture can be a viable and profitable business opportunity, increasing the desirability of agriculture-related career paths.

This case study explores the nexus of youth, technology, and agriculture, highlighting insights from a meta-analysis of efforts around the world — and particularly in U.S. Government Global Food Security Strategy (GFSS) countries — to engage youth in agriculture through ICTs. It begins with an analysis of the challenges hindering youth involvement in agriculture. These include:

- Family and community pressures
- Lack of perceived profitability
- Access to land
- Access to finance
- Access to education, technical training, and resources



The case study continues with an analysis of potential opportunities to improve engagement with youth in agriculture, including:

- Shifting the perception of farming within rural families and communities
- Exposing youth to agriculture early on, incorporating all aspects of the value chain (rather than just farming)
- Increasing the profitability and productivity of farming, and
- Introducing agriculture problems to youth to resolve them

Several examples are included to illustrate how organizations and projects within GFSS countries across Latin America, Africa, and Asia use ICTs to engage youth in rural communities and inspire them to consider agriculture and related careers. Examples discussed in depth include Agrijovent and Rana Labs (Guatemala), CocoaLink (Ghana), and ICT for Agri (Nepal).

The case study concludes with recommendations for USAID staff, implementing partners, and other organizations that wish to better engage youth in their agricultural programming through ICTs.



BACKGROUND

Information and communication technologies (ICTs) including mobile phones and Internet-based digital tools are bringing new vibrancy and potential to agricultural practices worldwide. These tools and approaches can help address a number of challenges to the future of our food supply, including limited arable land, increased unpredictability of weather patterns, and food losses (both on- and off-farm). However, leveraging these tools to their fullest potential requires a new set of skills and technical expertise. Young people are often more ready and eager to master these new technologies and apply them to agriculture to increase productivity and solve challenges (World Farmers' Organization, 2017). At the same time, these technologies can help demonstrate to youth how agriculture can be a viable and profitable business opportunity, increasing the desirability of agriculture-related career paths, in lieu of alternatives youth might otherwise be seeking.

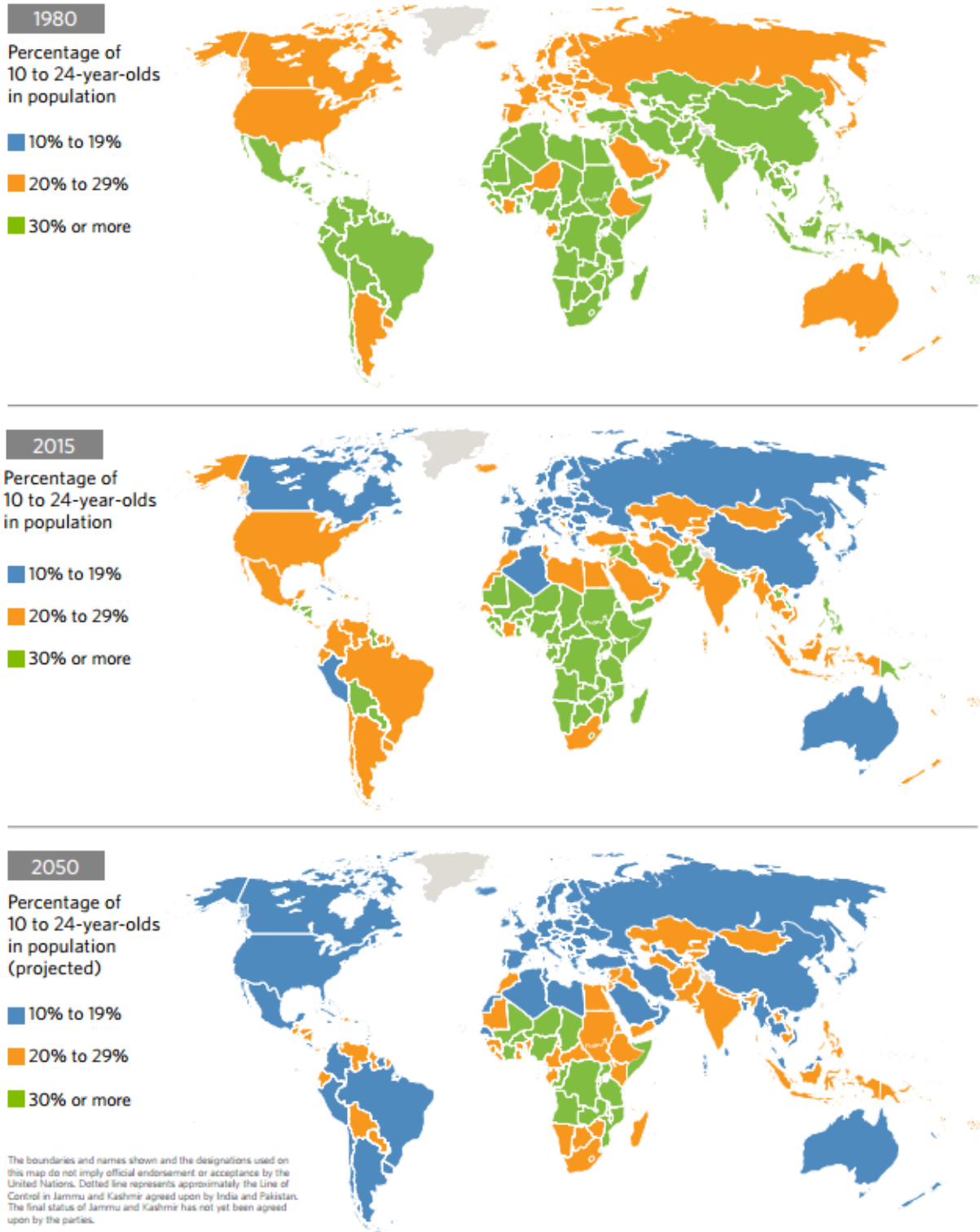
Right now, youth are the largest generation in human history, with half of the world's population younger than age 30, and 1.7 billion people aged 10–24 (USAID, 2012). Nearly 90 percent of the world's youth live in less developed countries, where two-thirds of the population lives in small farm households, working on land plots smaller than 2 hectares (UNFPA, 2014a; Rapsomanikis, 2015).

However, as youth seek out what they believe to be profitable and business-focused careers, they are increasingly turning away from agriculture. At the same time, the average age of farmers is increasing. Today, the average age of farmers is about 60 years old (World Farmers' Organization, 2017). These two phenomena combined both limit the sustainability potential of agriculture in less developed countries and can prevent the diffusion of innovative technologies and practices into the agricultural system.

The youth bulge is most apparent in Sub-Saharan Africa, where 10 of the youngest countries in the world are located, and where this trend is expected to accelerate in the coming years decades (Hutt, 2016) (Figure 1). Youthful populations can be advantageous, especially in emerging economies. The World Bank estimates that this demographic shift in Africa is expected to generate 11–15 percent GDP growth between 2011 and 2030 (Hutt, 2016). Yet this growth is contingent on countries with youthful demographics providing adequate education, training, and employment to its young citizens. Failing to do so could be risky, with a "lack of meaningful work among young people playing into frustration that has in some instances contributed to social unrest or unmanaged migration" (UNFPA, 2014a).



Figure I: Young in the World: Changing Proportions in 1980, 2015, and 2050



Source: United Nations, via [WEE](#)

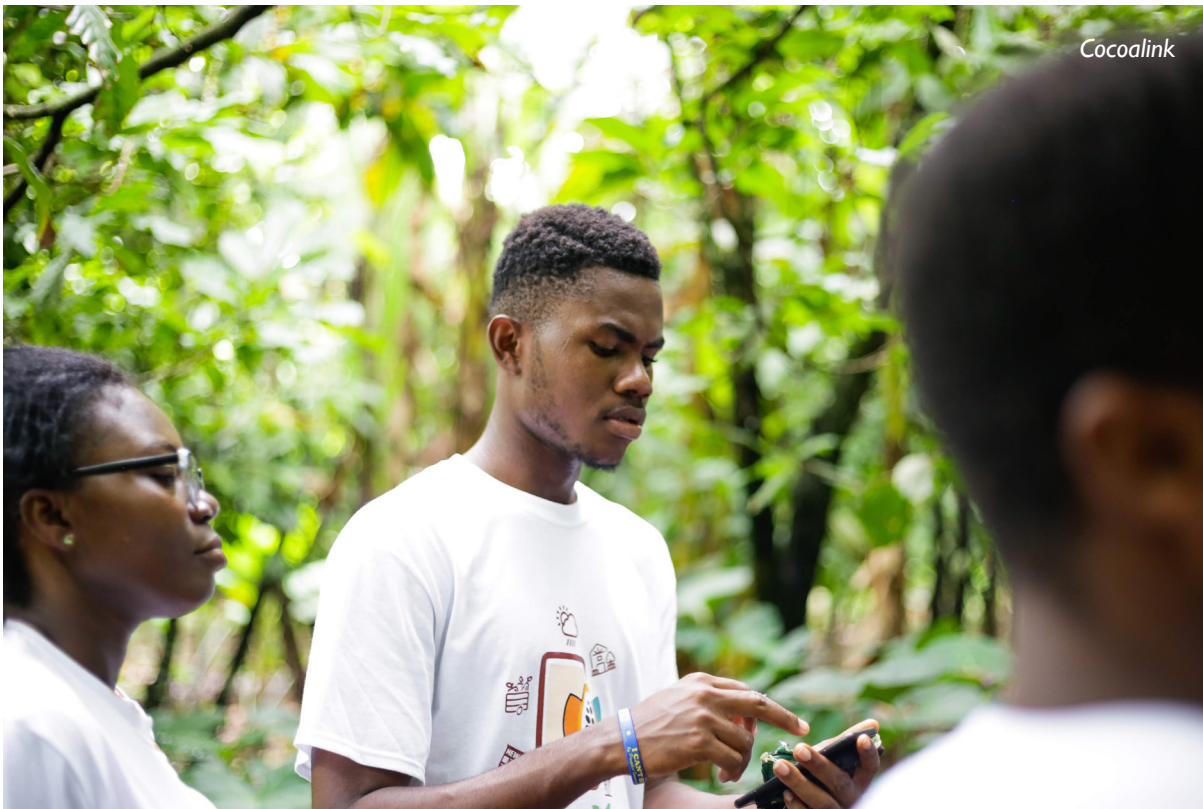
META-ANALYSIS

CHALLENGES HINDERING YOUTH INVOLVEMENT IN AGRICULTURE

Globally, several challenges contribute to a shift in the ambitions of rural youth from agricultural to non-agricultural careers. Some of them are real, including tangible constraints in access to resources, such as land, finance, and training that prevent youth from pursuing profitable careers in agriculture. Others are perceived challenges, having more to do with the way young people think about careers in agriculture. Young people's perceptions of agriculture are also influenced by the views and opinions of adults around them, including parents, relatives, and community members. Some of the most pervasive challenges hindering youth involvement in agriculture follow:

1. Family and community pressures: In many rural agricultural communities, parents encourage their children to seek out alternate career paths that will take them away from the difficult, subsistence-based lifestyle of working on the family farm. This leads to a perception of agriculture as a "backup plan" for youth, or something that they will engage in only until they find their own, alternative, career path.
2. Perceived lack of profitability: Youth do not believe farming is a profitable career path. The seasonality of planting and harvesting adds to this perception, given that profits from farming can come many weeks or months after large financial investments in inputs, machinery, or labor at the beginning of the season.
3. Access to land: In many U.S. Government Global Food Security Strategy (GFSS) countries,¹ particularly in Sub-Saharan Africa, land is a communal resource and must be passed down within a family, rented, or purchased. Though youth have opportunities to work on their parent's land, and family land is often subdivided among the children, youth are limited in their ability to access new or additional land to begin or grow their own farms.
4. Access to finance: Financial resources are required for both on- and off-farm pursuits. This is a challenge for all demographic groups, but particularly so for youth who often lack collateral or other requirements for accessing credit from a bank. Youth access to finance is thus typically limited to family or community resources. Financial literacy also plays a role, as young people may not understand the importance of saving and financial planning or the steps required to access formal or informal financial services, particularly if the financial literacy of their parents or caregivers is also limited.
5. Access to training, education, and information: Agricultural knowledge is often passed down generationally and within communities, but youth particularly demand new knowledge, access to improved technologies, and an understanding of how to apply advanced techniques or grow new crops. Without a structured system to provide youth with this knowledge, many seek out other career paths.

¹ GFSS target countries are Bangladesh, Ethiopia, Ghana, Guatemala, Honduras, Kenya, Mali, Nepal, Niger, Nigeria, Senegal, and Uganda.



OPPORTUNITIES TO BETTER ENGAGE YOUTH IN AGRICULTURE

Each of these challenges is complex and requires multifaceted solutions to help youth see the value and potential of pursuing a career in agriculture. Examples of ways to promote youth engagement in agriculture include the following:

1. Shift the perception of farming within rural families and communities: ICTs, such as mobile phones and the Internet, and communications platforms like television and radio can be used to highlight examples of successful youth agripreneurs and agriculturalists to shift perceptions of agriculture in rural areas. The [Mediae Company](#) in Kenya is known for producing “edutainment” shows to accomplish this goal. Examples include [Shamba Shape-Up](#), a makeover-style reality TV show with an audience of 10 million that aims to educate smallholder farmers about good agricultural practices; [Makutano Junction](#); and
2. Expose youth to agriculture early on, incorporating all aspects of the value chain (rather than just farming): Learning about agriculture can start at a young age, and partnerships with schools and universities offer opportunities to promote such learning. For example, the U.S. Department of Agriculture’s 4-H program has taken root through independent, country-led affiliate programs in 15 countries in Africa. The 4-H Enterprise Gardens program, started in Ghana in 2000, now reaches more than 320,000 youth (ages 6–24) across the continent (National 4-H Council, 2016). Through the 4-H Enterprise Gardens, youth in Africa are exposed to agriculture from a young age. They help plan, plant, and manage a food-producing garden, either in or outside of school, learning

PROGRAM PROFILE

DON'T LOSE THE PLOT (EAST AFRICA)

Funded by Feed the Future, Africa Lead, and Mercy Corps AgriFin Accelerate (AFA), *Don't Lose the Plot* is a TV show designed and produced by Mediae Company in 2017 as part of a strategy to engage young people in farming as a business and to leverage digital tools and services. The show, which aired in Kenya, Tanzania, and Uganda, showed four young farmers (two men and two women) competing to win an award of \$10,000 for having the most profitable and sustainable farm on a one-acre plot.

The goal of the reality show was to appeal directly to young people and “cultivate the next breed of farmers” through the use of digital tools. The episodes covered such topics as soil testing, irrigation, and fertilizers; budgeting; obtaining a loan; choosing crops and livestock; managing the farm. The farmers received guidance from agriculture experts provided by AFA on financial planning, planting strategies, agricultural inputs, and marketing. Digital tools that were integrated into the show, such as a web-based budget planning tool called Budget Mkononi, were posted on Mediae's web and social media platforms so viewers could also access them. Budget Mkononi enables the farmer to select the variables needed to start their own agri business and to provide real-time budget information. Users can save budgets for later reference and share them with lenders and financial institutions.

AFA and Mediae used several interactive communication platforms to allow viewers to engage with the show participants, agriculture experts, and producers. For example, viewers could submit requests for additional information on farm management or agricultural practices through iShamba, an interactive SMS-based farming information service that responds to questions and requests for information, has tips from the shows, and presents weather alerts, market price information, and special offers. Viewers could also request resources and advice using Facebook and Twitter.

After 13 episodes, AFA and Mediae conducted an initial assessment of the impact and found out that 3.4 million viewers watched the TV shows in Kenya, Tanzania, and Uganda. More than 60 percent of viewers were aged 18–34, with an equal representation of male and female farmers (Madara, Makau & Gwinner, 2017). However, 54 percent of the website users, 66 percent of the Facebook audience, and 74 percent of the Twitter account followers were young male farmers, revealing a gender gap in the use of digital tools to learn more about farming (Madara, Makau & Gwinner, 2017). The initial evaluation also reviewed which type of digital tools was used most by viewers. The findings revealed that 62 percent of the viewers accessed the website by mobile phone, compared to 35 percent by computer and 3 percent by tablet (Madara, Makau & Gwinner, 2017). The evaluation also revealed that Budget Mkononi was the most popular page on the show's website with 10,479 budgets created as of May 2018 (Madara, Makau & Gwinner, 2017).

The *Don't Lose the Plot* project confirmed that competition is one of the ways to attract youth in agriculture. For example, all four participants made an average return 2.5 times their investment (Madara, Makau & Gwinner, 2017). Additionally, popularity of the budgeting tool confirmed that youth are open to and seeking ways to increase their financial literacy. Through funding from Feed the Future, Mediae conducted an in-depth evaluation of the project and identified that the TV episodes improved knowledge of farming and agribusiness among high-intensity youth viewers who were already engaged in farming (Kantar Public East Africa, 2018). The findings also revealed that 77 percent of female high-intensity viewers in Tanzania strongly agreed that farming is “cool” compared with 50 percent of female non-viewers (Kantar Public East Africa, 2018). To learn more about the findings of the in-depth evaluation of the project, [read the report](#).



both agricultural and entrepreneurial skills in the process. Through [AgriCorps](#), for instance, American agriculture volunteers are embedded in schools in developing countries to provide experiential agricultural education through classroom instruction and working in an on-school farm. Finally, in seeking to promote its CocoaLink application in Ghana, ag-tech company Farmerline incorporated Farm Field Days in partnership with local universities, bringing youth directly to farms for in-person engagement (see case study on page 16).


- 3. Increase profitability and productivity of farming:** ICTs can play an important role in modernizing farming practices, incorporating elements of precision agriculture, and introducing new, innovative techniques to speed up and increase production. These technologies are often created and managed by tech-savvy youth. Young farmers are also generally early adopters or serve in formal or informal roles to support less tech-savvy farmers in using these technologies. [Hello Tractor](#), a Feed the Future Partnering for Innovation and Development Innovations Ventures grantee in Nigeria, is one such an example. Hello Tractor's platform connects tractor owners to farmers via a digital application, increasing on-farm efficiency through machinery and mechanization. The service employs a team of booking agents — young, tech-savvy men and women living in or near rural villages — to help facilitate access to their platform, even for those who may not have access to or comfort in using a mobile phone or the booking platform (Foote, 2018). Not only does this model create employment for youth, it also leverages their unique skill sets to create impact in the broader community.

- 4. Engage youth in solving agriculture problems:** Youth bring an innovative, tech-savvy perspective to solving some of the most difficult problems in agriculture, and they are eager to apply their technology skills to create change in their communities. Examples include USAID-funded prizes, such as the [Data Driven Farming Prize](#) in Nepal (for more on one of the winners, see the Krishi Guru case study on page 21) and the [Fall Armyworm Tech Prize](#) in Africa. Hackathons and startup competitions are another way to engage youth, such as the [Hack4Farming](#) event series held in Ghana (2015), Kenya (2016), and India (2017) and tech accelerator [Phandeeyar's Startup Challenge](#) in Myanmar, which incorporated a Tech for Farm track in both 2017 and 2018.

STAKEHOLDER ROLES

The government, private sector, and NGO/donor communities each have critical roles to play in addressing these challenges, both individually and through partnerships and collaborations.

The role of the **non-government organization (NGO)/donor community**, including USAID and its implementing partners, is the primary focus of this case study. Above all, for donors and implementing partners, the first step to better engaging youth in agriculture through ICTs will be to first develop a baseline understanding of how we are already doing this, determine what is working well, and what can be improved. Once there is a good understanding of what is already happening on the ground in the youth agriculture space, the next step will be to evaluate at which points technology can be integrated to help improve those efforts and create greater impact for youth, in a particular country or region. More detailed recommendations for the NGO/donor community are discussed in the final section of this document.



The **private sector** can support youth by providing them with incentives to engage in agriculture, and more specifically, agribusiness — for example, through internships, apprenticeships, and training programs to prepare youth to lead and manage agribusinesses. Private-sector companies are typically the main actors to which farmers turn to access seed, fertilizer, and pesticides, as well as machinery and equipment such as tractors. Working for private-sector companies may be more appealing to youth who are looking for agricultural opportunities off the farm; however, such opportunities are not always available.

In the financial sector, there is a \$430–\$440 billion shortfall in serving the global demand for smallholder finance (Carroll et al., 2012). Youth feel this shortfall more acutely than other demographic groups, and without appropriate financial resources, any agricultural pursuits are risky and may be prohibitive. Although traditional banks can play a role in meeting this shortfall, there is also an important role for digital financial services to fill in where formal financial services have failed. USAID's [Guide to the Use of Digital Financial Services](#) provides a framework for organizations to determine if and how digital financial services can help to address various roadblocks for farmers as they manage their farms as businesses. Mobile phones are a precondition for the use of digital financial services; in countries with high mobile phone penetration, youth are generally the most likely to own a phone. A 2015 survey reported that across seven countries in Sub-Saharan Africa — including GFSS countries Nigeria, Uganda, and Ghana — youth aged 18–34 were far more likely to own a smartphone than were their older counterparts (Pew Research Center, 2015). Though many digital financial services can be

operated with only a basic mobile phone, access to a smartphone and the Internet greatly enhances the opportunity to share digitally enabled information and services.

Governments also have an important role to play in engaging youth in agriculture. Every GFSS country except Mali has a National Youth Policy (Youth Policy Labs, 2018). The majority of these policies, however, were drafted in the early 2000s. Although some were updated since then, none have been updated within the past five years and consequently fail to account for the use of ICTs in engaging youth in agriculture. Governments can ensure that youth policies are up-to-date and reflective of the opportunities to leverage technology. In addition, they have an opportunity to focus their agricultural investments in ways that support the needs of youth, such as providing training and capacity building designed to help them develop the new skills they will need to excel in agricultural careers.

GENDER, ICT, AND AGRICULTURE

On average, women make up 43 percent of the agriculture labor in developing countries, ranging from 20 percent in Latin America to 50 percent in East and Southeast Asia and Sub-Saharan Africa (FAO, 2011). Similar to other markets, women and girls in agriculture encounter challenges related to land access, productive resources, managing income from land, education, financial services, and information (FAO, 2018). FAO claims that “the empowerment of women could raise farm productivity by 20–30 percent, increase national agricultural outputs by 2.5–4.0 percent and, ultimately, lift 100 to 150 million people out of hunger” (FAO, 2011).

ICTs can contribute to reducing the gender gap in agriculture and empowering women and girls to increase sustainable output, manage farm and agribusiness efficiently, and improve gender equality throughout the agriculture value chain. However, the digital, rural, and gender divide — also called the “triple divide” — that women face in agriculture, as in other markets (FAO 2018), due largely to cultural and societal norms and perceptions, creates challenges in accessing and using ICT tools. Based on the latest data from the GSMA², women are 10 percent less likely to own a mobile phone, and across low- and middle-income countries, 390 million women are completely unconnected (GSMA, 2018). Thus, many women around the globe remain unable to benefit from the use of ICT in agriculture. Unfortunately, there is no disaggregated data on girl's usage of ICT tools and participation in the agriculture value chain.

Considering the triple divide and the role of women in agriculture, projects such as Apprenticeship in Extension, Entrepreneurism, and Rural Innovation (AVENIR) are important to ensure that women and girls have opportunities to improve their access to resources, information, and knowledge and/or farm inputs, which will in turn increase their productivity in the agriculture and economic sector. In Guinea, the AVENIR project, developed through a partnership of USAID's Strengthening Market-Led Agriculture Research, Technology, and Education (SMARTER) and Feed the Future Strengthening Agriculture Value Chains and Youth (SAVY), aims to target at least 40 percent of young women in their program. The goal of the AVENIR project is to train young people aged 18–35 in theoretical and practical sides of entrepreneurship and agribusiness. The program consists of one month of theoretical training on market analysis, cost-benefit analysis, and other topics and nine-month apprenticeships with host institutions that includes ag-input suppliers, veterinary cabinets, producer organizations, and microfinance institutions in the Faranah, Kindia, and Mamou regions of Guinea (Loken, 2017). In 2017 and 2018, 42 young Guinean women completed the AVENIR training (Kovarik, 2018). To ensure sustainability and assist the graduates in implementing their business plans, the AVENIR project offers competitive small grants to alumni. By September 2018, two out of eight small grant recipients were young, female farmers. To learn more, please visit the AVENIR [project website](#) (Kovarik, 2018).

² The GSM Association (commonly referred to as ‘the GSMA’ or Global System for Mobile Communications, originally Groupe Spécial Mobile) is an originally-European trade body that represents the interests of mobile network operators worldwide.

EVIDENCE AND EXAMPLES

The following section describes a series of examples of organizations and projects within GFSS countries across Latin America, Africa, and Asia that use ICTs to engage youth in rural communities and inspire them to consider agriculture-based careers. Examples generally fall under two categories: 1) organizations that use ICTs to engage youth, but may or may not be founded and managed by youth themselves; and 2) organizations that are founded and managed by youth and incorporate ICTs into their operations. Agrijovent (Guatemala) is an example of the first type; Krishi Guru (Nepal) is an example of the second type; and Cocolink (Ghana) falls under both categories.

REGION: LATIN AMERICA

Agrijovent and Rana Labs (Guatemala)

Country Context

In Guatemala, 54 percent of the population lives in poverty and 13 percent in extreme poverty. The statistics are worse in the Western Highlands of the country, where the majority of the population is

indigenous and agriculture employs over 70 percent of the population (USAID, 2016). Here, 76 percent live in poverty and 27 percent in extreme poverty (USAID, 2017).

Over half of Guatemala's population is under 19, and 70 percent are under 30 — the highest youth ratio in Central America (USAID, 2016). Guatemalan youth living in rural areas tend to hold unstable jobs in the informal rural economy that pay less than half of the minimum national wage, driving many to migrate to cities or abroad in search of better opportunities (Food and Agriculture Organization [FAO], 2018). Though many Guatemalan youths who do not migrate continue to work on their family farms, agriculture is not perceived as a profitable or esteemed profession.

In terms of its digital ecosystem, Guatemala is keeping pace with the region overall and has a strong platform for digital growth (Table 1). A strong (and growing) digital ecosystem is an important enabler for digitally based projects to thrive.

TABLE 1
GUATEMALA'S DIGITAL ECOSYSTEM

	Market Penetration (unique subscribers)	Smartphone Adoption	Mobile Internet	3G Network Coverage	Annual Growth Rate (unique subscribers)
Guatemala	50%	59%	30%	95%	4%
Central America	61%	57%	46%	93%	4%

Source: GSMA Intelligence, 2018



Description of Initiative

The Feed the Future Partnering for Innovation Agrijovent project is implemented in the Western Highlands of Guatemala by Mercy Corps, in collaboration with digital media agency Rana Labs and local agri-exporter Fair Fruit.

Agrijovent engages over 1,000 youths (ages 14–29) through formal discussions on social and agronomic topics, with the ultimate goal of increasing income-generating capacity through savings and credit and the use of agricultural technologies to improve on-farm productivity (Feed the Future Partnering for Innovation, 2017). For example, Agrijovent already organized 64 savings and loan groups, which established 40 demonstration plots. These groups cumulatively saved \$125,431 and disbursed 1,030 loans worth \$101,512. To further increase impact, Agrijovent sought out Rana Labs to better engage the youth and increase their excitement about agriculture.

Leveraging low-cost technologies and equipment — the smartphones that over half of the youth already possessed, along with a few low-cost accessories — Rana Labs began holding workshops with groups of young farmers, training them to create their own professional-quality videos on good agricultural practices. The technical content of the videos has included the use of irrigation systems, integrated pest management (IPM), seed storage, food safety, and more.

Rana Labs ultimately seeks to build youth's skills that they can leverage for future business opportunities. At the same time, youth are creating videos that can be taken back to their communities as a teaching tool to improve crop quality and agricultural production, or sold to and used by others, such as community shops or agribusinesses.

Key Successes

Agrijovent has engaged 1,500 youths overall, with over 300 youth trained in video production through the partnership with Rana Labs, in each of the five Feed the Future priority municipalities of the Western Highlands of Guatemala (Feed the Future Partnering for Innovation, 2017). About 80 percent of participants are youth aged 14–25 years; the remaining 20 percent are adults 26–30 years of age.

Not only do participants learn video production skills and create high-quality videos that enable them to share agricultural information with others in their communities, but the process of creating the videos also facilitates agricultural learning for the youth. To create a professional-quality video that highlights information in a compelling way, the youth must first master the complex and highly technical information themselves.

Participants of the workshop have already been contacted by NGOs and hired to create agricultural videos for them, rather than hiring a professional video production company. Rana Labs hopes that in the future, Guatemalan agribusinesses will also see the value of these youth and their technical skill sets, choosing to hire them, instead of professional companies, to create marketing and promotional videos at a lower cost and in the appropriate local language. There also may be opportunities for these young people to take their skills to other sectors, such as tourism.

This approach of gaining real-world knowledge of how technology can improve farming in Guatemalan communities pairs well with young participants' desire to feel connected to the rest of the world through digital technologies and media. To that end, Agrijovent created a Facebook page that provides current and past participants with updates, photos, videos, and a forum to stay engaged with their peers.

Lessons Learned and Scalability

Rana Labs is expanding its operations in Guatemala and continues to think about ways to enhance the impact of the Arijoven project. One strategy will be improving its impact measurement processes by finding ways to better quantify the reach of the agricultural videos created in the workshops. Currently, at the end of each workshop, participants take advantage of low-cost Internet access to share the video files with one another. Youth in Guatemala seek to minimize their own use of expensive data, so beyond the workshop, the videos are mostly shared with others in person. Rana Labs is interested in better understanding of how, with whom, and with how many people the videos are shared after the workshops. At the same time, they would like to create additional opportunities for the videos to be shared with the broader agricultural communities in Guatemala.

Rana Labs would also like to complement the video production workshops with training on entrepreneurial

skills for the youth, in areas such as how to market themselves and the videos and how to engage with companies and community partners. This will allow participants to take what they learn in the workshops a step further, ideally facilitating additional opportunities for them to use their new skills to generate income for themselves and their families.

In terms of scalability, Rana Labs suggests that their model has worked well in Guatemala because of reasonably high smartphone adoption and strong digital literacy among young populations. In the future, Rana Labs would like to test their model in a different context, potentially in a country with higher levels of poverty, lower levels of smartphone adoption, or less access to electricity. Specifically, they are exploring whether the same model could be applied in a less-connected context, for example, by bringing in solar-powered chargers to help with charging phones or exploring other low-cost technologies where smartphone adoption is lower.



REGION: AFRICA

CocoaLink (Ghana)

Country Context

Sixty-eight percent of Ghana's population live in rural areas, with agriculture contributing 54 percent of the GDP and accounting for 40 percent of export earnings. Agriculture provides 90 percent of the country's food needs — all through farms with an average size of less than 1.6 hectares (FAO Organization, 2018). Forty percent of Ghana's population works in the agricultural sector, though this number has declined in the past five years, from 45 percent in 2013, and Ghana's food imports are on the rise (World Bank, 2017).

Ghana is like many other countries in Sub-Saharan Africa and globally experiencing an aging farmer population and rapidly growing youth population. The average age of farmers in Ghana is 55 years, with life expectancy averaging between 55 and 60 years (Ghana Ministry of Food and Agriculture, 2011). At the same time, 30 percent of Ghana's population is aged 10–24 years. Many youth are migrating from rural to urban areas to seek employment, rather than working in agriculture (UNFPA, 2014b). However, according to

a 2015 Labour Force Report, youth unemployment remains high: 31 percent of young females and 25 percent of young males do not have gainful work (Ghana Statistical Service, 2015).

In terms of Ghana's digital ecosystem, the country is above the regional average in terms of market penetration, mobile internet, and 3G network coverage, with a market penetration rate of above 50 percent and nearly one third of the population having access to mobile internet. This is the second highest Internet access rate in West Africa (Farmerline, 2018).

Description of Initiative

Farmerline was established in 2013 as a social enterprise. It uses technology to increase information access for smallholder farmers, reaching over 200,000 farmers in 11 African countries, including Ghana. Through support from Hershey, Farmerline developed CocoaLink 2.0, an informational application that targets cocoa farmers in Ghana, building on the success of Hershey's original CocoaLink platform, which leveraged SMS and voice messages to exchange information with cocoa farmers.

TABLE 2
GHANA DIGITAL ECOSYSTEM

	Market Penetration (unique subscribers)	Smartphone Adoption	Mobile Internet	3G Network Coverage	Annual Growth Rate (unique subscribers)
Ghana	53%	35%	31%	85%	5.5%
West Africa	48%	35%	22%	69%	5.8%

Source: GSMA Intelligence, 2018

Through gamified and interactive content in a variety of digital media such as video, pictures, interactive quizzes, and chatbots, CocoaLink 2.0 aims to inspire, train, and incentivize the next generation of Ghanaian cocoa farmers.

The target audience for CocoaLink is youth aged 18–35. Farmerline engages them through churches, universities, and agriculture courses, predominantly in the Ashanti region. One of Farmerline’s outreach strategies is their Farm Field Days, conducted in partnership with university agricultural programs. Farmerline takes students to the field, exposing them to cocoa farming and helping them learn about the CocoaLink application, harnessing the power of in-person communication and mentorship. Farmerline has also elected university campus ambassadors to support marketing and feedback collection from young users.

Key Successes

Farmerline conducted a pilot of CocoaLink in 2017 with 800 young farmers, in partnership with Hershey and the World Cocoa Foundation.³ The goals of the pilot included improving the certification efficiency and sustainability of cocoa supply chains and increasing access to information for young farmers. This effort ultimately contributed to increased farmer incomes and improved agricultural productivity for Ghana. Additionally, Coccoalink serves as a unique avenue for young people in Ghana to learn about cocoa farming and see firsthand how involvement in agriculture can be a profitable and respectable career:



Source: Farmerline

Lessons Learned and Scalability

Farmerline demonstrates that ICTs can be a highly effective tool in engaging youth, but it should not be the only one. Human connections are also vital, particularly for youth who may not have access to or be comfortable with digital technologies. This understanding led to Farmerline’s Farm Field Days, which provide opportunities to foster in-person relationships between university students and the organization, while sharing the idea that cocoa farming can be profitable and exciting. Additionally, Farmerline recognized a need to engage users with varying degrees of technology access. This recognition drove them to develop the Farm Assistant BOT, an AI-powered chatbot that allows users to interact with CocoaLink through Facebook Messenger.

3 Hershey’s Case Study: Coccoalink a Case Study by Miller Center

PROGRAM PROFILE

YOUTHMAPPERS (GHANA)

YouthMappers is a global initiative funded by the USAID GeoCenter. Its goal is to create a global network of university students empowered to build resilient communities and define their world by creating open geographic data that directly addresses locally defined development challenges. In late 2015, YouthMappers was founded by USAID's Global Development Lab in conjunction with Texas Tech, George Washington, and West Virginia universities. The network currently consists of 120 universities in 38 countries. Apart from engaging youth to map their local communities, the initiative includes leadership workshops, research fellowships, and in-person and virtual training, while focusing on female mapper participation and chapter-to-chapter collaboration. YouthMappers uses open source geospatial software tools to remotely map communities from satellite imagery, then head into the field to conduct surveys and capture photos. USAID Offices and YouthMappers provide mini-grants to local YouthMappers chapters to assist them with travel and technology costs associated with mapping. These projects focus on themes such as community resilience, health, hazard preparation, and food security.

In 2018, YouthMappers engaged in their first field project directly related to agriculture. Over 10 days, 12 Ghanaian students and a mentoring professor from the University of Cape Coast worked with experts from the Soybean Innovation Lab to map and capture information to better understand the dynamics of the soybean industry in Kumasi, Ghana – the country's soybean hub. This project was initiated and funded by the Bureau for Food Security, which realized the potential of using digital tools to collect data while teaching students the different ways soybeans contribute to the country's economy. After completing the field mapping exercise, students analyzed data and suggested ways to increase soybean production, storage, and processing capabilities in Kumasi. Some of their recommendations are inclusion of soy products in school feeding programs, improving financial assistance and access, establishment of storage facilities and improving the road infrastructure. This project clearly demonstrates the potential youth and digital tools can play in the agriculture value chain. Not only were students introduced to the soybean market, but they experienced it via the interactive digital tool of GIS mapping and open source KoBo Toolbox (<https://www.kobotoolbox.org/>)

In implementing Farm Field Days, Farmerline also identified the need to specifically target and encourage female participation, as over 80 percent of the field day attendees have been male. For that reason, Farmerline have been trying to talk to more female students when they attend career fairs at local universities. However, in Ghana, women — particularly young women — face additional challenges related to agricultural training, land and property access, and a lack of mentorship, resulting in an even greater need to find ways to provide them with support.

REGION: ASIA

ICT for Agri (Nepal)

Country Context

Nepal is one of the poorest countries in the world. Over the past decades, Nepal has seen an overall shift away from the agriculture industry — from 90 percent of the population working in agriculture in the 1980s to where it stands today (Paulde, 2016).

Today, agriculture accounts for 34 percent of its GDP and provides employment for 68 percent of the population. Yet limited access to improved seeds, agricultural technologies, and market opportunities have contributed to declining agricultural production and widespread hunger (USAID, 2018).

Like many other countries, Nepal is experiencing a youth bulge in its population demographics. According to Nepal's National Youth Policy, 21 percent of the population is 16–25 years of age, and 41 percent is 16–40 (Kumar, 2015). More than 80 percent of the country's youth are employed in the non-formal sector, and almost half of the youth labor force depends on agriculture for survival (Kumar, 2015; Nepal Government, n.d.). Many Nepali youth seek out employment abroad, particularly in the Persian Gulf, sending remittances home to help support their families and communities. Remittances make up nearly 29 percent of the GDP (Dennison, 2017).

TABLE 3
NEPAL'S DIGITAL ECOSYSTEM

	Market Penetration (unique subscribers)	Smartphone Adoption	Mobile Internet	3G Network Coverage	Annual Growth Rate (unique subscribers)
Nepal	53%	56%	29%	90%	1.2%
Southeast Asia	72%	64%	45%	93%	3.2%

Source: GSMA Intelligence, 2018

PROGRAM PROFILE

AKORIAN EZYAGRIC (UGANDA)

An event organized in 2014 by Feed the Future and USAID/Uganda inspired five youth-led ICT companies to form Akorion Limited Liability Company. The youth-led Akorion focuses on digitizing the agriculture value chain and enabling smallholder farmers in Uganda and other agriculture service providers to access information and high-quality production and marketing services through EzyAgric (Akorion, 2016).

EzyAgric serves as a marketplace to connect farmers, buyers, sellers, input suppliers, exporters, soil labs, crop insurance companies, and financial institutions in one place (Akuba, 2017).

Considering that mobile phone ownership in Uganda is low, Akorion incorporates e-VAM (Electronic Village Agent Model), a service delivery model in which youth are employed as village agents and equipped with smartphones to deliver services and gather data from farmers (Akorion 2016). e-VAM enables Akorion to employ youth in agriculture and connect with smallholder farmers on a personal basis.

Using EzyAgric, village agents capture farmers' demography, production, inputs, and product supply data, and they map the cultivated land using GPS. With these data, Akorion creates digital farmer profiles and provides customized services and recommendations to farmers. Additionally, the aggregated data help identify what farmers need and, using EzyAgric, negotiate good prices from vetted suppliers of genuine Agro Input products (Akuba, 2017). Akorion has also trained their village agents to conduct soil sampling and use the data Akorion distributes to identify appropriate fertilizer for the farm, thus earning a commission on both the soil testing and product distribution (Anyang, 2015). Overall, Akorion's business model generates up to \$42 in commission fees for the package of services delivered to each farmer (Anyang, 2015).

After three years of implementation, Akorion has served 60,000 farmers and digitally profiled 42,000 farmers through a network of 480 village agents, 100 farmer associations, and partner organizations such as Feed the Future, World Food Programme, and Savannah Commodities (Akorion, 2018). Further, Akorion has continued working with youth in Uganda, and since 2016, they have trained girls 13–18 years of age in entrepreneurship, technology, and healthy life choices (Akuba, 2017). In 2018, Akorion became a finalist in the Fall Armyworm (FAW) Tech Prize Challenge. The company is designing a smartphone application to identify, monitor, and combat FAW.



Nepal lags behind other Southeast Asian countries on all metrics of the digital ecosystem (Table 3). However, year-on-year growth for these metrics is high, particularly for mobile Internet access, which is growing at 26 percent annually (GSMA Intelligence, 2018).

Description of Initiative

Sibjan Chaulagain founded ICT for Agri in 2014, launching an SMS and mobile application called Krishi Guru that provides precise and localized information to Nepali farmers about climate-smart crop advisories, input suppliers, weather forecasts, and market prices.


Born and raised in a remote village in Nepal, where almost everybody works in agriculture, Chaulagain chose an untraditional path by studying engineering. After returning to his village and spending two years setting up solar-powered computer labs, he decided to apply his expertise to agriculture to help his community. This led him to found ICT for Agri later

branded as *Krishi Guru*, to create a way to connect the agriculture information that exists elsewhere to his community, ultimately improving the livelihoods of Nepal's smallholder farmers.

Key Successes

ICT for Agri currently engages 117,000 farmers by sending information and receiving questions via SMS, Facebook, and the *Krishi Guru* application. This includes 20,000 downloads of *Krishi Guru* (about 10,000 of which are considered "active" users) and 10,000 farmers registered on the SMS platform.

The most popular component of *Krishi Guru* is an on-demand inquiry system, in which farmers can upload a picture of their crops and seek out expert help. Once a picture is updated, farming and agronomics experts identify the problem and recommend a solution. ICT for Agri also leverages the interactivity of Facebook to allow farmers to share information and help solve one another's problems.



In addition to supporting a large number of Nepali farmers, ICT for Agri strives to provide opportunities for other youth in Nepal who are interested in learning how to apply technology to agriculture. ICT for Agri currently hosts five agriculture students as interns (selected from a competitive pool of over 50 applicants), who help respond to inquiries on the platform. These interns are increasing their knowledge about agriculture and technology while directly connecting with farmers. ICT for Agri provides the interns with a unique platform wherein they can solve real-time problems that farmers are facing.

Lessons Learned and Scalability

ICT for Agri is thinking about other ways to leverage the 117,000 Nepali farmers already engaged in their platforms to inform even more farmers, and they are developing a chatbot on Facebook Messenger that will go live in the coming months to help with this goal. The chatbot will be more accessible to farmers who lack smartphones (prohibiting their access to the Krishi Guru app) and may not have a Google account, but who do have access to Facebook, either through a shared phone or a feature phone that can access the Internet but not run the application. ICT for Agri also hopes to engage more female farmers, who make up only an estimated 30 percent of users, despite there being more female farmers than male farmers in Nepal.

As a young ag-tech entrepreneur, Chaulagain also spends a lot of time considering the future of agriculture in Nepal and the role that youth can play in supporting a more profitable and sustainable

future. Growing up, Chaulagain recalls agriculture being considered a very low-profile sector and a difficult career path, with limited access to enabling technologies, especially in rural areas.

Through ICT for Agri, however, he discovered how he can apply his background in engineering to solving some of the problems in Nepal's agricultural sector, realizing that ICTs can increase the profitability of agriculture, making it more commercialized and simultaneously improving its perception — especially among youth.

At the same time, Chaulagain notes that especially in recent years, the agricultural sector has become a hot topic of conversation among youth in Nepal, particularly those who have returned home after spending time working as migrant workers in Gulf countries such as Israel and Saudi Arabia. Here, recounts Chaulagain, Nepali youth have seen that agriculture can be very commercial and profitable — even in challenging environmental conditions — and are bringing that message back to Nepal when they return.

In 2017, ICT for Agri received a \$50,000 award from USAID's Data Driven Farming Prize, and in 2018, Chaulagain was recognized as an [Echoing Green Climate Fellow](#). Through the support of these networks, ICT for Agri hopes to grow its impact, both increasing its user base and improving the services that it can provide to farmers.

PROGRAM PROFILE

DREAM AGRITECH (PHILIPPINES)

[Dream Agritech](#) is an agricultural consulting firm in the Philippines founded and run by a group of young agricultural professionals. The organization was started by a group of classmates studying different branches of agriculture in university, with the aim of becoming a “one-stop shop” of knowledge for clients, who are often landowners without a background in agriculture. The firm provides guidance on how landowners can operate their farms effectively even if they are relative beginners in the industry.

The “Dream Team,” which is scattered across the country, uses mobile phones, email, Slack, and Google Drive to stay connected and provide real-time updates. Recently, they began using drones to get a better view of the fields where they are working. The team initially used images from Google Earth to get a view of new farms, but they found that the shots were not up-to-date, and some of the more remote areas of the country were not yet covered by Google Earth. This led the company to purchase a small drone that they use to take area photographs of a site and help with farm layout. In the future, they hope to integrate additional technologies such as low-cost sensors for soil testing.

While most of Dream Agritech’s team are in their mid 20s and early 30s, their farmer clients tend to be older, in their early to mid 50s. Most of their clients have mobile phones and can make and receive calls and SMS, and a handful have Facebook, but they typically do not use email or access spreadsheets. Part of Dream Agritech’s service is to help enhance their clients’ use of digital and mobile technologies. The company hopes to integrate more technology training into their model in the future.

Dakila Oflindo, founder of Dream Agritech, did not grow up expecting to work in agriculture. While most of his friends’ parents encouraged them to find jobs in fields such as engineering, medicine, and law, his mother — who went to the same university he graduated from and worked in agricultural business management — encouraged him to pursue agriculture. “If there’s one thing the world can never run out of (demand?), it is food, so [if you work in agriculture], there will always be demand for people like you,” his mother said.


More recently, Oflindo recalls, activists on Facebook and social media have started to shift the perception of agriculture, with a groundswell of support for the industry coming from youth who are reacting to news about food shortages across the Philippines and recognizing the role they can play in addressing this problem. Recognizing the role they can play in addressing agricultural issues, Dream Agritech is committed to help change the perception of agriculture for youth in the Philippines and showing that agriculture can be both a profitable and exciting career path.



RECOMMENDATIONS FOR HOW TO ENGAGE YOUTH IN YOUR AGRICULTURE PROGRAM

The recommendations that follow can help integrate learnings from the approaches described into agricultural programming and ensure that digital tools and youth-focused programming are best used to accelerate progress toward results.

- 1. Meet youth where they are.** Make sure you understand the enabling environment around access to technology and digital literacy, as well as the digital tools or services to which youth have been exposed. At the same time, ensure that you are being youth-centered from the beginning: getting input and feedback early and often from youth themselves on the project design. This may mean leveraging relationships with local organizations or partners. For example, Rana Labs implemented their model in collaboration with Agrijovent, which was already directly engaging with youth in Guatemala.
- 2. Recognize that ICTs alone will not solve all the problems that young farmers and young prospective farmers are facing.** Providing solutions to other challenges such as access to finance, land, and other resources, as well as ensuring that youth have access to appropriate agriculture-related training and education should be considered as complementary approaches. In many contexts, agriculture is presented as a low-skill career, and adequate training opportunities are not offered for young farmers to develop the skills they will need to thrive in an agricultural setting, especially in other value chain pursuits that move beyond on-farm activities.
- 3. Leverage interpersonal relationships and mentorship.** Interpersonal relationships are crucial. Of particular importance are strong mentors and role models of other youth who are creating profitable and successful careers for themselves in agriculture. For example, ICT for Agri strives to provide the young agriculture students who work as interns with mentorship and guidance, showing them what it entails to run a successful ag-tech startup in Nepal.
- 4. Develop programming that recognizes the heterogeneity of youth.** Their needs differ across many factors, including age and gender, and successful youth-focused programming in agriculture should recognize and design for these differences. For example, though an analysis of youth in agribusiness in Uganda suggested that a perceived disinterest in agriculture cut across both male and female youth, female youth in Uganda are more significantly affected by constraints such as scarcity of arable lands and available time, due to cultural and gender norms (Ambrose & Zake, 2015). When Farmerline started holding Farm Field Days in Ghana, they realized that while the events were well attended, over 80 percent of attendees were male, suggesting a need to create a strategy that would appeal to young women as much as young men.



Youth of different ages require different approaches as well. USAID youth programs engage young people aged 10–29, with an understanding that youth at different ends of this spectrum have different needs and live in very different contexts. For example, children and early teenagers are typically not living independently, and their parents or caregivers are likely to be involved in their decision making about education, training, and careers. Thus, holistic approaches are important to not only address the needs of youth but also provide value for parents, mentors, or other influences who are involved in their lives. At the other end of the spectrum, many youth are married, supporting their own families and having already completed all or most of their formal education. For these older youth, their priorities may have shifted from seeking out a well-perceived and exciting career path to finding one that is profitable and will provide a steady income to support a growing family or other future pursuits.


- 5. Consider approaches that leverage social networks and build community through technology.** Digital technology, through social media and messaging applications, can be a useful tool to foster peer-to-peer engagement among youth. There is also an opportunity for donors or implementing partners to use digital approaches to share success stories and highlight examples of youth that have cultivated successful careers in agriculture to serve as role models for others. Sharing these stories can play three distinct roles. First, for youth who are participating in agriculture but thinking about pursuing other opportunities, seeing examples of others who have exciting and profitable careers in agriculture could help incentivize them to stay on the farm — or in

another agriculture-related job — rather than seeking out other career paths, while at the same time providing them with additional information to help improve their farms. Second, for youth who may have already left their farms, seeing other youth who are successful in agriculture could help this youth subset to understand that farming can be profitable as well and may encourage them to return to agriculture as a career. The same would be true for youth who are neither currently engaged in agriculture nor ever have been.

- 6. Change the perception of agriculture, to highlight both on- and off-farm activities.**

In many countries, the traditional perception of agriculture has not changed for generations, with a vision of hard, challenging labor in the fields. Yet with improved seed varieties, new agricultural technologies, and novel farming techniques, farming can be more productive and more efficient. Helping youth to understand that these tools and processes can be integrated into agriculture can demonstrate ways that agriculture can yield a quicker return on investment, and ultimately be more profitable.

Additionally, it's important that youth understand being a "farmer" can take many different forms — from planting your own crops to working for an agrodealer or input supplier to leveraging science, technology, and innovation to transform the way that farming is done in their community. USAID and implementing partners can create opportunities for youth to gain the awareness, business acumen, and financial support required to pursue agricultural paths off-farm as well as on-farm.



Making agriculture “cool” is just one piece of the puzzle. Changing perceptions is important, but even more so is creating ways to make agriculture more manageable and more profitable. With the right information and training, young farmers can be more efficient and productive — perhaps even using agriculture as a part-time job or “side hustle” to supplement other income. A survey of youth in agribusiness in Uganda highlights that youth are not necessarily disinterested in agriculture, but rather they do not believe it can be profitable and efficient. A survey of Ugandan youth from rural areas indicated they were interested and involved in agriculture, but were predominantly on a small scale and part-time, in addition to other income-generating activities (Ambrose & Zake, 2015).

7. Use a deliberate and intentional approach to engage youth, rather than an “adding on” a youth component to an existing approach.

Addressing the needs of youth may necessitate a completely different approach altogether so it is crucial to keep this in mind from the scoping phase of a new project or activity. For example, In a USAID digital extension project in Malawi,

there was no plan initially to engage youth. However, project staff quickly found that many men and women who signed up for the digital extension service had challenges in using the phone or accessing the information, and it was the participants’ children who helped them read messages and record information. After that realization, youth became a central part of the project as digitally savvy focal points in communities.

The project also found that when they launched a digital commodity exchange platform, many young farmers who signed up were working as aggregators to collect crops from older farmers in rural communities. These youth were not only starting their own successful careers in agribusinesses, but they were also providing support to the older farmers in their communities. Only a year before the end of the program did the project start to specifically engage youth through focus groups, farm field days, and radio shows. Had they engaged youth earlier, however, there may have been even greater impact.



BEST PRACTICES: THE PRINCIPLES FOR DIGITAL DEVELOPMENT

When designing programs or projects that incorporate digital and mobile technologies to engage youth in agricultural pursuits, it is important that USAID staff and implementing partners consider the [Principles for Digital Development](#), a set of nine simple concepts to guide organizations in their use of digital tools for maximum impact and sustainability. The discussion below highlights the four most significant and relevant applications of the Digital Principles to youth engagement activities. It is intended to be an illustrative, rather than comprehensive, portrayal of how the Digital Principles apply in practice.

Principle 1: Design with the User:

The users, in this case, are most often the young people that a youth-centric project are trying to serve, but depending on the age of the young people and the context in which the project is being designed, the user may also be the parents, caregivers, or other influencers that help guide youth in their decision making. An approach that considers Principle 1 ensures that these users are consulted early in the design process and are able to contribute to iteration and adaptation to make sure the approach effectively meets their needs.

Principle 2: Understand the Existing Ecosystem:

When thinking about ways to engage with youth via digital or mobile technologies, consider what types of devices youth have access to, whether they are likely to already have access to the Internet through these devices, and which channels or services they are already comfortable using. While youth may be receptive to learning about new tools or techniques, make sure they have access to the appropriate tools even after the direct engagement ends. If youth already have access to or are comfortable using a tool or technique, and if non-participant youth can also access that tool or technique, there may be an opportunity for youth to share the new skills that they have learned with others in their communities.

Principle 8: Address Privacy and Security:

This principle is even more important to consider when designing an activity or approach that engages with youth or other vulnerable populations. Extra consideration and caution may be necessary when using social media platforms or messaging services to engage directly with youth, to make sure that these youth — and their parents or caregivers — understand how the personal information they provide through these services is collected, used, stored, and shared.

Principle 9: Be Collaborative:

In many Feed the Future target countries, other public-, private-, and government-sector actors are joining Feed the Future in a commitment to finding better ways to provide resources for and meet the needs of a growing youth population. Sharing best practices, successes, and challenges can help improve the efficiency and impact of youth-centric activities, and formal, cross-sector partnerships can help effective activities reach even greater levels of scale.



CONCLUSION

With growing populations of youth in emerging economies, coupled with the rising age of farmers, USAID and other donors and development organizations must explore new ways to create and manage their agricultural programs in a way that meets the needs of countries' shifting demographics. Young people seek profitable, prestigious, and exciting career paths that will enable them to support themselves

and their families. Without a clear understanding of how agriculture can provide this such a career path, youth are increasingly turning to other options. ICTs offer one pathway by which young people can have successful and exciting careers in agriculture, and the development sector — in partnership with local governments, nonprofits, and the private sector — can play a critical role in facilitating this pathway.

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