Call for Proposals

Agricultural Information Exchange Platforms

Quick facts

- **Grant amount:** Up to EUR ~360k/USD 400K per MVP cohort for projects of 12 months in duration.
- **Scope:** Cohorts of multiple partners aiming to build minimum viable products (MVPs) of an **agricultural information exchange platform** that supports smallholder farmers and extension officers in **Kenya and Bihar, India**
- **Eligibility:** Cohort members need capacity to implement the MVPs in Kenya and/or Bihar, India and to manage grants according to GIZ's administrative rules.
- **Proposal submission deadline:** 26 May, 2023 at 23:59 (Anywhere on Earth time, UTC-12)
- **Submission form:** Submission Form - Agricultural Information Exchange Platforms (kobotoolbox.org)
- **Contact:** Christian Resch (christian.resch@giz.de) and Christian Merz (christian.merz@giz.de)

What is the challenge?

Advanced digital solutions like AI and machine learning can offer unseen access to information and possibilities for exchange. They can address **three significant challenges** with the current landscape:

1. **Inclusivity:** Many digital agricultural solutions currently struggle to address the needs of low-literacy and low-digital skill groups. We seek solutions that utilize innovative technology, such as language AI and machine learning (ML), to engage with smallholder farmers and extension officers in their preferred language and communication channels.
2. **Learning:** A significant portion of the existing content is static and lacks personalization. We seek solutions capable of learning from user behavior and context to tailor and recommend the most suitable content for everyone, particularly considering the agroecological context.
3. **Interactive Communication and Feedback:** Present systems often fall short in allowing farmers to provide feedback and engage in meaningful two-way conversations, including those that allow farmer to farmer learning. We seek solutions that facilitate substantial conversations at scale, for instance, by employing conversational and speech AI.

There is **lack of a global, cross-cutting platform aimed at advisory information exchange services** that is agile and adaptable for a variety of geographies and use cases. **Disjointed and nascent data ecosystems** make combining datasets for developing AI and ML solutions and dynamic and personalized information exchange difficult. We therefore aim to increase the agility in which information exchange platforms can be implemented in LMIC countries for the populations that need them the most.

How do we plan to solve it?

Together with you, we want to build minimum viable products of agricultural information exchange platforms that change this. An information exchange platform that utilizes newly available artificial intelligence (AI) and ML models, that works in local languages, integrates data and technology assets from content and solution providers to make digital advisory available to low-literacy and low-digital skill groups, dynamically and personalized. With you, we want to approach this based on an architecture that everyone can agree upon and that allows everyone to exchange, combine and reuse technology that is developed to interact with and to support farmers.

In Kenya and Bihar, India, we want to develop and test around 4 MVPs to serve specifically low-literacy and low-digital skill smallholder farmers, extension officers and intermediaries with better, more personalized content in their preferred language and to allow them to communicate their needs and ideas. **We want to especially reach women and other marginalized groups.**

Our vision is that in 3 to 5 years actors in various domains and geographies can provide low-literacy and low-digital skill groups with the information they need by easily setting up information exchanges based on the architecture and MVPs we will begin to develop in this effort. These information exchange platforms can combine various sources and use various channels and technology including SMS, feature codes (USSD), interactive voice response (IVR), automatic speech recognition (ASR), machine translation, messengers, chatbots and conversational AI, telephone lines, video or smartphone applications (apps).

Our principles

Our approach rests on three principles:

1) The use of digital public goods such as open AI, open standards and open-source software. The aim to build markets, ecosystems and structures for easier adoption of open AI and digital technology
2) The involvement of local partners including end users and local tech actors to strengthen local ecosystems in building solutions for their communities
3) Employing principles for the responsible and human-rights-based usage of data, AI and for Digital Development.

To achieve this, we need you

We are looking for **you and your partners** to combine all necessary skills and resources to develop an MVP – ranging from technical development capacity, community connections, know-how on small scale farming systems and design and user testing experience. You and your partners form a **cohort,** and it is up to you to decide who should be part of your cohort. MVPs should cover all functions and features of the information exchange platform but can also focus on specific parts of it (see figure 1 below for components of the information exchange platform). In the latter case, it is key that you can also test what you develop with the end users, e.g. by relying on modules developed by other cohorts or by using dummy or low-tech parts. Specific use cases can vary as well: One cohort may focus on use cases related to agroecological advice via voice bots; another one may provide market access information via apps serving farmer groups and co-op intermediaries. **We believe it is important that all cohorts have female and local representation and that, where needed, cohort members extend their capacities through working together.** If you solve a very specific issue shared across cohorts, you also can be part of multiple cohorts. We also realize that there are many existing solutions and want to encourage you to also improve and extend those – just note that we follow the principle of digital public goods including open AI and open-source technology.

If you are interested in joining a cohort but are currently lacking potential partners, **please contact us *early* with information on your strengths and core contributions and we will try to introduce you to others who are looking for partners.**

Who are the end users?

We want to support **smallholder farmers, intermediaries, and extension officers, especially female users and those with low-literacy and low digital skill**. In Kenya and India, these user groups face multiple challenges, e.g. service delivery models for public extension that scale, gender representation among extension workers or limited access to digital information and services. As technology usage and digital information continues to grow, these low literate and low-digitally skilled individuals are at risk of being excluded from information that might ultimately improve their quality of life. Against this backdrop, improved agricultural information exchange platforms could help to overcome these challenges by either targeting extension officers, by

providing trusted and personalized content to farmers directly or empower women by designing service that specifically address their ideas, needs and wishes.

Ultimately, we want **you to leverage you and your partners' expertise to design the details on how to achieve this.**

The architecture

Together with you and other stakeholders, we want to establish an open and modular architecture for the information exchange platforms. Our goal is to allow the reuse and recombination of what is developed as part of the individual MVPs. We would like to jointly explore the common ground for an architecture that leverages and integrates the many existing solutions and knowledge. It should enable easy uptake of the platform or its modules by others in other geographies and domains.

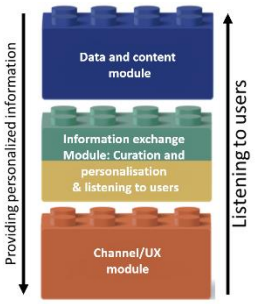

Figure 1: Basic architecture

How does this work?

We support explorative approaches and collaboration **to achieve our goal**:

1) **Explore innovative technology:** We want to provide an experimental space to create MVPs that combine proven concepts from a wide variety of approaches to serve the needs of smallholder farmers and extension officers
2) **Making this a collaborative effort:** We want to create technology assets as digital public good by a community of actors based on trust, cooperation and transparency. For this, we use a methodology that iterates between parallel work of the cohorts with phases of consolidation and recombination.

In parallel work, you and your partners in the cohort develop and test the MVPs. In phases of consolidation, you come together with other cohorts and DPG community members, synergize on pieces from each other and combine efforts. Together, you conceptualize a common architecture that allows to consolidate, recombine and reuse individual modules.

Two tracks

After a collective virtual kick-off, the project will start in two tracks with one ideation workshop each in Kenya and Bihar, India. We intent to invite around 5 to 7 cohorts and some individual actors to each workshop.

We explicitly encourage you to explore with your partners whether your MVP could serve smallholder farmers both in Kenya and Bihar because we value solutions that are applicable beyond individual country contexts. In case your concept spans both Kenya and Bihar, you and your relevant partners in each country will be invited to both ideation workshops. We welcome any initiative from you to gather first user feedback for your concept based on

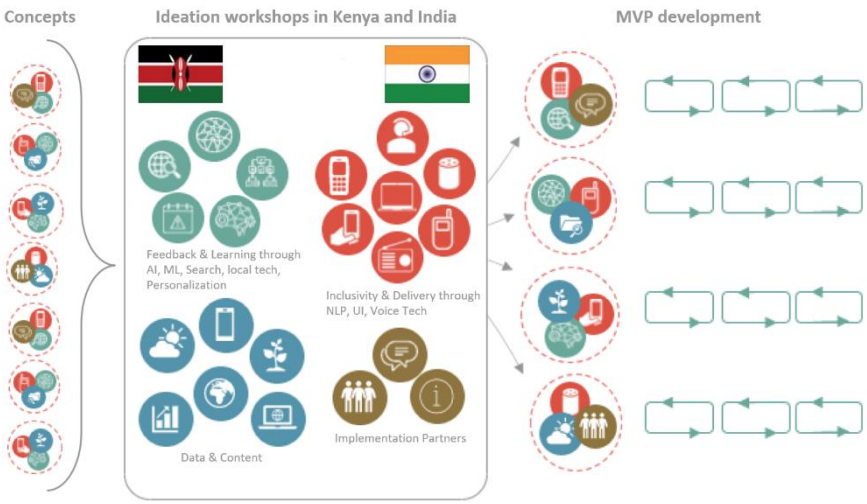

Figure 2: Process overview

mock-ups, wireframes or prototypes before the ideation workshop. This is, however, not a requirement as we understand that innovative solutions might need more time to gather useful user feedback.

With the **ideation workshops,** we pursue three main goals: (1) to **establish the final cohorts**, (2) to **finalize product visions** per cohort and (3) to define **a 1st iteration of the architecture** of the information exchange platform. In addition, we also want to identify potential bottlenecks in the local ecosystems with you (e.g. access to target groups, community engagement or data access) so that we can address them collectively. We will also invite **farmer and extension officer representatives** to the ideation workshops to provide us with their initial reactions to concepts based on their experience with the communities. Limited support for travel costs to the ideation workshops is available. (Please indicate in your response to the call whether you or your partners may need such support).

After the ideation workshops, you will have time to refine your concepts, combine efforts and onboard additional partners. This initiative also has limited resources and therefore a technical advisory committee will select about 4 cohorts to be supported in the development of the MVPs with financial means of about 400k USD per cohort for about 12 months of development and testing.

MVP development

As outlined above, we plan for you to work in parallel on the development of the MVPs of the information exchange platform in between recombination and consolidation workshops. These recombination and consolidation workshops provide a space to exchange user insights and developed modules, to combine efforts and take stock on the overall progress towards our shared goal. We will also provide light-weight exchange formats in addition to these workshops.

In parallel to the MVP development, we will also work with you and other stakeholders to refine and revise the architecture for the information exchange platform. We envision this as the place to explore and agree on the technical details that allow for reuse and the combination of our efforts.

What could your role be if you were not part of a cohort?

If for some reason becoming part of a cohort is not an option for you, there are other options to engage with us to contribute to achieving the goal. **If you would like to support, advise, or engage with us and the cohorts in any other way, please do not hesitate to contact us.** Specifically, we will conduct open sessions to collectively create the architecture of the agricultural information exchange platform to which you are warmly invited. In addition, we envision that the recombination and consolidation workshops will include public sessions to foster the exchange between the cohorts and the wider community.

Selection criteria

Submitted proposals will be evaluated against the following criteria stemming from conducted end user research in Kenya and India:

- **Technological innovation:** There already are many agricultural information exchange platforms and advisory services. We aim to contribute by working out how to improve information exchange platforms with the technology that is now available including AI, ML and language technology to improve the service they provide to smallholder farmers and intermediaries.
- **End user and community orientation:** The MVP should gain the trust of the end users. It should be designed with the end users, not for them. It should be suitable for smallholder farmers, especially those with low literacy and low digital skills, and intermediaries and consider their language needs. It should be able to provide actionable, localized and personalized information, taking into account financial access and other barriers. It should enable two-way communication by being able to provide and receive information.

- **Gender:** You should be conscious of gender-specific barriers and women's needs and reflect this in your strategy to explicitly serve women and account for potential bias and discrimination
- **Impact orientation, evidence and user feedback:** End user feedback will be key to develop MVPs that serve them. We also think it is important to gather data on the use and potential impact as far as possible already in the development effort.
- **Local representation** and involvement of local partners including the local technology and open-source ecosystem and including capacity building for stakeholders and cohort members where needed
- **Openness** of the developed resources and your willingness to participate in a process to build Digital Public Goods and re-use and improvement of existing platforms. Adherence to FAIR and CARE data principles.
- **Long term sustainability** and clear ownership of the MVP

Application instructions

Please submit your concept via this submission form. There, we ask you to share the following:

- Your proposal, including: (We will ask you for short responses to these question within the word limits provided in the submission form.)
    - **Project summary** (200 words)
    - **Use case** (400 words): Who are your end users? What is their specific problem that you try to solve? Will you work in Kenya or Bihar, or both?
    - **Your solution** (400 words): How do you plan to solve the problem? What technology do you want to use? How does technology help you to achieve this goal?
    - **User needs** (400 words): How do you intend to cater for the needs of women and low-literacy and low digital skill groups? Which risks to you see for the end users and how do you intend to mitigate them?
    - **User feedback & community engagement** (400 words): How do you engage with end users and their communities? How do you gather end user feedback?
    - **Evidence** (Optional, 200 words): What evidence do you already have that your approach works?
    - **Sustainability** (200 words): How do you intend to ensure sustainability beyond this initiative? Who will host the MVP? How do you intend to share and integrate the MVP with other initiatives and actors?
    - **Cohort setup** (400 words): Who are you and your partners? What capacities and experiences do you have? What is your connection to the tech and agricultural ecosystem in Kenya and/or India? Which other previous work do you and your partners plan to build on?
- Information on whether you are seeking other partners
- Budget outline
- Information on whether you or your partners would require travel support to participate in the ideation workshops

Due date: 26 May 2023 at 23:59 (Anywhere on Earth time, UTC-12)

Contact

If you have question, feedback or concerns, please reach out to Christian Resch (Christian.resch@giz.de) and Christian Merz (Christian.merz@giz.de)

Who is behind this?

FAIR Forward – Artificial Intelligence for All

The German Development Cooperation initiative “FAIR Forward – Artificial Intelligence for All” strives for a more open, inclusive and sustainable approach to AI on an international level. To achieve this, we are working together with seven partner countries: Ghana, Rwanda, Kenya, South Africa, Indonesia, Uganda and India. Together, FAIR Forward pursues three main goals:

1. Access to Training Data and AI Technologies for Local Innovation
2. Strengthen local technical know-how on AI
3. Develop Policy Frameworks for Ethical AI, Data Protection and Privacy

You can find more information on FAIR Forward here.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

As a service provider with worldwide operations in the fields of international cooperation for sustainable development and international education work, GIZ works with its partners to develop effective solutions that offer people better prospects and sustainably improve their living conditions. GIZ is a public-benefit federal enterprise and supports the German Government and a host of public and private sector clients in a wide variety of areas, including economic development and employment promotion, energy and the environment, and peace and security.

Bill & Melinda Gates Foundation

Guided by the belief that every life has equal value, the Bill & Melinda Gates Foundation works to help all people lead healthy, productive lives. We work with partner organizations worldwide to tackle critical problems in four program areas. Our Global Development Division works to help the world’s poorest people lift themselves out of hunger and poverty. Our Global Health Division aims to harness advances in science and technology to save lives in developing countries. Our United States Division works to improve U.S. high school and postsecondary education and support vulnerable children and families in Washington State. And our Global Policy & Advocacy Division seeks to build strategic relationships and promote policies that will help advance our work. Our approach to grantmaking emphasizes collaboration, innovation, risk-taking, and, most importantly, results. To learn more about the foundation's work, visit www.gatesfoundation.org