mAgri Design Toolkit
User-centered design for mobile agriculture

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frog is a global design and strategy firm. We transform businesses at scale by creating systems of brand, product and service that deliver a distinctly better experience. We strive to touch hearts and move markets. Our passion is to transform ideas into realities. We partner with clients to anticipate the future, evolve organizations and advance the human experience.


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mAgri

GSMA’s mAgri Program catalyzes scalable, commercial mobile services that improve the productivity and incomes of smallholder farmers and benefit the agriculture sector in emerging markets. The mAgri Program is in a unique position to bring together mobile operators, the agricultural organizations and the development community to foster sustainable and scalable mobile services that improve the livelihoods of smallholder farmers. This report is part of the mNutrition initiative, launched by the GSMA in 2014 in partnership with the UK Government’s Department for International Development (DFID).

For more information, please visit the GSMA M4D website at http://www.gsma.com/mobilefordevelopment. Follow us on Twitter: @GSMAm4d
The mAgri Design Toolkit is one of the outcomes of a two-year initiative led by the GSMA mAgri Program. From 2014 GSMA worked closely with six mobile network operators (MNOs) — Airtel Malawi, Dialog Sri Lanka, Grameenphone in Bangladesh, Ooredoo Myanmar, Telenor Pakistan, and Vodafone Ghana — to develop and launch life-changing mobile agriculture services.

The MNO-led services target smallholder farmers with a focus on providing agriculture information and advisory services, as well as nutrition-sensitive agricultural information and tips, and in some cases mobile financial services.

The GSMA mAgri Program partnered with frog to bring the user-centered design approach into the product development process, to better connect the mAgri services with the needs of farmers and other key actors in the ecosystem. frog has been coaching UX experts within each of the MNOs, working closely with them to establish and practice user-centered design methods tailored to the mobile agriculture context and needs. All the tools provided as part of the mAgri Design Toolkit have been tested, proven, and refined multiple times on the ground before being included in this collection.

The design toolkit is intended as an instrument to provide operational guidance to the development and implementation of mAgri services. Designing services around the needs of the rural user is critical to the success of mAgri services. Besides service design, MNOs and value-added-services (VAS) providers must form partnerships with ecosystem players, including agriculture content providers. They must also identify the best-suited technology delivery channels for their target markets, and then implement viable marketing strategies, including both above-the-line (ATL) and below-the-line (BTL) marketing. All of these elements are intertwined with user design and are critical to a viable and sustainable mAgri business model.

Please see the appendix for the suggested GSMA resources that should be used alongside this toolkit.
User-centered design helps MNOs and VAS providers to understand what farmers really need, thereby increasing the chances of launching successful mAgri services.

Many mAgri services that have launched in emerging markets have suffered from low user adoption, despite coming from leading mobile network operators and value-added service (VAS) providers.

The rural segment is highly price sensitive, requiring service providers to consider highly competitive pricing and freemium models. Reaching scale is therefore critical in order to derive commercial benefits.

Tackling these challenges can be daunting for any service provider, but the size of the agricultural sector and the number of people who rely on farming for their livelihood in emerging markets, means that service providers can’t ignore the opportunity to deliver services to this largely under-served segment. GSMA mAgri estimates the labor force in agriculture to be 552 million, and agricultural workers with a mobile phone to be close to 200 million in Sub-Saharan Africa and South Asia in 2015.

I feel adopting a user-centered design process is a must when you develop mobile products for a segment such as farmers. It gave me the confidence that we have got the basic elements of the product right in order for it to be accepted by the users. We are continuously sharing our learning with fellow product teams in Dialog to help them understand the user better.

Inas Jenabdeen, product manager, Dialog
WHY IT IS IMPORTANT

By integrating a deep understanding of the user when designing or adapting an mAgri product, service providers can drive successful innovation in the mAgri sector and generate services that can be commercialized faster and become more widely adopted.

The work that frog Design has been doing to support key actors to design products and services for smallholder farmers is really revolutionary and has certainly changed the way I think about serving the rural poor, even after 20 years of experience. Frog’s meaningful and compelling client-centric insights are helping field staff, management and boards of directors to design for and meet the needs of smallholders, making sense of how technology can have a human face and be impactful, while being sustainable.

Leesa Shrader, AgriFin Accelerate program director, Mercy Corps

While exploring a complex value chain like agriculture, we believe that the GSMA mAgri Toolkit can effectively translate user-centered design into sustainable social impact.

Muhammad Farooq Shaikh, director digital services, Telenor Pakistan

The user-centered design approach helps mAgri service providers get a much better understanding of this customer segment and their ecosystem, and then design appropriate products and services that meet the real needs and challenges of the customer. This approach is not typically followed by many MNOs or VAS providers, which has resulted in several poorly designed products that do not meet the demand and have gained little traction with farmers.

The user-centered design approach puts farmers and their experience at the center of the product and service design, and is grounded on a continuous and structured interaction with end users. This approach helps to translate the solid understanding of users who are into a product and value proposition, and ensures that all aspects of the service — from the overall experience to each detailed feature — are verified with target users.
PRODUCT DEVELOPMENT CYCLE

- Concept Development
- Concept Realization
- Execution & Scaling
- Maintain
- Plan
- Learn
- Create
- Develop
- Launch

START
The mAgri Design Toolkit displays a process together with a set of methods and tools to integrate user-centered design at any stage of the product development cycle.

The mAgri user-centered design process focuses on engaging the farmer at any stage of the product development, from the early moment of identifying the opportunities and generating concepts, to the advanced stages of product realization, execution, and scaling.

We can distinguish five moments in the user-centered design process, and map those against specific phases of the product development cycle.

1) The plan, learn, and create steps focus on building a foundational understanding of farmers and their ecosystem, preparing the team for field research (plan), gathering insights from users (learn), and transforming the data collected into opportunities and service ideas (create). The create step represents the transition from concept development to realization, dictating design and strategic decisions.

2) The develop stage looks at ways to extend the interaction with users during concept realization by providing tools and methods that allow the team to continuously evaluate the service idea, value proposition, and detailed features. The feedback collected is then used as input to refine the product execution and strategies.

3) After launch, the maintain phase evolves the tools and methods used during product realization to look at new design iterations and extensions of the product based on the actual user experience. The maintain phase also loops back into the planning phase, setting the stage for new cycles of research and idea generation.

It is important to note that this mAgri Design Toolkit does not cover other aspects that are critical to making an mAgri product successful (e.g., getting C-level buy-in). Please see the appendix for the suggested GSMA resources that should be used alongside this toolkit.
To apply a user-centered process, you need to first align on team setup, existing knowledge, and assumptions. Discuss the overall goal for your mAgri service and how to set up user research to ensure that farmers’ voices and their ecosystem are integrated into the mAgri service.

To create meaningful products, you need to be closer to user, market, and context of use. This understanding starts with going out in the field, asking the right questions, and testing hypotheses with farmers to guide you throughout the design process.

To develop a mAgri concept that is deeply rooted in insights captured in the field, you need to analyze the information collected, and identify the right opportunities for your mAgri service, considering all the diverse voices of the farmers and their ecosystem.

To shift from concept to realization, you need to prioritize features and plan how to create value, deliver, and capture it over time. While the product starts to take shape, organize additional validation sessions with the user to make sure you are going in the right direction.

The launch is only the beginning of the journey, not the goal. When the product launches, you need to continuously gather feedback from farmers and the ecosystem to refine and improve the product, looking at all the aspects that shape the final user experience.
How the Design Toolkit can help you come up with a new service idea.

If you have not yet developed an mAgri service, or the product you have in the market has not been successful, the user-centered design process can help build a deep understanding of farmers and the complex system of cultural, societal, financial dynamics they are part of. The learnings collected in the field become the foundation for your team to generate ideas for new mAgri services or to redesign the existing ones, giving the opportunity to always verify any design or strategic decisions against user insights.

**ENTRY POINT: PLAN**

**RECOMMENDED TOOLS:**
- ORGANIZATION READINESS, SUCCESS CRITERIA,
- ECOSYSTEM MAPPING, RECRUITING CRITERIA,
- RESEARCH PLAN, DISCUSSION GUIDE, IN-DEPTH INTERVIEW, INTERCEPT INTERVIEW, RESEARCH INSIGHTS,
- USER ARCHETYPES, CUSTOMER JOURNEY, VALUE PROPOSITION, MINIMUM VIABLE PRODUCT

How the Design Toolkit can help refine the product you are developing.

If you are developing a new mAgri service and you are unsure how it will be perceived in the market and generate adoption, the user-centered design process can help verify and adjust the product design and strategy before launch. You can test the mAgri service idea by creating rough prototypes of the service, evaluating the value proposition and prioritizing certain features with farmers, assessing the distribution strategy with all the actors in the ecosystem, and integrating your lessons into the product development process.

**ENTRY POINT: DEVELOP**

**RECOMMENDED TOOLS:**
- ECOSYSTEM MAPPING, RECRUITING CRITERIA,
- USER VALIDATION PLAN, DISCUSSION GUIDE,
- IN-DEPTH INTERVIEW, CARD SORTING, LOW-FIDELITY PROTOTYPES, TRUST CIRCLE, FARMING LIFE CYCLE,
- CONTENT PLANNING, AGENT TRAINING, GO-TO-MARKET STRATEGY, CUSTOMER JOURNEY ISSUES
Following a user-centered design approach does not guarantee a successful product; other factors need to be in place to get the desired outcome.

IT IS IMPORTANT TO CONSIDER THESE FACTORS WHEN YOU ADOPT A USER-CENTRED DESIGN APPROACH FOR YOUR mAgri SERVICE:

1. **INTERNAL BUY-IN**
   Make sure you have the buy-in and support from the right people in your organization. mAgri products that don’t have C-level visibility and support often struggle.

2. **MARKET SIZE ASSESSMENT AND BUSINESS CASE**
   Conduct a market sizing assessment and develop a business case for your mAgri service. This will be critical to get C-level and organizational buy-in.

3. **BUDGET**
   Secure budget for the research and design process. After reading the toolkit, work out the budget required to do all the activities relevant for your stage of product development.

4. **PARTNERS**
   Find the right partners to work with. MNOs and other mobile service providers need to partner with organizations that can bring the agriculture knowledge and support the research.
# How to read the toolkit:

## SECTION COVER

Each section opens with a description of the product development phase and a summary of the tools suggested for preparation, activities, and outcomes of the phase.

## TOOL DESCRIPTION & INSTRUCTIONS

Each tool is described with indication of time, materials, complexity, and resources needs (on the left side) and detailed instructions (on the right side).

## STORIES FROM THE FIELD

Some of the tools include real stories from the field that help put a specific tool into context and provide additional suggestions on how to apply it.

## TOOL TEMPLATE

When needed, a blank worksheet or template is also provided: you can easily print out the worksheets you need and start practicing!
To create something meaningful, you need to be closer to the user and to the market and contexts of use. This understanding starts with going out in the field, asking the right questions, and testing hypotheses with farmers to guide you throughout the design process.

**PREPARATION**
Make sure you are ready to start the field research

**DISCUSSION GUIDE**
**NOTE-TAKING TEMPLATE**

**ACTIVITIES**
Methods and tools that can help you run the research

**IN-DEPTH INTERVIEW**
**FARMING LIFE CYCLE**
**TRUST CIRCLE**
**HOUSE-FARM TOUR**
**INTERCEPT INTERVIEW**

**OUTCOMES**
Methods and tools to frame what you learned

**RESEARCH INSIGHTS**
**REFINED HYPOTHESES**
LEARN

☑️ PREPARATION
Made sure you are ready to start the field research

DISCUSSION GUIDE

NOTE-TAKING TEMPLATE
Discussion Guide

OUTLINE TOPICS, QUESTIONS, AND ACTIVITIES YOU PLAN TO FOCUS ON DURING THE FIELD RESEARCH, BUILDING A COMPLETE GUIDE FOR THE MODERATOR.

TIME
90+ minutes for each guide

MATERIALS
Text edit tool

COMPLEXITY
Medium: good understanding of ethnographic research methods

ROLES
Research team (define a research team by picking one or two representatives from each area)
LIST THE KEY INVESTIGATION AREAS
Start by listing the main areas you need to explore with each group of participants. Usually the interview is shaped around three to four main areas of exploration. Once you have identified them, assign an order, going from the high-level ones and then gradually digging deeper into the topic.

DETAIL YOUR QUESTIONS FOR EACH INVESTIGATION AREA
Focus on one investigation area each time and list all the questions that come to mind for that specific theme. Make sure the questions encourage participants to share stories and not just answer “yes” or “no.”

DON’T ASK LEADING QUESTIONS, SUCH AS “YOU NEED PRICING INFORMATION, CORRECT?” INSTEAD, ASK OPEN QUESTIONS, SUCH AS “WHAT TYPE OF INFORMATION DO YOU LACK THE MOST?”

ADD HYPOTHESES AND ASSUMPTIONS
Consider the main hypotheses and assumptions that your team have made and find ways to add them into the questionnaire. Don’t be concerned about asking opinions about hypotheses or ideas that may be wrong; this can help to get the conversation going.

DESIGN HANDS-ON ACTIVITIES
Sometimes it’s hard to cover all the points you identified in the discussion guide with direct questions. Review your list of questions at the end and mark the ones that would need the support of physical materials (e.g., cards) to generate more effective discussions.
Following the instructions provided during the first workshop with frog, we started off with the creation of the discussion guide used during the interviews in the field. We started by organizing sticky notes under the categories of “challenges” and “opportunities.” In parallel, we continued planning the overall research in terms of locations and types of participants (middlemen, farmers, experts, etc.).

With challenges, opportunities, and roles roughly defined, we brainstormed and populated trigger questions under each section of the discussion guide.

Our main intention was to ensure “triggering discussions” instead of a simple questionnaire approach.

Once the discussion guide was completed, we circulated it internally across the different teams involved for review.

While it was great to get stories from the farmers, we also had to make sure the discussion was being kept on track. At some points, we were picking keywords from the regional language and paraphrasing, to move the discussion back to the right direction.

The discussion guide was important to make sure we asked the right questions, but we soon memorized it so the conversation flowed more naturally.
Another interesting aspect that we learned is that printing out the discussion guide could sometimes be ineffective, as interviews were then perceived by the participant more as an exam than as an open conversation. We quickly realized that and memorized the questions included in the guide instead of bringing it in front of the interviewees.

One day was very windy. As soon as we started talking, the sheets of the guide were flying around, and we had to use rocks to keep everything on the table. [Kashif, Telenor UX expert]

DISCUSSION GUIDE: PAKISTAN TELENOR INVESTIGATION AREAS

1. INTRODUCTION AND HOUSEKEEPING [10 min]
2. WARM-UP [10 min]
3. FARMING LIFE CYCLE [30 min]
4. PURCHASE, EARNING, AND FINANCIAL SERVICES [30 min]
5. ADVICE, TRUST, AND DECISION-MAKING [20 min]
6. HYPOTHESIS TESTING [20 min]
7. TECHNOLOGY AND CONNECTIVITY [20 min]
8. WRAP-UP [10 min]
INTRODUCTION & HOUSEKEEPING [10 MIN]

Hi, my name is __________. We are here to learn more about you and find a way to design a better product to support your farming – and we have support from the government and MNO. This is because the farming industry is extremely important to Bangladesh, so with all the new development, it’s important to hear your voice too. We really appreciate all your honest feedback and insights; there is no right or wrong. We just want to hear your life stories. May we come in?

[Find a place for everyone to sit or stand comfortably at this point. Hand out your business card.]

INTRODUCE OTHERS IN THE GROUP

As you can see I have several colleagues with me today. They are here to take detailed notes so that I can focus on our conversation. I’ll be conducting the interview, ______ will be taking notes, and ______ will be taking photos.

[If simultaneous translator present: We also have a translator with us today, she/he will translate our conversation into English for my colleagues and me.]

RECORDING

We would like to record our discussion today, both video and audio, and will capture certain moments with a still camera. This is merely to ensure that we capture your thoughts and opinion accurately, and I can assure you that neither your name nor picture will ever be used publicly. Is it alright if we turn the camera on? At the end of our session we can review the photos together to make sure you approve of the photos we’ve collected.

TIME

We’ll spend the next ______ hours learning about your experiences with farming and your relationship with technology, your personal preferences, and general needs. Are you free for the next 2 or so hours? In this time we will do an interview between you and I, then we’d like to ask you to show us your phone, and take us on an informal tour of your farm.

Do you have any questions for me before we start?
**DISCUSSION GUIDE TEMPLATE**

Add questions you want to ask under each topic

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### 02 WARM-UP [10 MIN]

**GOAL:** GET A GENERAL UNDERSTANDING OF THE PARTICIPANTS' LIFE AND WORK.

1. What's your name?
2. Tell us about your family.
3. How is your typical day?
4. What do you do in your spare time?
5. What are your goals in the next few years?

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### 03 FARMING LIFE CYCLE [30 MIN]

**GOAL:** GET A GENERAL UNDERSTANDING ABOUT THE CROPS GROWN ACROSS THE YEAR AND DOCUMENT THE KEY TOUCH POINTS IN THE FARMING CYCLE.

- See Farming Life Cycle exercise and worksheet

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### 04 PURCHASE, EARNINGS, AND FINANCIAL SERVICES [30 MIN]

**GOAL:** UNDERSTAND PARTICIPANTS' FINANCIAL BEHAVIOR

1. What are your primary sources of income?
2. How do you pay your electricity, phone bills, and school bills etc.?
3. What are your primary expenses on the farm?
4. Do you have a bank account?
5. Have you taken out a loan in the past year?
05

ADVICE, TRUST, AND DECISION-MAKING [20 MIN]

GOAL: GET A GENERAL UNDERSTANDING ABOUT PARTICIPANTS’ DECISION-MAKING BEHAVIOR AND WHO INFLUENCES THEIR DECISIONS.

See Trust Circle exercise and worksheet.

06

HYPOTHESIS TESTING [20 MIN]

IF THE GOVERNMENT OR A PRIVATE COMPANY WOULD PROVIDE THESE SERVICES TO YOU FOR A SMALL FEE, WHICH WOULD YOU BE INTERESTED IN? (PLEASE RANK IN ORDER OF IMPORTANCE.)

- The mobile device is an unfamiliar channel for accessing agricultural information.
- Mobile phones subsidized with the farmer-centric services will have greater penetration in the market.
- Information sources must be trusted in order for the information to be used by the farmer.
- Farmers don’t follow best agricultural practices because they lack expert knowledge and advice.

07

TECHNOLOGY & CONNECTIVITY [20 MIN]

GOAL: GET A GENERAL UNDERSTANDING ABOUT THE PARTICIPANTS’ BEHAVIOR TOWARD TECHNOLOGY AND CONNECTIVITY, AS WELL AS THEIR DIGITAL LITERACY LEVELS AND POTENTIAL INTERESTS IN NEW TOOLS.

- Do you have a mobile phone? Could you show us?
- What do you use the phone most for?
- What are your favorite things to do on your mobile?
- Besides calling, do you use the phone for any other services?
- How can a mobile help you or improve your life?
08 WRAP-UP [10 MIN]

CLOSING QUESTIONS AROUND THEIR GOALS/DREAMS, THEIR HEALTH, AND THEIR FAMILY

Thank you for your time today
Review photos
Goodbyes
Gifts

Question: Follow-up information/views? Feedback?
SET A PREDEFINED TEMPLATE FOR NOTE-TAKING
TO KEEP DATA COLLECTION ORGANIZED AND
MAKE IT EASIER TO SYNTHESISE THE DATA LATER.

TIME
1+ hours practice, then used throughout field research

MATERIALS
Block notes

COMPLEXITY
Medium: fast analytical skills

ROLES
Note-taker (define who in the research team is going to take notes)
ASSIGN ROLES
Assign each team member a role to play during field research. The moderator will be in charge of asking the questions, and the others will be observers charged with taking notes and photos. Observers wait to ask questions until invited by the moderator.

REFLECT ON THE NOTE-TAKING TASK
Explain that careful in-field note-taking enables later synthesis of insights and reduces the tendency for team members to only remember information that confirms their own opinions. The notes from the field will become the rough data to build learnings upon.

DEFINE A NOTE-TAKING FORMAT
Establish a shared note-taking format for the observers. It can be analog or digital (usually analog works better in rural environments). Predefined categories or maps could help setting a grid for the note-taker. Experimenting beforehand is highly recommended.

APPLY IT!
During the interviews, write down each note following the predefined categories. Remember that a note can be a quote, but it can also be your observation of body language, behavior or of something else in the environment.
LEARN

ACTIVITIES

Methods and tools that can help you run the research

- IN-DEPTH INTERVIEW
- FARMING LIFE CYCLE
- TRUST CIRCLE
- HOUSE-FARM TOUR
- INTERCEPT INTERVIEWS
TIP: BE AWARE OF GENDER DYNAMICS. IF YOU WANT TO INTERVIEW WOMEN, CONSIDER AN ALL-FEMALE INTERVIEW TEAM OR HAVE A FEMALE MODERATOR. IF YOU ARE TALKING TO THE MALE HEAD OF THE HOUSEHOLD, HAVE A MALE MODERATOR.

In-depth Interview

Developing a deep understanding of farmers is critical when designing an mAgri product that meets the real needs of the target users.

HAVE FOCUSED ONE-TO-ONE CONVERSATIONS WITH SELECTED PARTICIPANTS TO DIG DEEP INTO THEIR HABITS, NEEDS, MOTIVATIONS, AND BEHAVIORS.

**TIME**
90-120 minutes per interview

**MATERIALS**
- Discussion guides
- Block notes
- Camera
- Audio recorder

**COMPLEXITY**
High: expert moderation skills

**ROLES**
- Interviewer
- Note-taker
- Photographer
INTRODUCE YOURSELF AND THE TEAM
Introduce yourself and your organization and explain your research objectives to set clear expectations. Always check in to understand if the participant is comfortable with the interview and try to build a context for the conversation.

APPROACH THE INTERVIEW WITH STRUCTURE
Establishing credibility is essential to set the right tone for the conversation. During the interview it’s important to cover all the aspects mentioned in the guide while remaining open and listening carefully, to shape the dialog around what the participant shares and says.

ASK WHY
Always ask why as a way to dig deeper into the answers and uncover hidden needs and motivations. Even when the participant might say something you expect, ask why to understand the key motivation behind his or her actions and answers.

FINISH POLITELY!
At the end of the interview, thank the participant and offer a small gift (appropriate in the local context) to show appreciation for his or her time. If you took photos, let the participant review the photos to make sure he or she is comfortable with them.

TIP: MAKE SURE THAT NO MORE THAN FOUR PEOPLE ATTEND AN INTERVIEW SESSION TO AVOID INTIMIDATING THE PARTICIPANT

ALWAYS ASK WHAT LANGUAGE THE PARTICIPANT IS MORE COMFORTABLE WITH AND BRING WITH YOU SOMEONE WHO CAN SPEAK THE LOCAL DIALECT AND TRANSLATE
BUILD AN UNDERSTANDING OF THE WHOLE FARMING LIFE CYCLE TO IDENTIFY PAIN POINTS AND OPPORTUNITIES THAT CAN BE USED IN THE PRODUCT DESIGN.

TIME
30 minutes for each farmer interviewed

MATERIALS
- Worksheet
- Pen

COMPLEXITY
Medium: good facilitation skills

ROLES
Interviewer
**EXPLAIN THE EXERCISE TO THE PARTICIPANT**
The objective is to discuss the overall farming experience, focusing on each step in the journey. The worksheet provides an initial sequence of phases (plan, prepare, grow, harvest, sell). Feel free to add and remove phases while talking.

**DISCUSS THE KEY CHALLENGES**
Start from the first phase and ask the farmer to describe what happens (e.g., “How do you plan the seeding?”) and list the key challenges in that moment (e.g., “What is the most difficult part of planning?”). Write notes directly on the worksheet, phase by phase.

**ASSIGN EMOTIONAL RATING**
Once the map is completed, ask the participant to assign an emotional rate to each moment (e.g., “Do you feel satisfied or frustrated in the plan phase? Why?”). Feel free to draw the emotions using symbols that you think farmers would understand (e.g., different face expressions, star rating, ticks, and crosses).

**[OPTIONAL] ADD THE FINANCIAL LAYER**
Complete the farming life cycle by asking what is the financial income and expenses of each stage. Adding the financial layer to the overall map of challenges and emotions will provide a better understanding of how to design the mAgri service to suit the farmer’s financial cycle.
FARMING LIFE CYCLE MAP

Describe the experience phases to identify pain points and opportunities.

01 PHASES

02 EMOTIONS

03 CHALLENGES

04 FINANCIAL PLAN
UNDERSTAND WHO FARMERS TRUST FOR INFORMATION; THESE INSIGHTS ARE A FOUNDATION FOR THE MAGRI PRODUCT AND MARKETING AND DISTRIBUTION PLANS LATER.

TIME
20 minutes exercise

MATERIALS
• Worksheet
• Player cards

COMPLEXITY
Low: basic moderation skills

ROLES
Interviewer
BUILD YOUR TRUST CIRCLE
Prepare a set of little cards that represent all the players you identified in the ecosystem (one player per card).
Do not exceed more than eight players or the exercise can become overwhelming.

RECOMMENDATION: IF YOU ARE AT THE BEGINNING OF A LONG FIELD RESEARCH TRIP, YOU MAY CONSIDER LAMINATING THE CARDS TO BETTER PRESERVE THEM

SHOW THE WORKSHEET AND CARDS TO THE PARTICIPANT
During the in-depth interview, place the cards in front of the participant so that he or she can see every item. Introduce the cards one by one and explain the circles visualized in the worksheets to represent the different degrees of trust for information around the farmer.

MAP THE PLAYERS ON THE CIRCLES
Pick the first player you want to discuss and ask the participant how much he or she trusts that player. You can place the card on the circles yourself based on the answer, or ask the participants to do that by themselves. Place the players who they trust the most at the bottom and center of the sheet, and players they trust less to the outer circles.

ASK WHY
The exercise is just a trigger to dig deeper into certain aspects. Before jumping to the next players, always ask why the current one has been placed in a certain position. At the end review the entire map, trying to make some broader considerations about the ecosystem and user’s trust.
The trust circle exercise was a fundamental exercise that helped inform our mAgri product. We learned many surprising insights about who the farmers trust for information, and it was very different from what we expected. To prepare for the exercise, we identified eleven players who are part of the farmer’s day-to-day life for information and made a card to represent each one. We could bring the cards into the fields. The trust circle exercise was great to do at the beginning of in-depth interviews with farmers, because the farmers enjoyed the hands-on activity and the discussion.

While each farmer had some differences in whom he or she trusted, it was overall quite consistent across all the interviews. There were three key insights from the exercise that surprised us. First, we learned that farmers don’t really trust other farmers, and mainly see each other as competitors. Second, we were surprised that mobile network operators (MNOs) are not trusted for farm information. Third, we learned that farmers gain trust by validating the information with many sources (e.g., middlemen, input dealer shop, TV, and radio), and won’t just trust a single source of information instantly.

The trust circle exercise was a fundamental exercise that helped inform our mAgri product. We learned many surprising insights about who the farmers trust for information, and it was very different from what we expected. To prepare for the exercise, we identified eleven players who are part of the farmer’s day-to-day life for information and made a card to represent each one. We could bring the cards into the fields. The trust circle exercise was great to do at the beginning of in-depth interviews with farmers, because the farmers enjoyed the hands-on activity and the discussion.

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Based on these trust dynamics, we designed the mAgri service that incorporates these learnings. We wanted each farmer to feel the mAgri service is customized for him or her only and not the whole community. We want farmers to get information that makes them more competitive.

Also, we have been working closely with popular farmers in the community and the government to build more trust with the mAgri service, as we know that the mobile operator brand isn’t enough to get farmers’ trust. Also, we decided to make the content sound like a conversation between many different types of people, so that farmers feel they are getting a diverse set of voices on the advice.

We have just completed the user testing with some farmers, and received positive feedback about farmers trusting the mAgri service.

The go-to-market strategy and content for the mAgri service was heavily influenced by the findings from the trust circle exercise.

[Lilian, frog program manager]
Trust Circle Cards

Bring the trust circle cards into the field to help fill out the trust circle map.
House-farm Tour

ASK FOR A GUIDED TOUR THROUGHOUT THE CONTEXT OF WHERE A FARMER LIVES AND WORKS TO OBSERVE HABITS, NEEDS, AND CHALLENGES.

TIME
30–60 minutes for each farmer interviewed

MATERIALS
- Discussion guide
- Block notes
- Camera

COMPLEXITY
Low: good observation skills

ROLES
- Interviewer
- Note-taker
- Photographer
INTRODUCE YOURSELF AND THE TEAM
Introduce yourself and your organization and explain your research objectives to set clear expectations. Always check in to understand if the participant is comfortable with the interview and try to build a context for the conversation.

ASK FOR A TOUR
Only start the house-farm tour after you have gained trust with the farmer. If you think the farmer feels comfortable with you, ask the farmer to take you through his or her day visiting the specific places where farm activities take place. Carefully listen to every detail while observing the context.

DEEPLY INVESTIGATE UNCLEAR ITEMS
Take time after the visit to ask more questions that help you clarify what you observed during the tour. Focus on elements that have a correlation with your research purpose and be sure to pursue every avenue.

RECOMMENDATIONS: THIS ACTIVITY HELPS BUILD PERSONAS. TRY TO BRING YOUR MARKETING TEAM INTO THE FIELD

AFTER THE VISIT
Don’t forget to thank the farmer for participating! If the tour was particularly insightful, you may consider returning to engage the same interviewee for concept testing during the next phase of the project. Debrief with the rest of the team.

USE THE OBSERVATION TO VERIFY WHAT THE FARMERS SAY: SOMETIMES PEOPLE DON’T TELL THE EXACT TRUTH OR FORGET KEY DETAILS
TRY TO UNDERSTAND THE WHOLE ECOSYSTEM BY QUICKLY GETTING THE PERSPECTIVE FROM SEVERAL PLAYERS. GO BEYOND JUST THE FARMER TO DISCLOSE OTHER PAIN POINTS AND OPPORTUNITIES.

**INTERCEPT INTERVIEW**

**TIME**
15–30 minutes each intercept interview

**MATERIALS**
- Block notes
- Camera

**COMPLEXITY**
Low: good conversation skills

**ROLES**
- Interviewer
- Photographer
PLAN FOR SOME INTERCEPTS
Identify key players from the ecosystem mapping exercise that you need to understand further. Find ways to intercept these key players who may provide interesting perspectives. For example, go to farmer market days, visit input stores, and attend NGO events. Have a short discussion guide with three to five questions that you would like to ask them.

INTRODUCE YOURSELF BRIEFLY
Once you find somebody you would like to briefly interview, introduce yourself and explain what you are doing with the project. Ask if he or she is willing to answer a couple of questions that would help you better understand some aspects. Be transparent about your goals.

ASK A FEW QUESTIONS
The most important thing to remember with intercept interviews is that the people you talk to may not have a lot of time to respond to questions. Try to find a quiet spot to talk and keep the conversation to less than 30 minutes. You can also run a group interview in the same way.

[OPTIONAL] FOLLOW UP LATER
If the data collected is interesting and you want to explore it further, ask the intercept to meet at another time to continue the conversation or schedule another time for an in-depth interview. Intercepts are usually a great opportunity for snowball recruiting (where you ask participants to connect you with other interesting people for interviews).
LEARN

Methods and tools to frame what you learned

OUTCOMES

RESEARCH INSIGHTS

REFINED HYPOTHESES
MEET WITH YOUR TEAM AFTER EACH INTERVIEW AND AT THE END OF THE DAY TO CAPTURE RESEARCH INSIGHTS WHILE THEY ARE FRESH.

TIME
30 minutes at the end of each interview; 1 hour at the end of the day

MATERIALS
• Post-it notes
• Block notes

COMPLEXITY
Medium: good collaboration and analytical skills

PARTICIPANTS
Research team (define a research team by picking one or two representative from each area)
STOP SOMEWHERE
Find a place for the full team to comfortably meet right after each interview. Do not let much time elapse between the interview and the debrief to ensure you remember the details of every interview. If you are traveling with a car, the trip usually becomes a good moment for debriefing.

ELABORATE INSIGHTS INDIVIDUALLY
The lead should have five key questions that everyone should individually answer about that interview within 10 minutes. These questions could span from asking about the interview profile, to surprising insights, to how to improve the next interview process.

DISCUSS ALL THE INSIGHTS COLLECTIVELY
Team members should take turns reading aloud their answers for each of the questions. Team members should add onto another person’s insights, rather than repeat them. Each story or insight should have one Post-it note.

IF YOU IDENTIFY KEY INSIGHTS RELATED TO GENDER DYNAMICS, TRY TO VALIDATE YOUR THINKING WITH LOCAL EXPERTS

IF YOU HAVE MULTIPLE TEAMS RUNNING RESEARCH IN PARALLEL, FIND A WAY TO DEBRIEF TOGETHER (e.g., VIDEO CALL)

LEAVE TIME TO DEBRIEF ABOUT THE ENTIRE DAY
During the evening the team can cluster similar insights and stories together and discuss the implications of learnings to the mAgri service. Be clear about what new questions or hypotheses need to be tested for the next round of interviews. Refine your insights throughout the entire duration of the research.
Refined Hypotheses

PUT THE INSIGHTS INTO ACTION BY USING THEM TO **VERIFY AND REFINE THE ORIGINAL HYPOTHESES AND EARLY PRODUCT CONCEPTS.**

**LEARN / ACTIVITY**

**TIME**
30 minutes exercise

**MATERIALS**
- First hypothesis
- Notes and insights

**COMPLEXITY**
Medium: good analytical skills

**PARTICIPANTS**
- Project manager
- UX lead
- Technology
- Marketing
- Content
REVIEW THE FIRST HYPOTHESIS
Do this exercise with a mix of people, some who have done the field research, some who have not. Start from the initial hypothesis that was created in the planning phase. Write each hypothesis on a separate sheet of paper.

MAP YOUR RESEARCH INSIGHTS AGAINST EACH HYPOTHESIS
Have the field team add Post-it notes under each statement, representing a key related insight collected in the field. Try to write insights that represent patterns you observed several times; don’t challenge an hypothesis with single intuitions.

REFINE THE STATEMENTS
Compare the initial statement with the insights from the field, and decide whether you can confirm the hypothesis or need to change it. If needed, come out with a new statement that represents the revised hypothesis. Repeat the same exercise for all the statements.

CONTINUE TO ITERATE
The hypothesis refinement is an ongoing activity that continues to evolve as the research and the project evolve. Hypotheses, as well as archetypes and ecosystems, can vary over time, reflecting changes in the market, technology, and society.
Our team developed an initial mAgri concept before going into the field. The aim of the product was to develop a stronger link between farmers and buyers by providing better access to information (e.g., prices, amount of crops to sell).

Before our first interview, the team took some time to write down the assumptions about farmers that led to the concept. After spending about three weeks in the field, we revisited each hypothesis and found that many of them were not correct.

For example, we thought that farmers lacked access to pricing information. During the field research, we learned that farmers have multiple ways to learn about pricing, such as radio, TV, and other farmers who just went to the market. However, just knowing the price doesn’t empower them, because they are located far away and their quantity of crops isn’t large enough to negotiate for a better price. So, what farmers actually lack is negotiation power. Having more information about the latest prices doesn’t necessarily mean a farmer is more empowered to get a better price.

The initial hypothesis was significantly updated after the field research.

We are really happy that we tested the hypothesis in the field rather than sticking to them and failing once we launch the product.
The hypothesis exercise was important for the team to realize that basic assumptions we make about the farmers aren’t always correct, and it’s important to speak with the farmers themselves to make sure we aren’t imposing our own values and beliefs into the design.

Farmers don’t have access to latest market prices and buyers, resulting in diminished bargaining power and income.

After doing research we realized that it is always better to step out of the office and understand the user better before creating products.

Even though my family farms, most of my hypotheses about the farmers were proven to be wrong.

[Sathyan, Dialog UX expert]

<table>
<thead>
<tr>
<th>INITIAL ASSUMPTIONS</th>
<th>REVISED HYPOTHESIS</th>
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<tbody>
<tr>
<td>Farmers don’t have access to latest market prices and buyers, resulting in diminished bargaining power and income.</td>
<td>Farmers do have timely access to market prices and buyers, but access to information alone does not necessarily improve negotiation power.</td>
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<tr>
<td>Farmers don’t follow best agricultural practices and misuse chemicals because they lack expert knowledge and advice.</td>
<td>When expert advice seems risky and not validated, farmers deliberately ignore the advice and follow their own instinct and experience.</td>
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<tr>
<td>The mobile device is an unfamiliar channel for accessing agricultural information.</td>
<td>The mobile device is an unfamiliar channel for accessing information, and it won’t replace the other channels in the short term as a key, trusted source of farming information.</td>
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</table>
To apply a user-centered process, you need to first align on team setup, existing knowledge, and assumptions. Discuss the overall goal for your mAgri service and how to set up user research to ensure that farmers’ voices and their ecosystem are integrated into the mAgri service.

To create meaningful products, you need to be closer to user, market, and context of use. This understanding starts with going out in the field, asking the right questions, and testing hypotheses with farmers to guide you throughout the design process.

To develop a mAgri concept that is deeply rooted in insights captured in the field, you need to analyze the information collected, and identify the right opportunities for your mAgri service, considering all the diverse voices of the farmers and their ecosystem.

To shift from concept to realization, you need to prioritize features and plan how to create value, deliver, and capture it over time. While the product starts to take shape, organize additional validation sessions with the user to make sure you are going in the right direction.

The launch is only the beginning of the journey, not the goal. When the product launches, you need to continuously gather feedback from farmers and the ecosystem to refine and improve the product, looking at all the aspects that shape the final user experience.
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<tr>
<th>Preparation</th>
<th>Activities</th>
<th>Outcomes</th>
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<td>- Organization Readiness</td>
<td>- Success Criteria</td>
<td>- Recruiting Criteria</td>
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<td>- Team Setup</td>
<td>- Mission Countdown</td>
<td>- Research Plan</td>
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<td>- Collaboration Tools</td>
<td>- Hypothesis Generation</td>
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<td>- Ecosystem Mapping</td>
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<td>- Discussion Guide</td>
<td>- In-Depth Interview</td>
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<td>- Note-Taking Template</td>
<td>- Farming Life Cycle</td>
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<td>- Trust Circle</td>
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<td>- House-Farm Tour</td>
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<td>- Intercept Interview</td>
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<td>- User Archetypes</td>
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<td>- Life Cycle Mapping</td>
<td>- Customer Journey</td>
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<td>- Minimum Viable Product</td>
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<td>- Advocate &amp; Skeptics Map</td>
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<td>- User Validation Plan</td>
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<td>- Low-Fidelity Prototypes</td>
<td>- Agent Training</td>
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<td>- Go-to-Market Strategy</td>
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Further reading on Agri VAS

MARKET OPPORTUNITY AND BUSINESS CASE

Agricultural value-added services (Agri VAS): market opportunity and emerging business models (2015)
Estimates the size of the potential Agri VAS market in South Asia and Sub-Saharan Africa and presents an in-depth analysis of the business models in the market today.

Agricultural machine-to-machine (M2M): a platform for expansion (2015)
GSMA investigates the opportunity for mobile operators in the Agricultural M2M space.

TECHNOLOGY

Guidelines for agricultural call centers (2014)
Lays out a step-by-step process for establishing an agricultural call center.

Agri VAS functional requirements and best practice: SMS & IVR (2014)
Outlines the different types of Agri services that can be delivered with SMS and IVR, common pitfalls, and best practices.
APPENDIX

CONTENT

Mobile market information for Agri VAS operators: a quick start guide (2013)
Applying the concept of market information systems to mobile delivery service channels.

Guidelines for creating agricultural VAS content (2013)
A guide to understanding the scale and scope of different agricultural content requirements and a step-by-step process to deliver against them.

PRODUCT & MARKETING

Women in Agriculture: a toolkit for mobile services practitioners (2014)
Outlines the case and considerations for designing an Agri service “through a gender lens.”

Mobile user analytics: a case study in mAgri (2014)
This guest study from the M4D Impact team discusses the value of user analytics for improving mobile agriculture services.
AGRI VAS

**Agricultural Value Added Services (Agri VAS): Market Entry Toolkit (2011)**

This comprehensive document explores the opportunities for Agricultural VAS and covers emerging best practices on marketing, service design, and business modeling.

**mAgri CASE STUDIES**

Outlining progress and best practices in mobile agriculture services.

**Vodafone Turkey Farmers’ Club (2015)**

An Agri-VAS and bundled service

**Airtel Green SIM (2015)**

An Agri-VAS service in India

**mFarmer case studies and deep dive analyses of Tigo Kilimo, Airtel Kilimo, Orange’s Sènèkèla and Handygo’s mKisan services**, co-funded by the mAgri team under the mFarmer initiative (2014-15)

**Micro-insurance in mobile agriculture (2015)**

Analysis of ACRE, a Kenyan micro-insurance product for farmers

**mKilimo (2011)**

An agricultural call center funded by the mAgri Program
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