

Abstract/ Poster for Global Food Summit 2020

Solutions for creating rural prosperity: How legwork supports the delivery of technology solutions to the agricultural last mile

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Agriculture employs about 60% of the population in developing regions such as Ghana. Unfortunately in Ghana, less than 12% of smallholder farmers use improved inputs such as seeds and fertilizers, leading to low productivity. Despite the economic growth experienced in Ghana, agriculture has grown less than proportionately. Although Ghana has up to 6 million hectares of arable land, it remains untapped due to lack of infrastructural support and socio-economic development. Also, climate change has become a serious threat to livelihoods in Ghana. Drought, flooding, and extremely high temperatures have become an impediment to farmers' productivity, leading to the decline of agriculture production. However in order to fully appreciate the challenges of the agriculture sector in Ghana, one must fully understand the circumstances of the primary producers of food. Most smallholder farmers in Ghana live in remote communities with limited connectivity, poor roads and high illiteracy rate. So even though the solutions to their problems may exist, the true challenge lies in the ability to efficiently deliver these solutions to farmers in a cost-efficient way.

Given the above challenges, there lies a huge opportunity for young entrepreneurs to use modern digital technology to develop solutions that are well suited for rural farmers in the areas of;

- Climate-smart advise and farmer education
- Efficient & affordable distribution of quality resources
- Innovative finance mechanisms

These solutions will go a long way in helping rural farmers to do their work in a more efficient and environmentally friendly way.

Farmerline is a Ghanaian social enterprise that develops solutions to increase farmers' access to resources and simplify transactions throughout the agricultural value chain. Our focus on creating lasting profits for farmers has fueled our innovations from the very onset using a human-centred design approach. Our work enables access to information and resources among rural small scale farmers. Our unique solution combines human effort with technology to ensure a behavioural change in African farmers. In line with this, each farmer in our network is directly contacted by a field agent who offers training on the right use of inputs, business modelling and improved farming

practices. These training sessions are reinforced with mobile voice calls in local languages which farmers receive on a regular basis. In addition to this, we deliver location-specific weather updates to farmers, also in their local language. These weather updates are sourced from about 80 weather stations across the country, ensuring accurate predictions. Because of our direct contact with farmers, we are able to tell their geo-location, crop types and preferred language in order to deliver the right messages for their farming needs.

We leverage advances in mobile phones and machine learning algorithms to empower a network of field agents to efficiently deliver quality and affordable farm inputs bundled with intensive training to farmers in remote areas. We do this whilst reducing the cost of distribution. Our agents are locals of communities in which we operate, they understand the cultural dynamics and the challenges of the farmers. They easily connect farmers and the entire community to ensure that the impact of the services we deliver is felt at the community level as well. Our agents are well-educated people who are able to use technology to increase the efficiency of their work in the field.

Over years working with farmers, we have come to learn that financing inputs is one of the major challenges to accessing inputs in rural communities. We have developed an input financing scheme that enables farmers to access inputs just when they need it and pay later.

In order to ensure better profits for farmers, we developed a technology platform (Mergdata) that allows other organisations to also reach and transform the agriculture last mile. Mergdata is designed to offer communication, data collection, and supply chain analytics solutions to various organisations throughout the agricultural ecosystem. Our theory is based on the belief that, by providing farmers with reliable and timely information, training, quality resources and market access, we are enabling farmers to improve their behaviour, increase their yield and bargain for better income and profits.

Since its inception in March 2013, we have been able to directly reach over 40,000 farmers with information and inputs, increasing yields by 37% and incomes by 29%. The company has shown modest growth in services and products in partnership with 71 organisations to over 340,000 farmers across 24 countries. Our goal is to become a full-service provider of agricultural solutions to various players in the sector.

Keywords: smallholder farmers, food security, mobile technology, innovation, social enterprise, Africa; Ghana; rural communities, climate-smart advice, financing, technology, efficient distribution.