Agriworks Business Model Canvas

Grace Mukarusagara, Raïssa Urujeni, Natacha Akaliza, Lacey Bodnar, Nick Brozović
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THE DAUGHERTY WATER for FOOD GLOBAL INSTITUTE at the University of Nebraska

Key Partners

Equipment suppliers, including Chinese pump manufacturers and irrigation parts wholesalers.

Key Activities

Agriworks trains motorbike drivers to operate pumps and matches farmer irrigation requests to driver availability.

Managers check-in on the moto riders (e.g., do they show up on time, charge the right price, and return equipment in good condition?) and supervise cash transactions.

Key Resources

Human resources, including professional site managers and moto riders trained to operate irrigation equipment.

Irrigation equipment, including custom connecting devices and spare parts.

Intellectual property associated with pump connector plate.

Value Propositions

For smallholder farmers who require irrigation for horticulture during the dry season, Agriworks provides mobile, hourly irrigation service at an affordable cost. Working with a service provider saves farmers the upfront cost to purchase equipment, and reduces farmers' effort to acquire, operate, and maintain equipment.

For moto riders who earn sporadic income transporting short-haul customers, Agriworks hires them for full days during the dry season, providing predictable and higher income. This makes drivers more profitable, as their income increases relative to their operating expenses.

Customer Relationships

Personal relationships are important between Agriworks managers, farmers, and moto riders. Managers communicate frequently with each customer segment through phone calls and WhatsApp.

Channels

Phone calls, SMS, and WhatsApp messages are used to schedule irrigation.

Brand awareness spreads by word-of-mouth. There is currently no advertising.

Customer Segments

Agriworks serves smallholder farmers who:

- farm <1 hectare.
- are <240m from a surface water source and <5 km from the Agriworks offices.
- grow horticultural crops.

Agriworks also serves moto riders who:

- own or rent motorcycles.
- live and work near the Agriworks offices, as this reduces riders' costs to reach customers.

Cost Structure

Salaries for managers and executives.

Purchases and maintenance of equipment, including pumps, pipes, connector plates, and spare parts.

Overhead, including office space, storage space, and cellphone airtime.

Revenue Streams

Farmers pay a service fee of 10,000-12,000 UGXs/hour ($2.70-3.20 USD/hour). Half of the revenue goes to Agriworks and half goes to the moto rider.

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Raïssa Urujeni, Natacha Akaliza, Grace Mukarusagara, Lacey Bodnar, Nicholas Brozović

Agriworks, founded by Abraham Salomon, is an irrigation startup serving smallholder farmers in Uganda. The company works as a multi-sided platform. It has two distinct customer segments, and its business model connects them so that each segment derives value from interacting with the other in a way that it couldn't without the platform. Agriworks' two customer segments are smallholder farmers and "boda boda" motorbike drivers. Multi-sided platforms are unusual for smallholder irrigation, whether in Uganda or elsewhere. Well-executed multi-sided platforms with product-market fit can scale very well (for example, Uber, Airbnb, and Amazon Marketplace). This sparked our interest to understand more about how Agriworks operates. Our research team visited Abraham at the Agriworks office and field sites in Mbale District, in the eastern part of Uganda, in March 2023.

Customer segments

Agriworks serves smallholder farmers within the service area of the Agriworks branch offices. Due to the nature of Agriworks' irrigation technology, smallholders must be located near surface water, within a proximity of 240 meters. To reduce logistics costs, Agriworks serves customers no more than 5 kilometers from their offices. Smallholders who benefit the most from irrigation are those who grow horticulture crops, primarily vegetables.

Agriworks also works with "boda boda" motorbike drivers who either own or rent a motorcycle and are located near the Agriworks shops. These customers are normally taxi drivers in urban areas in Uganda, but they now utilize their motorbikes for water pumping. Motorbike drivers are a customer segment because Agriworks operates as a multi-sided platform, connecting smallholder farmers and drivers so that each group benefits in a way that would not be possible without Agriworks.

Value propositions

Agriworks offers smallholders growing cash crops the ability to irrigate conveniently at a relatively low cost. In our interviews with farmers, they told us how owning and operating irrigation equipment can be both challenging and costly. For example, farmers may spend an entire day moving irrigation pumps and pipes in and around their fields and then move them again to ensure safe storage at night. Additionally, ownership means spending time and money to maintain equipment. Renting from Agriworks is quite simple in comparison. Farmers pay one fee to irrigate and Agriworks manages all the transportation and maintenance.

Agriworks also provides stable, higher income to local "boda boda" drivers. Rather than operating their motorbike for taxi services, during the dry season (December-February), drivers become irrigation service providers, which offers a consistent and reliable source of income. An Agriworks driver told us that he always answers the call from Agriworks, because he can earn twice as much operating his motorbike for irrigation, rather than as a taxi.

Revenue streams

Agriworks earns revenue by charging farmers an hourly irrigation service fee of 12,000 UGX ($3.20 USD). The fee is split equally between Agriworks and the motorbike driver.

Key activities

Currently, Agriworks schedules all irrigation services through personal communication. This is a significant time commitment and a logistics challenge, which Agriworks is overcoming by hiring professional branch managers. Branch managers supervise motorbike riders, verifying that the rider arrived on time, charged the correct price, and returned the equipment in good condition.

To be successful, Agriworks trains motorbike drivers in irrigation technology. Drivers are responsible for setting up and operating the irrigation equipment, which includes a custom attachment and booster pump that allows the motorbike to function as an irrigation pump. This must be done carefully to avoid compromising the motorbike's stability or damaging the bike engine.

Customer relationships

Agriworks branch managers provide frequent communication with farmers and motorbike drivers. Currently, a manager may handle 25-35 drivers and 300-400 farmers per season. Farmers may contact either a manager or a motorbike driver to request irrigation, depending on their personal preference. However, if a farmer contacts a driver directly, the driver will still need to contact a manager to schedule irrigation for the farmer (Figure 1). Managers supervise equipment and make the schedule to ensure the service is provided for the number of hours agreed upon with the customer. Drivers do not own the irrigation pumps and pipes; the irrigation equipment is owned by Agriworks and motorbike drivers have to return the equipment each day.

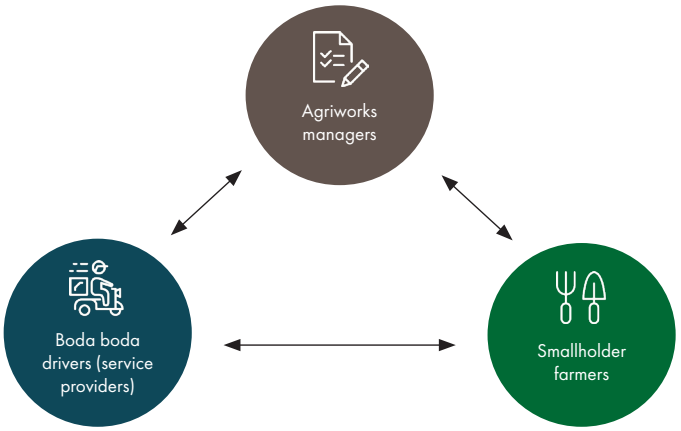

Figure 1. Communication pathways with customers

Key resources

A key technology innovation by Agriworks is a specially-designed adaptor plate that connects a commercially-available water pump to the bike engine. The pump Abraham uses is less bulky and more fuel-efficient than a traditional gasoline or diesel water pump. Spare parts are also an important resource. Screws for connecting devices break easily and can take a long time to be delivered. Agriworks keeps a small inventory of spare parts to reduce pump downtime. Finally, human resources are essential to the Agriworks business, including managers and motorbike drivers.

Key partners

Agriworks sources its pumps, adaptor plates, and spare parts from Chinese manufacturers and wholesalers.

Channels

In the beginning, Agriworks branch managers recruited customers. Now, with word-of-mouth recommendations, new customers are approaching Agriworks since the majority of farmers in the region are aware of Agriworks' services. Farmers call managers or motorbike drivers for service.

Cost structure

Costs of doing business include providing the profit-sharing payment to motorbike drivers, paying site managers' salaries and expenses, purchasing and maintaining equipment, renting office space and equipment storage, and conducting research.

Conclusion

Agriworks' irrigation-as-a-service business model provides a convenient and cost-effective option to smallholder farmers to access irrigation without having to own the irrigation equipment. Agriworks also provides a higher income to local "boda boda" drivers by enabling them to work as irrigation service providers. This business model supports economic development of rural communities by keeping money circulating through the local economy.

Photo showing the Agriworks mobile, motorbike-powered water pump.