Co-design methodologies help to develop digital agro-advisory tools that fit well to the local reality. Developing digital services is an open-ended process that must begin with research. In our project, we first studied how farmers access agro-information and in which situations they struggle to get the right information. We found, for example, that farmers have difficulties reaching extension officers in case of questions. To develop a new successful digital service, it is also crucial to understand farmers’ technological preferences. In our case, agricultural radio was widely popular, although farmers often missed shows. This gave us an idea about which existing information flows should be reinforced (radio-like dissemination, calls to extension officers).

How to develop digital services that address real problems and get adopted:

Include smallholder farmers and extension agents in your design team.

Mobile phones are now widely common in rural areas. Nevertheless, adoption of new digital agro-advisory applications has often been weak. Many of these new services were developed outside of their target context, leading to mismatches with farmers’ preferences regarding mobile phone usage or information access.

Adoption increases when new digital services are developed together with their end users—smallholder farmers. But how? Co-design methodologies systematically involve farmers and extension agents from the beginning. This helps to understand existing information needs, select locally suitable technologies, and further adapt the design with the critical feedback from expected users.

Avoiding “design-reality gaps”

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Applying co-design in practice

Co-design takes time! It is crucial to commit to spending time with prospective end users, such as farmers, traders, or extension officers. In multiple, successive sessions, our participants developed ownership. Eventually, their creativity fully unfolded. Co-design participants not only voice opinions, but take decisions about the design of the service.
The “Ushauri” service was created in Tanzania and Kenya following a three-step methodology: “User-Centered Design”

1. **Inspiration.** Interviews with smallholder farmers and extension agents generated insights about the preferred channels of information flows in agricultural advisory. Farmers stated liking agricultural radio, but missing the broadcasts frequently. Extension officers stated they were sometimes overwhelmed by the large number of telephone calls by farmers.

2. **Idea.** The insights from the previous phase helped the design team to generate a design concept: A service that allows farmers to access “radio-like” content anytime through their phones. It should also reduce extension officers’ workload, but still allow farmers to get in touch with them. These ideas were shaped into prototypes and discussed with farmers and extension officers in participatory workshops until reaching consensus about the design.

3. **Implementation.** The digital service was defined as an automated hotline that farmers call to select and listen to agricultural audio contents. Farmers can also leave further questions in the hotline. This combines with an online platform, where registered extension officers listen to their local farmers’ questions and send answers via push-calls. Workload is reduced because answers, once recorded, can be sent to multiple farmers. “Ushauri” was then tested and evaluated in both countries.

**Box: “Ushauri” hotline and online platform supporting information flows between farmers and extension services**

In co-design sessions, we presented farmers and extension officers various design options for different features of a new, digital service. The participants tested the ideas in a playful manner. For example: We simulated the hotline by regular phone calls, to test farmers’ interactions. After discussing, the most popular options were eventually combined to a “prototype”, which was taken up by our software team.

Some participants tend to hesitate to openly share their thoughts in the group sessions. Using diverse, interactive methods, including game activities, helps to prompt useful feedback.

Prototypes and discussions should always focus on realistic situations that the participants can easily relate to.

**Policy recommendations**

- There is no gold standard for digital agro-advisory tools. Their development is an open-ended process. Expectations should not be placed on certain, pre-defined technologies or services.
- Farmers, extension officers, designers, and software developers should interact from the very beginning to avoid strong “design-reality gaps”.
- Successful co-design takes time. Projects need to allocate funding and personnel, and plan reporting lines accordingly.

**Moving from initial ideas to a functioning service through many iterations**

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.