Summary

- We created and tested a new digital information service together with extension services and farmers in South-Eastern Tanzania (→ Fig. 1).
- Through an automated hotline using interactive voice response (IVR), farmers have 24/7 access to a set of pre-recorded audio messages about aflatoxin control in the groundnut value chain.
- Farmers can also record further questions through their phones.
- Farmers’ questions are sent to an online dashboard (→ Fig. 2). There, agricultural advisors listen to them online, record and upload replies. They send the replies as automated voice calls back to farmers.
- Over time, the service, called “Ushauri”, generates insights into farmers’ information needs. This helps to iteratively improve the service (→ Table 1).

Results from a pilot in South-Eastern Tanzania

97 farmers / 28 days
86 % called at least once
389 calls
More than 13 calls per day on average
Each farmer made 4.6 calls on average

![Image](https://example.com/image1.png)

*Fig. 1. “Ushauri” service for semi-automated communication in agricultural advisory

![Image](https://example.com/image2.png)

*Fig. 2. Screenshot of an advisor’s online dashboard for managing farmers’ questions and recording/sending replies. Names replaced by fake names.

- Omar Rashidi has made a new question that has not been listened to yet (first line).
- When a farmers doesn’t answer the call (‘reply failed’), the advisor can send it again later.
- The advisor attributes keywords to each question (→ Table 1).

18 hours Farmers’ mean waiting time for an answer call
Once recorded, a reply can sent to multiple farmers. On average, advisors’ replies were sent: 2.8 times

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<table>
<thead>
<tr>
<th>Keyword Area</th>
<th>Frequency</th>
<th>Examples of keywords</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pests and diseases</td>
<td>29</td>
<td>rosette virus, rust</td>
</tr>
<tr>
<td>Inputs</td>
<td>9</td>
<td>seeds, fertilizer</td>
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<tr>
<td>Land preparation</td>
<td>34</td>
<td>spacing, soil type</td>
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<tr>
<td>Cultivation</td>
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<td>weeding</td>
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<tr>
<td>Harvesting</td>
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<td>when to harvest</td>
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<tr>
<td>Post-harvest</td>
<td>8</td>
<td>drying, storage</td>
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<tr>
<td>Market</td>
<td>3</td>
<td>market access</td>
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<td>Consumption</td>
<td>8</td>
<td>effects of aflatoxin</td>
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<tr>
<td>Other</td>
<td>4</td>
<td>-</td>
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</tbody>
</table>

Table 1. Keywords assigned to farmers’ questions highlight existing information needs

- Using an IVR service for providing agro-advisory is feasible. Farmers quickly learn to navigate the menu.
- For farmers, the possibility to ask questions anytime was more important than getting access to pre-recorded advice.
- Advisors appreciate the efficiency gains provided by asynchronous communication (handling new questions once per day) and answering frequent questions using an answer recorded earlier.
- User attrition due to lack of airtime was strong. Business models around advertisement (e.g. agro-vets, seed companies) could make the service toll-free.
- “Ushauri” generated useful insights about further knowledge and information needs, which can be used to improve the “Ushauri” service as well as general extension programming.