

INCLUSIVE INNOVATIONS

Non-ICT Extension Services

Pairing productive inputs with extension services to facilitate uptake

HIGHLIGHTS

- Despite high unmet demand for extension services, farmers are reluctant to pay for it, especially when it was free in the past.
- Enterprises that sell productivity enhancement agricultural inputs include high-touch information and capacity building services as part of their farmer awareness-building and marketing activities.
- Enterprises partner with rural government bodies and NGOs to expand reach to farmers.



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Summary

Smallholder farmers lack information about use of yield-enhancing inputs, weather, pest control, and seeds and often find it difficult to access expert advice on production planning, business and marketing. This leads to low productivity and sustainability. Enterprises that sell agricultural inputs bundle demonstration plot sessions, farmer field school training, and exposure visits to increase farmers' understanding on effective use of the inputs, and as a result increase uptake of enterprises' products. Enterprises that engage with farmers on a contract farming basis or provide direct-from-farm market links can provide farmers advice on pre-harvest production practices and post-harvest marketing.

Development Challenge

Subsistence farming constitutes the largest component of agriculture across most developing countries. Small-scale farmers can become integral suppliers of food and strengthen food security globally if they are provided capacity building and techniques to enhance the productivity of their farms.¹ Factors such as lack of awareness, information and advisory support on agriculture inputs, farm practices, and new techniques limit agricultural productivity. Further, limited guidance on adequate storage solutions, post-harvest processing, financing mechanisms, and addressable markets restricts their potential for growth. Smallholder farmers require training and support in terms of capacity building and training in modern agricultural practices, technical support, such as soil analysis, market facilitation advice, and business management skills.

Historically, governments have provided agricultural extension services, including training, information, and capacity building services free of charge to small-scale farmers.² However, limited resources curtail governments' capacities to provide quality and timely extension services.³ For instance, despite 71 percent and 43.2 percent of Uganda farmers expressing interest in receiving extension services in crop and animal husbandry respectively, only 17 percent of crop and 21 percent of livestock farmers were served by extension services.⁴

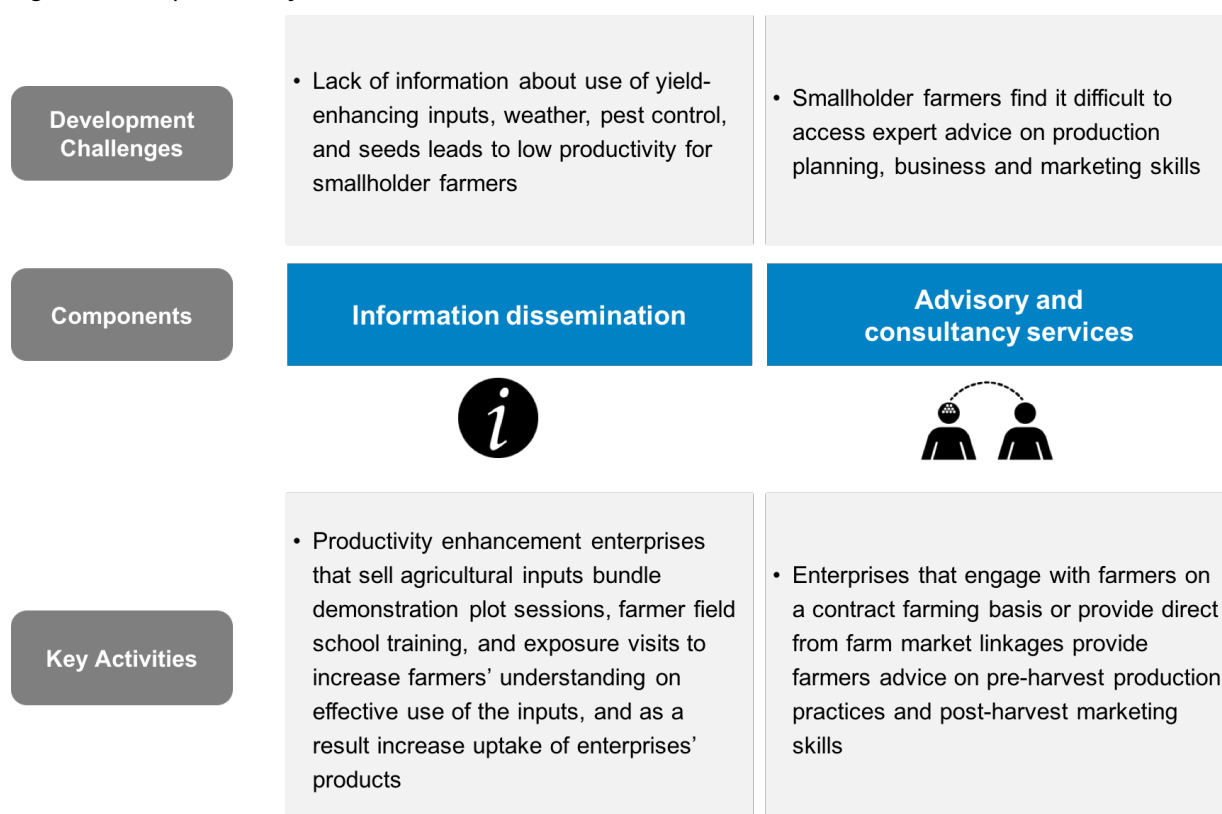
Of the 71 percent of Ugandan crop farmers who demanded extension services, only 17 percent were served by the government.

Similarly, in the Democratic Republic of Congo, research showed that only 17 percent of the sampled villages reported having had visits from any extension agent in the previous five years and 83 percent of villages reported not receiving any extension visits.⁵ In India, public extension agencies, including extension workers, *Krishi Vigyan Kendras* (or Farm Science Centres), and State Agricultural Universities, were a source of information for a mere 10 percent of households; another 41 percent sourced their information from either farmer-to-farmer interaction or traditional and modern forms of ICT (newspapers, radio, television, and internet).⁶ The given mismatch in demand and supply of extension services may seem to warrant private sector participation in providing these services.

Business Model

Agriculture extension is the application of scientific research and knowledge to agricultural practices through farmer education. Enterprises that provide farmers income-generating or productivity-enhancing products and services, such as agricultural inputs, direct from farm market links, or contract farming procurement models, bundle extension services in their service offerings to farmers. These enterprises increase farmer awareness to increase uptake of their products and services.

Figure 1. Components of the model



Information dissemination

Typically, enterprises whose core business model involves selling productivity enhancement agricultural inputs include high-touch information and capacity building services as part of their farmer awareness building and marketing activities. They disseminate knowledge to farmers through various modes of delivery including classroom workshops, demonstration plot visits, and peer-to-peer learning. As part of classroom training, agriculture experts and technicians provide theoretical knowledge on agricultural practices to a cohort of farmers. Demonstration plots involve on-field demonstration of successful agriculture techniques that farmers can observe, test and learn about. For example, The Real IPM and Hydroponics Africa conduct demonstration plot sessions related to the products that they sell. Peer-to-peer learning workshops involve training select village level farmers who disseminate the insights and information to other farmers in their communities. Most

enterprises partner with rural government bodies and NGOs in order to expand the reach of farmers that are served.

Advisory and consulting services

Typically enterprises that engage with farmers on a contract basis or provide direct-from-farm market linkages collectivize farmers and provide capacity building and training on aspects related to production, collection, storage, and processing. For example, Go4Fresh, a direct from farm marketplace conducts exposure visits for farmers registered on its platform in order to enable these farmers to understand urban market preferences, and as result, influence their farming practices. Equator Kenya, an agricultural exporter that works with farmers on a contract farming model provides climate-smart technologies, training and market linkages to smallholder farmers in Kenya. Babban Gona franchises farmer groups and markets maize on their behalf. Members get access to development and training in agronomy, financial literacy, business skills and leadership skills.

Challenges Limiting Financial Viability

Stand-alone non-ICT agricultural extension services tend to remain as not-for-profits or government programs. Farmers' belief in traditional agricultural practices is deep rooted, and their adoption is instinctive; hence, providing information alone will not encourage them to make the shift to consistently use modern and efficient practices. They lack the willingness to pay for information not linked with visible positive outcomes, and do not trust extension agents who are not from within their communities. Therefore, despite the need to bolster existing government agricultural extension services, providing solely non-ICT extension services is not a sustainable model for private enterprises.

Private enterprises also have to deal with mistrust and prejudice associated with poor past experience of farmers. Governments do not always take into consideration tailored needs of individual farmers while designing and delivering information and capacity building services which results in ineffective information application and dissemination to the recipient.⁷ Based on these experiences, farmers tend to mistrust the advice provided by extension agents. This means that private enterprises have to make significant effort to build trust among its target farmer base. It is a cost-intensive service considering farmers are reluctant to pay for information and training that they have previously been receiving free of charge. A survey⁸ of Ethiopian smallholder farmers showed that only 10.5 percent of the sampled farmers were willing to pay for extension services.

Ease of access to attend training and demonstration sessions also play a role in determining the willingness to pay for non-ICT extension services. For example, research⁹ on farmers in Uganda showed that 36.8 percent of households that were 2 kilometers or less from the nearest road were willing to pay for extension services in crop husbandry as compared to 34.5 percent among household located more than 5 kilometers from the nearest road. Leveraging on ICT to deliver extension services to remotely located smallholder farmers seems to be more cost-efficient for enterprises¹⁰; enterprises can minimize physical visits to farms and reduce hiring extension agents to deliver training and demonstrations. In comparison to non-ICT services, ICT as a means of dissemination for extension services also enables enterprises to provide a variety of information to farmers in a timely manner that is easily accessible, relevant, and affordable to small-scale farmers.¹¹

Research shows that extension services that are combined with income generating and financially effective activities for farmers are more valuable to smallholder farmers.¹² In fact, 90 percent of farmers in Ethiopia who expressed willingness to pay for extension services suggested that they will pay only if profit was guaranteed by adopting the extension advice and if payment could be made after production.¹³ Extension services without agricultural inputs or market access is not useful to farmers.¹⁴ A majority of private enterprises therefore provide non-ICT extension services as part of

Farmers are willing to pay for extension services only if these services are combined with profit-generating activities.

selling productivity enhancement inputs to farmers or engaging with farmers on contract farming models.¹⁵ Private commodity firms or input suppliers may provide extension services (such as pest management advice and best practices in irrigation) to their clients in order to create awareness and increase uptake of their products – examples include The Real IPM, myAgro and Sidai Africa. The provision of this service may be exclusive only to an enterprise’s customers or may be provided as an incentive for farmers to buy an enterprise’s products or services, like in the case of Hydroponics Africa which conducts training in demonstration plots and then sells its hydroponic systems to interested farmers.

Conclusion

Given the premise that the primary consumer base who require agricultural advisory services are small-holder farmers who don’t possess the ability to pay, non-ICT extension services often need to be bundled with additional yield-enhancing and income-generating services in order to attract these farmers. Farmers are also more willing to pay for information and training if other value-added services are also provided. However, agriculture companies that have been engaging and supplying farmers for decades and have large extension teams, often view extension services (a combination of ICT and non-ICT mechanisms, but always with a strong human/non ICT element for relationship building) as an “investment” in their supplier base to ensure they grow crops the right way and build trust etc. Private enterprises will also need to work closely with government agencies to increase their outreach. Enterprises may also leverage on technology-enabled extension support for widespread dissemination of information and training services to remotely located farmers.

Table 1. SEs: Non-ICT Extension Services

Company	Country	Solution Description
Hydroponics Africa	Kenya, Uganda, Tanzania	Hydroponics Africa specializes in manufacturing, installation and marketing of hydroponic systems. As part of its marketing strategies, it trains farmers in hydroponic farming technology. It conducts training sessions in its demonstration plots and charges a fee of USD 9.88, which is waived from the total price of a hydroponics system if a farmer opts to procure a system after attending the training.
Jain Irrigation Systems	Africa, Asia	Jain Irrigation Systems Ltd. (JISL), manufactures micro irrigation systems and offers to buy back the produce of these farmers through contract farming. The company also runs an institute to train its 3000 distributors and engineers to take orders, deliver products, and teach people how to use them. The distributors, along with Jain’s own agronomist and engineers, train more than 100,000 farmers every year on their farms. In addition, Jain’s procurement network consists of 2,100 contract farmers.
myAgro	Mali, Senegal	myAgro is an agricultural input aggregator and distributor that uses a mobile technology platform to provide access to fertilizer and seed packages on layaway. They also provide technical training, market access to premium buyers and access to asset loans for appropriate small-scale farm equipment. The training services focus on best practices in agriculture and increasing awareness of their products to farmers.
Sidai Africa	Kenya	Sidai provides crop inputs, livestock and veterinary services to pastoralists and farmers in Kenya through franchised and branded Livestock Service Centres that are equipped to provide quality animal health products and professional technical advice. The enterprise’s field agents visit crop and livestock farmers on their fields to disseminate knowledge on use of quality inputs to increase productivity and conduct demonstration on best practices in agriculture.
The Real IPM	Kenya, Zambia, Zimbabwe, Ethiopia, Tanzania, South Africa	The Real IPM Company Ltd. designs integrated pest management solutions for farmers in Kenya. It conducts training sessions in demonstration plots on best practices in agriculture and markets its pest management products.

ENDNOTES

- ¹ Extension and Advisory Services Rural Extension Services for Agricultural Transformation, Dr. Abou Berthe, 2015
http://www.afdb.org/fileadmin/uploads/afdb/Documents/Events/DakAgri2015/Extension_and_Advisory_Services_Rural_Extension_Services_for_Agricultural_Transformation.pdf
- ² Agricultural Extension The Kenya Experience, Precip, World Bank Operational Evaluation Department, 1999
- ³ Willingness to pay for extension services in Uganda among farmers involved in crop and animal husbandry, Economic Policy Research Centre, 2010
- ⁴ Willingness to pay for extension services in Uganda among farmers involved in crop and animal husbandry, Economic Policy Research Centre, 2010
- ⁵ Factors Affecting Performance of Agricultural Extension: Evidence from Democratic Republic of Congo, Catherine Ragasa, John Ulimwengu, Josee Randriamamonjy & Thaddee Badibanga, The Journal of Agricultural Education and Extension, Apr 2016
- ⁶ Public-Sector Agricultural Extension in India: A Note, The Journal of the Foundation for Agrarian Studies, 2016
- ⁷ Willingness to pay for extension services in Uganda among farmers involved in crop and animal husbandry, Economic Policy Research Centre, 2010
- ⁸ Determinates of small holder farmers willingness to pay for agricultural extension services: A case study from Eastern Ethiopia, Daniel Temesgen and Teferi Tola, African Journal of Agricultural Research, 2015
- ⁹ Willingness to pay for extension services in Uganda among farmers involved in crop and animal husbandry, Economic Policy Research Centre, 2010
- ¹⁰ Changing incentives for agricultural extension – a review of privatized extension in practice, Robert Chapman and Robert Tripp, Agricultural Research and Extension Network, 2003
- ¹¹ Delivery of Agricultural Extension Services to Farmers in Developing Countries, CTA, 2006
- ¹² Willingness to pay for extension services in Uganda among farmers involved in crop and animal husbandry, Economic Policy Research Centre, 2010
- ¹³ Determinates of small holder farmers willingness to pay for agricultural extension services: A case study from Eastern Ethiopia, Daniel Temesgen and Teferi Tola, African Journal of Agricultural Research, 2015
- ¹⁴ Common Framework on Agricultural Extension, Neuchatel Group, 1999
- ¹⁵ Changing incentives for agricultural extension – a review of privatized extension in practice, Robert Chapman and Robert Tripp, Agricultural Research and Extension Network, 2003