



**AGRICULTURAL  
TECHNOLOGY GUIDE  
FOR ADVANCING  
PROFESSIONAL FARMER  
ORGANIZATIONS**

“

## DEAR READER

I am sure we all appreciate the value technology brings to our lives, especially at this time with most of us locked down due to COVID-19. We need information to make decisions and make sense of the future. Farmers are no different to us and in response to their needs we have seen thousands of agtech innovations being piloted. Hopefully we are close to a consolidation and scale up period of the most reliable, demand driven, viable products. This guide is AMEA's first attempt to capture the learning from our members and promote the products we believe have the most potential. I hope you will find this useful and we welcome your feedback as we immediately start on the 2nd edition.

”

Mark Blackett  
AMEA Network Director



FIRST EDITION AG-TECH FOCUS AREA

# AG-TECH THAT ENHANCES SUPPLY CHAIN MANAGEMENT AND INFORMATION COMMUNICATION FOR EXTENSION

APRIL 2020

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**AMEA** AMEA is a fast-growing network of public and private organizations that work in the agricultural sector. There are currently 26-member organizations and hundreds of individual members, all dedicated to accelerating the development of professional farmer organizations. Our global network meets both online and in-person on a regular basis and collaborates for systematic change in the agricultural sector.



AMEA brings stakeholders together to create change through the AMEA Framework, towards more professional farmer organizations, aimed at access to markets and finance, and ultimately the improvement of livelihoods and resilient supply chains. The AMEA Framework contains six elements: **1** the global guidelines, **2** approved assessments, **3** approved curricula, **4** qualified trainers, **5** common indicators, and **6** feedback loops ensuring implementation, collaboration, learning, and adaptation at a national and local scale. This integrated, scalable approach provides a consistent and internationally recognized roadmap toward farmer organization professionalism.

The AMEA Framework was developed at a global level with national input, but it is implemented and refined in different local contexts. AMEA local networks in Ethiopia, Côte d’Ivoire, Uganda, and Kenya bring together national practitioners and businesses with a common objective of advancing professional farmer organizations. Local networks are actively generating new business to business partnerships, sharing learnings, and addressing context-specific challenges with other agribusiness stakeholders.

**AMEA WORKING GROUPS** AMEA provides a pre-competitive space for agricultural development practitioners and agribusiness stakeholders to collaborate, learn, and share knowledge on best practices relevant for professionalizing farmer organizations in developing countries. The AMEA Working Groups (WGs) focus those collaborations on specific topic areas that have a high potential for disrupting stagnant agricultural development practice.

At their core, the WGs serve the local networks by aggregating, organizing and disseminating new opportunities, tools, and other relevant information that can create space for systematic change in the agricultural sector and, most importantly, bringing new opportunities to smallholder farmers traditionally marginalized by the global economic status quo. Moreover, feedback loops between the AMEA international WGs and local networks ensure input is gathered and information disseminated to the people and local organizations creating change on-the-ground.

# THE AGRICULTURE TECHNOLOGY WORKING GROUP

## AG-TECH WG PRIORITIES FOR 2020

Launch 1st edition of the AMEA Ag-tech Guide

Research and complete the 2nd edition of the Guide with new topic area to be published in 2021

Regularly engage with local networks to gather Ag-tech endorsements and more detailed case studies

Include Ag-tech companies, software developers, and other service providers in WG online meeting schedule

At the 2019 Global Convening in Washington D.C. AMEA members agreed that these priorities will create new value for current and future AMEA members and accelerate their collective and individual efforts to bring systemic change to the agricultural sectors in AMEA local network countries.

The Agriculture Technology (Ag-tech) WG was created at the 2018 AMEA Global Convening in Delft, Netherlands with a goal to curate, disseminate, and promote disruptive and appropriate **Ag-tech that increase farmer professionalism, incomes and promote sustainable production.** Regular on-line meetings were held throughout 2019 to unpack and refine this goal. Subsequently, a set of criteria was created and endorsed by the AMEA members active within the Ag-tech WG. The six criteria were created to ensure that the Ag-tech AMEA promotes in this Guide provide local networks and AMEA members with

**1 Member organization endorsed technologies, 2 disruptive new technologies, and 3 technologies appropriate for use with smallholder farmers.**

The result of the 2019 meetings, research and collaboration is this 1st edition of the AMEA Ag-tech Guide for Advancing Professional Farmer Organizations, which contains a set of Ag-tech profiles organized by the six criteria.

As the Ag-tech WG and the AMEA local networks mature there is increasing opportunity for deeper collaboration and more regular feedback loops to be established. Strengthening these feedback loops can increase the value of subsequent editions of the Guide by **1** integrating “farmer-user experiences” within the Ag-tech profiles, **2** increasing the number of nationally derived Ag-tech profiled and promoted, and **3** localizing the endorsements for the Ag-tech.

## AG-TECH GUIDE FOR ADVANCING PROFESSIONAL FARMER ORGANIZATIONS

This is the 1st edition of the AMEA Ag-tech Guide and represents a collaborative effort in generating a curated set of Ag-tech that support the objectives of AMEA members, local networks and farmer organizations. The first step in generating this Guide was to establish the framing for “disruptive and appropriate” agricultural technologies. To this end, the six criteria (see next section) were generated through a review of publicly available academic and institutional literature, as well as, through debate and discussion within regular WG meetings. The WG also acknowledged the need to focus the agriculture and agribusiness topic area for the Guide’s 1st edition, because the Ag-tech landscape is a vast, innovative and rapidly growing segment in the agricultural sector. The topic area chosen for this edition is as follows:

**AG-TECH THAT ENHANCES SUPPLY  
CHAIN MANAGEMENT AND  
INFORMATION COMMUNICATION FOR**

Three organizational resources and initiatives guided the final framing of the criteria and 1st edition topic area. They include:

- 1 **The Agricultural Technology Adoption Initiative:** a collaboration between MIT’s Abdul Latif Jameel Poverty Action Lab (J-PAL) and UC Berkeley’s Center for Effective Global Action (CEGA), launched in 2009 with support from the Bill & Melinda Gates Foundation and UK Government.
  - | Jack, B. Kelsey. 2013. “Constraints on the adoption of agricultural technologies in developing countries.” Literature review, Agricultural Technology Adoption Initiative, J-PAL (MIT) and CEGA (UC Berkeley).
- 2 The International Finance Corporation, **Agribusiness and Forestry investment and advisory services team**
  - | International Finance Corporation. 2019. [Working with Smallholders: A Handbook for Firms Building Sustainable Supply Chains](#). Washington, DC. © International Finance Corporation. <https://openknowledge.worldbank.org/handle/10986/29764> License: CC BY 3.0 IGO.
- 3 The **Technical Centre for Agricultural and Rural Cooperation (CTA)**. CTA is a joint international institution of the African, Caribbean and Pacific (ACP) Group of States and the European Union (EU). CTA operates under the framework of the Cotonou Agreement and is funded by the EU.
  - | [The Digitalisation of African Agriculture Report, 2018-2019](#)

In order to collect input from AMEA members to support the creation of this guide the Ag-tech WG surveyed and interviewed AMEA members who are experts in the fields of agricultural development, agribusiness, information and communication technology, and smallholder farmer capacity development. Time and resource limitations did not allow for engagement directly with farmer-users of the Ag-tech. However, as previously stated the WG plans to ensure that those insights are gathered in 2020 for the 2nd edition of the AMEA Ag-tech Guide by working through the already existing AMEA local networks that will be strengthened by increased AMEA staff as regional coordinators.

## THE SIX CRITERIA FOR DISRUPTIVE AND APPROPRIATE AG-TECH

<p><b>AMEA MEMBER ENDORSED</b></p> <p>An AMEA member organization has actively used or collaborated with the creators of the Ag-tech solution and were willing to provide evidence of their experience through documentation and provide written endorsement of the Ag-tech in the profiles below.</p>	<p><b>DEMAND</b></p> <p>The tech has a proven or clearly estimated demand for the tech by smallholder farmers and/or their representative farmer organizations and/or value chain players who engage with smallholder farmers. If the demand is not proven yet there is a business plan and engagement strategy to assess if demand and adoption have high probability.</p>	<p><b>BENEFITS/VALUE ADDITION</b></p> <p>The tech generates measurable value for farmer organizations and/or the value chain. This value can be through increases in productivity, agricultural income, or through premiums/cost savings downstream and upstream in the value chain. Tech can also help to improve efficiency in terms of time, cost and accuracy compared to traditional non-digital methods.</p>
<p><b>LIMITED ADDED COSTS</b></p> <p>The tech should not create burdensome added costs for the smallholder farmers and/or their representative farmer organizations that are not offset by increases in revenue. If an added investment is needed the tech proprietor should either internally account for the cost or limit the impact on farmers through strategic partnership</p>	<p><b>TRANSCENDING INEFFICIENCIES</b></p> <p>The tech clearly and empirically addresses inefficiencies in at least 2 of the following focus areas: input/output markets, land tenure, labor (including costs of goods sold), productivity and on-farm risk, credit and finance, information/knowledge, human rights, and the environment.</p>	<p><b>INTEROPERABILITY</b></p> <p>The tech or system in which it is embedded can work together within and across technological boundaries in order to advance the effective delivery of agricultural and agribusiness information for individuals and communities.</p>

# THE AMEA AG-TECH PROFILES

This guide is not an exhaustive list of the Ag-tech, Fintech or ICT agricultural

sector writ large. The eight Ag-tech profiles displayed below represent the evaluative experiences of AMEA members, the owners of these technologies, and the supporting documentation provided voluntarily to the Ag-tech WG.

In short, the Ag-tech contained within this Guide can help smallholder farmers and their farmer organizations meet the demands, faster and more efficiently, of a variety of value chain stakeholders and accelerate progress towards sustainability. The Ag-tech have been supported or employed by at least one AMEA member organization dedicated to accelerating the development of professional farmer organizations.

## List of eight endorsed Ag-tech and the endorsing organization

### ENDORSERS



### AG-TECH





## PRODUCT OVERVIEW

EcoFarmer is Econet's mobile farming platform. EcoFarmer was launched in 2013 as a weather indexed insurance business, which enabled farmers to insure their crops against the risk of false rainfall, excessive rainfall and excessive dry days for as little as \$1.00 USD (later revised to 2.50 RTGS per year) for \$25 worth of cover. The cover was initially available for maize. Insured farmers also received free maize advisory tips and market information. This service was popular with smallholder farmers, although improvement areas were identified.

Research on customer needs in conjunction with CTA partners in 2015, allowed the business to identify other needs that the service was not addressing. As a result, the services offered are being expanded to include information, financial and value chain services that will be offered by EcoFarmer in conjunction with various Econet units or other external strategic partners. These services will be provided to small scale-farmers, large-scale farmers, farmer organizations, as well as industry at large.

## DISRUPTIVE AND APPROPRIATE CRITERIA

The AMEA network created a set of criteria to ensure that the endorsed Ag-tech were appropriate for smallholder farmers, but disruptive enough to create transformational change in the global agricultural sector. Below, you will find how **EcoFarmer** meets AMEA's criteria.

### Demand

Econet's EcoFarmer has a base of 1,000,000 registered users, including small-scale farmers,

"Since 2017 CTA has had a partnership with Zimbabwe Farmers Union and Econet. This partnership has seen a sharp increase in subscriptions to bundled services to farmers"

Piet Visser

Team leader Agribusiness and Value Chain at CTA

large-scale farmers, farmer organizations, as well as industry at large. Demand has grown at a rate that justifies Econet's offer of services for farmers and services for agribusiness.

### Benefits & Value Addition

As a platform developed by Econet to deliver agriculture services to smallholder farmers via USSD (Unstructured Supplementary Service Data) and SMS (Short Message Service), EcoFarmer has broad coverage in Southern Africa. More broadly, the EcoFarmer platform in Zimbabwe covers advisory services, payments (EcoCash), and agri-insurance. Digitally-enabled value chain market linkage services are in the product pipeline.

### Limited Added Costs

In Zimbabwe - The bundle of services costs US\$1 per month and includes: weather index insurance, funeral insurance, ZFU membership contribution and access to EcoFarmer advisory services.

### Transcending Inefficiencies

Econet is a mobile network operator, multinational company, and has built partnerships with financial institutions, advisory service providers, and others to create the EcoFarmer bundled product.

### Interoperability

Some interoperability was identified based on the findings in the [CTA report](#).

## SCALE AND AVAILABILITY

Currently, variations of the EcoFarmer product bundles are available in Zimbabwe. Please use the contact information above to learn more.





## PRODUCT OVERVIEW

Mobis is a cloud-based microfinance management platform designed uniquely to help savings and loan cooperatives go paperless and become more efficient by digitizing how they manage customer data and transactions.

Mobis automates reports that can be customized to extract the exact data needed, and permits group management, allowing saving groups to self-manage and centralize data management to their affiliated organization. Communication can be done in bulk via SMS integration, which also allows automatic alerts.

## DISRUPTIVE AND APPROPRIATE CRITERIA

The AMEA network created a set of criteria to ensure that the endorsed Ag-tech were appropriate for smallholder farmers, but disruptive enough to create transformational change in the global agricultural sector. Below, you will find how **Mobis** meets AMEA's criteria.

### Demand

Demand for Mobis has reached 50 African SACCOs with close to 300,000 farmers in Uganda. Demand has huge potential to increase, as Uganda has close to 20,000 registered SACCOs and as Ensibuuko partners with Airtel Uganda and MTN Uganda.

### Benefits & Value Addition

- Automation of reports, records of savings and shares, reports on membership savings and loan portfolios.
- Tracking of SACCOs' members' bio-data - information available at a click.
- Members are able to send and receive money through the platform, reducing distances and cutting costs with transportation.
- Offer of training on capital management.

"A start-up winner of CTA's 2013 AgriHack competition, they received a small grant and benefited from mentorship facilitated by CTA and a local incubator. Eventually, they offered services to a CTA satellite-data and advisory services project that they have now embedded as part of their services. Currently with close to 40 staff, they have been operating as private sector, providing notably a digital financial platform for SACCO's in Uganda and beyond."

Ken Lohento

### Limited Added Costs

SACCOS purchase an annual license for a fee between \$530 and \$2500, plus \$100 annual maintenance fees and regular purchase of SMS credit. The solution is 20% the cost of existing banking software in Uganda (For more information follow [this link](#)).

### Transcending Inefficiencies

Mobis improves the confidence and trust that smallholder farmers and other clients have in SACCOs by providing a more cost-efficient way to manage member data, generate reports and limit corruption. Ensibuuko partners with Airtel Uganda and MTN Uganda, the country's two largest mobile operators.

### Interoperability

Mobis integrates mobile tools - Mobile money, SMS, USSD.



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## SCALE AND AVAILABILITY

Currently, Mobis is available in Uganda and looking to expand to new geographies. Please use the contact information above to learn more.



**MOBIS**  
BY ENSIBUUKO





## PRODUCT OVERVIEW

**Plantwise** is a global program led by **CABI**, which helps farmers prevent losses due to plant health problems. Working closely with national agricultural advisory services, a global plant clinic network has been established, with each plant clinic run by trained plant doctors. Plant clinics work just like clinics for human health: farmers visit with samples of their crops, and plant doctors diagnose the problem and make science-based recommendations (including via SMS) on ways to manage it.

CABI and Koppert Foundation have developed an additional training curriculum for plant doctors to raise their knowledge and skills to advise biological and other non-chemical solutions for pests and diseases.

The plant clinic network is reinforced by the Plantwise Knowledge Bank, a gateway to practical online and offline plant health information, including diagnostic resources, best-practice pest management advice, and plant clinic data analysis for targeted crop protection. Together, these two unique resources are part of the Plantwise approach to strengthen national plant health systems.

## DISRUPTIVE AND APPROPRIATE CRITERIA

The AMEA network created a set of criteria to ensure that the endorsed Ag-tech were appropriate for smallholder farmers, but disruptive enough to create transformational change in the global agricultural sector. Below, you will find how **Plantwise** meets AMEA's criteria

### Demand

- By the end of 2018, it has an estimated reach of 31 million farmers.

"The Plantwise Knowledge Bank offers an excellent repository for information and pictures of pests and diseases. Plant doctors trained by CABI use this as a base to provide solid and independent advice to smallholder farmers via numerous channels. Koppert frequently collaborates with plant doctors to convey sustainable crop protection solutions to groups of smallholder farmers."

Ed Moerman

Knowledge Manager R&D microbiology, Koppert Biological Systems

- Only 3% Plant Doctor training conducted by CABI in 2018 (a proxy for sustainability)

Since inception, the annual reach of Plantwise has increased 25-fold from an initial direct reach of 70,000 farmers in 2012. In 2017, the program reached an estimated 1.7 million resource-poor farmers directly with plant health messages: 10% through plant clinics, 4% through plant health rallies and other face-to-face activities and 86% through mass extension campaigns.



## Benefits & Value Addition

The Plantwise Programme launched in 2011 by developing the online Plantwise Knowledge Bank and iOS/Android phone apps. This online user-friendly database was linked to on-the-ground systems of plant clinics and doctors to reach farmers through existing extension systems with nationally and regionally-specific plant pest and disease advisory and mitigation information.

- Plantwise improves farmers' plant health knowledge, adoption of good agricultural practices, sustainable use of pesticides, crop productivity and income.
- Increase in crop-based productivity and income.
- Establishment of social network groups that help improve the technical capacity of plant doctors and the interconnectedness of plant health systems.
- Change in countries' ability to respond to pest outbreaks.
- Data can be used to map and monitor pest occurrence so that information on the spread of pests is used to design extension materials and actions accordingly.

## Limited Added Costs

Integrated into national extension services is part of a sustainability strategy. The independent assessment of Plantwise's impact in Kenya by the American Institutes of Research (AIR), which used a randomized control trial (RCT) design, ran from 2014 to 2017 and was published in 2018, showed that the program contributes to improvements on crop yields, crop-based household incomes, and reductions in cases of non-judicious

use of pesticide by farmers. The main finding from this assessment is that the monetary benefits of Plantwise outweigh the costs of its implementation threefold (benefit-cost ratio of 3:1) and initial investment in the program would be fully recovered within two years (internal rate of return of 54%).

## Transcending Inefficiencies

Plantwise has a network of over 3,700 plant clinics in 34 countries around the world. Plant clinics are a meeting place where local agricultural advisory officers, known as plant doctors, help farmers struggling with plant pests and diseases. They provide diagnoses and management advice for any problem and any crop and introduce farmers to the online Knowledge platform.

The open-access Plantwise Knowledge Bank includes a source of locally relevant, comprehensive plant health information for everyone from farmers to extension agents and scientific researchers. It delivers information on the diagnostics, treatment, and distribution of over 2,500 crop pests with content in 80 languages and dialects.

## Interoperability

Plantwise Factsheet App is available both in Android and IOS versions so anyone with a smartphone can download packs of Plantwise factsheets of relevance to their country. Educational apps (simulation gaming) have been developed to make learning fun, sustaining the engagement of end-users while building their skills and knowledge. The Plant Doctor Simulator (Android) is designed to improve extension workers' ability to diagnose key pest groups. A second simulator improves extension workers' ability to recommend suitable solutions to farmers.



## PRODUCT OVERVIEW

Ledger Link is an app resulting from a collaboration between Barclays, CARE and Grameen Foundation that started in 2014 as a project with the objective to link microfinance savings groups to Barclays, so Barclays could have visibility into the groups perform (good attendance, repayment of loans, regular savings), and farmers groups could have financial security and further build their relationship with the bank to access loans.

Today, Ledger Link continues to serve as a connector between farmer groups and financial institutions. The data farmers enter on Ledger Link can support their application for banking products offered by partner financial institutions.

## DISRUPTIVE AND APPROPRIATE CRITERIA

The AMEA network created a set of criteria to ensure that the endorsed Ag-tech were appropriate for smallholder farmers, but disruptive enough to create transformational change in the global agricultural sector. Below, you will find how **Ledger Link** meets AMEA's criteria

### Demand

Unknown outside of Grameen and Care projects. Please use contact above for more information.

### Benefits & Value Addition

- E-recordkeeping makes attendance, savings, loan and Social Fund transaction records easily available to members and others online. This reduces the time and cost of making field visits to examine groups' records, allows closer oversight and more responsive technical support to savings groups

"Ledger Link is a simple app used by groups to facilitate linkages with financial institutions. Grameen Foundation also endorses the app for use by farmer associations to facilitate linkages to supply chain actors interested in cost-effective market-led smallholder engagement strategies."

Mona Mccord  
Agriculture Innovations Director, Grameen  
Foundation

- Automatic loan repayment and Share-out calculations reduce the difficulty and errors involved in calculating VSLA transactions by hand. This is especially important for Share-Out calculations as disagreements about Share-Out can be a major source of conflict within groups.
- Training Mode allows members to practice continuously on the platform for weeks or months after their initial training and get comfortable using the platform without needing the support of Community-Based Trainers. This is an essential component for users who are new to digital technologies.
- Cloud-based data storage enables groups to easily forward their credit records to financial institutions to support applications for loans, and thus provides access to finance for people lacking formal credit histories.
- Cloud-based data storage also ensures recovery of group data in case of loss of the smartphone



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**Limited Added Costs**

Unknown at this time. Please use the contact above for more information.

**Transcending Inefficiencies**

- Automatic Loan and Share-out Calculations
- Available in local languages
- Video-based training integrated into the application
- Training mode
- Dashboards to track and visualize progress
- Real-time data for credit scoring and linkages to an external financial institution
- Group attendance tracking
- Migration of existing paper-based records to digital format
- Cloud-based data storage
- E-recordkeeping of savings, loan, and social fund transactions
- Partnership with Barclays and Airtel.

**Interoperability**

Ledger Link is designed to run on any Android smartphone, with a straightforward intuitive interface. Mobile data can be sent from Ledger Link to a partner financial institution. Currently available in English, Luo, Arabic and Bari.

**SCALE AND AVAILABILITY**

Ledger Link is being adapted to support a South Sudanese microfinance institution called RUFU (Rural Finance Initiative) to reach a vast majority of borrowers in refugee populations that no longer meet traditional collateral requirements and to find a more cost-effective way to expand their customer base in refugee settlements. Please use the contact information above to learn more.



## PRODUCT OVERVIEW

In collaboration with Mars and Rainforest Alliance, Grameen Foundation designed and developed the Digital Farm Development Plan (FDP) now called [FarmGrow](#), an android-based decision-making tool for cocoa farming households that combines detailed farmer socio-economic information and farm environmental conditions to generate farm development and investment plans that help cocoa farming households use sustainable farming practices to increase productivity on existing cocoa land as much as three-fold.

## DISRUPTIVE AND APPROPRIATE CRITERIA

The AMEA network created a set of criteria to ensure that the endorsed Ag-tech were appropriate for smallholder farmers, but disruptive enough to create transformational change in the global agricultural sector. Below, you will find how **FarmGrow** meets AMEA's criteria

### Demand

There is a lot of momentum around FarmGrow which is quickly becoming an industry-wide tool for the cocoa sector. Apart from cocoa, FarmGrow can be calibrated for other value chains such as coffee, tea and cashew. t

### Benefits & Value Addition

A critical part of the FarmGrow is the human element that field officers bring. Field officers are trained on how to use the tool and engage respectfully with farmers, especially when gathering detailed farmer profiling data that contains sensitive information on household financing and production levels. The data collected combined with "smart logic" generates a farm investment plan that provides farming household's a snapshot of

"Grameen Foundation endorses the FarmGrow app that was designed for the farmer/by the farmer. It is a stellar planning tool for farmers and value chain partners to work together towards a sustainable future."

Mona McCord  
Agriculture Innovations Director, Grameen Foundation

their potential income (or loss) and the ability to plan ahead and manage costs.

Using FarmGrow, field officers are able to provide customized coaching to farming households on how best to maximize their return on investment through sustainable agricultural practices and appropriately targeted investments.

### Limited Added Costs

\$15,000 for complete operational setup.t

### Transcending Inefficiencies

FarmGrow is a decision-making tool for farmers that combines agronomy and economics. Private sector partners equip their field agents with the tool to facilitate specific agronomic practices and farm management coaching to cocoa farmers to increase their productivity to 1.5 MT to 2 MT per hectare.

Farmer data, collected using the tool, informs individual investment plans that help farmers understand the financial investment needed to reach optimal levels of productivity over a multi-year timeline.

### Interoperability

FarmGrow is designed to run on any Android smartphone, with a straightforward intuitive interface. Please use the contact information above to learn more.

## SCALE AND AVAILABILITY

Currently, FarmGrow is operational in Ghana, Ivory Coast, and Indonesia with a wide array of stakeholders. Please use the contact information above to learn more.





## PRODUCT OVERVIEW

Agromovil is a mobile, cloud-based platform connecting producers, transporters, and markets to unlock the tremendous trapped value in the current inefficient farm-to-market system. Agromovil links farmers to transporters and to buyers, facilitating transactions and reducing waste and loss of produce.

## DISRUPTIVE AND APPROPRIATE CRITERIA

The AMEA network created a set of criteria to ensure that the endorsed Ag-tech were appropriate for smallholder farmers, but disruptive enough to create transformational change in the global agricultural sector. Below, you will find how **Agromovil** meets AMEA's criteria

### Demand

Piloted in Colombia in 2018, with cooperatives and transporters, packing houses and exporters and banks and the government. It has been supported by nine organizations, including the World Bank.

### Benefits & Value Addition

The main value of Agromovil is that it formalizes the link between farmers, transporters, and buyers, facilitating transactions. Agromovil makes the match between producers and transporters, enabling scheduling batch pick up and payments on the platform, using their own bank.

- Value for farmers, who are able to schedule pick up of their produce when they are the fresher and at the pick of their value.
- Value for transporters, who struggle to find the goods to fill their trucks, and make safe transactions.

"Grameen Foundation endorses the Agromovil app for its value and potential for strengthening and tightening supply chain relationships."

Mona McCord  
Agriculture Innovations Director, Grameen Foundation

- Value for buyers and processors, looking for more reliable sources of fresh food and the opportunity to avoid an endless stream of resellers and intermediaries.
- And broader value for financial institutions, mobile network operators, and others trying to expand their work in rural areas.

### Limited Added Costs

Presently, Agromovil is employed through a series of strategic partnerships and added costs to farmers and farmer organizations are unknown. Please use the contact information above to learn more.

### Transcending Inefficiencies

- Available in English and Spanish.
- Farmers to MATCH with buyers when crops are at their freshest and ready for pickup.
- Transporters BATCH pickup, so each trip is more efficient and profitable.
- Sellers, buyers, and transporters to PAY on the platform, making payments faster and more secure.

### Interoperability

Agromovil is designed to run on any Android smartphone, with a straightforward intuitive interface. Further interoperability is unknown at this time.





## SCALE AND AVAILABILITY

Emerging from a pilot phase, Agromovil is presently available in Colombia with potential application in new geographies. Please use the contact information above to learn more.



## PRODUCT OVERVIEW

**Farmforce** is a cloud-based mobile platform that extends digital management to the agricultural “first mile” and specifically to the management of smallholder farming schemes. Farmforce uses mobile technology to replace existing paper-based processes. Primarily, a digital traceability tool for smallholder farmers and their farmer groups. Presently, the cost is offset by the multinational or national agribusiness aggregator or processor with out-growers (formal and informal) of smallholder producers.

## DISRUPTIVE AND APPROPRIATE CRITERIA

The AMEA network created a set of criteria to ensure that the endorsed Ag-tech were appropriate for smallholder farmers, but disruptive enough to create transformational change in the global agricultural sector. Below, you will find how **Farmforce** meets AMEA’s criteria

### Demand

The Farmforce server currently has 350,000 farmers in 31 countries and provides services in 14 languages. Recent [case studies](#) provide strong evidence for domestic and international corporate demand and uptake of “premium”, “standard” and “light” versions (with the most commonly used version being the “standard”).

### Benefits & Value Addition

Farmforce can be used to digitize data collection that would be done manually, considerably increasing efficiency and accuracy while providing better oversight of farmers’ production. It allows data gathering on a wide range of activities, including planting and harvesting, pest and disease prevalence,

“IFC has deployed Farmforce in projects in six countries across six crops. Farmforce offers an effective, customizable solution that can be implemented quickly to facilitate traceability through digital data collection”

Hileena Eshetu Chole  
Consultant Smallholder Supply Chain Platform, IFC

and input application. By ensuring traceability, it helps farms achieve the certification needed to be competitive in international markets. The tool is available on a mobile application and web server, while the company provides training and ongoing support to facilitate ease of use. Local language customization is available, and features like GPS mapping and SMS communication can be integrated. Farmforce is ideal for use in remote areas as internet-free data collection is possible (data will be uploaded onto the server when a connection is available).

### Limited Added Costs

“The cost of implementing Farmforce is dependent on the number of users with a one-off set up cost being €1,650 Euro with an additional fee of €460 Euro per user per year.”

### Transcending Inefficiencies

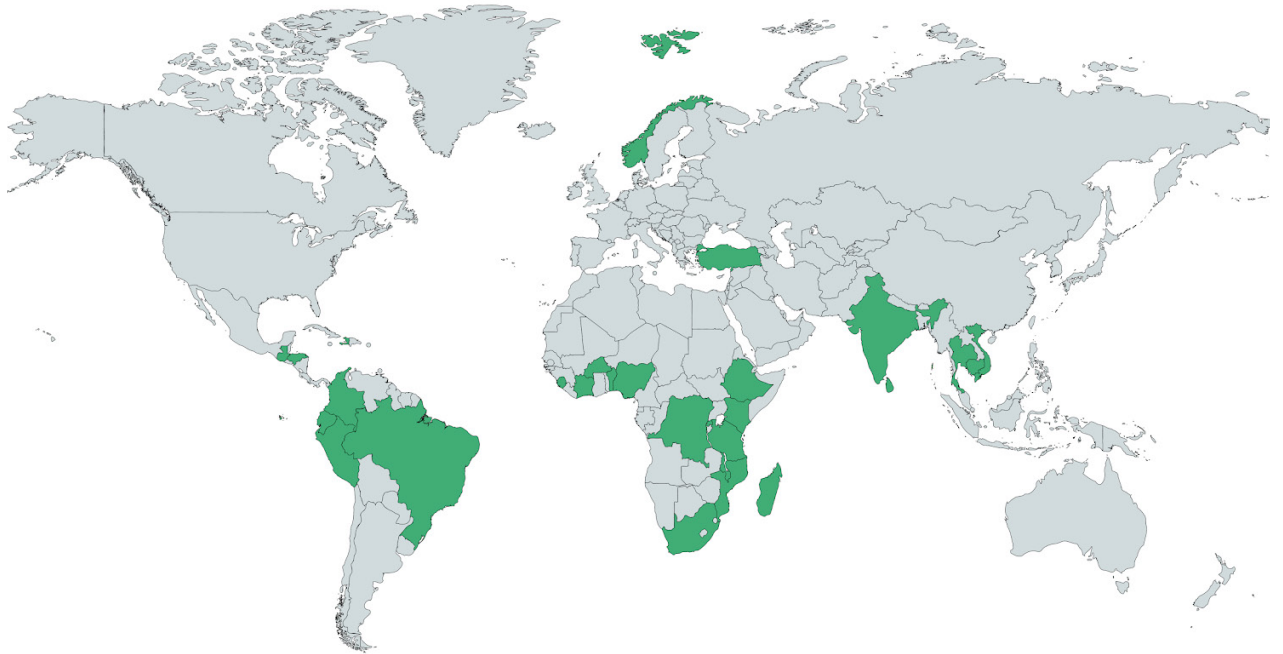
Farmforce allows tracking of produce from farm to market through registration of individual farmers and groups of farmers, records of internal production practices, management of harvest and tracking of produce from farm to markets. Data stored on Farmforce is accessible anytime anywhere as the system is cloud-based.

### Interoperability

Farmforce also allows for the management of most compliance standards by integrating checklists for purposes of internal audits. Further interoperability is unknown at this time.

## SCALE AND AVAILABILITY

Farmforce is currently operating in 30 countries with plans for further expansion. The global HQ is located in Oslo, Norway. Please use the contact information above to learn more.



## PRODUCT OVERVIEW

CropIn is a leading AI and Data-led agri-tech organization that provides SaaS solutions to agribusinesses globally. CropIn's suite of products enables large stakeholders in the agri-ecosystem to adopt and drive digital strategy across their operations. The company offers four groups of services, and thus businesses can leverage technology to effectively drive their initiatives around Digitization, Predictability, Compliance, Sustainability and Traceability.

Technology like big data analytics, artificial intelligence, machine learning, and remote sensing underpins the company's solution products. CropIn creates an interconnected network of all these stakeholders at different levels of the agriculture ecosystem, enabling clients to analyse and interpret data to derive real-time actionable insights on standing crops.

CropIn develops a farm management platform that detects cropping patterns, analyses real-time data and predicts yields.

## DISRUPTIVE AND APPROPRIATE CRITERIA

The AMEA network created a set of criteria to ensure that the endorsed Ag-tech were appropriate for smallholder farmers, but disruptive enough to create transformational change in the global agricultural sector. Below, you will find how **CropIn** meets AMEA's criteria.

### Demand

CropIn's suite of services currently serve over 2 million farmers in over 52 countries. The company has seen the greatest demand for their services through three key products - 'Smartfarm', 'SmartRisk' and 'Smartware'

"CropIn has worked with IFC's premier client-DCM Shriram in India to adopt Agtech solutions into their business (sugar value chain). Digital farm log books, geo tagging of farms and satellite based weather information have helped IFC's client in increasing visibility on traceability and overall efficiency of farm extension services

Operations Officer  
IFC India

with the former being a flagship product, that aims to solve organisational deficiencies by registering all farmers to provide the right set of practices to managing the entity of the pre-harvest value chain.

### Benefits & Value Addition

CropIn's vision is to 'maximize per acre value' and the mission to 'make every farm traceable'. Through its crop agnostic suite of solutions, CropIn aims to add value to agribusinesses by increasing efficiency, scaling productivity, and strengthening sustainability across the board.

CropIn offers a web application accessed on PCs, laptops and tablets and a mobile-based application accessed on Android phones to help agribusinesses collect and store real-time information from the field, record farm and farmer data with historical accuracy and leverage this data to increase the farm productivity and incomes of farmers.



### Limited Added Costs

The cost of implementing CropIn’s solutions is dependent on the type of solutions chosen; where the client typically covers the associated costs. The pricing model is based on a one time set up charge, for hosting, configurations and a recurring charge. Recurring charges are determined based on two formats, either on a licensing agreement or cost per user, per farmer or acre the technology is applied to or used by. For example: SmartFarm- a) one time charge is \$15k, and the b) annual subscription starts from \$1000 and can be reduced to \$500 depending on economies of scale.

## SCALE AND AVAILABILITY

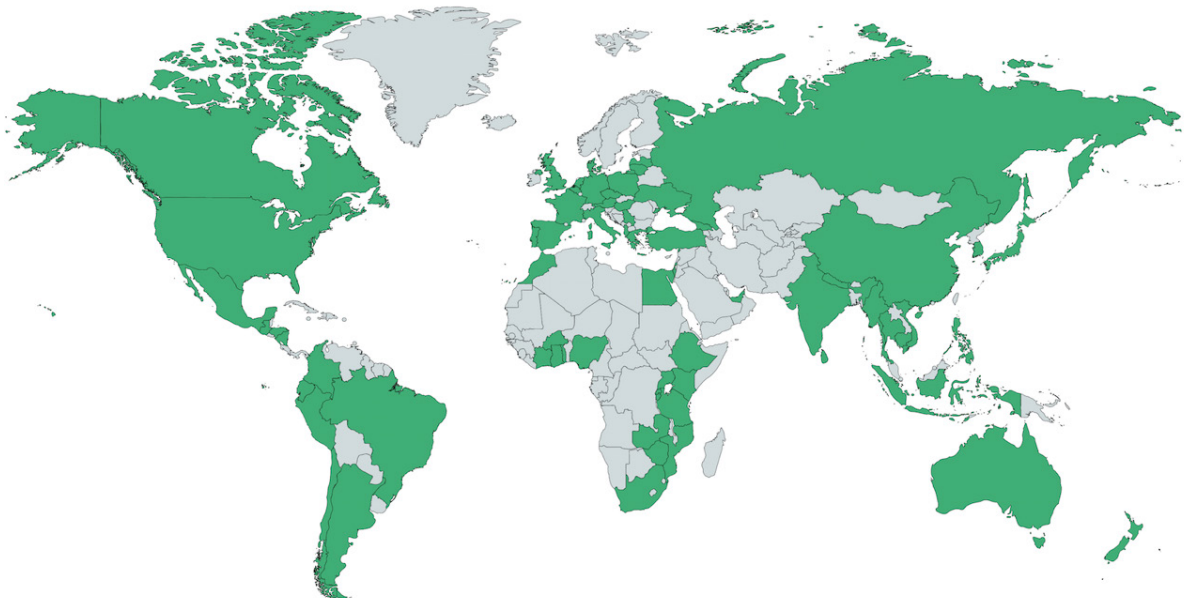
CropIn has digitized over 5.5 million acres of farmland and enriched the lives of nearly 2.1 million farmers, while gathering data on 380+ crops and 3,600+ crop varieties in 52+ countries on 6 continents. CropIn aims to reach 20 million farmers by 2022 and has thus far worked with over 225 clients. The global HQ is located in Delhi, India. Please use the contact information above to learn more.

### Transcending Inefficiencies

CropIn’s suite of digital enabling products, ‘from farm to fork’, is enabling farmers to overcome some chronic challenges in the agriculture ecosystem, such as; soil degradation, no traceability, pest infection and diseases, climate shift and others. CropIn’s apps are hosted in the Amazon Web Services and data is accessible to all clients, during offline periods. All the solutions can be configured for the appropriate language.

### Interoperability

CropIn’s systems are integration ready, as they have an open API system, where any data relating to external devices, middleware software, farmers and field officers can be synchronised. The company is in the process of obtaining relevant compliance and audit related certification (applicable in the international and north American context); previous large clients like Syngenta have carried out various external audits to ensure data privacy.



# APPENDIX: AMEA and its members acknowledge that the Ag-tech landscape is vast and that this guide is not a comprehensive

## AG-TECH COMPANIES TO WATCH

list of the agricultural and financial inclusion technologies available to development practitioners and the agribusiness sector. The eight Ag-tech profiles shared represent the evaluative experiences of AMEA members, the owners, and supporters of these technologies, and the supporting documentation provided voluntarily to the AMEA Ag-tech WG. Most importantly, each profiled Ag-tech meet the first of six appropriate and disruptive criteria **member endorsement**. An endorsement is a display of public approval that represents a willingness to promote the tech company or partner who owns the technology.

Below is a list of Ag-tech that were explored and researched during Ag-tech WG discussions and meetings. It should also be noted that the below list is not exhaustive. In some cases, the Ag-tech were considered for endorsement, but further evidence and experience was needed by AMEA members. If you would like to discuss your company's or partner's Ag-tech solution please contact [casey.harrison@nuruinternational.org](mailto:casey.harrison@nuruinternational.org) (Ag-tech WG Lead) and/or [matteo@ameaglobal.org](mailto:matteo@ameaglobal.org) and we can set up an online meeting.



COMPANY/DEVELOPER	AG-TECH	ADDITIONAL LINKS
<a href="#">Techno Brain Group</a>	Digital Agriculture Platform	<a href="#">Website Blog Post</a>
<a href="#">Farmingtech Solutions Ltd.</a>	<a href="#">DigiCow</a>	<a href="#">National Press</a>
<a href="#">Digital Green</a>	<a href="#">Farmstack</a>	Digital Green <a href="#">Innovation Lab</a>
<a href="#">Ignitia</a>	Tropical Weather Forecasting	<a href="#">AMEA/Ignitia Exchange webinar</a>
<a href="#">mfarms Agribusiness Solutions</a>	Current technology <a href="#">solutions</a>	
Wefarm Limited	<a href="#">A farmer-to-farmer digital network</a>	<a href="#">International Press</a>
<a href="#">BanQu</a>	BanQu blockchain platform for supply chain management	<a href="#">Case Study</a>
<a href="#">Dimagi</a>	<a href="#">CommCare</a>	
BPC Banking Technologies	<a href="#">BPC MarketPlace</a>	
<a href="#">Cellulant Corporation</a>	<a href="#">Agrikore</a>	<a href="#">International Press</a>
<a href="#">IloveZoono</a>	Mobile payments to facilitate e-vouchers to pay out growers.	<a href="#">Case Study</a>
AgriSight Inc / FarmLogst	Farmlogs complete: a comprehensive farm management.	
<a href="#">Kisan Hub</a>	Crop intelligence platform connecting enterprises to growers.	
Airwoodt	Complete farm management	<a href="http://www.airwood.in/solutions/">http://www.airwood.in/solutions/</a>
AgroStar	Pre-harvest analytics	<a href="#">Presentation</a>
<a href="#">aWhere</a>	Weather Intelligence	<a href="#">Case Study</a>
<a href="#">Ganaz</a>	Farm employee management	
<a href="#">Accessagriculture</a>	Video extension services	<a href="#">Agtube</a>
<a href="#">Solinftec</a>	ALICE: AI solutions that offer solutions for real-time monitoring, optimization and traceability of agricultural operations.	
<a href="#">HelloTractor</a>	Facilitating the use of mechanisation tools, through rental models.	<a href="#">Case Study</a>