Improving agricultural extension with digital data

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In summary

- **Using digital dissemination tools, extension services can more easily report on achievement of targets**

- **Planners can use farmers' digital feedback to adapt planning of activities to local needs**

- **Policy-makers can review the work of extension services based on data from the ground**

Our project showed how digital tools can help to ensure that public money for agricultural extension is spent wisely. Governments often fund offices, training centers, and the salaries of extension officers, but cannot easily review the impacts of these expenditures. This is because the activities of extension agents are not monitored systematically. Extension services rarely generate quantitative data on the effects of their work.

Digital tools can provide decision-makers with evidence about extension delivery

Many extension officers use field books to report towards their direct supervisors. But that information cannot be aggregated at larger scales. This makes it hard for policy-makers to evaluate the work of the extension service as a whole.

Nowadays, large numbers of farmers can be reached through their mobile phones. When new ICT tools are used in the delivery of advice, this generates useful data for monitoring and evaluation.

We tested the new digital advisory service "Ushauri" (see Box below). As an example, this generated the following data:

- Which topics were disseminated

- How many farmers were reached

- How frequently each officer gave advice

Box: "Ushauri" digital service

Information exchange between farmers and extension services through voice messages

- An automated 24/7 hotline, accessible by normal phone calls, gives farmers access to pre-recorded agro-advisory messages adapted to local context. Farmers can also record further questions.

- At an online platform, registered extension officers can listen to their local farmers' questions. The officers record answers and send them as push-calls.

- To each farmer question, extension officers add thematic keywords that are stored online. Analysis of these keywords allows detecting trends in farmers' information needs.

Jonathan Steinke, Berta Ortiz-Crespo, Jacob van Etten

In our study, 86% of all registered farmers actively used the digital service, making one call per week, on average. This type of data allows setting performance targets, so the extension service can improve from season to season.

When all extension officers use the same digital tool, these data can be aggregated and analyzed at district, or even national scale. This way, policy-makers get better evidence about the performance of the public extension system.

Digital tools can inform more farmer-oriented extension programming

Extension services often follow a pre-designed project approach, focusing on certain value chains. But agricultural activities are diverse, and farmers' needs can change over time.

To help extension services better respond to farmers' current needs, digital tools can continuously collect and aggregate data on farmers' questions and information needs.

Using our "Ushauri" tool, extension officers answered farmers' questions, but also noted keywords – which major topic each question was about. This showed: Over the first season,

36% of all questions asked by farmers related to land preparation, and 14% of questions were about groundnut diseases.

This type of evidence can be used by planners. For example, the extension service can now plan upcoming training and dissemination activities about proper land preparation. Because all questions and keywords are stored at a single online platform, large-scale analysis can be performed, for example, at regional level.

Recommendations

- Increased use of digital tools in the provision of extension, and ICT training for extension officers.

- Extension officers should report on their activities using digital media. This could be done using a custom ODK survey, to be filled by each officer once per week.

- A set of key indicators for measuring the performance of extension services needs to be defined. These indicators should be calculated from the data reported by extension officers.

- Data about farmers' questions should be taken into account in the planning and programming of extension services.

Credit: Bioversity International/B. Ortiz-Crespo

The project

The "What Works Where for Which Farmer" project is funded by UK Aid from the UK government through the Sustainable Agricultural Intensification and Learning in Africa (SAIRLA) programme. The project has generated evidence about how digital tools can help smallholder farmers, especially women and youth, to access information that can support the implementation of sustainable agricultural intensification (SAI). Over the course of the project, novel concepts for digitally improving advisory services were tested in Ethiopia, Kenya, and Tanzania. Researchers, farmers, and extension agents specified the design of a new digital information service for SAI through a participatory design process.