HUMAN CENTERED DESIGN

TOOLKIT

2ND EDITION

H C D

HUMAN CENTERED DESIGN

AN INTRODUCTION

2ND EDITION

ARE YOU LOOKING TO...

Bring innovation to the base of the pyramid? Enter a new region? Adapt a technology to your region? Understand the needs of constituents better? Find new methods for monitoring and evaluation?

THIS TOOLKIT WAS MADE FOR YOU.

It contains the elements to Human-Centered Design, a process used for decades to create new solutions for multi-national corporations. This process has created ideas such as the HeartStart defibrillator, Cleanwell natural antibacterial products, and the Blood Donor System for the Red Cross—innovations that have enhanced the lives of millions of people.

Now Human-Centered Design can help you enhance the lives of people living on less than $2/day.

This process has been specially-adapted for organizations like yours that work with communities of need in Africa, Asia, and Latin America.

Human-Centered Design (HCD) will help you **hear** the needs of constituents in new ways, **create** innovative solutions to meet these needs, and **deliver** solutions with financial sustainability in mind.

LET'S GET STARTED.

WHY DO HUMAN CENTERED DESIGN?

Because it can help your organization connect better with the people you serve. It can transform data into actionable ideas. It can help you to see new opportunities. It can help to increase the speed and effectiveness of creating new solutions.

We are excited about our ability to continue replicating the Human-Centered Design process to create and bring to scale new approaches to provide eye care in the developing world.

—VISIONSPRING, INDIA

HCD surprised us because even people who didn't know a lot about the topic were able to create so many solutions.

—IDE VIETNAM

WHY A TOOLKIT?

Because the people are the experts.

They are the ones who know best what the right solutions are. This kit doesn't offer solutions. Instead, it offers techniques, methods, tips, and worksheets to guide you through a process that gives voice to communities and allows their desires to guide the creation and implementation of solutions.

Because only you know how to best use it.

Human-Centered Design is a process broken into a set of tools. This is so that you can pick and choose which techniques work best for your context and your situation. Use it alone or along with PRISM, value chain analysis, PRA, triangulation or other methods you use in your organization to imagine and implement new ideas.

THE THREE LENSES OF HUMAN-CENTERED DESIGN

Human-Centered Design (HCD) is a process and a set of techniques used to create new solutions for the world. Solutions include products, services, environments, organizations, and modes of interaction.

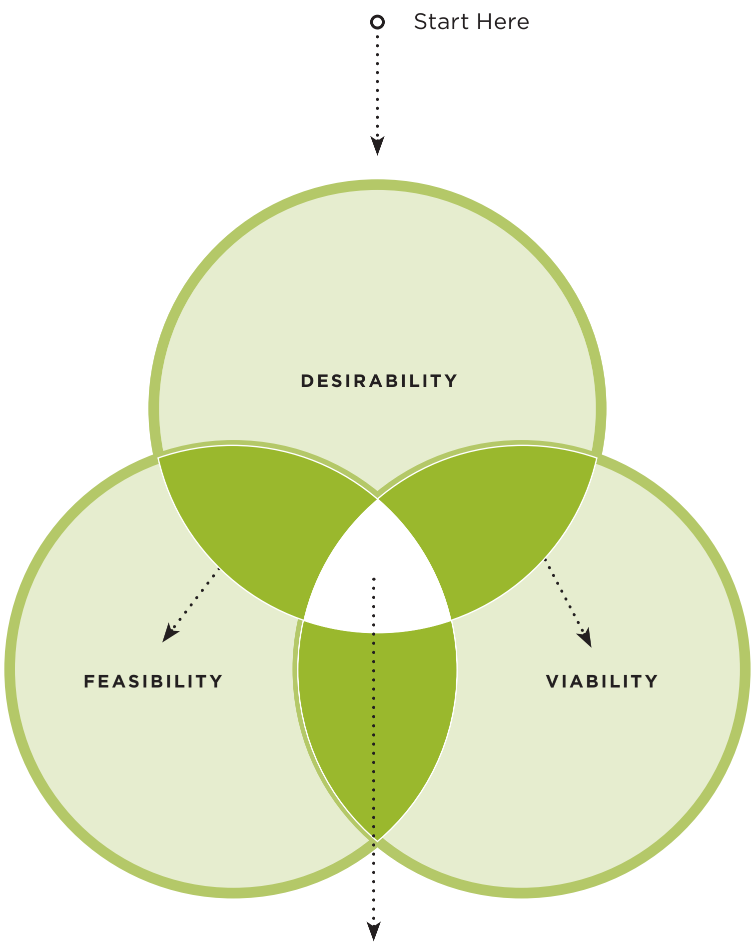
The reason this process is called “human-centered” is because it starts with the people we are designing for. The HCD process begins by examining the needs, dreams, and behaviors of the people we want to affect with our solutions. We seek to listen to and understand what they want. We call this the Desirability lens. We view the world through this lens throughout the design process.

Once we have identified a range of what is Desirable, we begin to view our solutions through the lenses of Feasibility and Viability. We carefully bring in these lenses during the later phases of the process.

DESIRABILITY → **What do people desire?**

FEASIBILITY → **What is technically and organizationally feasible?**

VIABILITY → **What can be financially viable?**



The solutions that emerge at the end of the Human-Centered Design should hit the overlap of these three lenses; they need to be **Desirable, Feasible, and Viable.**

THE HCD PROCESS

The process of Human-Centered Design starts with a specific Design Challenge and goes through three main phases: Hear, Create, and Deliver. The process will move your team from concrete observations about people, to abstract thinking as you uncover insights and themes, then back to the concrete with tangible solutions.

H — HEAR

During the Hear phase, your Design Team will collect stories and inspiration from people. You will prepare for and conduct field research.

C — CREATE

In the Create phase, you will work together in a workshop format to translate what you heard from people into frameworks, opportunities, solutions, and prototypes. During this phase you will move together from concrete to more abstract thinking in identifying themes and opportunities, and then back to the concrete with solutions and prototypes.

D — DELIVER

The Deliver phase will begin to realize your solutions through rapid revenue and cost modeling, capability assessment, and implementation planning. This will help you launch new solutions into the world.

To recall these phases, simply remember H-C-D.

HOW TO USE THIS TOOLKIT

This toolkit will guide you through an innovation process based on HCD methodology.

A FLEXIBLE TOOLKIT

Using this toolkit on its own will yield great solutions. However, HCD is also very flexible and can complement or be supplemented by various other approaches. Methods such as Participatory Rural Appraisal (PRA), Subsector/Value Chain Analysis and Triangulation can all be incorporated into the HCD methodology provided here. For example, your Design Challenge may necessitate knowing about the mapping of village resources. If a team member is familiar with a PRA method effective for gathering this kind of information, it should absolutely be incorporated into the process.

So be creative and rigorous in choosing and mixing your methods – the best outcomes might come from the most unexpected combinations!

TIP

There is the “facilitator” version of the Toolkit. If you are the facilitator, use the notes provided to you in the margins as rough instructions of how to move your team forward through the innovation process. Please add any additional instructions, methods, or techniques you feel would be relevant to your design challenge.

WATCH OUT

The facilitator must user his/her power wisely. The facilitator is a role to lead the team through the process; this person can certainly contribute to the content of the ideas, but should not use his/her power to sway decisions.

BEST PRACTICES FOR INNOVATION

By completing thousands of innovation and design challenges, IDEO has learned a few rules for creating an environment to facilitate innovation. See if any of these can be applied to your organization.

MULTI-DISCIPLINARY TEAMS

The challenges you face are very complex and are likely to have been explored by predecessors. You will have a higher likelihood of success at solving such complex, difficult, and already-examined problems by intentionally assembling the right team of people. This team will work best if it consists of a core group of 3-8 individuals, one of whom is the facilitator. By mixing different disciplinary and educational backgrounds, you will have a better chance of coming up with unexpected solutions when these people approach problems from different points of view.

DEDICATED SPACES

Having a separate project space allows the team to be constantly inspired by imagery from the field, immersed in their post-it notes, and able to track the progress of the project. If possible, find a dedicated space for your design team to focus on the challenge.

FINITE TIMEFRAMES

Many people notice that they work best with deadlines and concrete timelines. Likewise, an innovation project with a beginning, middle, and end is more likely to keep the team motivated and focused on moving forward.

TIP

To ensure that there is a balanced gender perspective, involve female staff in all phases of this process.

SCENARIOS OF USE

The following Scenarios of Use help to outline four possible ways to use this toolkit for innovation. The first two scenarios utilize the principle of finite timeframes to frame the entire challenge, while the latter two demonstrate how small sections of the toolkit can be used to provide motivation, concrete goals, and a path to getting unstuck in longer-term programs.

01

SCENARIO 1: THE WEEK-LONG DEEP DIVE

This mode of engagement forces the design team to work quickly to gather and analyze data, then moves rapidly to solutions, prototypes and plans. The one-week timeframe is a familiar timeline that is long enough to gain good understanding, yet short enough to allow a stressed organization to put limited resources against a challenge. This format is good for early-phase learning and for spurring new thinking.

Use When You:

» Need to learn about a new area or challenge quickly.

» Need to kick-start thinking about a long-standing intractable problem.

» Want to refresh the thinking of the staff.

Pull Out and Use:

» All sections of the Toolkit in sequence.

TIP

Know the limitations of your data and your early prototypes when doing a Week-Long Deep Dive. If validity is necessary without much time for research, use secondary data to triangulate your findings. Build a plan for iterating early prototypes for future refinement.

02

SCENARIO 2: THE SEVERAL-MONTH DEEP DIVE

A longer Deep Dive can last several weeks to several months. This mode of use enables a deeper, more nuanced understanding and theorization of a complex challenge or problem. With a longer time frame, more locations can be examined and more stakeholders in the value chain can become participants in the process.

Use When You:

» Need to design robust solutions because the funds for implementation are available.
» Have the resources to allocate on thinking through a multi-faceted challenge.
» Need to engage many actors in the process, such as partners, value chain stakeholders, funders, etc.

Pull Out and Use:

» All sections of the Toolkit, allowing the nature of the Challenge to dictate the appropriate timeframes for each Phase.

TIP

When you have more time for a Deep Dive, it may be tempting to spend the vast majority of time doing more research. Pay attention and notice when you are hitting decreasing returns and stop the research when you are learning little new information. Remember, in the early stages, you are doing research to understand the problem and inspire the team. There will be time to validate later.

03

SCENARIO 3:
ACTIVATING ALREADY-EXISTING KNOWLEDGE

Often organizations have a great deal of research and already-existing information but are unable to translate all that information into actionable solutions. In this case, the processes outlined in Create and Deliver can help your team transform what you know into things you can start doing.

Use When You:

» Have a lot of data and you don't quite know what to do with it.
» Have been hearing interesting stories from the field staff and want to see if those stories can yield new opportunities or solutions.
» Have a robust research methodology that you like better than the one in this toolkit.

Pull Out and Use:

» Create
» Deliver

TIP

Even if you have the information captured in a different form (in Word documents, for example), take the time to translate that information through the Story Sharing methods outlined in the first part of the Create booklet.

04

SCENARIO 4: COMPLEMENTING EXISTING LONG-TERM ACTIVITIES

Many HCD methods are applicable at different times to the challenges your organization will face in Technology Adaptation, Monitoring & Evaluation, etc. We hope that you will find some of the techniques useful in infusing the spirit of innovation in your day-to-day activities, even when there is no explicit Design Challenge at hand. Pick and choose your methods as you wish to help complement your daily work.

Use When You:

» Want a new technique to add to your work routines.
» See a method in this toolkit that you find applicable to the daily challenges you face.
» Can't set aside the resources for an HCD project, but want to infuse the spirit of Human-Centered Design in your everyday work.

Pull Out and Use:

» Any pieces of your choosing.

TIP

For example, if you're working on adapting an existing technology and have already-existing information about the context you want to adapt to, use Steps 3, 4, 5, and 6 in the Create book to guide you through several iterations of opportunity identification, brainstorming, prototyping, and user feedback.

On the other hand, if you are looking for help in gathering data for M&E reporting, use the exercises in the Field Guide to supplement your current activities.

HEAR

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H C D

HEAR: GOALS

Designing meaningful and innovative solutions that serve your constituents begins with understanding their needs, hopes and aspirations for the future.

The Hear booklet will equip the team with methodologies and tips for engaging people in their own contexts in order to understand the issues at a deep level.

Goals of this book are to guide:

» WHO TO TALK TO
» HOW TO GAIN EMPATHY
» HOW TO CAPTURE STORIES

Great technique for getting farmers to tell stories.

—IDE ZAMBIA

H C D

HEAR: OUTPUTS

At the end of the Hear section, prepare to go to the field by completing these worksheets from the Field Guide:

Recruiting Plan
Research Schedule
Identity, Power & Politics
Group Interview Guide
Individual Interview Guide

Outputs of the Hear Phase are:

- **» PEOPLES' STORIES**
- **» OBSERVATIONS OF CONSTITUENTS' REALITY**
- **» DEEPER UNDERSTANDING OF NEEDS, BARRIERS, & CONSTRAINTS**

Qualitative research methods enable the design team to develop deep empathy for people they are designing for, to question assumptions, and to inspire new solutions. At the early stages of the process, research is generative — used to inspire imagination and inform intuition about new opportunities and ideas. In later phases, these methods can be evaluative—used to learn quickly about people's response to ideas and proposed solutions.

H C D

HEAR: THEORY

What will qualitative research methods do?

Qualitative methods can uncover deeply-held needs, desires, and aspirations. It is particularly useful in early-stage research to test assumptions about the world, and when we cannot assume that the researchers already know the entire universe of possible answers, beliefs, and ideas of the participants.

Qualitative methods can help unveil people's social, political, economic, and cultural opportunities and barriers in their own words.

Qualitative research can also be powerful for analyzing and mapping the relational dynamics between people, places, objects, and institutions. This is possible because phenomena in the social world tend to be internally related (that is, they are mutually-dependent and co-constituted).

By examining the extreme ends of a set of phenomena in depth, the entire universe of relationships can be illuminated since other instances will fall somewhere on the map of relations and links. Once a set of relationships are identified, they can be interrogated using interpretive methods or further refined for quantitative testing.

What will qualitative research methods not do?

Qualitative methods will not determine "average" behaviors/attitudes or answer questions such as: "Are people in X region more likely to do this than in Y region?" This is because qualitative methods do not cover a sample large enough to be statistically significant.

Deep understanding, not broad coverage, is the strength of qualitative research.

In later phases of the design process, quantitative research becomes a good complement to understand, for example, the potential adoption of a new solution or to understand how the effect of solutions will vary from region to region.

STEP 1

IDENTIFY A DESIGN CHALLENGE

The foundation of HCD is a concise Design Challenge. This challenge will guide the questions you will ask in the field research and the opportunities and solutions you will develop later in the process. A Design Challenge is phrased in a human-centered way with a sense of possibility. For example: “Create savings and investment products that are appropriate for people living in rural areas.”

TIP #1

The Design Challenge can be decided by organizational leadership or can be developed through a team-based approach. In either case, begin by identifying challenges people are facing or springboard off opportunities the organization is interested in exploring. Narrow this list down to one specific design challenge.

TIP #2

A good Design Challenge should be:

» Framed in human terms (rather than technology, product, or service functionality)

» Broad enough to allow you to discover the areas of unexpected value

» Narrow enough to make the topic manageable

WATCH OUT

The challenge you choose may be related to adoption of new technologies, behaviors, medicines, products, or services. This might lead to framing a design challenge that is organization-focused, such as “How can we get people in villages to adopt savings accounts?” Instead, to act as a springboard for innovation, the challenge should be re-framed in a more human-centered way, such as “How can we create a financial safety net for people in villages?”

TRY

Start the design challenge with an action verb such as “Create”, “Define”, “Adapt”, etc. Or phrase the challenge as a question starting with: “How can...?”

Facilitator Notes

Time:
1-1.5 Hours

Difficulty:
★★★★★

Step 1: Work with leadership to identify a list of criteria for the challenge. (i.e. Does it need to fit into a certain timeframe? Does it need to have a geographical or topical focus? Does it need to fit into an existing initiative? Does it need to explore new opportunities?)

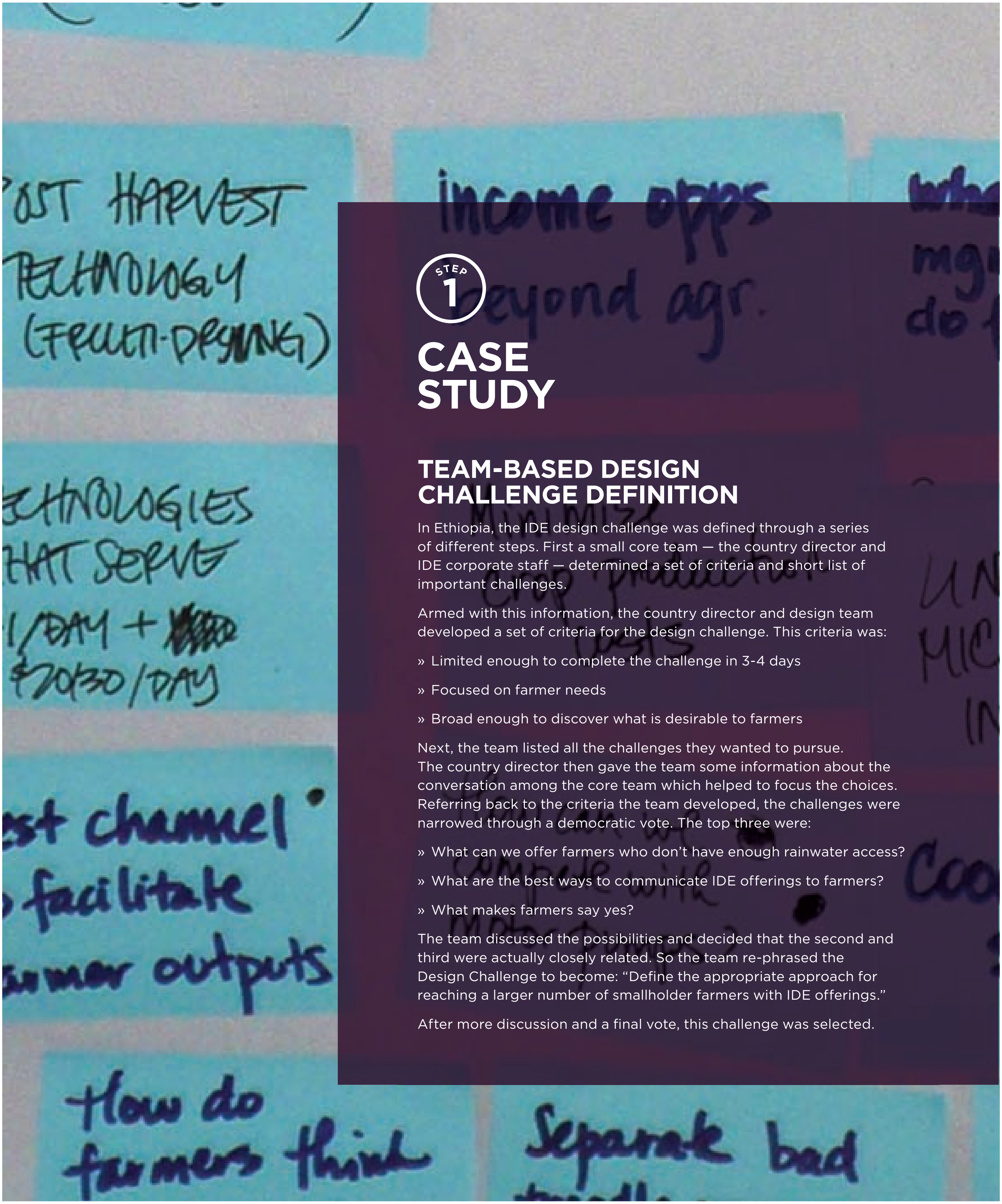
Step 2: With leadership, the design team, and/or constituents, make a list of the challenges you are facing.

Step 3: Re-frame those challenges from the constituent’s point of view and broader context.

Step 4: Vote or select the top two or three challenges based on your criteria.

Step 5: Narrow to one challenge with input from key stakeholders.

Step 6: Write a succinct, one sentence Design Challenge to guide the design team.



STEP 1

CASE STUDY

TEAM-BASED DESIGN CHALLENGE DEFINITION

In Ethiopia, the IDE design challenge was defined through a series of different steps. First a small core team — the country director and IDE corporate staff — determined a set of criteria and short list of important challenges.

Armed with this information, the country director and design team developed a set of criteria for the design challenge. This criteria was:

» Limited enough to complete the challenge in 3-4 days

» Focused on farmer needs

» Broad enough to discover what is desirable to farmers

Next, the team listed all the challenges they wanted to pursue. The country director then gave the team some information about the conversation among the core team which helped to focus the choices. Referring back to the criteria the team developed, the challenges were narrowed through a democratic vote. The top three were:

» What can we offer farmers who don't have enough rainwater access?

» What are the best ways to communicate IDE offerings to farmers?

» What makes farmers say yes?

The team discussed the possibilities and decided that the second and third were actually closely related. So the team re-phrased the Design Challenge to become: "Define the appropriate approach for reaching a larger number of smallholder farmers with IDE offerings."

After more discussion and a final vote, this challenge was selected.

STEP 2

RECOGNIZE EXISTING KNOWLEDGE

Facilitator Notes

Time:
30-60 mins.

Difficulty:
★★★☆☆

Step 1: Post the design challenge so that the team can see it.

Step 2: Hand out post-it notes to the design team, and ask them to write what they already know about the topic. Have one piece of information per post-it note.

Step 3: Ask each person to read their notes, and post them under the design challenge. Ask others to disagree or challenge any of the assumptions that come out.

Step 4: Ask the team to write down on post-it notes what they don't know about the challenge and read their notes. Post these notes in a different area.

Step 5: Group the post-it notes into themes to help the team develop research methods, a recruiting plan, and the interview guide.

Chances are good that you already have some knowledge about the topic. Conducting a "What Do We Know?" session helps call forth existing knowledge related to the Design Challenge. Once documented, you can freely focus on discovering what you don't yet know.

TRY

First, on Post-Its, write down what you already know about the Design Challenge, including:

» What people need or want

» What technologies can help in this challenge

» What solutions or ideas are being tried in other areas

» Any early hypotheses about how to solve the Design Challenge

Are there any contradictions or tensions that emerge? Where is the team's knowledge the strongest: on the needs of people, on the technological possibilities, or in how to implement ideas?

Next, write down what you don't know but need to learn about the area of investigation, such as:

» What constituents do, think, or feel

» How people value offerings

» What constituents' future needs may be

» Challenges to implementation of ideas

Where are the biggest needs for research?
How should the recruiting strategy be tailored?
Which categories might structure the discussion guide?

STEP 3

IDENTIFY PEOPLE TO SPEAK WITH

Facilitator Notes

Time:
30-60 mins.

Difficulty:
★★★☆☆

Step 1: Develop the spectrum along which to recruit. Generate several options (i.e. High income to low income, early adopter to risk averse, large landholder to landless). Individually or collectively narrow to one or two relevant spectrums to make sure "extremes" are covered in the research.

Step 2: Identify the relevant locations to recruit participants. Ask stakeholders to list good areas for this research. Pick 2-5 field sites that vary from one another (i.e. a dry and a wet site or a site in a central district and one more remote).

Step 3: Select appropriate community contacts to help arrange community meetings and individual interviews. Make sure community contacts include men & women.

Recruiting appropriate and inspirational participants is critical. Attention to gender, ethnicity, and class balance is crucial for research.

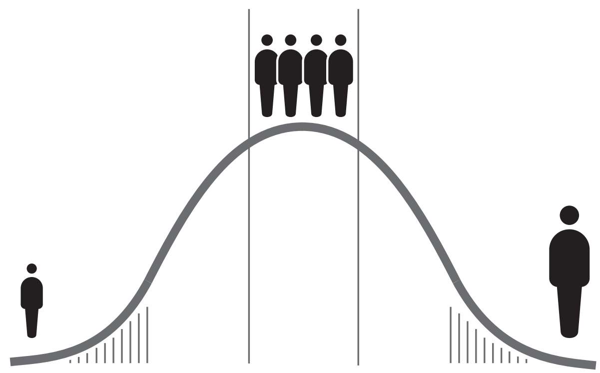
For research meant to inspire new opportunities, it is useful to find people who represent "extremes." Extreme participants help to unearth unarticulated behaviors, desires, and needs of the rest of the population, but are easier to observe and identify because they feel the effects more powerfully than others. By including both ends of your spectrum as well as some people in the middle, the full range of behaviors, beliefs, and perspectives will be heard even with a small number of participants. Including this full range will be important in the later phases, especially in constructing good frameworks and providing inspiration for brainstorming.

GENDER

Some communities may be resistant to male NGO staff interviewing women. Make sure female staff help recruit & interview women.

WATCH OUT

Group sessions are a great springboard to identify participants for the individual interviews. However, communities often want to showcase only the most successful constituents or male community members to NGOs.



TIP
#1

One-third of participants might be "ideal constituents": those who are successful, adopt new technologies quickly, and/or exhibit desirable behaviors.

One-third of participants should be on the opposite extreme: those who are very poor, resistant to new technologies, and/or exhibit problematic behaviors.

One-third of participants should be somewhere in between: those who the researchers believe represent more "average" people.

TIP
#2

To satisfy the economic spectrum from the more well off to the very poor, you might ask:

» "Can you introduce me to a family who cannot afford to send their children to school?"

» "Who has not been able to afford maintenance or repairs to their home?"

» "Who has experienced a recent setback (medical problems, bad harvest, etc)?"

Refer to the Field Guide to help guide your recruiting.

STEP 4

CHOOSE RESEARCH METHODS

Design research is useful to not only understand individuals but also frame individual behaviors in the context and community that surrounds them. Therefore, it will be important to employ many methods of research. In addition to the methods described in this book, secondary sources and quantitative data can be supplemented to understand income or asset variances across different regions.

Five methods described here are:

» Individual Interview
» Group Interview
» In Context Immersion
» Self-Documentation
» Community-Driven Discovery
» Expert Interviews
» Seeking Inspiration in New Places

METHOD: INDIVIDUAL INTERVIEW

Individual interviews are critical to most design research, since they enable a deep and rich view into the behaviors, reasoning, and lives of people. If possible, arrange to meet the participant at his/her home or workplace, so you can see them in context. In-context interviews give the participant greater ease and allow you to see the objects, spaces, and people that they talk about during the interview.

Facilitator Notes

Time:
60-90 mins.

Difficulty:
★★☆☆☆

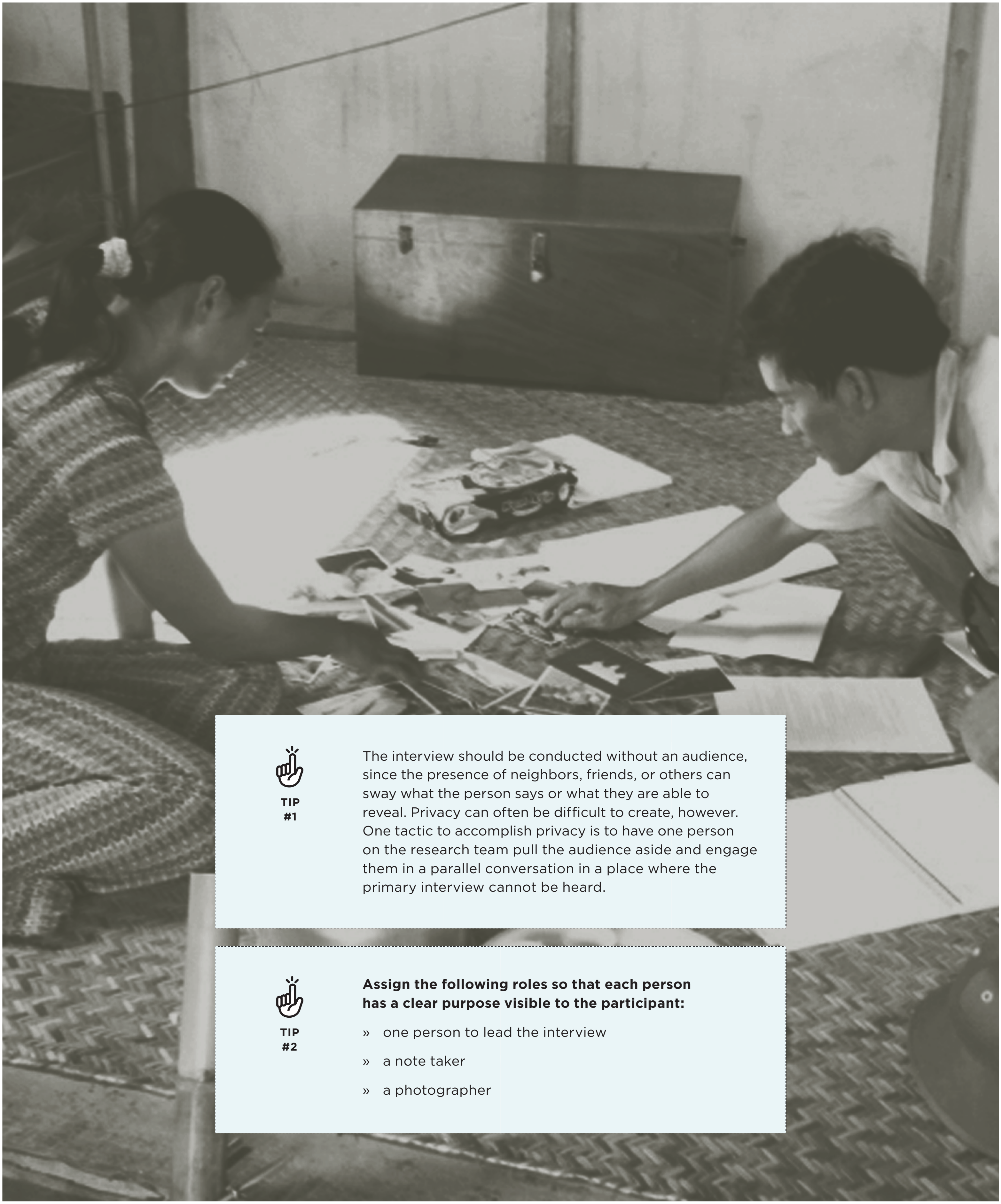
Step 1: After your team has written the Interview Guide (see Field Guide), practice the individual interview by partnering in teams of two. One person plays the role of the interviewer and the other the interviewee. Ask the teams to go through a "practice interview" with their partner.

Step 2: Ask the team what they learned through this exercise. Are there any topics or questions that are missing?

WATCH OUT

If there are many people on the research team, no more than three people should attend any single interview so as to not overwhelm the participant and/or create difficulty in accommodating a large group inside the participant's home.

Refer to Step 5: Develop an Interview Approach to create a set of questions for your individual interviews.



TIP
#1

The interview should be conducted without an audience, since the presence of neighbors, friends, or others can sway what the person says or what they are able to reveal. Privacy can often be difficult to create, however. One tactic to accomplish privacy is to have one person on the research team pull the audience aside and engage them in a parallel conversation in a place where the primary interview cannot be heard.

TIP
#2

Assign the following roles so that each person has a clear purpose visible to the participant:

» one person to lead the interview

» a note taker

» a photographer

STEP 4

METHOD: GROUP INTERVIEW

Group-based interviews can be a valuable way to learn about a community quickly. Group interviews can be good for learning about community life and dynamics, understanding general community issues, and giving everyone in a community the chance to voice their views.

Group interviews are not good for gaining a deep understanding of individual income streams, uncovering what people really think, or understanding how to change commonly-held beliefs or behaviors.

TIP #1

Guidelines for group meetings:
Size: 7-10 people from diverse economic backgrounds

Place: Meet on neutral ground in a shared community space that all people have access to (regardless of age, gender, status, race).

Gender: Mixed or same-sex groups depending on the customs in that community (if men and women should meet separately, two facilitators can run the groups in parallel).

Age: Mixed groups of parents and teens/children, depending on the topic and local context.

WATCH OUT

Are the viewpoints of men and women equally valued in this community? If not, it may make sense to have two meetings, one with women only and one with men only.

Are political heavyweights (such as chiefs, local administrators, etc) present? If so, their opinions may hamper the ability of others to speak freely.

Does the community view you as a source of funds, gifts, or charity? If so, their interactions may be influenced by the desire to access potential benefits; it may be helpful to prepare an introduction that makes the purpose of the interview clear and state that nothing will be given away.

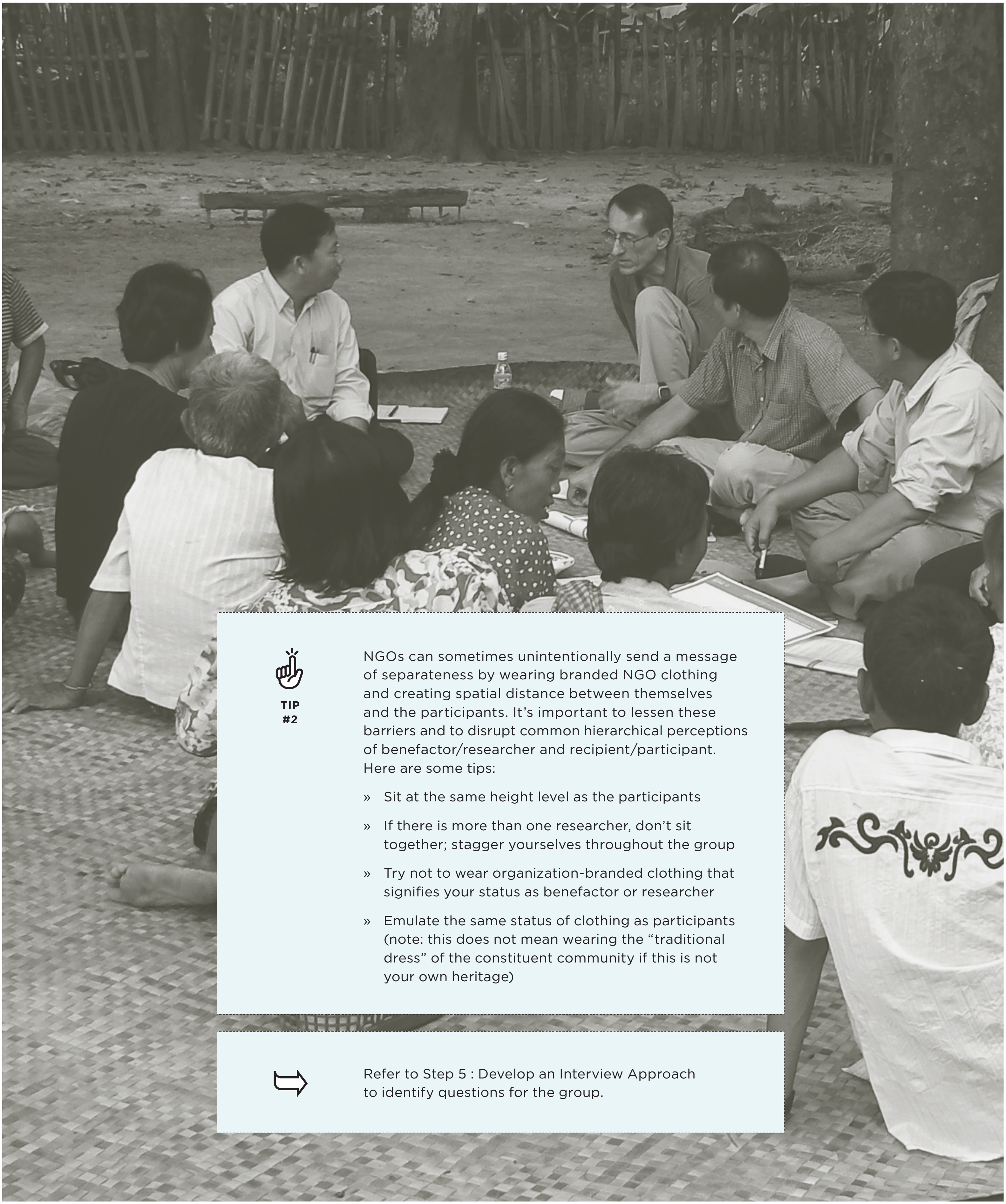
Facilitator Notes

Time:
1.5-2 Hours

Difficulty:
★★★☆☆

Step 1: After the team develops a Group Interview Guide (see Step 4), have the team partner in groups of two for a practice interview. Ask the interviewers to develop an approach for including women and quieter members of the group. Ask them also to develop strategies for asking people who may be dominating the conversation to allow other people to answer.

Step 2: Have the team share "best practices" for including quieter members of the group and redirecting the conversation away from people who are dominating the conversation.



TIP
#2

NGOs can sometimes unintentionally send a message of separateness by wearing branded NGO clothing and creating spatial distance between themselves and the participants. It's important to lessen these barriers and to disrupt common hierarchical perceptions of benefactor/researcher and recipient/participant. Here are some tips:

- Sit at the same height level as the participants
- If there is more than one researcher, don't sit together; stagger yourselves throughout the group
- Try not to wear organization-branded clothing that signifies your status as benefactor or researcher
- Emulate the same status of clothing as participants (note: this does not mean wearing the "traditional dress" of the constituent community if this is not your own heritage)

Refer to Step 5 : Develop an Interview Approach to identify questions for the group.