Digital Green

ANNUAL REPORT 2018–19

Empowering our heroes with their own data

At Digital Green, we seek to change the narrative of smallholder farmers for the better. Over our first 10 years, thousands of farmers have shared their own stories about how to grow more food and live healthier through short videos that inspire their fellow community members. Our partners make this possible by working with us to leverage technology to amplify the good work they already do at the grassroots level. We have been humbled to see how quickly this network of farmers and partners has scaled and the impact that it has had on farming communities and the frontline workers that support them.

The story for farmers continues to change rapidly. Agriculture is becoming even riskier with erratic weather, degrading soils, and depleting groundwater. Farmers contend with fluctuating input costs and market prices, as competition increases in the global marketplace. At the same time, farmers are also encountering new opportunities— even the poorest farmers are gaining access to smartphones and internet connectivity in remote corners of the world. Our vision is to put farmers back in the center, by empowering them to own their own data so that they can decide who it's shared with and how it's used—we believe that by doing this, farmers will be in a position to show us how it creates real value for them.

We are developing a suite of new services to increase farmers' incomes and enable their aspirations, but also recognize that no single organization can serve the diversity of the world's farmers. We are exploring ways to harness technology to better connect the dots across a wider constellation of stakeholders—from agricultural research centers to online grocery startups—to flip our food and agricultural system from the bottom up. We will continue on our journey as we always have: by starting with each farmer and innovating together.

Rikin Gandhi
Co-Founder & Executive Director

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OUR MISSION

Empower smallholder farmers to lift themselves out of poverty by harnessing the collective power of technology and grassroots-level partnerships.

OUR APPROACH

Digital Green joins forces with governments, private agencies and, most importantly, rural communities themselves to co-create digital solutions that are of the community and for the community to improve agricultural, health, and nutrition outcomes. We believe in listening to people and data, and understanding local context and culture to build technology that truly serves communities and addresses the challenges and opportunities they see as most vital in a manner that's nutrition-sensitive, climate-resilient, and inclusive. Throughout this process, we continually test, learn, iterate, and evaluate to ensure that farmers and their families improve their livelihoods and increase their incomes.

IN FY18–19,
PARTICIPATING FARMERS
ACHIEVED
AN AVERAGE YIELD
INCREASE OF
22%

Community Videos

Since 2008, our network of partners and communities have produced more than 6,000 locally relevant videos in 54 languages about productive farming, health, and conservation practices. As our partners have scaled the video approach to reach more farmers, we've expanded the library of knowledge that farmers have access to. Topics now range from natural resource management to livelihood resilience strategies to nutrition practices. The 43 million views of our videos on YouTube demonstrate the demand for this information. We've also collaborated with research partners to prioritize the content featured in videos, so that farmers can focus on the practices that have the biggest impact on their yields, health, and incomes.

TOOLS FOR FRONTLINE WORKERS

Similar to what we've seen in the agricultural sector, frontline health workers find that the videos make their jobs easier. We have trained frontline health workers to develop and facilitate dialogue around videos promoting good maternal and child health, nutrition, and family planning practices. These videos are created with an understanding of local taboos, myths, and traditional practices that are contrary to scientifically proven best practices, so that they effectively promote social behavior change.

"At the initial screening of the family planning video, the community members at my center would feel shy and avoid answering my questions, but after 2–3 video screenings, they started asking questions and requesting condoms and contraceptive tablets."

—HEALTH WORKER IN JHARKHAND

Training Courseware

Our approach hinges on the capacity of frontline workers to effectively engage farmers in their communities. Our open access, multimedia courseware facilitates knowledge and skill development for video production, video dissemination and effective facilitation and key agricultural practices. This courseware is now mobile—frontline workers can access modules anytime, anywhere, online and offline, and are assessed on their mastery of the information. Its use is helping our partners to replicate and scale our community video approach on their own.

Loop

Loop is a transport logistics service for aggregating and bringing farmers' produce to market more efficiently. Time and cost savings from Loop allow farmers to spend more time in their fields and with their families. Since 2015, Loop has reached more than 26,000 farmers in India and Bangladesh, transacted more than US$16 million in fresh produce sales, and resulted in 15% greater income due to more efficient transportation and better access to markets. We are focused on making Loop financially sustainable while boosting its value for farmers, especially as they increasingly are connected with smartphones and the Internet.

Innovation Lab

Through our innovation lab, we've been testing the application of different technologies—such as interactive voice response (IVR) systems and drone-based hyperspectral aerial imagery—to both reinforce what farmers are learning through videos, and to deliver more localized, timely, and useful advisories to them. Our aim is to scale the innovations that show the greatest promise for improving smallholder farmers' livelihoods.

Enhancing Farmer Value with Impactful Practices

While farmers may watch many videos about different practices pertaining to a particular crop or livestock, our data shows that they typically adopt no more than a few. We've learned that some practices have a higher ROI for farmers than others, and those practices can vary based on local context and farming conditions—so, there's more we can do to help farmers prioritize investing in the practices that yield the biggest returns in productivity and income.

Not all practices generate the same returns—we're focusing on fewer, better practices.

In India, Ethiopia, and Nigeria, we worked with researchers to identify these subsets of impactful practices for specific crops— and selected only practices that could feasibly be implemented by the majority of farmers (e.g. were not cost prohibitive). Our government and private sector partners played a critical role in modifying their messaging and ensuring that frontline workers emphasized these 3–5 practices. Farmers who were exposed to and adopted all of the impactful practices saw yield gains ranging from 24% to 319% and income gains from 82% to 145%, depending on the crop, (when compared with farmers that did not adopt any of those practices). These results have encouraged our partners to continue this approach for key commodities.

UNLOCKING THE POTENTIAL OF PIGEON PEA IN JHARKHAND

With rice production failing (due to erratic monsoons) we worked with the Jharkhand State Livelihood Promotion Society (JSLPS) to explore more climate resilient crops. Pigeon pea (*arhar dal*) was already cultivated in the area, but farmers were far from capturing its potential. Through consultation with stakeholders and farmers, we identified and prioritized three impactful practices to intensify pigeon pea production, and piloted these with 700 farmers. Farmers who followed the recommended impactful practices saw yields that were over 300% higher than those of farmers adopting traditional practices.

Following this success and the ability of pigeon pea to thrive in extreme weather conditions (particularly drought), the JSLPS team introduced the impactful practices to 20,000 farmers over the subsequent two years and the JSLPS began to actively promote pigeon pea cultivation. More farmers are now growing pigeon pea, and are reporting that increased yields enable them to meet household needs with surplus to sell. With this expanded production, JSLPS invested in four processing units (for pigeon pea and other pulses)—which are operated by community-run institutions— and is purchasing pigeon pea from the farmers.

"While preparing our field for adopting the pigeon pea practices, fellow farmers mocked us, saying it won't work. I was also a bit apprehensive but adopted the suggested practices. Last year, I could hardly get 30 kgs of pigeon pea from my 0.3 acre of land, but this year I harvested 68 kgs of pigeon pea from just 0.07 acre (where I tried the practices). This is enough for my entire year's requirement of pulses…. I will now be adopting these practices across a larger part of my land so that I can sell the surplus produce and make an extra earning.

—IGNESIA TOPPO, JAGALDAGA VILLAGE, LATEHAR BLOCK, LATEHAR, JHARKHAND

Farmer-Centered Digital Innovations

Smallholder farmers are confronted by increasingly variable conditions—which means that practices that are effective one season may not be applicable the next. Building on the core of our community video work, we're testing new ways to reinforce key agriculture and health practices and integrate additional data and technologies to provide more customized, localized, and timely services for farmers and their families.

In Bihar, India, we learned that potato farmers were extremely worried about potato blight, which can result in losses of up to 80%. Without real-time advisories about when and where weather conditions heightened the risk of potato blight, farmers were excessively applying fungicides—which was costly and reduced the effectiveness of the fungicides. Together with our partners, we turned weather data into targeted risk forecasts and advisories for farmers so that they could employ blight management techniques only when (and where) necessary. We see tremendous potential to expand the use of dynamic weather data to provide farmers with early pest and disease warnings and management advisories—and are testing similar services in other locations and with different crops.

Farmers are always at the center of these innovations—we rely on them to tell us what their biggest threats and challenges are, and design for them. Over the coming months and years, we'll be scaling the innovations that work best for them.

We innovate with and for farmers to make sure our solutions work where they live and farm.

PILOTING NEW SERVICES IN ANDHRA PRADESH

ANDHRA PRADESH, INDIA. **Partnering with Awaaz.De, we tested the use of an automated phone line that farmers could call to access additional information about productive farming practices that they had already seen in videos— and have found that these reinforcing messages increased their adoption of those practices (by 21–74%, depending on the practice). Farmers were also able to listen to pre-recorded weather forecasts, which are especially critical for farmers in dryland areas. While some farmers reported receiving SMS-based weather forecasts from government and private service providers in the past, they typically didn't know what the forecasts meant for their crops or what action they should take in their fields. We analyzed private weather data (from Skymet) to provide weekly village-level weather forecasts and specific advisories for groundnut farmers, with the assistance of technical experts. Farmers were also able to listen to pre-recorded, and we're exploring offering a similar service in other geographies.**

I heard calls on seed treatment, nursery preparation, clippings and alleys, and main land preparation. Last week, I got a call about Ghanajeevamrutham (soil nutrition) from this number. I liked the audio message a lot because of the family discussion (story-based content). I implemented the seed treatment practice after listening to the call. By doing so, my seeds will be protected against the pest attack.

– KUMUDA DUMDUDORA, RICE FARMER, BODIGAPUTTU, ANANTAPUR, ANDHRA PRADESH

Transforming Systems

Over the years, we have worked alongside our government and NGO partners to build their digital extension programs. Having seen the benefits of equipping extension agents with educational videos and other digital tools first-hand, many of our partners have invested their own resources in scaling and sustaining this approach on their own.

In India, the Andhra Pradesh Department of Agriculture and Cooperation has committed its own resources to purchase pico projectors and train frontline workers to reach 300,000 additional farmers. And, after seeing the impact—and cost effectiveness—of digital innovations, such as the IVR reminders and mobile-based training courseware, they have asked us to work with them to scale these innovations to a wider population.

In Ethiopia, the community video approach has been incorporated into the country's National Agricultural Extension Strategy. Our partnership with the Ministry of Agriculture (MoA) has reached over 420,000 farmers—the MoA has independently launched and is self-funding digital extension activities in an additional 44 woredas, which aim to reach another 2.2M farmers.

We continue to be inspired by the commitment and ownership our partners have shown to integrate digital technologies into their extension systems.

Working through partnerships, we seek to transform and strengthen existing systems that affect farmers' livelihoods.

To understand the impact of our approach, IFPRI is conducting a two-year RCT in Ethiopia to compare results from Digital Green's video-enabled extension approach to the MoA's conventional in-person training approach. After the first year, preliminary results show that video-enabled extension achieves 30% greater reach, 35% higher uptake of promoted practices, and a 22% increase in women accessing extension services.

STRENGTHENING NATURAL RESOURCE MANAGEMENT & LIVELIHOOD RESILIENCE IN ETHIOPIA

In Ethiopia, soil degradation has become a major concern that threatens national agricultural productivity. Soil and water conservation, and other natural resource management practices have become priorities—and we have used community videos to teach farmers about how to reverse environmental degradation on their land.

Nazifa is the leader of a women farmer development group in Oromia. The extension agent who visits the group began showing videos about location-specific methods for restoring nutrients into the soil and controlling erosion. Through one video, Nazifa learned that planting fast-growing tree seedlings is one way she can control the erosion she's experiencing on her farm—and she decided to plant African juniper seedlings on her plot. The native tree has a variety of economic uses and does not degrade soils in the way that eucalyptus trees (which are traditionally planted by farmers in the area) do. By watching videos, Nazifa learned the proper size and spacing of the holes for the seedlings, and was able to avoid common mistakes that often cause tree seedlings to fail, especially during dry spells.

With the arrival of the dry season, Nazifa and her neighbors have been learning about water and moisture conservation and beneficial methods for preparing their fields for planting. Seeing new methods demonstrated by other women on the videos has given Nazifa and her neighbors the confidence to apply what they learn on their own plots.

> We need DAs [extension agents] to tell us women about natural resource management practices we can use. Our husbands don't often share with us what they have learned during the trainings, even though they promise to. Women are equally contributing to agricultural development and are affected by climate change.
>
> —NAZIFA MOHAMMED
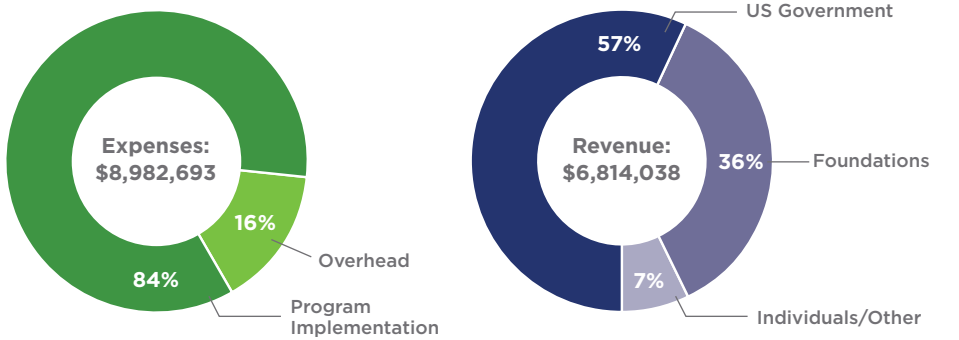
Catalyzing a Community of Practice

Through the Feed the Future Developing Local Extension Capacity (DLEC) project, Digital Green manages a global community of practice, which connects practitioners and researchers across 46 countries to share, learn from, and advocate for scaling proven approaches for enhancing agricultural extension.

We connect our community members through an online platform, global and local forums, and drive discussions about questions we all face. Through DLEC and our community of practice activities, we've catalyzed over $1.5M in additional funding from governments, NGOs, and the private sector to improve extension services globally.

FINANCIAL PERFORMANCE

2019—Digital Green Foundation

Expenses: $8,982,693
- 84% Program Implementation
- 16% Overhead

Revenue: $6,814,038
- 57% US Government
- 36% Foundations
- 7% Individuals/Other

2019—Digital Green Trust

Expenses: INR 142,594,917
- 91% Program Implementation
- 9% Overhead

Revenue: INR 125,780,815
- 3% Individuals/Other
- 18% US Government
- 79% Foundations

2018—Digital Green (combined)

Expenses: $10,243,673
- 84% Program Implementation
- 16% Overhead

Revenue: $5,215,014
- 72% US Government
- 18% Foundations
- 10% Individuals/Other

2019—Digital Green Foundation

Assets—total:	$5,265,191
Liabilities—total:	$512,766
Net Assets—total:	$4,752,425

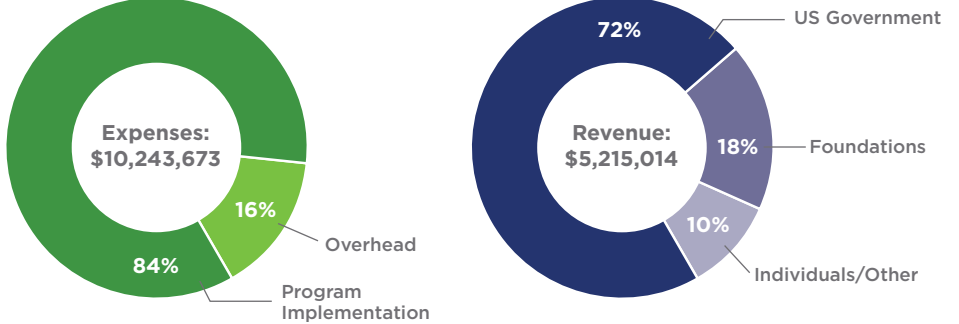Based on draft FY19 audit report received 12/30/19 prepared in US
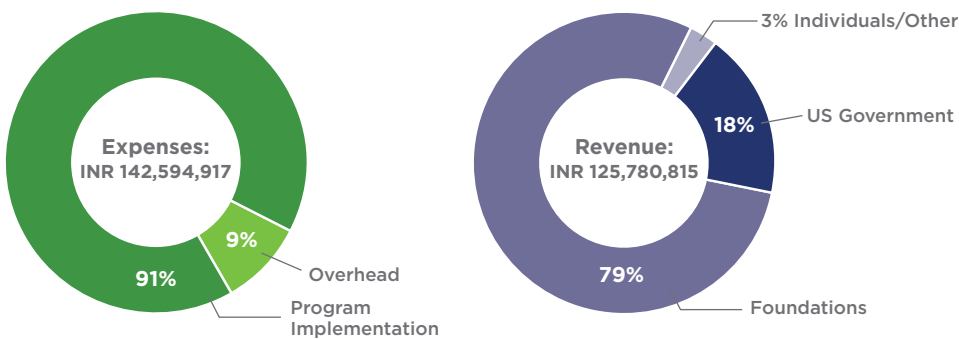
2019—Digital Green Trust

Assets—total:	INR 57,990,550
Liabilities—total:	INR 15,871,041
Net Assets—total:	INR 42,119,509

2018—Digital Green (combined)

Assets—total:	$8,335,009
Liabilities—total:	$461,736
Net Assets—total:	$7,873,273

GUIDESTAR PLATINUM PARTICIPANT

LEADERSHIP TEAM

Rikin Gandhi
Co-Founder & Executive Director

Karin Lion
Vice President—Strategy

Giovanna Masci
Vice President—Internal Operations

Aditya Sethi
Managing Director—Loop

We wish to acknowledge the following individuals who were part of the leadership team during this reporting period: Vinay Kumar (Managing Director—Asia), Lakshmi Iyer (Managing Director—Africa), Neeta Vinay (Vice President—Finance), and Alex Dunlop (Deputy Director—Developing Local Extension Capacity)

BOARD

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We wish to acknowledge Srikant Vasan, who served on the Digital Green Foundation Board during this reporting period.

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PARTNERS

FUNDERS

Bill & Melinda Gates Foundation (BMGF)

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The David and Lucile Packard Foundation

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Walmart Foundation

World Bank

GOVERNMENT PARTNERS

INDIA

Andhra Pradesh Department of Agriculture and Cooperation

Bihar Rural Livelihoods Promotion Society (JEEViKA)

Department of Agriculture and Farmers' Empowerment, Govt. of Odisha

Integrated Child Development Services

Jharkhand State Livelihoods Promotion Society

National Health Mission Chhattisgarh

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National Health Mission Uttarakhand

National Rural Livelihoods Mission

Odisha Livelihood Mission

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Chhattisgarh State Rural Livelihoods Mission

Uttar Pradesh State Rural Livelihoods Mission

ETHIOPIA

Ministry of Agriculture (Government of Ethiopia)

Amhara Regional Bureau of Agriculture & Natural Resource

Oromia Regional Bureau of Agriculture & Natural Resource

SNNP Regional Bureau of Agriculture & Natural Resource

Tigray Regional Bureau of Agriculture & Rural Development

Agricultural Transformation Agency (ATA)

Ethiopian Institute of Agricultural Research (EIAR)

KNOWLEDGE + IMPLEMENTATION PARTNERS

ALINe

CARE

Centre for Media Studies

Centre for Youth and Social Development

Ekjut

Global Forum for Rural Advisory Services

International Food Policy Research Institute

JSI Research and Training Institute

Kansas State University

London School of Hygiene & Tropical Medicine

Mahila Kisan Sashaktikaran Pariyojana

One Acre Fund

Skymet

SOAS University of London

Voluntary Association for Rural Reconstruction and Appropriate Technology (VARRAT)

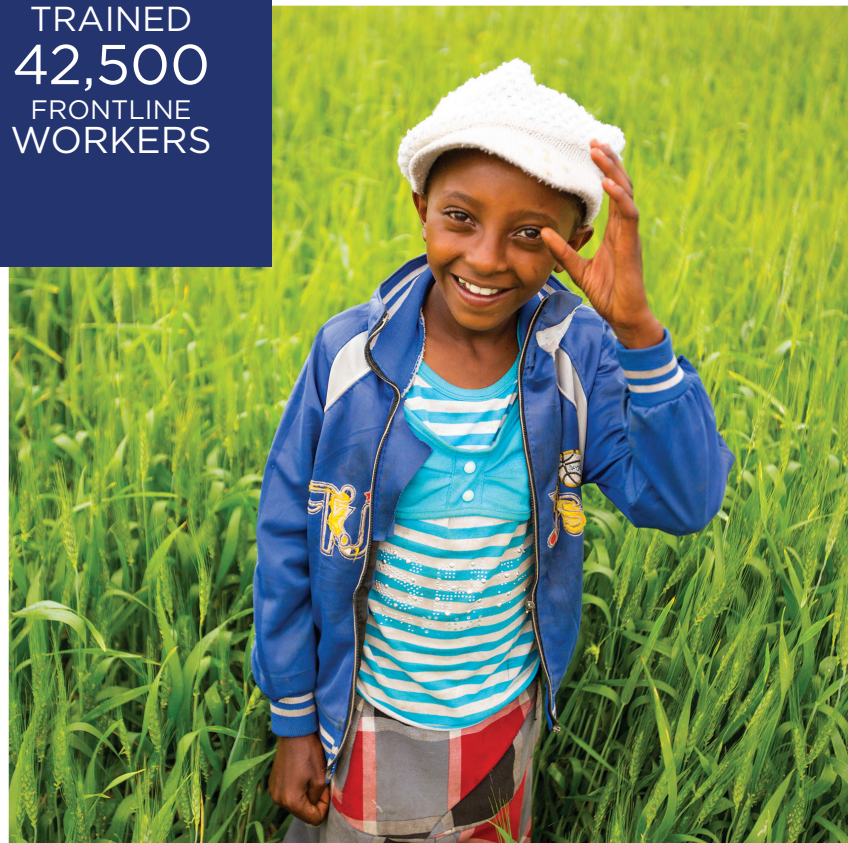Winrock International

TECHNOLOGY PARTNERS

Awaaz.De

Bharat Rohan

Cropin

Exotel

IDEO.org

Microsoft Research

One Mobile Projector Per Trainer

OnionDev (Gramvaani)

SINCE 2008,
WE HAVE

REACHED	TRAINED
2.2 MIL	42,500
FARMERS	FRONTLINE
IN 16 COUNTRIES	WORKERS