ICT for Agriculture

For nearly 50 years, FHI 360 has addressed the nutritional, agricultural and livelihood needs of vulnerable populations throughout the world, developing ways of empowering households and communities to improve their health and economic status.

FHI 360 + ICT FOR AGRICULTURE

Working alongside local organizations, tech startups and in-house experts, FHI 360 is known for rigorous research design, high-standards of implementation and analysis, and dedication to apply and sharing learnings on the impact technology has on agricultural value chains and farmers.

DESIGNING DIGITAL AGRICULTURE PROGRAMS RESPONSIBLY

FHI 360 researchers and program designers have developed technology solutions and advised donors and programs in 16 countries on how to build ICT for agriculture solutions.

Climate Change Adaptation and ICT (CHAI) program: In Uganda, FHI 360 developed and implemented an award-winning digital solution under the Climate Change Adaptation and ICT (CHAI) program. This digital solution uses locally-driven tools such as mobile phones, interactive radio, printed media and community meetings to disseminate climate change information gathered through mobile phone-based tools, climate-based agriculture advisories, and rural weather stations. CHAI won the United Nations Framework Convention on Climate Change Momentum for Change's Lighthouse Activities Award, which recognizes transformative solutions addressing climate change and wider economic, social and environmental challenges.

fhi360
THE SCIENCE OF IMPROVING LIVES

PRINCIPLES FOR DIGITAL DEVELOPMENT

Under the mSTAR project, FHI 360 established the Digital Development Principles Working Group, which created the Principles for Digital Development. More than 100 organizations have endorsed these principles including donors, nonprofits, and private companies.

Fall Armyworm Tech Prize Challenge: Based on the success of the CHAI program, FHI 360 developed UDefeatFAW, a digital solution that addresses the Fall Armyworm invasion across sub-Saharan Africa. UDefeatFAW was selected as a finalist in the Fall Armyworm Tech Prize Challenge.

Wireless Solutions for Fisheries: In Senegal, FHI 360 designed the Wireless Solutions for Fisheries (WISE) project with support from Qualcomm. WISE uses advanced wireless technologies to improve the lives of fisherfolk in Senegal. Through crowdsourcing and disseminating fish market prices and providing access to mobile money and loans through local micro-finance institutions, FHI 360 engineered an electronic fish market information system, making way for a more competitive fish market.

Mobile Solutions Technical Assistance and Research Project: FHI 360's $34.8 million Mobile Solutions Technical Assistance and Research (mSTAR) project, funded by USAID, is a broad, flexible and responsive mechanism fostering the adoption and scale-up of technologies in development across Africa, Asia and Latin America. A key pillar of mSTAR's mission is using digital finance, inclusion and mobile data to further agriculture and food security initiatives. mSTAR has implemented over $5 million in activities focused on research and design of digital tools for agriculture. In Nepal and Cambodia, mSTAR is enhancing electronic data collection conducted by agriculture and livelihoods researchers. Within this activity, mSTAR has developed common ontologies for agriculture programs and is working to improve data structure, storage and governance for agriculture and livelihoods researchers. mSTAR shares its research and digital tools with agriculture practitioners through workshops and guides to move the sector forward.

The Fostering Agriculture Competitiveness Employing Information Communication Technologies: The Fostering Agriculture Competitiveness Employing Information Communication Technologies (FACET) project, funded by USAID, brought together USAID missions, implementing partners, governments, and the private sector to enhance competitiveness and productivity of agricultural value chains and trade across sub-Saharan Africa. FACET generated research and guidelines on sustainable approaches for using ICTs in agricultural value chains and trade. FACET provided short-term technical assistance to USAID implementing partners and missions from more than 10 sub-Saharan African countries on using low-cost video to improve agricultural extension services, product marketing and monitoring and evaluation.

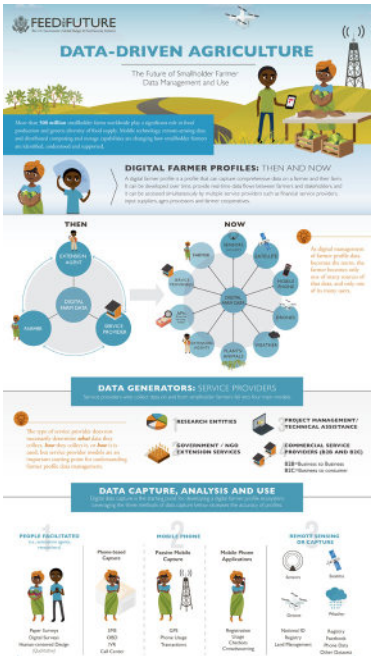
Future Malawi Mobile Money Program: From 2012–2016, FHI 360 led the $5.9 million Feed the Future Malawi Mobile Money program. The Malawi Mobile Money program was designed to increase mobile money adoption in Malawi and enhance product development through interventions that demonstrate the advantages of mobile money to agricultural sector stakeholders. Rigorous field research informed the development of a Farm Input Subsidy Program e-voucher with a 95 percent redemption rate, piloting of over 200 micro-loans to smallholder farmers, trainings for agro-dealers and smallholder farmers in digital financial literacy, public awareness campaigns and the transition of 3,200 "Village Savings and Loan" participants to mobile money.

WELL-CRAFTED RESEARCH AND EVIDENCE SYNTHESIS

Globally, FHI 360 has more than 150 full-time staff members with doctoral degrees from across the sciences and social sciences. FHI 360 researchers publish up to 200 peer-reviewed journal articles a year and hundreds of analytical and evaluation reports. FHI 360 has dedicated support for statistics, data management and research utilization and an in-house Institutional Review Board and Office of International Research Ethics.

In the use of ICTs, we apply our research and evaluation expertise to inform specific approaches and products; to examine contexts, diagnose needs, and measure impacts; and to synthesize existing evidence into accessible products. Our commitment to publicizing and disseminating research helps inform practitioners and drive the digital development sector forward. Since 2015, FHI 360 researchers have published over a dozen papers in peer-reviewed journals on digital solutions for development challenges.

In 2018, USAID commissioned the mSTAR project to develop a common framework to understand how big data can impact small-holder farmers. mSTAR led research to uncover how data can be pulled together to create specific profiles of farmers and how these profiles can benefit agriculture and food security programming. To conduct this research, mSTAR facilitated a participatory approach including public-private workshops. The report, Digital Farmer Profiles: Reimagining Smallholder Agriculture was published in late 2018.



An mSTAR infographic on farmer profile data.

FHI 360 AGRICULTURE RESEARCH

Formative research to customize digital approaches and products:
FHI 360 conducts formative research based on human-centered design principles to identify opportunities for the use of digital tools and tailors product design to the needs of users.

In **Bangladesh**, the mSTAR project completed an assessment of USAID's Rice Value Chain (RVC) project to identify opportunities to digitize payments and to incorporate mobile money into RVC's project payment streams. In **Myanmar**, the mSTAR project assessed the digital payment potential within agricultural value chains. After identifying digital payment potential and avenues to harness that potential, mSTAR launched a small grants program to support the integration of DFS into existing digital agriculture platforms in Burma.

Primary research to understand markets and best practices:
FHI 360 conducts quantitative, qualitative and mixed methods research to examine access, use and impacts of ICTs on the daily lives of users. We design and manage surveys for a wide range of respondents in a variety of contexts, often using digital technologies.

- In Mozambique, FHI 360 conducted a multi-faceted mobile access and usage study. The study featured two large scale surveys conducted in-person and through computer-assisted-telephone-interviewing, to provide recommendations on digital inclusion to inform the country's agricultural and livelihoods programming. The in-person survey pinpointed severe access issues and barriers to use. The computer-assisted survey measured the impact of using SMS reminders and airtime bonuses to incentivize respondent feedback.
- In Tanzania, FHI 360 conducted a study on perceptions of UAVs among citizens and government officials. The study revealed overwhelmingly positive views about the potential of UAVs in Tanzania to address development challenges and flagged serious concerns over the need to establish regularity frameworks. Based on this study, FHI 360 is releasing *A UAV Readiness Assessment Tool* to guide donors and governments.

Evidence reviews to consolidate and synthesize global research finding:
FHI 360 conducts and publishes evidence reviews to identify, catalogue, and synthesize high-quality evidence about ICT interventions with the goal of informing effective and contextualized program and product development.

- FHI 360 researchers conducted a mapping of the effectiveness of development interventions using ICTs. The research, titled, "How much evidence is there really? Mapping the evidence base for ICT4D interventions," used systematic review methods to identify 253 evaluations on ICTs in development. The authors coded these evaluations into 11 intervention categories and nine sectors. The map identifies 30 impact evaluations that examine the effectiveness of ICTs in the agriculture sector.

About FHI 360:
FHI 360 is a nonprofit human development organization dedicated to improving lives in lasting ways by advancing integrated, locally-driven solutions. Our organization implements an annual portfolio of over $500 million per year. FHI 360 boasts strong partnerships across the public and private sectors including USAID, U.S. Treasury, IFC, Rockefeller Foundation, Ecobank, IFIC Bank Limited and Bangladesh Bank.

SHARING RESEARCH OUTCOMES AND BEST PRACTICES

FHI 360 is continuously translating our experience and research into best practices and tools for our partners and stakeholders.

Guide to the Use of Digital Financial Services in Agriculture: This Guide identifies challenges in agriculture value chains addressable by improved financial services and DFS.

Guide to the Use of Digital Tools to Expand Access to Agriculture Insurance: This Guide complements the Guide to the Use of DFS in Agriculture and helps practitioners leverage digital tools to increase access to agricultural insurance for smallholder farmers.

Interactive Radio for Agricultural Development Projects: This Toolkit helps projects and implementing organizations use interactive radio to augment agriculture extension services and provides practitioners.

Integrating Low-cost Video into Agricultural Development Projects: This Toolkit helps USAID projects and implementing partners to use low-cost video to augment traditional agricultural development activities and extension services.

Gender and ICT Survey Toolkit: The Toolkit addresses the lack of gender-disaggregated data at the sub-national level. It facilitates the collection of gender-disaggregated information with resources such as survey questions, focus group discussion guides and technical competence tests.

The Atlas of Innovation for Economic Stability: The Atlas presents 63 examples of policy, program and technology innovations that promote economic stability, including agriculture and food security, with an emphasis on the welfare of poor and vulnerable people worldwide.

ICT for Agriculture Case Studies: Under mSTAR, FHI 360 has developed a series of agriculture case studies highlighting how organizations are using research, digital tools and technologies to more effectively and efficiently meet their agriculture goals.

ICTforAg Conference: To continue sharing and soliciting best practices in agriculture, FHI 360 hosts the annual ICTforAg conference in Washington, DC and has developed the ICT to Enhance the Impact of Agricultural Development website. The site incorporates papers on diverse issues related to ICTs in agriculture; profiles of innovative ICT applications in use in or adaptable to the sub-Saharan African context and presentations and workshop materials.

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