

Digital Green's LOOP

Pooling Technology and Extension Networks for Market Access



About Digital Green

Digital Green is a global development organization that empowers smallholder farmers to lift themselves out of poverty by harnessing the collective power of technology and grassroots-level partnerships. We join forces with governments, private agencies and, most importantly, rural communities to co-create digital solutions that are of the community and for the community. When farmers have the tools they need to connect with one another, they are far more likely to apply what they learn, on their farms and in their households - improving their own livelihoods and those of others in their community, in a manner that's nutrition-sensitive, climate-resilient, and inclusive.

Digital Green began as a research project at Microsoft and became its first non-profit spin-off in 2008. We began by working with frontline extension workers, training them to

produce and share videos featuring local farmers. This led to significant increases in information sharing, best-practice adoption rates and, above all, sustainable development at scale. To date, we've worked with more than 1.5 million smallholder farmers - eighty percent of whom are women - in South Asia and sub-Saharan Africa.

Loop is a result of Digital Green's foray into agriculture output markets focused on streamlining market linkages to directly increase smallholder farmers' incomes.

With Loop, Digital Green works directly with farmers to address a question every farmer asks every day: "how much will my product fetch at the market today?"

The Problem

Although smallholder farmers produce a large portion of the world's food supply, they very often live in poverty and are malnourished. They buy inputs at high retail prices and sell produce at low wholesale rates - missing out on potential gains when dealing in bulk.

In India, smallholder farmers receive about 25%-30% of the final price of their produce (about half the rate of US farmers). Most of them face several factors that combine to create lower net margins for their primary cash-producing livelihood activity.

- They deal in low volumes that prevent them from tapping into cost savings and better pricing that come with economies of scale.
- They lack adequate, up-to-date information on pricing, which hinders their ability to select and negotiate with buyers.
- They expend anywhere from a half to a full day travelling to market, absorbing high opportunity cost for low returns.
- They pay high transportation costs relative to their small, individual load size, which eats into their earnings margin.



The opportunity: *increase income from sales and decrease costs*

Digital Green created a pilot project that leverages technology, human mediation and aggregation with the goal of increasing farmers' net income by:

- cutting transportation costs,
- negotiating better pricing,
- increasing market access and market price information; and
- saving opportunity costs.

The more farmers can aggregate, the more negotiation power they have to lower costs of transport and increase their income from sales.

The Solution

Loop is a human-mediated mobile phone application that improves farmers' access to markets by helping them to aggregate their perishable produce.



Loop is different from other aggregation services, which are limited to arranging transportation or selling produce collectively. Loop has a trusted aggregator in the community who understands the village dynamics. Aggregators sell everything they take to the market but they keep each farmer's produce separate so that farmers with higher quality produce can obtain better prices. Digital receipts and a helpline allow farmers to keep a check on the aggregator.

When we launched the Loop pilot in Bihar state, we chose to focus on vegetables because they are perishable and need to be sold quickly rather than stored for future markets.

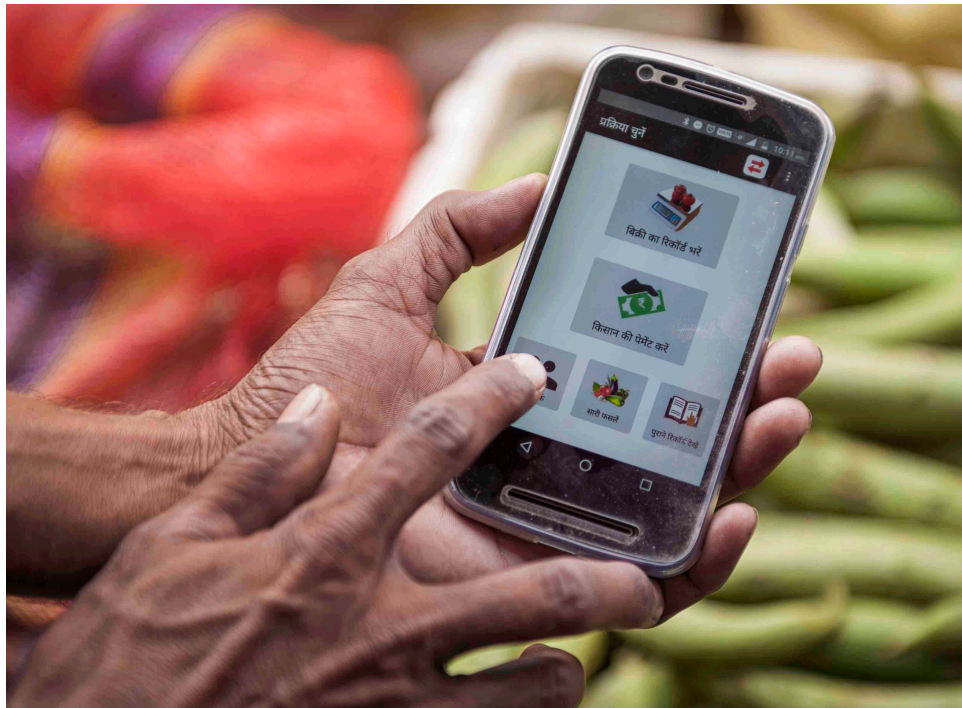
How Loop Works

Aggregators are trusted community members, often a farmer themselves, selected by other farmers in the community. They receive training and support from Digital Green project staff. Aggregators reach out to fellow farmers to raise awareness about

Loop, recruit participants, and operationalize Loop's collection, transport, and sales transactions with farmers, transporters, and buyers.

When farmers' produce is ready to sell, they call the aggregator, who determines which nearby market offers the best price, arranges transport based on volume, and sells the produce directly to wholesale buyers on behalf of each participating farmer. Aggregators record volumes and sales on the mobile app, which automatically sends receipts to farmers via text message. After completing transactions on behalf of each farmer, they deliver same-day payment and earn a commission of their own. Most transactions close on the same day, limiting farmer exposure and wait time.

Aggregators use Loop's mobile application to record collections, sales, transport type, costs and trader details in a digital ledger. Their payments are based on transaction data recorded in the app. Digital Green's applications are customized for low resource settings. Aggregators can toggle the app seamlessly in offline and online modes for uninterrupted usage. Loop data syncs to a global real-time dashboard that enables remote monitoring and allows us to have a lean ground presence, keeping costs low. There are no capital investment requirements for infrastructure, which facilitates scaling.



Benefits

With Loop, farmers are seeing benefits from both aggregation and technology.

- Reduced financial costs and better market access. Aggregation optimizes transportation costs by fully utilizing vehicle capacity. With more volume, it pays to sell at a market further away if the price is better.
- Reduced opportunity costs. Farmers save 4-8 hours per market trip.
- Increased profits through increased negotiating power. While individual sales are on a per farmer basis, by presenting aggregated volumes for sale, aggregators negotiate more competitive pricing and

While small shocks such as inclement weather, congested traffic, or the sudden appearance of an additional competitor can doom an individual farmer's take for the day, aggregators can withstand such shocks with the flexibility to adjust tactics. If prices in one market drop suddenly due to oversupply, they can visit a different market the same day and still sell the produce.

purchasing agreements, benefitting all of the participating farmers regardless of individual volume.

- Market information. Farmers have lacked the real-time, comparative pricing information to inform decisions about which market to take their produce to, on any given day. Transaction data on the Loop app provides a real-time view of market prices.
- Transparency. Aggregators use Loop's mobile application to record all collection, cost and sales details on a comprehensive digital ledger, ensuring transparency and minimizing risk of fraud.
- Accountability. Participating farmers can call a helpline to alert Digital Green to any problems.

Results

Since Digital Green launched the Loop mobile application in January 2016 and until June 2017, over 3000 farmers in 105 villages have used Loop to sell 6000 tons of vegetables, recording \$1 million in cash transactions.



The Loop dashboard tracks results in realtime.

Using Loop has cut farmers' transportation costs in half and saves them 4-8 hours each week. Over 75% of farmers using Loop are repeat users. Due to their success in the market, some farmers are increasing their production of vegetables. Less food is wasted because farmers can always get it to the market.

Success Story

The first time she sold produce through Loop, Veena Devi was apprehensive about earning less money than she would if she sold it at the market herself. Though she had more produce available, she sent only radishes to the market through her aggregator, Devinder Singh. By early afternoon, Devinder returned with her earnings and receipt. The price was competitive, and Veena saved six hours by not travelling to the market herself. Veena now uses Loop regularly, selling radishes, okra, tomatoes, and other vegetables.



Videos about Loop

We have produced a video demonstrating [vegetable aggregation in Samastipur for market trade](#) and a shorter version [with English subtitles](#).

Two video testimonials feature participating farmers [Anil Kumar](#) and [Dukni Devi](#).

A video describing Digital Green's broader approach to video-enabled agricultural extension is [here](#).