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Mercy Corps – Cropin tie-up to drive farming digitization and livelihoods of smallholder farmers in Ethiopia

REGION: Ethiopia; West and Central Africa

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Agriculture transformation with value chain digitization in Ethiopia

Ethiopia's economy depends on agriculture, and a huge part of the country's workforce is employed in the agricultural sector. Most of them are subsistence farmers. It predominantly has a mixed agricultural model — a combination of farming and herding of livestock and birds.

Climate change events, degradation and shortage of farmland, urbanization on agricultural land, lack of infrastructure and coordination among stakeholders, poor knowledge of modern farming techniques among farmers and political instability are some of the main challenges facing Ethiopia's agricultural sector.

Limited use of quality seeds, fertilizers and pesticides, poor irrigation facilities and minimal use of modern technology has kept crop yields low.

Mercy Corps, a non-governmental humanitarian aid organization and Ethiopian Agricultural Transformation Agency (ATA), collaborated with Cropin and initiated a project in 2020. The project aimed to achieve 30-40% productivity gains and translate those to a 50-60% increase in income among smallholder farmers. The targeted regions were Oromia; Amhara; Southern Nations, Nationalities, and People's Region (SNNP); and Tigray. The project has transformed the lives of 135,515 farmers.

The need for farming digitization

ATA faced problems in achieving productivity gains and converting them to an increase in smallholder farmer income.

Key issues included a lack of proper documentation of land, crop and farmer profiles for promoting farmer-centric services; challenges in farmer categorization and cluster record keeping.

Farmers also suffered from the non-availability of advisories related to Package of Practices (PoPs), weather, and pest and disease alerts.

Monitoring and management of farms became a challenge. Inefficiency in input usage, fertigation, irrigation scheduling, etc., resulted in ineffective planning and interventions.

Digitization of various segments of the agricultural value chain by the Mercy Corp/ATA-Cropin project has solved many of the challenges faced by extension and advisory service providers and smallholder farmers in Ethiopia.

Smallholder farmers gain big with farming digitization

The Ethiopian ATA is a government organization that develops delivery-oriented strategies to fast-track the growth and transformation of the agriculture sector in Ethiopia. The sole mandate of ATA and Mercy Corp is to improve the livelihood of smallholder farmers across the country.

The project aimed to digitize the value chains of the Agricultural Commercialization Cluster Initiative, gather real-time insights on the Farmer Production Clusters (FPCs) and offer timely advisories to individual smallholder farmers and clusters using these data insights. The ultimate goal was to help enhance productivity and income opportunities for the farmers.

Cropin's project intervention included **piloting and scaling digital solutions, adapting to the local context, advisories, capacity building, training and knowledge management**. The Mercy Corp/ATA-Cropin project first piloted the digital solution and checked for adaptability and scaling as per local needs. Multilingual support in 29+ global languages localized the application for country-wide operations.

Agricultural plots were geotagged with geographical identification markers, making location-specific information readily available. Farmer profiles, including details of household members, were digitized, which helped develop a farmer data bank. Farmer clusters were created, and cluster-based record-keeping was activated on **Cropin's SmartFarm** platform.

Digitization enabled farmers to benefit from the package of practices (PoPs) specific to crops and regions shared on the platform. It also helped development agents (DAs) track whether farmers adopted the recommended PoPs. Process digitization allowed traceability and monitoring of all aspects of farm operations.

Climate-smart advisories based on localized weather forecasts and digitalized crop monitoring provided information on which agri-inputs to use, how much and when; sowing activities such as seed treatment and transplanting; fertilizer application; crop protection activities and the time of harvest. It helped to cut down costs and efforts considerably.

Training programs for field officers and DAs ensured widespread adoption of the product. Digitization of farmer and training programs enabled uniformity and quick updates. Cropin monitored data collection by field officers to ensure activation and quality reporting of field intervention. **Digitization enhanced the quality of field reporting and brought transparency to the field.**
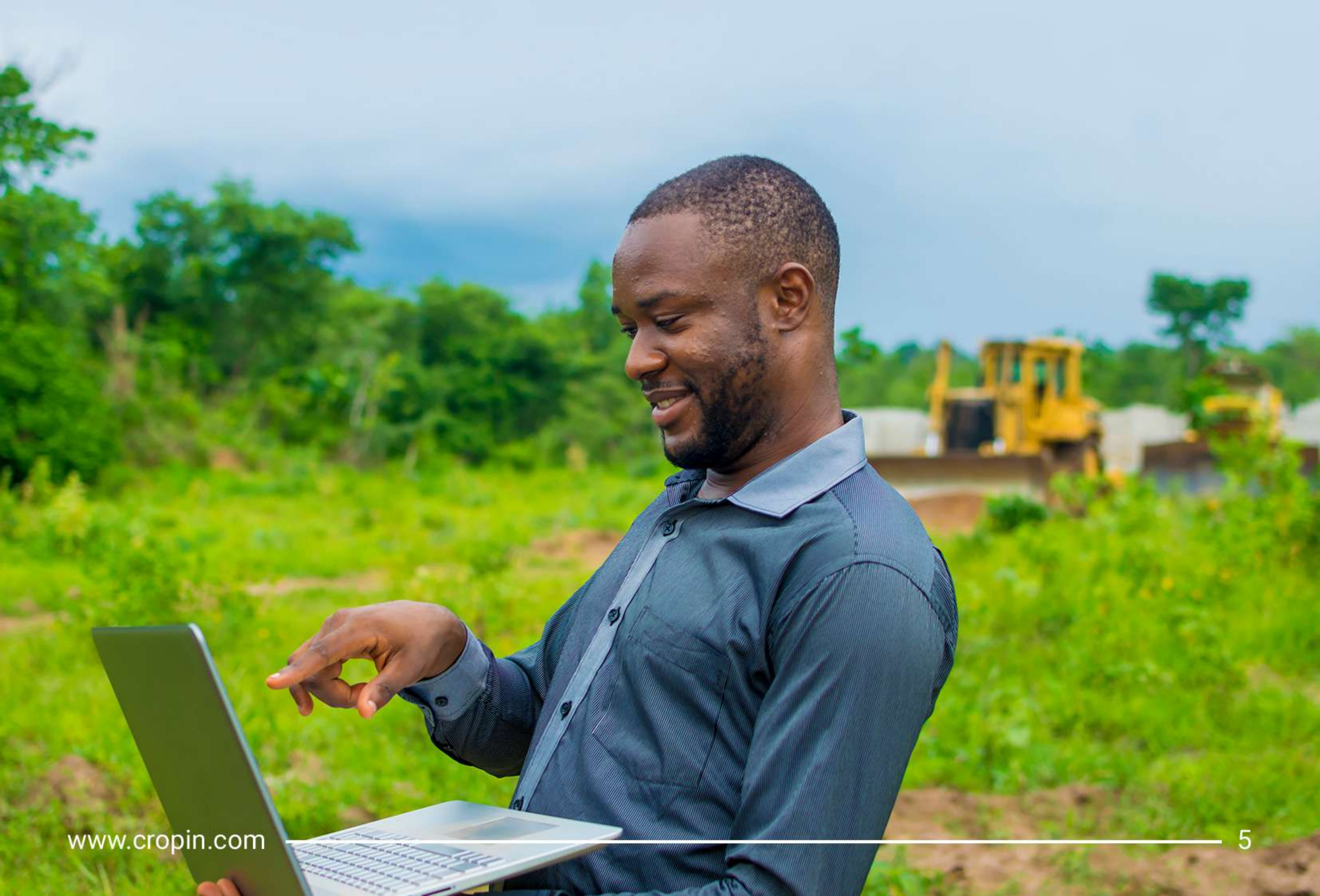
Cropin provides a knowledge management model, which collects, organizes and securely stores data for easy access. This insight helps with strategic data-driven decision-making. User manual and product feature update alerts were shared with field officers, which equipped them to advise farmers better and build engagement.

The numbers reflect the gains

Agricultural advisory and extension services are essential in improving the livelihoods of smallholder farmers and the overall agricultural sector in Ethiopia. DAs enable the dissemination of agricultural extension and advisory services, but many of them lack knowledge about the latest agricultural technology. The Mercy Corp/ATA-Cropin training programs improved their entrepreneurial skills and knowledge, thereby delivering advisory and extension services.

Mercy Corp/ATA anticipates that participatory and customized rural advisory services can drive 30-40% productivity gains, which can translate to a 50-60% increase in smallholder farmer income. The project is in the initial phases and is going forward to achieve these goals. **The following table gives an overview of the progress and impact figures.**

Regions	Farmer	DAs
Oromia	51255	158
Amhara	26607	158
SNNP	10142	157
Tigray	47511	158

Cropin Company Profile

Founded in 2010, Cropin is a global Agtech pioneer who has built the world's first purpose-built industry cloud for Agriculture - Cropin Cloud, an Intelligent Agriculture Cloud.

Cropin Cloud enables various stakeholders in the agri-ecosystem to leverage digitization and predictive intelligence to make effective decisions that increase farming efficiency, scale productivity, manage risk and environmental changes and enhance sustainability. Cropin has been instrumental in creating the global Agtech category and bringing advanced technologies together to transform farmers' lives worldwide through partnerships with agri-businesses, governments and development agencies across 56 countries. They helped the ecosystem to eliminate the uncertainties associated with farming and made it predictable, traceable, and sustainable.

Cropin Cloud combines cutting-edge technologies, including artificial intelligence, machine learning, data science, satellite imagery, and remote sensing. It helps derive real-time actionable insights to build a connected and sustainable agri-ecosystem that can benefit farmers, farming companies, agri-input providers, food processing companies, retailers, financial service providers, governments and development agencies.

Cropin has partnered with over **250 B2B customers** and **digitized 16 million acres of farmland, improving the livelihoods of more than 7 million farmers**. Our work over the last decade has enabled us to spearhead a global 'Ag-intelligence' movement with a crop knowledge graph of **488 crops and 10000 crop varieties in 56 countries** that powers the Cropin Cloud. Cropin Cloud's Intelligence platform has already computed and **provided predictive intelligence for over 0.2 billion acres of farmlands** across the globe.

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