Understanding Vaccination Barriers

Mozambique Human-Centered Design Co-creation and Assessment Report

July 2022

MOMENTUM Routine Immunization Transformation and Equity

Contents

About the MOMENTUM Routine Immunization Transformation and Equity Project

MOMENTUM Routine Immunization Transformation and Equity (the project) is a USAID-supported project that works toward a world in which all people eligible for immunization, and particularly underserved, marginalized, and vulnerable populations, are regularly reached with high-quality vaccination services to protect their children and themselves against vaccine-preventable diseases.

In Mozambique, the project works with partners in Nampula and Zambézia to strengthen the routine immunization system and design solutions to reach zero-dose and under-immunized children with life saving vaccines. The project also supports the introduction of COVID-19 vaccines in the country.

Objectives of this Report

GOAL:
Readers will understand why the project used human-centered design (HCD) in our co-creation and assessment approach and how to build on final recommendations to shape interventions in Mozambique.

OBJECTIVES:
- Describe the methodology used and rationale for it.
- Disseminate key co-creation findings emerging from the baseline assessment.
- Identify causes of under-immunization and how to apply co-creation and HCD methods to identify and mitigate them.
- Demonstrate the process for applying workplanning that incorporates the key findings.

AUDIENCE:
We expect our audience to use the project's bottom up assessment approach as a model for how to co-create priorities with stakeholders at the district, facility, and community level for which planning processes are meant to impact. In the absence of this capacity, the findings from this report are meant to assist stakeholders in prioritizing activities in the districts of Nampula and Zambezia that are covered in this report.

Primary: Mozambican decision-makers and program implementers in immunization and complementary fields:
- National ministry of health, the Expanded Program on Immunization (EPI), and other immunization partners in Mozambique.
- Provincial ministries of health, EPI, and divisions outside immunization, such as Community Engagement.
- Health staff at the district level and community focal points.

Secondary:
- Global funders (Gavi, USAID); other country decision makers outside Mozambique.
- Program implementers in other country settings who are interested in adopting HCD methodologies in their work.

Background of Co-creation and Assessment Phase

Nangoma Facility, Molumbo District

Co-creation and Assessment Objectives

Not only did our co-creation/assessment approach align with our overall project goal of identifying and overcoming entrenched obstacles, we designed it to also align with Gavi's new IRMMA (identify, reach, measure and monitor, advocate) framework to identify and ultimately reach zero-dose and under-immunized children.

IDENTIFY:

- Household, community, and health services-level factors determining the underlying causes of non-vaccination and vaccination drop-out in the selected districts.
- Barriers to vaccination (whether a health facility or mobile brigade concentration zone) for families of children 0–23 months.
- Stakeholder priorities, motivations, and opportunities to reduce the number of zero-dose and under-immunized children.
- Strategies adopted by health systems actors to mitigate the effects of COVID-19 on vaccination uptake.

OUR ULTIMATE GOALS:

- Identify and co-create interventions and strategies to overcome individual-, community-, and health system-level barriers.
- Strengthen the EPI's ability to reach unvaccinated and under-immunized infants.
- Support planning processes taking into account the needs of families to access health services and include resources outside health.

HCD Approach

HCD is a collaborative problem-solving approach that provides creative methods for deeply understanding human behavior to develop new ideas and solutions directly with the intended user or beneficiary.

To **understand the root causes to non-vaccination and dropout, we engaged community and health system stakeholders** through:

- **In-depth interviews** to understand the root causes of low vaccination rates.
- **Co-creation workshops** in locations where stakeholders work and live to solve problems that emerged from the in-depth interviews data. Conducted four district workshops: two each in Zambézia and Nampula.

Stakeholders included but were not limited to district EPI staff, facility nurses, vaccinators, community health workers (CHWs), community and religious leaders, and caregivers of zero- and under-immunized children.

Our Rationale for an HCD and Co-creation Approach

THEORY OF CHANGE

The MOMENTUM Routine Immunization Transformation and Equity project **focuses on putting people at the center** while introducing and testing targeted interventions to foster resilient systems and communities, engage local partners, and improve the quality and use of data.

As part of our HCD approach, we will continue to explore innovative solutions through direct co-creation with key local stakeholders that were identified as influencers in their community during the assessment phase.

TERMINOLOGY OF CO-CREATION IN THIS REPORT

This report uses "co-creation" in two ways. First, 'co-creation and assessment phase' refers to our work in July and August, 2021, as we engaged with health system and community stakeholders to develop project priorities for activities beyond Year 1.

Second, we use the term "co-creation" more broadly in reference to the way the project works with stakeholders closest to the problems that we work to solve. See *Next Steps* section.

Field Study Methodology

Field Study Methodology Roadmap

The project used a bottom-up approach to its assessment process, which is explained in this report. Through the use of this bottom-up approach, called a *Co-creation and Assessment Phase,* before any national or provincial priorities or decisions were made, we first engaged with district, health facility, and community stakeholders to better understand the challenges they faced in their work that prevented their ability to perform or receive vaccine services. This section covers the project's bottom-up approach that informed our subsequent workplanning approval process with national and provincial EPI stakeholders:

1. Data and document review of existing reporting with both quantitative and qualitative data sources.
2. Site selection criteria based on data from data and document review.
3. Data collection process: in-depth interviews, baseline quantitative data, and data management and flow.
4. Co-creation workshop methods/tools: how we translated the data from the in-depth interviews to engage stakeholders in developing solutions to immunization barriers that were relevant for their location.

Data collection and all six district and provincial co-creation workshops took place concurrently in Zambézia and Nampula Provinces between July 19 and August 13, 2021.

NOTE: See Appendix for information about our co-creation team

Ile District co-creation workshop

Data and HCD Studies that Informed Our Work

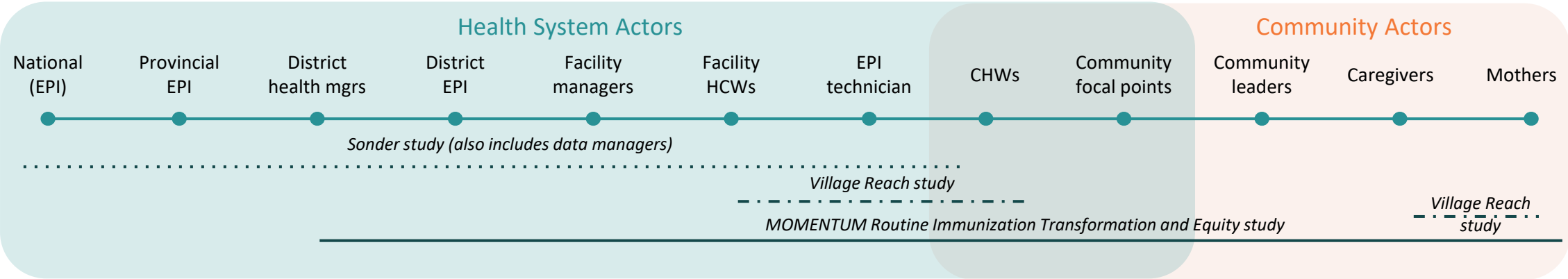
The assessment was built on:

- Reports from the ministry of health, including most recent reports from the EPI (January 2019) and post-campaign coverage surveys (PCCS, March 2019) to document and analyze vaccine coverage results following their campaigns.
- Gavi Full Country Evaluation Report, 2017-2018.
- Successes and challenges of reaching every district/community (RED/REC) implementation in Mozambique (April 2021).
- Strengthening Service Experience to Improve Immunization Demand Study (July 2020).

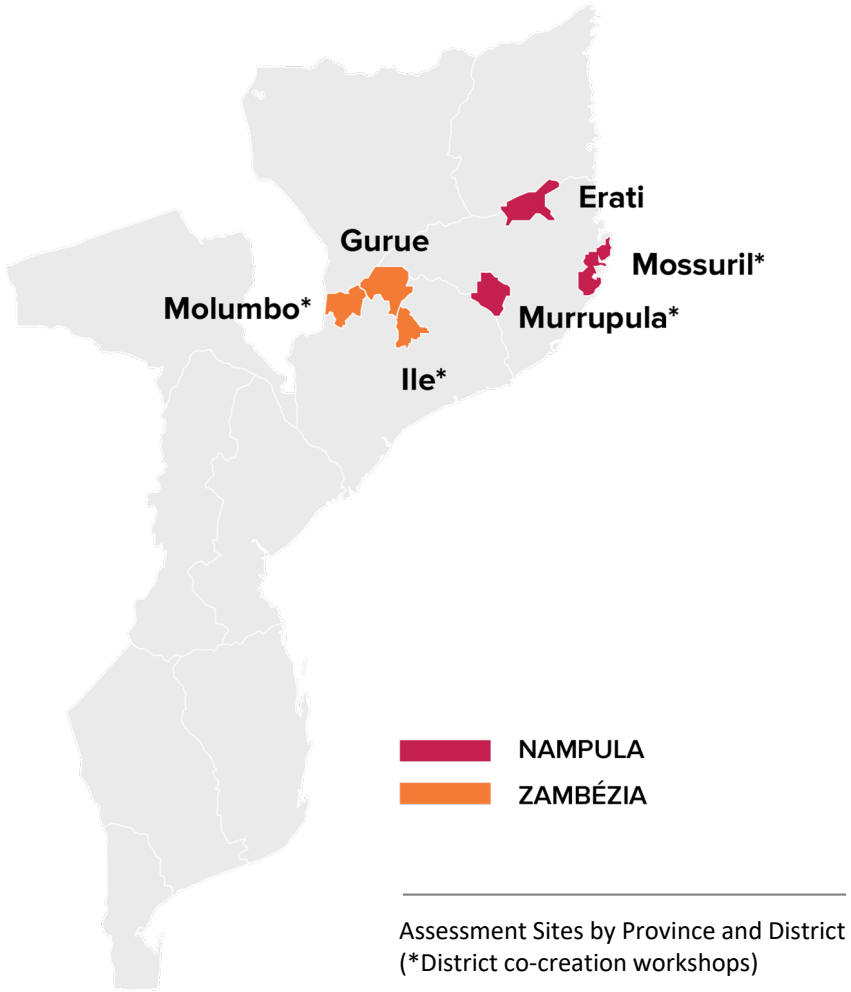
The following HCD-focused studies, including our study, focused on the motivations, pain points, and behaviors of individual actors to understand immunization barriers and solutions from their perspective.

- Vx Data Insights HCD Study, January 2021 v.3 (Sonder) on data quality, management, and use, including protocols and other tools.
- Village Reach's Determinants of immunisation dropout among children under the age of 2 in Zambézia province, Mozambique (Bate Papo Vacina) to examine determinants of and potential solutions to immunization dropout among children under-two in Zambézia. Province.

HCD Study Participants



Site Selection Criteria



Assessment Sites by Province and District
(*District co-creation workshops)

The team selected three districts in the two project provinces (Nampula and Zambézia) for the assessment:

- Ile and Murrupula are sampled in the recent EPI survey, which assessed vaccination coverage in targeted district and community levels among children ages 12–23 months and identified factors related to vaccination schedule adherence.
- The team selected the remaining districts based on the high proportion of zero-dose children in the past two years.

Participants in Assessment and Co-Creation Phase

COMMUNITY PARTICIPANTS

COMMUNITY LEVEL GROUP	Zambézia	Nampula	Total
Mother of zero-dose infant	5	4	9
Mother of under-immunized infant	3	8	11
Administrative leader	0	3	3
Religious leader	1	4	5
CHW/activist/health committee	4	4	8
Traditional Birth Attendant	1	0	1
Leader of feminine group	1	1	2
Traditional leader	3	3	6
Total - All Community Participants	18	27	**45**

Total Participants = **72**
(Zambezia = 33; Nampula = 39)

HEALTH SYSTEM PARTICIPANTS

FACILITY LEVEL GROUP	Zambézia	Nampula	Total
Clinical Director/Chief Medical Officer	3	2	5
Vaccinator/nurse/community engagement responsible	3	1	4
Nutrition responsible	0	1	1
DISTRICT LEVEL GROUP	**Zambézia**	**Nampula**	**Total**
EPI manager	2	2	4
Community engagement responsible	3	3	6
Monitoring & Evaluation responsible	1	0	1
PROVINCIAL LEVEL GROUP	**Zambézia**	**Nampula**	**Total**
Logistics responsible	1	1	2
EPI manager	1	1	2
Community engagement responsible	1	1	2
Total - All Health System Participants	15	12	**27**

Sample Selection Criteria

- **The provincial health services and health directorates supported the selection** of participants who represented key EPI sub-sectors in each province. The team selected facilities with:
  - lowest immunization coverage
  - balance between remote and less remote from the central area of the administrative post.
- **Within health facilities, the team used convenience sampling** to select vaccination staff and facility managers who were available at the time of interview so as not to disrupt delivery of routine health care.
- **Health facility staff and CHWs helped the assessment team select communities** with high proportions of zero-dose and under-immunized children.
- **Traditional authorities** helped to identify, through snowball sampling, community stakeholders to be interviewed.

Data Collection and Co-Creation Workshops Process

In-depth interviews, quantitative surveys, mapping

- **Provincial level** in-depth interviews
- **District level** in-depth interviews
- **Heath facility** in-depth interviews
- Community mapping + in-depth interviews with **leaders, mothers of zero-dose/ under-immunized infants**

District co-creation workshops with district, health facility, and community stakeholders.

Four district workshops total

Provincial co-creation workshops with provincial, district, and civil society stakeholders.

Two provincial workshops total

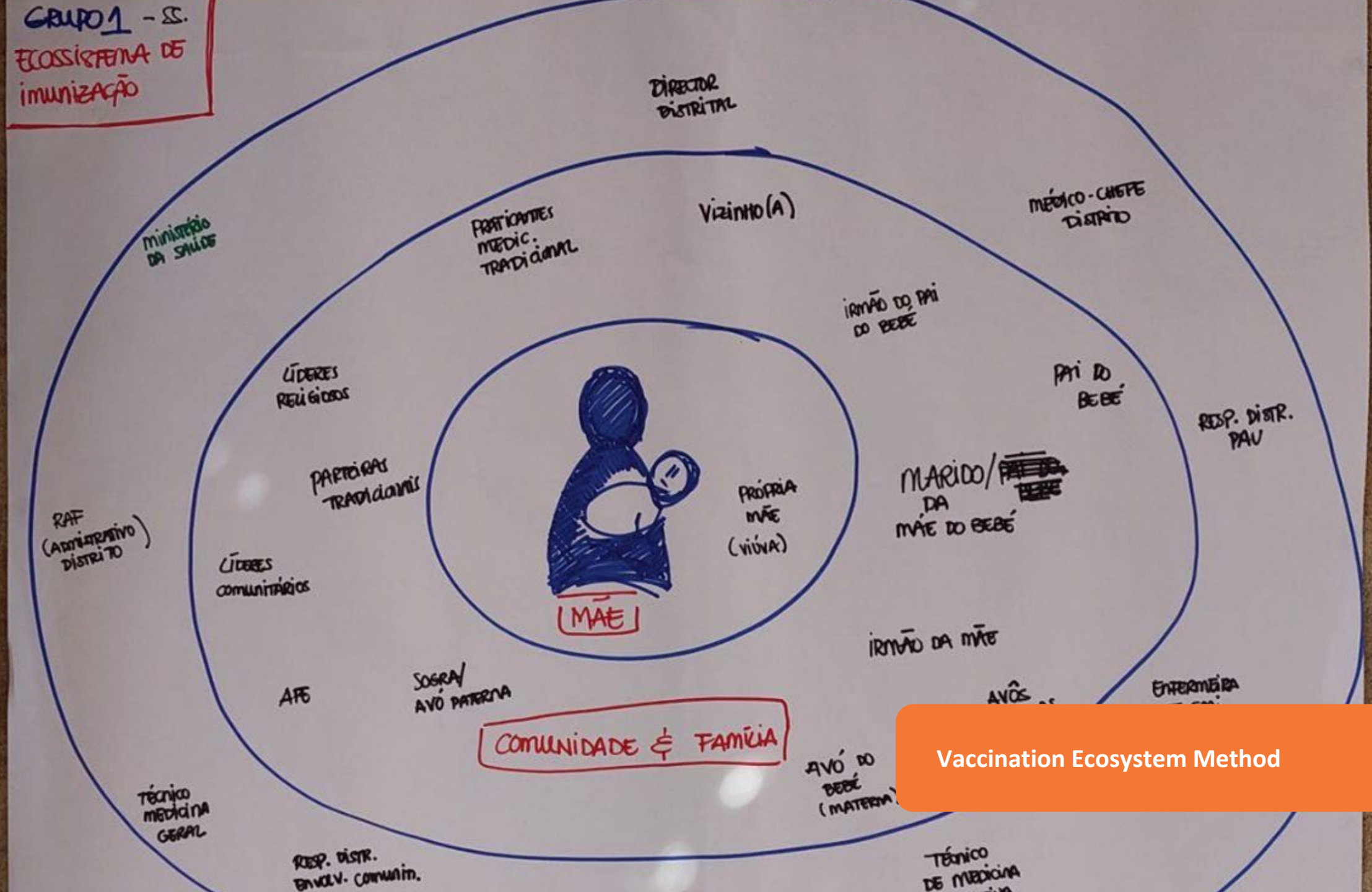
Data collection took place concurrently in Zambézia and Nampula Provinces between July 19 and August 13, 2021. In total, three co-creation workshops took place in each province: two district co-creation workshops and one provincial workshop.

We implemented a structured questionnaire targeting managers and decision makers at provincial, district, and health facility levels to reflect the quantitative component. The questionnaire also included a section to copy any existing health care performance indicators. Additionally, we developed a topic guide to for the in-depth interviews to collect qualitative data to understand the underlying and root causes of zero-dose or under-vaccination at various levels.

Data Management Tools and Flow

In-depth interviews > > >>> Synthesis > > >>> Solution development

The **solution briefs** are the bridge between the data collected during the interviews (e.g., root causes of missed vaccinations) and how we developed solutions with key health system and community stakeholders in the district and provincial co-creation workshops. In total, each district took approximately 2 weeks from kickoff to interviews to workshop. There were two teams working concurrently in Nampula and Zambezia provinces.



Vaccination Ecosystem Method

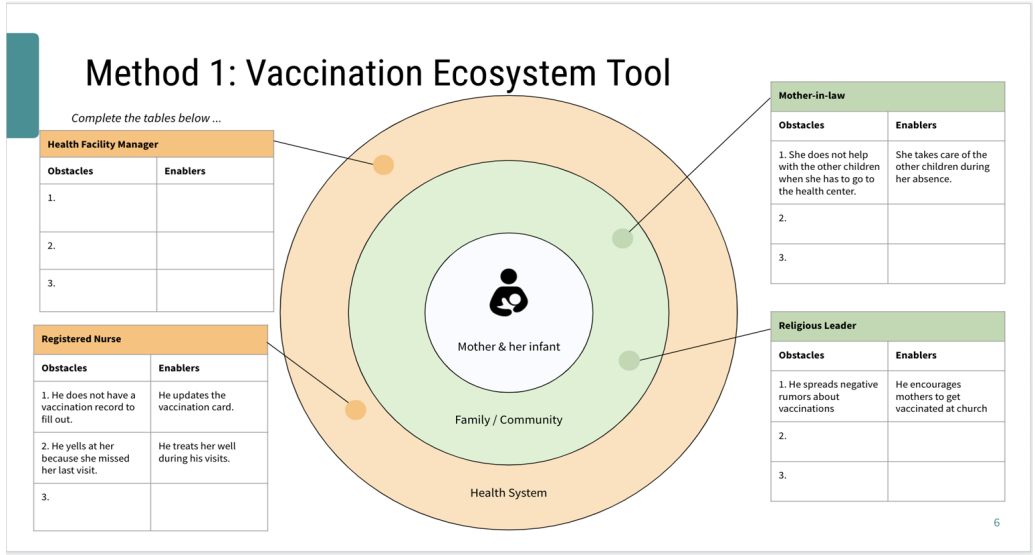
Co-creating with District and Community Stakeholders

Our co-creation workshops at the district level included stakeholders from the health system and community, including mothers of under-immunized and zero-dose children. Each workshop had two stakeholder groups that completed the two HCD methods below. One challenge with combating barriers to immunization is a pervasive perspective among both health system and community actors at all levels that mothers negligence is the problem for children not getting vaccinated.

Our interview data showed that mothers wanted to get their children vaccinated, but faced many challenges outside of their control. The HCD methods we used (on next page) were the *Mothers' Vaccination Ecosystem* and *Solutions Co-Creation Activity*. The Mothers' Vaccination Ecosystem method helped workshop participants to "walk in mothers shoes" and understand how people in her life positively and negatively influence her ability to vaccinate her children. Once participants gained empathy for mothers' lived experiences, we invited them to develop solutions with this reality in mind.

Key learning: At these workshops, we learned that community members preferred to engage separately from the health system actors so they could speak candidly about their experiences within the health system and avoid retribution for negative comments.

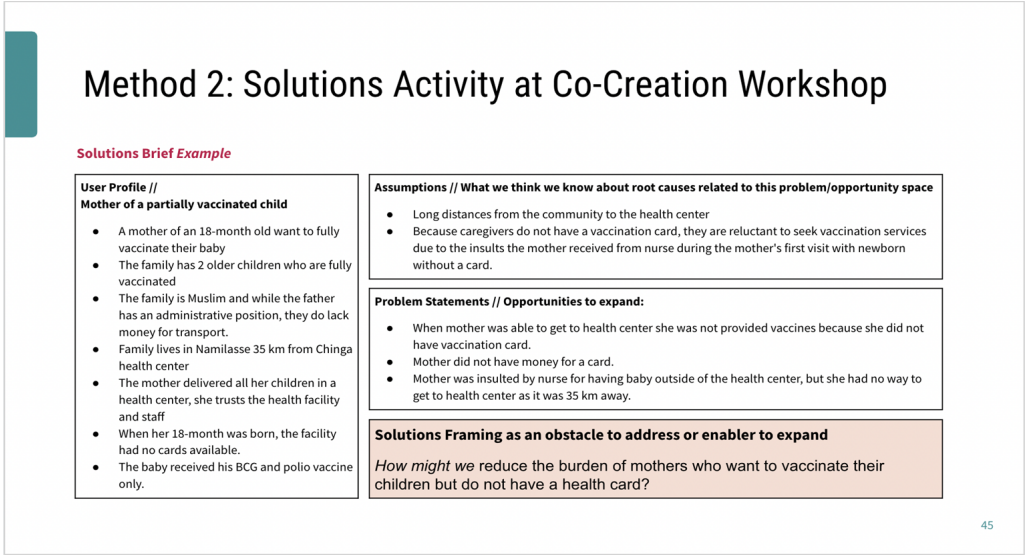
HCD Methods at the Co-Creation Workshops



What: Mothers' Vaccination Ecosystem*

Goal: The results of our interviews show that **mothers want their children to be vaccinated,** and the burden of vaccination is often solely placed on them. This method centers the mother perspective to help workshop participants understand how various actors can improve immunization rates in their community or district by helping remove the barriers that mothers face.

** See appendix for more information*



What: Solutions Co-Creation Activity*

Goal: This method is a practical approach for developing solutions to vaccine barriers by focusing problems on a specific user. In looking at the problem from the user's perspective, we can achieve appropriate solutions.

Co-creation Workshop: Solution Activity

Shown here are the components of the Solution Activity that participants worked through at the Co-Creation Workshops. Participants were provided with a solution brief (A) and a problem statement (B), then in their breakout groups developed a solution via guided questions (C).

A. SOLUTIONS BRIEF CONTENTS

1. Presented user personas

A persona is a fictionalized representation of an individual based on patterns and synthesized findings from our in-depth interviews.

2. Described assumptions regarding what we think we know about root causes of a problem

The workshop facilitators present what was heard during the interviews about the root causes to the problem.

3. Problem statements or opportunities to leverage

Using synthesized findings from our in-depth interviews, developed problem or opportunity statements for specific user personas.

B. SOLUTION FRAMING

Workshop breakout groups (one focused on health system and one on community) received a solution brief for a specific type of person, such as chw or mother of zero-dose 14-month old baby, and a solution framing to brainstorm as a group.

We select a problem mentioned in our in-depth interviews and reframe it as a question to be solved/answered. For example: how might we reduce the burden of mothers who want to vaccinate their children but do not have a health card?

C. SOLUTION DEVELOPMENT QUESTIONS

Session 1: Brainstorm 10 ideas to answer the question "How might we…?"

Session 2: Choose two ideas from your list of 10.

Session 3: Add details to the concepts of the idea: who, what, when, where, why, how.

Session 4: Put solution ideas into practice: What actions can be taken this month?

See Appendix for full questions and example.

Key Findings

Personas for Empathy

WHY USE A PERSONA?

Personas build empathy by representing the experiences of individuals based on their perspective. In addition to building empathy, we use personas in HCD to articulate a problem to solve.

The following two personas (Anifa and Armando) in the key findings are examples of how we aggregated information we learned about the challenges in immunization faced by mothers and CHWs in Zambézia and Nampula.

Mother Persona: *Anifa*

User Journey

PROFILE:

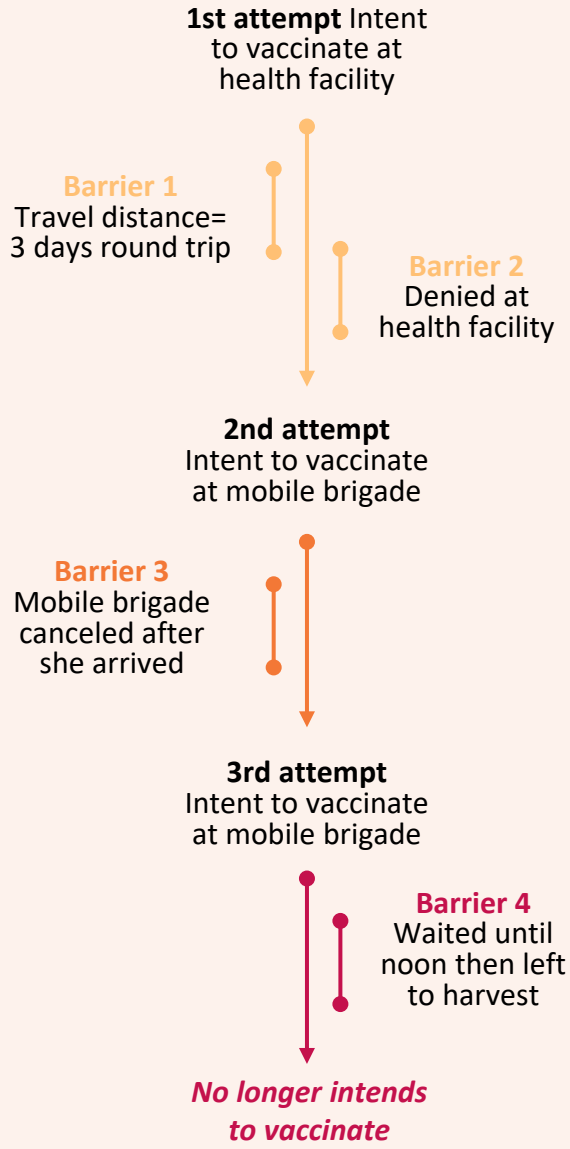
- 34 years old.
- 6 children; the last born at home.
- **Lives off agriculture.**
- **Her husband is a farmer too.**

CONTEXT:

- **Anifa wants to vaccinate her baby, but prefers to space out vaccines because too many at once makes her baby ill.**
- **Anifa prefers vaccination at the health facility.**
- Due to the distance to the health facility, she will sleep at her sister's house,-which is half the distance, on the way there and home to break up the journey.

CHALLENGES FOR ANIFA TO VACCINATE HER BABY:

- When she arrived at the health facility, the technician told her leave because children born at home are only vaccinated on Mondays.
- On the day for her local mobile brigade she went to the site, but the technicians canceled it without notice.
- Two weeks later there was another mobile brigade in her community. She arrived early, waited until noon, and left because she had to harvest crops. The mobile brigade arrived in the afternoon.
- At church, Anifa was told to pray because prayer is stronger than vaccines.
- She met a local leader who said that if she vaccinated the child, the child would get COVID-19 and die.



Community Health Worker Persona: *Armando*

User Journey

PROFILE:

- 33 years old.
- **Does not feel comfortable answering immunization-related questions.**
- Trained as an CHW in 2014.
- Resident of his community for over 14 years.
- Enjoys supporting his community's health.

CONTEXT:

- CHWs in Mozambique are only used for mobilization and sensitization.
- Armando received a phone but no money for data/SMS accessories, making it difficult for him to communicate.
- Data at the health facilities are often inaccurate.
- **Civic leaders unhappy about the difference in incentives between them and the CHWs.**

CHALLENGES TO ARMANDO'S WORK:

- Weak involvement of and support from community leaders.
- Lack of transportation.
- **Difficulties managing the expectations of some of the community leaders who do not collaborate in mobilization because they consider these tasks to be only the CHWs.**
- Payments from the district are often delayed.
- Forced to make last-minute adjustments because, for example, mobile brigades do not inform him of their schedules.

Ile District co-creation workshop

“

My child did not have a second dose. When I was getting ready to take her to the vaccination in the hospital, I was told that the brigade was coming here. That is why I did not go to the hospital. **And then they told me that the brigade was not coming**.”

Mother of under-vaccinated child, Ile District, Zambézia

Key Barriers: **Mothers**

This and the following tables represent the users' perspectives. It is important to consider the lived experience of the immunization barriers from the perspective and voice of the people who experience the barriers and enlist them in helping to develop solutions.*

Mothers of zero- dose and under-immunized children

Lack of adherence to mobile brigade schedule: Data from the six health facilities involved in the assessment indicate that less than half of planned mobile brigade sessions were conducted.

Fear of adverse outcomes from multiple vaccines: Among the reasons for vaccination hesitancy was the fear of side effects. Discomfort from receiving several vaccines simultaneously discouraged mothers from vaccinating their children as scheduled. Some make their own schedule to minimize the pain from multiple vaccines.

Knowledge and misinformation about vaccines: Mothers were generally aware that vaccines help keep children healthy, but many had the misconception that vaccines are equivalent to medication, serving both to avoid and cure diseases (diarrhea, measles, and malaria were the most frequently mentioned).

Having to care for other children and other domestic chores: Mothers struggle to find support for domestic duties and lack control over their culturally prescribed role as homebound caretakers and housewives. Domestic responsibilities are prioritized over vaccinating children.

Negative experiences at the health facility and perception of requirements to use health services: Some caregivers had poor (often undignified) experiences that made them reluctant to return. Further, without a child vaccination card, home-birth mothers feel they lack an entry point to child health care.

*This is a subset of the barriers uncovered. See appendix for the full list.

“

Some people in the community, even if informed about the campaigns and the importance of vaccination, do not adhere to them, because they are scared and have the fear of dying, because they are not used to going to the health facility. **Now, because of COVID-19 and misinformation that says that the vaccines that mobile brigades bring contain the virus**, caregivers are afraid to vaccinate their children. We don’t know what to do.”

Female church leader, Molumbo District, Zambézia

Key Barriers: Community Leaders and CHWs

Community leaders & CHWs*

Knowledge about vaccines: The leaders had great appreciation for vaccines, but very little knowledge about those offered, their purpose, or how the EPI works, including the vaccination calendar. This lack of knowledge lessens their ability to assuage community members' doubts and correct misinformation.

Political relations between leaders: Community leaders, especially traditional authorities, revealed the existence of tensions with other leaders due to their different political ideologies. This affects the information flow, particularly when it came to relaying information to different segments of the community about mobile brigades.

Credibility of community health care providers: In some communities, community-health workers lack credibility, on one hand because they are unable to reach entire communities, leaving some households unaware of their existence, and on the other because they cannot solve their problems (due to lack of medications in their kits).

Referral mechanisms between the community and the health facility: Some leaders are familiar with the procedure of referring babies who are born outside the health facility, but many of their peers do not know about this process.

Mobilization curbs due to COVID-19: Leaders reported that they have always conducted their mobilization activities by convening community meetings. With the COVID-19 pandemic, they changed their strategy to door-to-door visits, which are demanding and inefficient for reaching large segments of the population in a short period of time.

*This is a subset of the barriers uncovered. See appendix for the full list.

“

There is weak involvement of some leaders because they don’t receive the subsidy to mobilize the population for vaccination. They say that this is the [CHW’s] and activist’s job. This problem arose because there was a bed net distribution campaign and a nutrition project where the leaders were involved and received a subsidy. When the project ended, **I requested help for vaccination mobilization and they distanced themselves from the activity,** alleging that that was my task and not theirs because they know that I receive money from the health [sector].”

CHW, Murrupula District, Nampula

Key Barriers: Health Care Providers

Health care providers*

Care seeking during COVID-19: The COVID-19 pandemic brought new challenges to vaccine delivery. Participants at all levels (provincial, district, health facility, and community) raised this problem. According to provincial managers, rumors about COVID-19 reduced care-seeking, which diminished vaccination coverage. The pandemic also halted quarterly trainings indefinitely.

Leadership: There is high turnover of health staff, which makes many EPI managers and health providers new to the system or a facility. Few had specific training on their roles and responsibilities as managers, therefore were unfamiliar with most of the processes and respective tools (especially for monitoring and reporting) and had no leadership skills. An immediate outcome of this situation is a lack of clarity in some facilities about quantifying and forecasting needed vaccine stock, in turn contributing to stockouts.

Partnerships: Provincial respondents reported efforts to approach colleagues at various levels, for instance through the creation of Whatsapp groups to discuss challenges and solutions. However, these groups only include the provincial- and district-level EPI staff, not health facility counterparts or implementation partners at any level. Health care providers also alluded to the disruption caused by community health workers who abandoned the program due to lack of incentive.

Human resources: Health care providers noted several human resource challenges. Most facilities surveyed had only one or two health staff, and occasionally no immunization-specific staff. The lack of personnel dedicated to vaccinating was a strong limitation in both provinces and resulted in high workloads among the few existing personnel (particularly nurses).

Stockouts: Participants reported stockouts of vaccine and consumables as an important challenge in both provinces.

*This is a subset of the barriers uncovered. See appendix for the full list.

Solutions

Barriers Discussed at District Co-creation Workshops

The project restated barriers on the previous slides into questions at the co-creation workshops that participants (district, facility, and community stakeholders, including mothers) were guided to answer and find suitable solutions. Here are some of the questions.

User	Questions
Mother/ Caregiver	• How to reassure mothers who have delivered outside the health facility about their rights to postpartum health care (including for their babies)? • How to improve mothers'/caregivers' understanding that vaccines are for prevention and do not compete with treatment? • How can we make mothers/caregivers aware of the CHWs?
Vaccinator	• How can vaccinators be trained in administration and management matters? • How can we avoid missed opportunities to vaccinate children in the health units and mobile brigades? • How can we ensure the active involvement of health committees in mobilizing the population to vaccinate children?
Community leader	• How can we strengthen the relationship between health system professionals and community leaders to communicate and disseminate accurate information about the importance of vaccination and increase community awareness?
CHW	• How can we increase the credibility of CHWs in disseminating information to stimulate vaccine schedule adherence? • How can we ensure community members are aware of the true role of the CHWs and avoid misunderstandings about their role?

Key Actors to Enlist in Solutions (According to Workshop Participants)

How specific actors can remove barriers to vaccination

The following table is concrete suggestions for how specific actors can support vaccinating children in their community and district.

Other caregivers	Community leaders	CHWs	EPI technicians	Facility health care workers (HCWs)	District EPI
Father of the baby motivates mother to adhere to vaccination Mother's brother can help identify a taxi driver to accompany the mother and child to health facility	Disseminate accurate vaccination content to civic and religious constituents Receive basic training in vaccination from health unit	Communicate the arrival of a mobile brigade at least 4 days in advance Create a referral/referral system using friendship networks/mothers' groups	Provide good communication with mothers about the importance of the vaccine (schedule and side effects) Organize periodic meetings with more influential leaders to encourage the community to adhere to immunization schedule	Provide services to mothers with empathy and sympathy Sensitize nurses to care for patients, bearing in mind that we are all human beings	Provide transport/fuel for technicians to comply with the scheduled mobile brigades

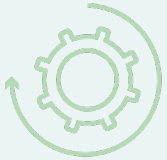
Through this exercise, workshop participants began to understand that mothers need support in getting children vaccinated. From a positive health service experience to minimizing time away from income-generating work and other family obligations, this exercise helped identify the supporting actors in a mother's life and highlighted those who need to be elevated to primary actors.

Summary of All Co-creation Workshop Solutions

Conceived by	Solution	Key actors implicated				
		District	Facility	CHWs, mobile brigades	Community leaders	Community and families
Community actor breakout group	**Empower:** Provide CHWs with knowledge, supplies, and skills	X	X	X		
	Transport: Enlist community resources for mothers' transport to facility for emergent health needs, including vaccination			X	X	X
	Families enabling mothers: Enlist male family members (fathers, uncles, grandfathers) to provide means for transportation; Enlist female family members (grandmothers, neighbors, aunts) to help with domestic responsibilities while mother is at the health facility				X	X
Both groups	**Organize mobile brigades**: There is a need for mobile brigades to be scheduled, integrated, stationed according to vaccination need	X	X	X	X	
	Strengthen health system-community relations: Improve community leader involvement (e.g., communications, outreach, advocacy, identification of home births)		X	X	X	X
	Improve mothers' health care experience: Through vaccine availability and supportive treatment from EPI technicians, HCWs should motivate mothers with positive messages	X	X	X		
Health system actor breakout group	**Transport**: Ensure community transportation to mobile brigades and outreach	X	X			
	Staffing: Ensure technical human resource needs are met for vaccination	X	X			
	Strengthen health system-community relations: Strengthen health committees activities and depoliticize vaccination in communities (political party affiliation should not defer access to services)	X	X	X	X	X
	Planning: Joint planning activities need to include SDSMAS and partners	X	X	X	X	
	Best practices for reaching unvaccinated children: Reduce missed vaccine opportunities at facility, e.g.: checking vaccination cards at every appointment and enlisting community leaders and members to identify mothers of zero-dose and under-immunized children		X	X	X	X
	Mobilizing EPI activities: Enlist technicians in community and community health workers for EPI mobilization efforts		X	X	X	

Next Steps

Co-creation and Assessment Phase to Workplanning



AFTER THE CO-CREATION AND ASSESSMENT PHASE

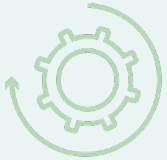
Following the conclusion of our data collection efforts through baseline surveys, in-depth interviews, and co-creation workshops, the MOMENTUM Routine Immunization Transformation and Equity team:

1) Used the results of the co-creation and assessment phase and organized joint planning with EPI staff at district and provincial levels and then prioritized interventions to remove barriers illuminated in the priority districts.

2) Ongoing activities:

- Implementing the workplan based on the co-creation and assessment phase.
- Advocating with other key stakeholders to implement activities or solutions identified through co-creation process, including for the integration of health services.
- Disseminating results among key health stakeholders to consider in further planning.
- Co-creating improvements in immunization directly with local stakeholders.

Co-creation through Various Approaches



AFTER THE CO-CREATION AND ASSESSMENT PHASE

The project built into its first full project year workplan (October 1, 2021 - September 30, 2022) ways to continue to co-create innovative solutions to-vaccination challenges. This includes:

Partnerships: reinvigorating community health councils to work closely with health facilities to plan and communicate mobile brigade efforts.

Community engagement with social behavior change: working on male engagement (husbands, brothers, uncles) to promote importance of immunization, as findings show they support mothers getting children vaccinated (if not necessarily having to give approval).

Service experience: strengthening HCW capacity to provide respectful and responsive care.

HCD innovations group: working with HCWs and community members to implement a client-centered solution and iteratively improve upon it through short testing cycles

Nampula Province, 2022

Unique Benefits of the Co-creation and Assessment Phase

The Project Values Co-creating with Those Closest to the Problem

Our co-creation and assessment approach first sought perspectives from sub-national stakeholders, especially at the district, facility, and community levels. The following is how our approach added value as compared to traditional assessment approaches:

1. Identified challenges from the community and caregiver (especially mother) perspective, which would not have been uncovered in interviews with health systems actors or from quantitative survey data.
2. Working with community members and others outside immunization enabled our understanding of how to improve services based on the needs and preferences of clients, which is novel for immunization.
3. Our focus on zero-dose children and gender barriers helped us identify the root causes of barriers to immunization that are typically hidden or not observed in approaches that focus on the general population.
4. Our “Vaccination Ecosystem” tool showed health care workers mothers’ immunization barriers, which are out of her control and led to empathy for mothers.
5. Solutions emerging from the co-creation workshops are only the beginning of our work with district and community stakeholders. It was challenging to adequately translate them into project activities in the allotted time frame, and we continue to build on what we learned into our PY2 activities.

APPENDIX

Full List of Barriers, by User

Barriers for Mothers

1. **Physical access to the health facility:** This was one of the most frequently mentioned reasons that mothers avoided the health facilities, which are often located in the center of communities. Barriers to reaching health facilities included distance (can take up to three days); transportation (dependent on family member or neighbor; roads in extremely poor condition).
2. **Alternative care-seeking options:** Health facilities are not the first care-seeking option for mothers of zero-dose children. Many are more inclined to choose curative (often referred to as tablets, topical medication, and injections) over preventive solutions, such as vaccines, and tend to see the two concepts as equivalent.
3. **Lack of adherence to mobile brigade schedule**: Data from the six health facilities involved in the assessment suggest that less than half of planned mobile brigade sessions were conducted.
4. **Fear of adverse outcomes from multiple vaccines:** Among the reasons for vaccination hesitancy was fear of side effects. Discomfort from receiving several vaccines simultaneously discouraged mothers from vaccinating their children as scheduled. Some make their own schedule to minimize the pain from multiple vaccines.
5. **Inconvenient/limited operating hours:** Health facilities provide assistance for non-urgent matters (including immunization) early in the morning. Mothers are reluctant to make the long journey when they foresee late arrival and associated humiliating and unfair treatment, such as being shouted at and sent home.

Barriers for Mothers (continued)

6. **Knowledge and misinformation about vaccines**: Mothers were generally aware that vaccines help keep children healthy, but many had the misconception that vaccines are equivalent to medication, serving both to avoid and cure diseases (diarrhea, measles, and malaria were the most frequently mentioned).
7. **Having to care for other children and other domestic chores**: Mothers struggle to find support for domestic duties and lack control over their culturally prescribed role as homebound caretakers and housewives. Domestic responsibilities are prioritized over vaccinating children.
8. **Negative experiences at the health facility and perception of requirements to use health services:** *Some caregivers had poor (often undignified) experiences that made them reluctant to return. Further, without a child vaccination card, home-birth mothers feel they lack an entry point to child health care.*
9. **Missed opportunities for vaccines at the health facilities**: The assessment found repeated situations of children (born at either the health facility or at home) who went to the health facilities a number of times, but aside from the BCG vaccine, did not receive any DTP doses and received other vaccines on an irregular basis.
10. **Community assistance**: Health workers such as CHWs, traditional birth attendants, activists, and community health agents are responsible for providing assistance at the community level. Mothers mentioned that the CHWs, who are expected to liaise between the health facility and the community by informing, receiving, and facilitating implementation of the mobile brigades, are often absent and working from home, in some cases turning their houses into “fixed health posts.” This model of care provision defeats the purpose of the “outreach” concept.

Barriers for Community Leaders and CHWs

1. **Knowledge about vaccines:** The leaders had great appreciation for vaccines, but very little knowledge about those offered, their purpose, or how the EPI works, including the vaccination calendar. This lack of knowledge lessens their ability to assuage community members' doubts and correct misinformation.
2. **Political relations between leaders:** Community leaders, especially traditional authorities, revealed the existence of tensions with other leaders due to their different political ideologies. This affects the information flow, particularly when it came to relaying information to different segments of the community about mobile brigades.
3. **Mechanisms to convey mobile brigade information:** All leaders said they received information about the date and time of the next mobile brigade through their phones or via letters. However, this information often arrives late (only about two days in advance), leaving them without enough time to inform the entire community. They must pass the information to the other leaders within their networks without ascertaining that the messages reach the intended audience. Leaders and CHWs alike expressed the limitations posed by the poor communication infrastructure.
4. **Credibility of community health care providers:** In some communities, community-health workers lack credibility, on one hand because they are unable to reach entire communities, leaving some households unaware of their existence, and on the other because they cannot solve their problems (due to lack of medications in their kits).
5. **Referral mechanisms between the community and the health facility:** Some leaders are familiar with the procedure of referring babies who are born outside the health facility, but many of their peers do not know about this process.

Barriers for Community Leaders and CHWs (continued)

6. **Mobilization curbs due to COVID-19:** Leaders reported that they have always conducted their mobilization activities by convening community meetings. With the COVID-19 pandemic, they changed their strategy to door-to-door visits, which are demanding and inefficient for reaching large segments of the population in a short period of time.
7. **Subsidy and incentives policies**: Leaders and traditional authorities in one district revealed that they receive a subsidy from the government to conduct their tasks. Although this includes health sector support, it was not clear to community leaders that the subsidy also includes health sector activities. The only community-based providers who are remunerated are the CHWs, who receive a kit to perform their tasks. Nonetheless, they are demotivated due to delays in the payments of subsidies and lack of transport. Activists and health committee members also complain that incentives are rare and irregular. They are particularly discontent with the lack of incentives to perform EPI activities, especially when compared with larger subsidies received by peers who work with other health programs, such as HIV. As a result, there is a high turnover of EPI activists.
8. **Lack of information about the target group**: Not all leaders knew how many children in their jurisdiction were under 24 months of age. Only one, in Zambézia Province, conducted a census of his village so knew there were around 5,700 people but knew nothing of their demographics or location. Leaders also lacked knowledge of the age of the vaccination target group, which limited their capacity to identify and monitor those in need. They also said it was difficult to distinguish mothers of immunized children from mothers of under-immunized children. Identification of probable zero-dose children is easier to an extent, because they use as a cue those who live far from the health facilities and do not attend the mobile brigades.
9. **Limited number of community-based health care providers**: Leaders as well as health facility-based providers recognized that there were not enough CHWs or health committee members operating in the communities, which impaired coverage of the activities and hinders achievement of vaccination targets, particularly those related to outreach.

Barriers for Health Care Providers

1. **Care seeking during COVID-19:** The COVID-19 pandemic brought new challenges to vaccine delivery. Participants at all levels (provincial, district, health facility, and community) raised this problem. According to provincial managers, rumors about COVID-19 reduced care-seeking, which diminished vaccination coverage. The pandemic also halted quarterly trainings indefinitely.
2. **Leadership:** There is high turnover of health staff, which makes many EPI managers and health providers new to the system or a facility. Few had specific training on their roles and responsibilities as managers, therefore were unfamiliar with most of the processes and respective tools (especially for monitoring and reporting) and had no leadership skills. An immediate outcome of this situation is a lack of clarity in some facilities about quantifying and forecasting needed vaccine stock, in turn contributing to stockouts.
3. **Partnerships:** Provincial respondents reported efforts to approach colleagues at various levels, for instance through the creation of Whatsapp groups to discuss challenges and solutions. However, these groups only include the provincial- and district-level EPI staff, not health facility counterparts or implementation partners at any level. Health care providers also alluded to the disruption caused by community RED/REC focal points who abandoned the program due to lack of incentive.
4. **Human resources:** Health care providers noted several human resource challenges. Most facilities surveyed had only one or two health staff, and occasionally no immunization-specific staff. The lack of personnel dedicated to vaccinating was a strong limitation in both provinces and resulted in high workloads among the few existing personnel (particularly nurses).
5. **Stockouts:** Participants reported stockouts of vaccine and consumables as an important challenge in both provinces.

Barriers for Health Care Providers (continued)

6. **Funding**: Zambézia provincial-level respondents said there was a delay in the disbursement of Gavi funds in 2021, which affected the ability to conduct EPI activities at district and community levels. Even when these funds were available, they were not enough to cover community engagement activities (i.e., transport, fuel, and communication means).
7. **Cold chain**: Two districts in Nampula reported solar panels as the sole energy source, which does not always have the capacity to support the fridge. Other facilities in the area had high-capacity solar panels, but constantly reported malfunctioning.

APPENDIX

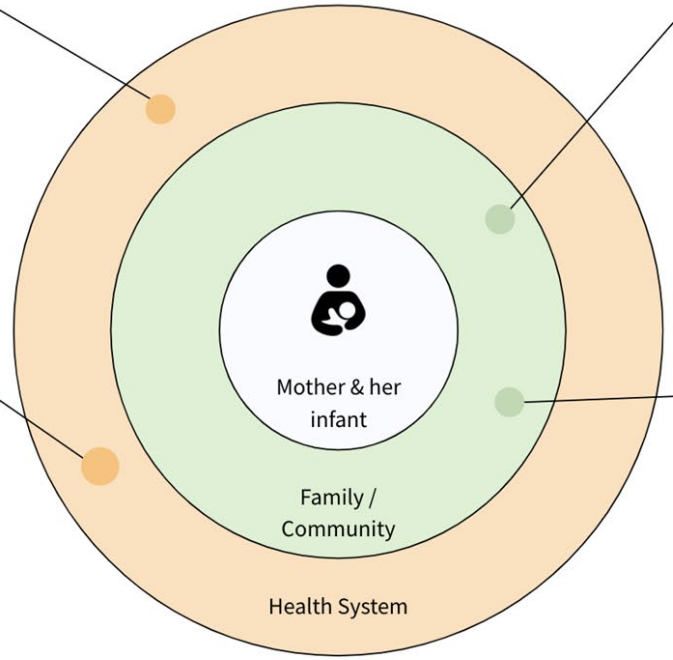
Co-creation Workshop Methods

Method 1: Vaccination Ecosystem Tool

Complete the tables below ...

Health Facility Manager	
Obstacles	**Enablers**
1.	
2.	
3.	

Registered Nurse	
Obstacles	**Enablers**
1. He does not have a vaccination record to fill out.	He updates the vaccination card.
2. He yells at her because she missed her last visit.	He treats her well during his visits.
3.	



Mother-in-law	
Obstacles	**Enablers**
1. She does not help with the other children when she has to go to the health center.	She takes care of the other children during her absence.
2.	
3.	

Religious Leader	
Obstacles	**Enablers**
1. He spreads negative rumors about vaccinations	He encourages mothers to get vaccinated at church
2.	
3.	

The following diagram represents the people that influence a mother in her life. Many actors can influence her ability to have her child vaccinated.

The tool first maps all the actors in her life (family members, community members, health system actors). Then explores the ways in which these actors both support or challenge her efforts to vaccinate her child.

Here are examples of actors that teams can brainstorm: husband, mother-in-law, civic leader, religious leader, nurse, etc. See photo on page 17 for an example of how one team mapped the various actors.

The example on this page illustrates how the tool is used.

Method 2: Solutions Activity at Co-creation Workshop

Solutions Brief Example

USER PROFILE/MOTHER OF A PARTIALLY VACCINATED CHILD:

- A mother want to fully vaccinate her 18-month-old.
- Her two older children are fully vaccinated.
- Family lives in Namilasse 35 km from Chinga health center.
- Her family is Muslim.
- While the father has an administrative position, it lacks money for transport.
- The mother delivered all her children in a health facility and trust the staff.
- When her 18-month was born, the facility had no vaccination cards.
- The baby received BCG and polio vaccine only.

ASSUMPTIONS/WHAT WE THINK WE KNOW ABOUT ROOT CAUSES RELATED TO THIS PROBLEM/OPPORTUNITY SPACE:

- Long distance from the home to the health center
- Mother is reluctant to seek vaccination services due to the insults from a nurse because she lacked a vaccination card at her first visit with newborn.

PROBLEM STATEMENTS/ OPPORTUNITIES TO EXPAND:

- When mother was able to get to health center she was not provided vaccines because she did not have vaccination card.
- Mother did not have money for a card.

Method 2: Solutions Activity, continued

FACILITATED BREAKOUT GROUP ACTIVITY

Solutions framing as an obstacle to address or enabler to expand
How might we better support mothers who are turned away from vaccination services because they do not have a health card?

Session 1: Brainstorm 10 ideas to answer the question above [20 minutes]

- HCD MINDSET: Any idea is good to consider. Think creatively and expansively. Imagine you have the budget to do it all. Imagine that you have a different role. What would you do?
- Write a short, one-line description of each solution idea.

Session 2: Choose two ideas from your list of 10 [5 minutes]

As a group, select two ideas for solutions that you would be most excited to pursue.

Session 3: Add details [20 minutes]

As a team, discuss and write the following for each of the selected ideas :

- What is it exactly?
- How does the user (from the user profile) directly benefit from this solution?
- How would it be conducted and by whom?
- When, where, how often would it be done?
- What additional inputs/resources would be needed?
  - Why are they needed and what would they accomplish?

Session 4: Putting solution into practice [15 min]:

What actions can be taken locally to implement these solutions? Who can take which small action in the coming month to achieve them?
These solutions aim to vaccinate zero-dose and under-immunized children. Remind participants that everyone has a role in reducing barriers to immunizing children.

APPENDIX

Data Collection Team

Mozambique Co-Creation Team

Lead by Dr Betuel Sigaúque & Dr Khatia Munguambe		
Number	**Name**	**Qualifications**
1	Vasco Muchanga	Master in Public Health and Degree in Sociology
2	Raquel Carrilho	Degree in Strategic Design
3	Estevão Manhiça	Master in Public Health and BA in Anthropology
4	Valério Govo	Master of Public Health and BA of Biological Science
5	Santos Sipaneque	Preventive Medicine Technicians with extensive experience in routine immunization and health system
6	Agostinho Mauire	Preventive Medicine Technicians with extensive experience in routine immunization and health system
7	Latia Sacur	Degree in Social and Organizational Psychology; Local language translator
8	Américo Mudaua	Local language translator

All photos from the MOMENTUM Routine Immunization Transformation and Equity team in Mozambique.

For more information about this project, please visit:

https://usaidmomentum.org/

https://twitter.com/USAID_MOMENTUM

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