HASH

HASH CO - CREATION WORKSHOP REPORT

20th- 22nd AUGUST 2025

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01 Executive Summary

The Hub for Artificial Intelligence in Maternal, Sexual and Reproductive Health (HASH) convened a three-day co-creation workshop from 20–22 August 2025 to initiate the development of a multilingual conversational AI assistant aimed at improving access to maternal, sexual and reproductive health (MSRH) information across Sub-Saharan Africa. The workshop brought together 28 participants from the HASH consortium, Phase I sub-grantees, and AI experts representing institutions in Uganda, Kenya, Ghana, and Ethiopia. The meeting marked an important milestone in HASH Phase II, which focuses on catalyzing the development and scale of responsible AI solutions to address MSRH challenges in the region.

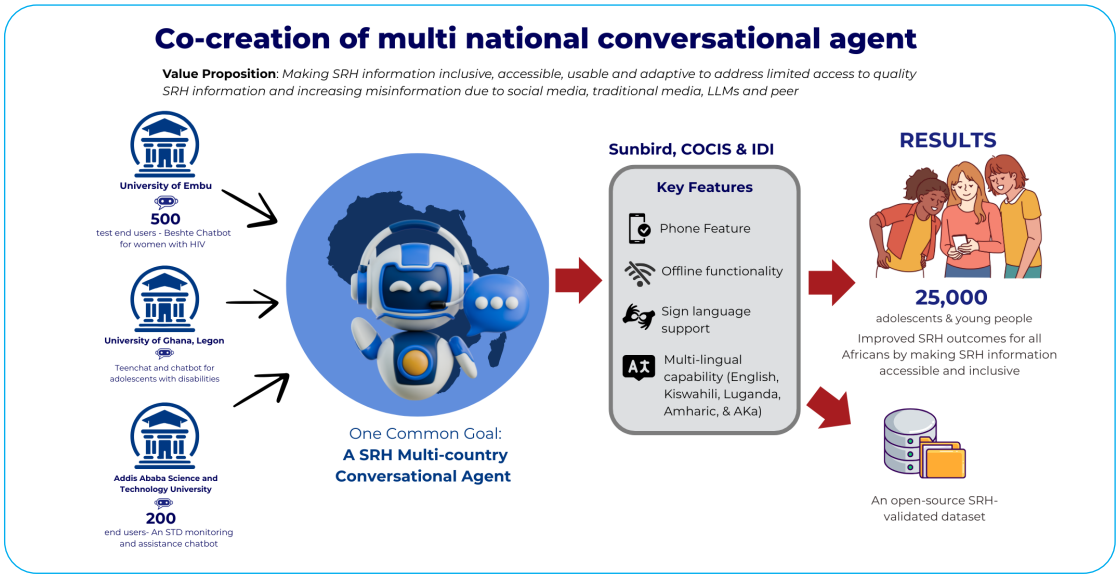
Since its establishment in 2021, HASH has supported African innovators working at the intersection of artificial intelligence and MSRH through funding, mentorship, capacity strengthening, and the creation of a community of practice. During Phase I, HASH supported ten innovators from seven African countries, resulting in the development of ten AI-driven tools and the formation of the HASH Network. Despite this progress, several challenges continue to limit the scaling of AI innovations in Africa, including gaps in high-quality datasets, limited representation of African languages in AI models, regulatory complexities, and difficulties in translating promising digital health solutions from pilot stages to large-scale implementation. Phase II therefore aims to build on existing innovations to develop scalable, locally relevant AI solutions that address priority MSRH challenges.

The co-creation workshop adopted a participatory and multidisciplinary approach, combining relationship building, peer learning, technical discussions, and implementation planning. The sessions focused on strengthening collaboration among participants and establishing effective team dynamics for multi-country implementation and creating clear project pathways.

- Dataset review, validation, and merging across countries.
- Model review, fine-tuning, and testing.
- Stakeholder engagement to guide user interface design and country-specific deployment strategies.
- Monitoring, evaluation, and learning.

Technical discussions focused on aligning system architecture, datasets, model approaches, and user interface requirements. The system will initially support languages including English, Luganda, Akan, Amharic, and Kiswahili, with plans to expand to additional languages. Participants identified adolescents (10–18) and young people (19–24), particularly vulnerable or marginalized groups including persons with disabilities, as the primary target population.

Figure 1: A diagram of the agreed conversational assistant and functionalities



02 Background & Rationale

The Hub for Artificial Intelligence in Maternal, Sexual & Reproductive Health (HASH), has been engaging in the AI for MSRH space since 2021, with the objective of implementing a research hub to advance MSRH and rights while strengthening health systems in Sub-Saharan Africa (SSA) through the responsible development and deployment of AI innovations.

HASH is a multidisciplinary consortium the Infectious Diseases Institute, the Makerere University AI lab and Sunbird AI. HASH targets pan-African anglophone and francophone stakeholders at the intersection of AI and MSRH and has provided capacity building, technological and methodological assistance, funding and the establishment of a community of practice. In Phase I of its operations HASH supported the research and development for ten local African innovators from seven African countries through our subgrantee program. We have conducted monthly capacity strengthening for almost 18 months and numerous AI Clinics for one-on-one technical consultation and mentorship.

From this, ten homegrown AI tools were successfully developed. We have established the HASH Network, our platform for community, collaboration, and learning, through a co-governance model with our subgrantees; five member-led clubs have been born out of this initiative and these clubs conduct regular events around common areas of interest. Additionally, the HASH meeting attendees and the subgrantees have published widely around the subject of AI for MSRH.

Despite the progress made regarding AI for MSRH, there remain key challenges that put limitations on the potential within the African continent. There are issues around data quality and accessibility, and knowledge gaps that hinder advancement of important innovations from ideation to scale. Further limited funding, under representation of languages besides English in AI development, rapid speed of advancement of AI technology as well as difficulty in identification of research priorities in MSRH that can be addressed through AI are concerns.

We must address these challenges through methods that center around equipping AI innovators to collaborate with multi-sectoral stakeholders and build local capacity for local solutions as this is a critical formula for successful uptake and scale. There is very little evidence for most digital health solutions being deployed on the continent. Whilst AI tools are being developed, progression to scale is limited. We aim to use HASH phase II to narrow this gap by providing concrete examples of different innovations that leverage AI to tackle the challenges in MRSH in a scalable way.

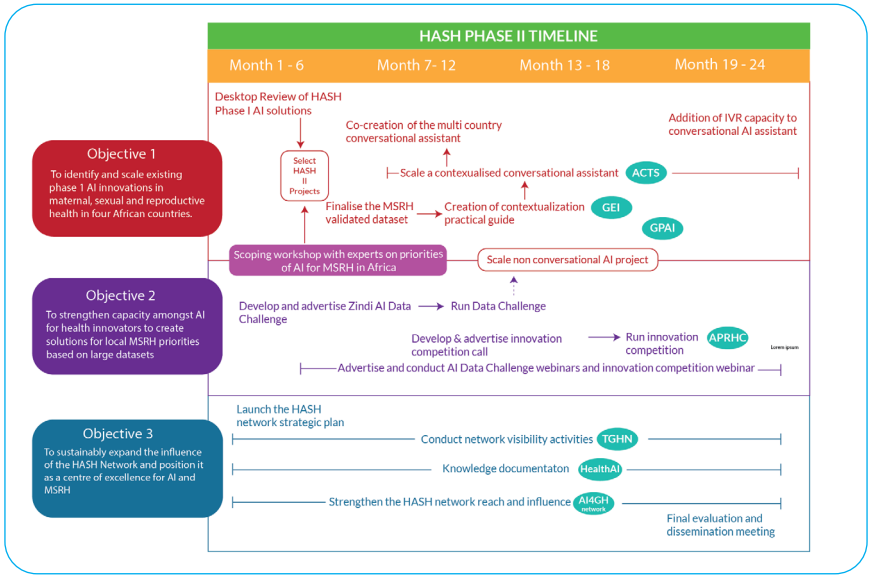
Project Goal

To catalyze the development and scale of Responsible AI solutions that address maternal, sexual and reproductive health challenges in SSA.

Specific Objective

i. To identify and scale existing phase 1 AI innovations in maternal, sexual and reproductive health in four African countries.
ii. To strengthen capacity amongst AI for health innovators to create solutions for local MSRH priorities based on large datasets.
iii. To sustainably expand the influence of the HASH Network and position it as a centre of excellence for AI and MSRH

Figure 2: HASH Phase II Project Pathway



03 Participation in the workshop

The co-creation workshop invited all members of the HASH consortium, HASH Phase 1 sub-grantee representatives selected to participate in the co-creation of the multinational conversational assistant following a rigorous desk review process and call for concepts review, AI experts from Makerere University, and other key HASH Secretariat members relevant to the co-creation process. The meeting registered 28 attendees over the three days.

Figure 3: Summary of the attendance by gender

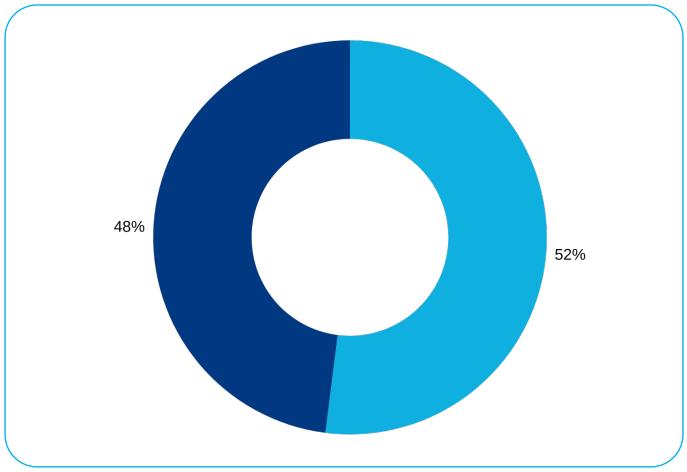
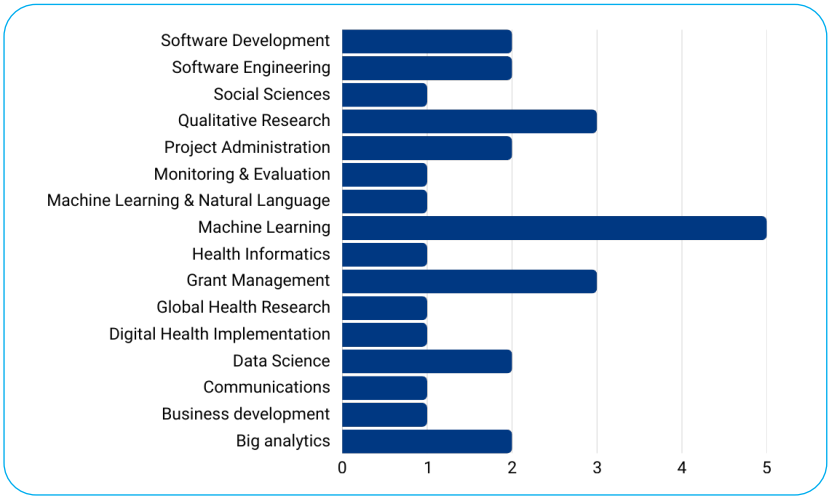


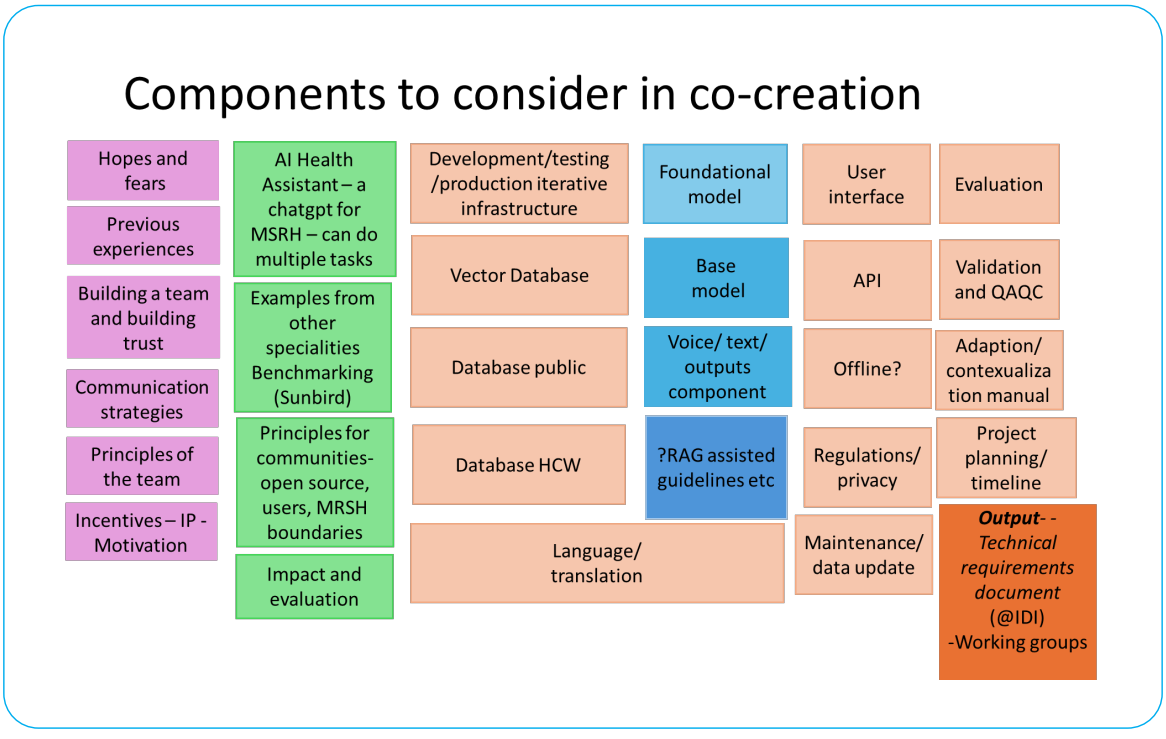
Figure 4: Summary of the attendance by professionality



04 Objectives of the Co-Creation Workshop

To collaboratively discuss the plans for development and deployment of the HASH multi lingual conversational agent. The HASH meeting attendees in order to set the page for this discussion required a competent firm to facilitate a co-creation work-meeting attendees building event for twenty-nine (28) meeting attendees members from HASH consortium member organizations (The Academy, Makerere College of Computing and Information Systems, and Sunbird AI) as well as HASH subgrantees (University of Embu, Kenya; University of Ghana, Legon; and Addis Ababa Science and Technology University, Ethiopia). The workshop focused on addressing the when, how, why, and what of the co-creation process and also discussed the components to consider in the co-creation process.

Figure 5: Components to consider in the co-creation process of the multimational conversational agent



05 Methodology and Approach

5.1. Overview

The HASH Phase 2 Co-Creation Workshop was implemented using a structured, participatory, and collaborative methodology designed to bring together multidisciplinary meeting attendees from Uganda, Kenya, Ghana, and Ethiopia. The workshop methodology combined meeting attendees building, technical discussions, benchmarking, system architecture reviews, user-centric design discussions, and implementation planning to support the development, alignment, and readiness of the multi-national conversational assistant. The approach emphasized collaborative work, cross-specialty learning, and iterative technical development, while ensuring alignment with regulations, privacy, and evaluation requirements.

5.2. Methodological Components

Relationship Building and Formation of Effective Team Dynamics

The HASH Phase 2 Co-Creation Workshop was implemented using a structured, participatory, anThe approach began on 20th August 2025 with an evening Dinner & Fun session and a fun game to let people know each other, aimed at fostering informal interaction and rapport among meeting attendees. This involved understanding unique things about each other.

On 21st August 2025, this was followed by an Introduction & Icebreaker session with the objective of getting to know one another. Meeting attendees introduced their neighbors by sharing:

- Name
- Country
- Organization
- Technical background
- Hobby
- Something they love about their culture

The session also included Group Superpowers, which supported early meeting attendees bonding and recognition of individual strengths.

Additionally, on 21st August 2025, a dedicated session on Building Effective Meeting attendees Dynamics formed a core part of the methodology. The objectives of this session were to:

- Build Trust
- Get to know each other's background and Social Styles
- How to work collaboratively to achieve project goals

Key discussion areas included:

- Effective team work
- Meeting attendees principles: Five Disciplines of Highly Effective team work
- Social Styles: Cross-cultural assessment
- Strength in diversity
- Effective communication strategies
- Previous experience from HASH Phase 1
- Working groups

This component was facilitated by an external partner Imprint Uganda Limited.

b. Project Presentation and Peer Learning

Subgrantee Project Presentations were used as a peer-learning and reflection methodology. Each subgrantee presented on: Problem statement, Methodology, expected outcomes, Demo of the current innovation, Activity plan
This enabled structured feedback, shared learning, and alignment across projects.

c. Cross-Specialty Benchmarking Insight

The workshop employed Cross-Specialty Benchmarking Insight as a learning methodology. Meeting attendees reviewed examples from other specialties to benchmark approaches, draw lessons, and inform innovation development.

d. Core Technical Architecture and Foundations

The methodology included in-depth technical discussions under Core Technical Architecture & Foundations, focusing on:

- Foundational model
- Base model
- Closed or open source
- Voice/ text Decisions component
- RAG assisted guidelines

These discussions supported alignment of technical foundations across subgrantee projects.

e. System Architecture

A System Architecture session provided a methodological framework for understanding and aligning technical infrastructure. Key areas covered included:

- Development/testing
- Production iterative infrastructure
- Vector Database
- Database public
- Database HCW
- Language/translation

This ensured consistency in system design and deployment planning.

f. User-Centric Design and Compliance

The methodology integrated User-Centric Design & Compliance, focusing on:

- User Experience
- User interface
- API
- Offline mode
- Regulations
- Privacy
- Maintenance/ data update

This ensured that innovations are user-focused, compliant, and sustainable.

g. Technical Requirements Review and Alignment

A Technical Requirements Review and Alignment session was used to review the technical requirements document, ensuring shared understanding and agreement across teams before implementation.

h. Implementation and Project Oversight

The final methodological component focused on Implementation and project oversight, covering:

- Validation and QAQC
- Adaption/ contextualization manual
- Project planning/ timeline
- Evaluation

This translated workshop discussions into actionable implementation plans and a technical requirements document.

06 Workshop Proceedings

Day 1: 20th August 2025

a. Session 1: Dinner & Fun – Relationship Building

Time: Evening
Objective: Foster informal interaction, rapport, and initial meeting attendees bonding

- Fun interactive games (e.g. HASH Bingo Know Me Better) to help meeting attendees learn about each other
- Sharing personal facts, hobbies, and cultural highlights
- Informal discussions on expectations and collaboration

Activities & Facilitation

- Fun interactive games (e.g. HASH Bingo Know Me Better) to help meeting attendees learn about each other
- Sharing personal facts, hobbies, and cultural highlights
- Informal discussions on expectations and collaboration

Participant Contributions:

- Meeting attendees shared unique personal interests and cultural highlights
- Began identifying potential synergies in skills and experience

Decisions:

- Early rapport and trust established among meeting attendees
- Foundation laid for collaborative work in subsequent sessions

Day 2: 21st August 2025

a. Session 2: Introduction & Icebreaker

Time: Morning
Objective: Introduce meeting attendees and strengthen interpersonal awareness

Activities & Facilitation

- Meeting attendees introduced their neighbors, sharing: Name, Country, Organization, Technical Background, Cultural Highlight, Hobby.
- Group Superpowers exercise to identify individual strengths

Participant Contributions:

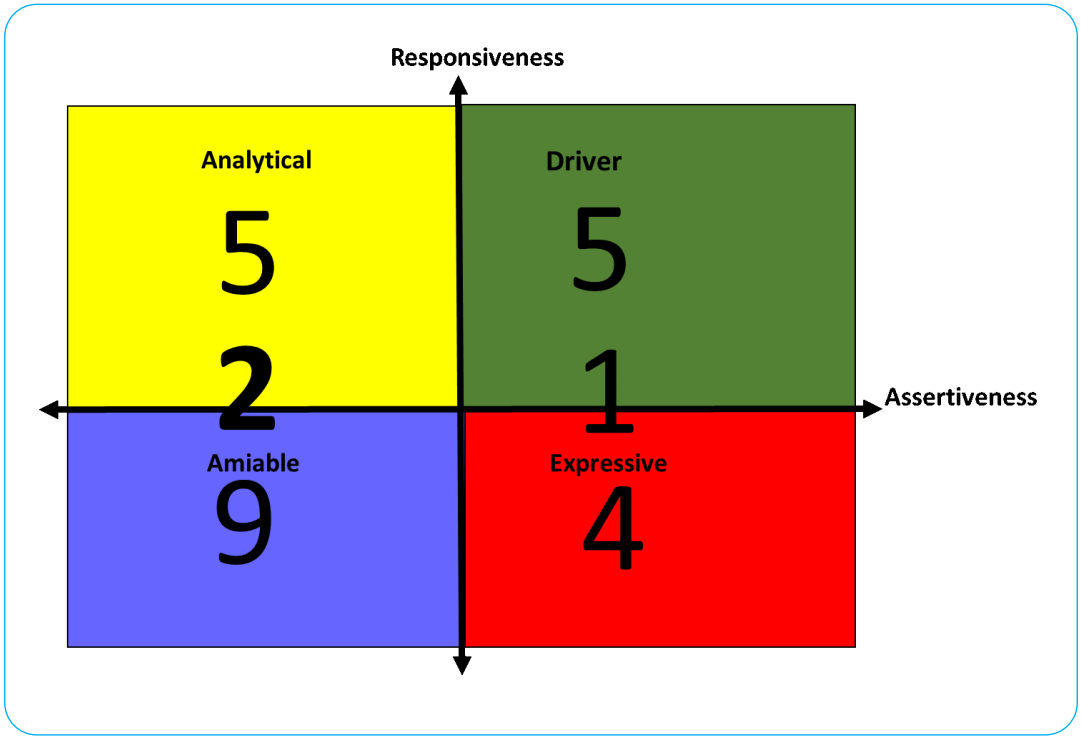
- Meeting attendees reflected on individual and complementary strengths
- Recognized areas for cross-country collaboration

Decisions:
- Early rapport and trust established among meeting attendees
- Foundation laid for collaborative work in subsequent sessions

b. Session 3: Building Effective Meeting attendees Dynamics

Objective: Build trust, align on meeting attendees principles, and improve collaboration
Activities & Facilitation:
- Presentation on Five Disciplines of Highly Effective Teams
- Assessment of the meeting attendees's social Styles and cross-cultural assessments

Figures 4: A distribution of the meeting attendees members across the social styles



Key Discussion Points:

- Effective team work strategies for multi-country collaboration
- Importance of recognizing diversity and leveraging complementary skills

Decisions

- Adopted structured communication channels and collaboration principles
    * The meeting attendees agreed to meet weekly for the first 3 months of cocreation and then bi-weekly.
    * The meeting attendees agreed to meet on Tuesdays at 3:00pm factoring in the time zone difference for other team members esp. the Ghanaians.

- Agreed on clear roles, responsibilities, and working dynamics
    * The meeting attendees identified the different strengths for each group and agreed on which meeting attendees would take lead on the major blocks in the process.
        » University of Embu and Makerere COCIS-Datasets review, translation and merging
        » SunbirdAI-Modelling
        » University of Ghana - Deploying
        » IDI-Cocreation Coordination, Scaling and documentation of the cocreation process
        » Addis Ababa University- Scaling

c. Session 4: Subgrantee Project Presentations – Peer Learning

Objective: Enable structured feedback and shared learning among subgrantees

Activities & Facilitation:

- Presentation on Five Disciplines of Highly Effective Teams
- Assessment of the meeting attendees's social Styles and cross-cultural assessments

Key discussion Points

- Challenges in deployment and scaling
- Meeting attendees provided peer feedback on technical design, user experience, and implementation approaches
- Lessons learned from each project to be applied in the cocreation process.

d. Session 5: Cross-Specialty Benchmarking Insight

Objective: Learn from other specialties to inform development

Activities & Facilitation:

- Presentation of benchmark examples from different specialties
- Group discussion on applicability to current projects

Key Discussion Points:

- Most existing chatbots are not cross-cutting and operate on different platforms (commonly WhatsApp), creating accessibility challenges in countries like Ethiopia
- Lack of truly multinational chatbots raises questions about design, sustainability, and scalability, especially for MSRH across Africa
- Barriers to scaling include limited resources, poor integration into existing systems, and failure to address end-user contexts
- Tension between technological innovation and contextual relevance: platform restrictions, linguistic diversity, and cultural differences must be considered
- Importance of designing adaptable solutions rooted in the lived realities of target users.

Participant Contributions:

- Suggested adaptations for conversational assistant design to improve accessibility and scalability
- Highlighted potential pitfalls, including platform dependency and lack of contextual fit, and proposed mitigation strategies
- Emphasized the need for innovations to be culturally and contextually relevant to avoid premature project failure

Decision

- Work together to develop manuals that can support and build capacity of other countries to develop a multinational conversational assistant. Probably looking two different options:
  * Option 1: One conversational agent
  * One suit with all functionalities like OPENMRS
- Work together to develop a functional model that can be used for all countries. A model that is adaptable by all countries to fine tune.
- Develop a technical requirements document detailing all the technical aspects needed.

Day 3: 22nd August 2025

Session 1: Technical architecture, cocreation process and value proposition statement

The first session was an interactive group work session, facilitated by the HASH Co-Principal Investigator and Project Coordinator, aimed at addressing questions on the core technical architecture, system alignment, and the user-centered design vision and value proposition for the assistant. Meeting attendees' responses focused on the following aspects:

i. HASH Phase 1 current chatbot capabilities and other aspects
ii. Where in the assistant development lifecycle should we co-create together?
iii. What core functionalities should we focus on?
iv. Datasets, model architecture, User Experience and Inclusivity Considerations
v. What are the in-country regulatory, privacy and IP considerations?
vi. What is our target population
vii. and languages we should consider?
viii. What is our value proposition?
ix. What is our vision?

a. What functional and technical capabilities are currently implemented in the Phase 1 subgrantees' chatbots?

This session involved collecting different technical aspects from the subgrantees to guide the cocreation process.

Table 1: HASH Phase 1 subgrantee chatbot capabilities

Aspect	Ghana	Ethiopia	Kenya
Most used local languages	Akan	Amharic, Oromo	Kiswahili, Kikuyu
Planned additional languages	Akan, Ga, Frafra	Amharic	Kiswahili, Kikuyu
Future target population	Adolescents with hearing, vision & developmental disabilities	Young people-University students	Adolescents & young people
RAG planned	Yes	Yes	Yes
IVR / Voicebot planned	Yes	Yes	Yes
Input modality	Text & Voice	Text only	Text only
Current languages	English	Amharic & English	English & Swahili
Uses RAG	Yes	Yes	No feedback
LLM type	Closed	Open source	Closed
Specific LLM	OpenAI GPT	LLaMA 3	GPT
Offline capability	No	No	No

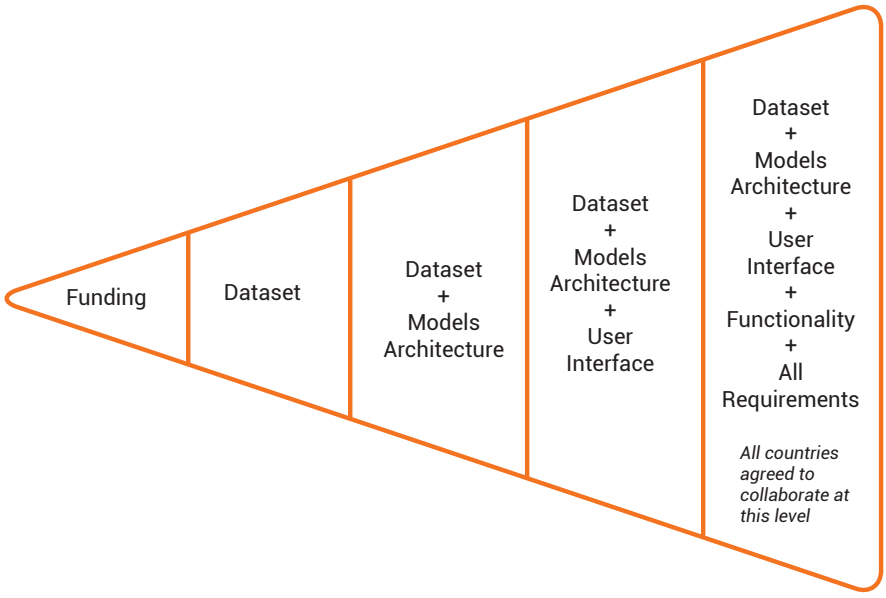
b. At which stages of the AI conversational assistant development process should we collaborate most as a group?

Meeting attendees were presented with a staged cocreation funnel illustrating progressive levels of maturity and collaboration, ranging from foundational funding and dataset curation to full assistant incorporating datasets, model architecture, user interface, functional requirements, and system functionality.

The purpose of this exercise was to understand where meeting attendees felt most comfortable and motivated to collaborate collectively during the co-creation process.

Notably, all meeting attendees unanimously selected the final stage of the funnel, representing collaboration across the complete functional assistant including datasets, model architecture, user interface, all requirements, and functionality. This consensus highlighted a strong preference for end-to-end co-creation.

Figure 4: Diagram of the funnel illustrating the different levels of collaboration



This outcome reinforced the importance of inclusive, multidisciplinary collaboration throughout the full lifecycle of AI-conversational agent within the HASH initiative.

i. Datasets and Validation process

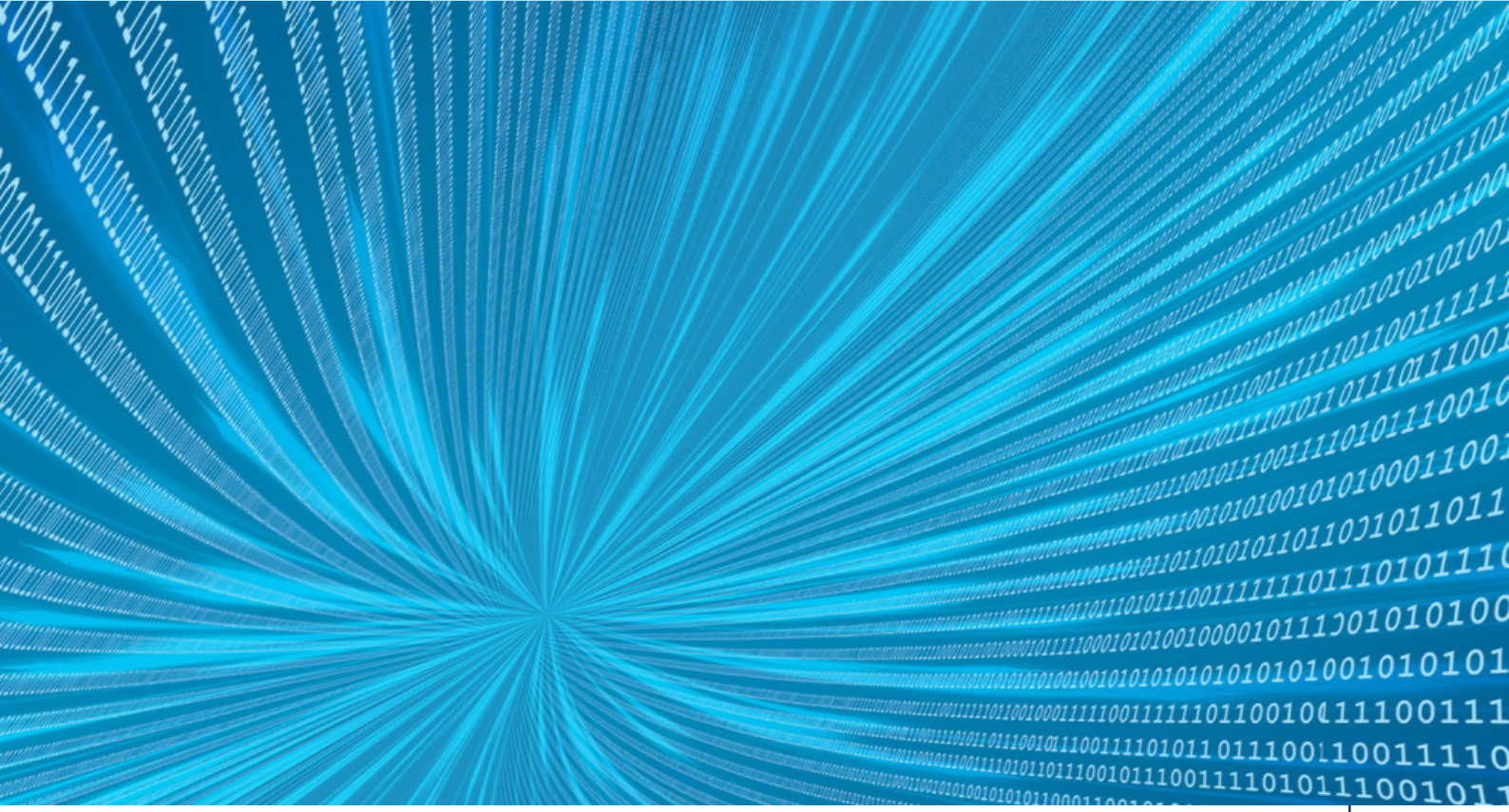
Meeting attendees discussed dataset validation as a critical component of the dataset development process. Updates from participating countries indicated that Ghana, Kenya, and Uganda had completed their dataset validation processes.

The workshop reached the following agreements:

- Validation Scope: Each country will conduct validation on 15% of its dataset.
- Validation Dimensions: Validation will be undertaken across two key aspects:
  - » Language accuracy and appropriateness
  - » Clinical accuracy and relevance
  - » Comprehensiveness

- Validation Criteria: Meeting attendees agreed to adopt a defined validation criterion, drawing on and adapting the existing Uganda dataset validation framework to ensure consistency across countries.

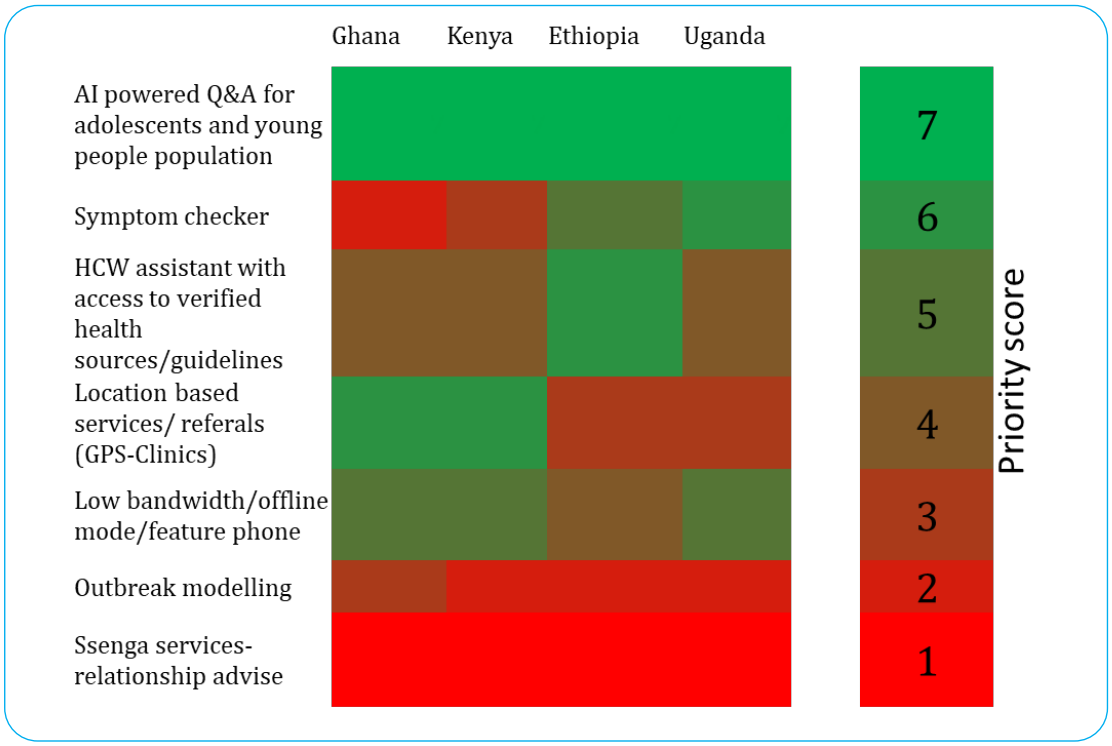
These agreements aim to promote standardization, quality assurance, and cross-country comparability of the datasets.



ii. User Experience and Inclusivity Considerations
- » Ease of access via social media platforms
- » Support for community moderators
- » Text and voice interfaces, including text-to-speech and speech-to-text
- » Support for non-smartphone users (USSD, offline, low-bandwidth)
- » Multilingual support (local and official languages)
- » Compatibility with Android, iOS, and web platforms
- » Core functionalities: conversational interface, audio, empathetic responses

a. What should be our AI assistant core functionalities?

Figure 5: A heat map of prioritized core functions



The meeting attendees also agreed to incorporate important functionalities in the future.

- Community rooms

- Gamification
  - » The meeting attendees agreed to reach out to MENA hub which has an app with gamification functionalities and learn from them

- Sign language support
  - » The HASH PI raised the need for extra funding to add sign language functionality to the AI conversational assistant.

- French and Arabic language support

b. What are the in-country regulatory, privacy and IP considerations?

- Applicable data protection and regulatory frameworks include:
- Kenya: Data Protection Act, Kenya AI Strategy, institutional IP policies
- Ghana: Data Protection laws, institutional IP policies
- Ethiopia: Consent-based data use requirements
- National and institutional approvals (NACOSTI, IRBs, GHS, GES)
- Cross-border data transfer regulations
- Clarification of data controller and IP ownership

c. Access models for each country and languages

Aspect	Uganda	Ghana	Ethiopia	Kenya
Access model	Web Interactive Voice responses	Web Social media Mobile App	Telegram	WhatsApp Web Mobile App
Language of preference	English Luganda	English Akan	English Amharic	English Swahili

d. Target Population (Voting Results)

Target Population	Votes
Young Africans (20–24) with disabilities across all literacy and socioeconomic levels	2
All Africans across the life cycle including people with visual and hearing impairments	5
Adolescents (10–18) and young people (19–24), vulnerable and marginalized, including those with disabilities	11

e. Vision Statements (Voting Results)

- Improve SRH outcomes for all Africans by making SRH information accessible and inclusive (8 votes).
- Provide accessible and quality SRH information to vulnerable and marginalized adolescents and young people (6 votes).
- Debunk myths surrounding MSRH through accurate, quality information (5 votes).

f. Value Proposition Development and Final Selection

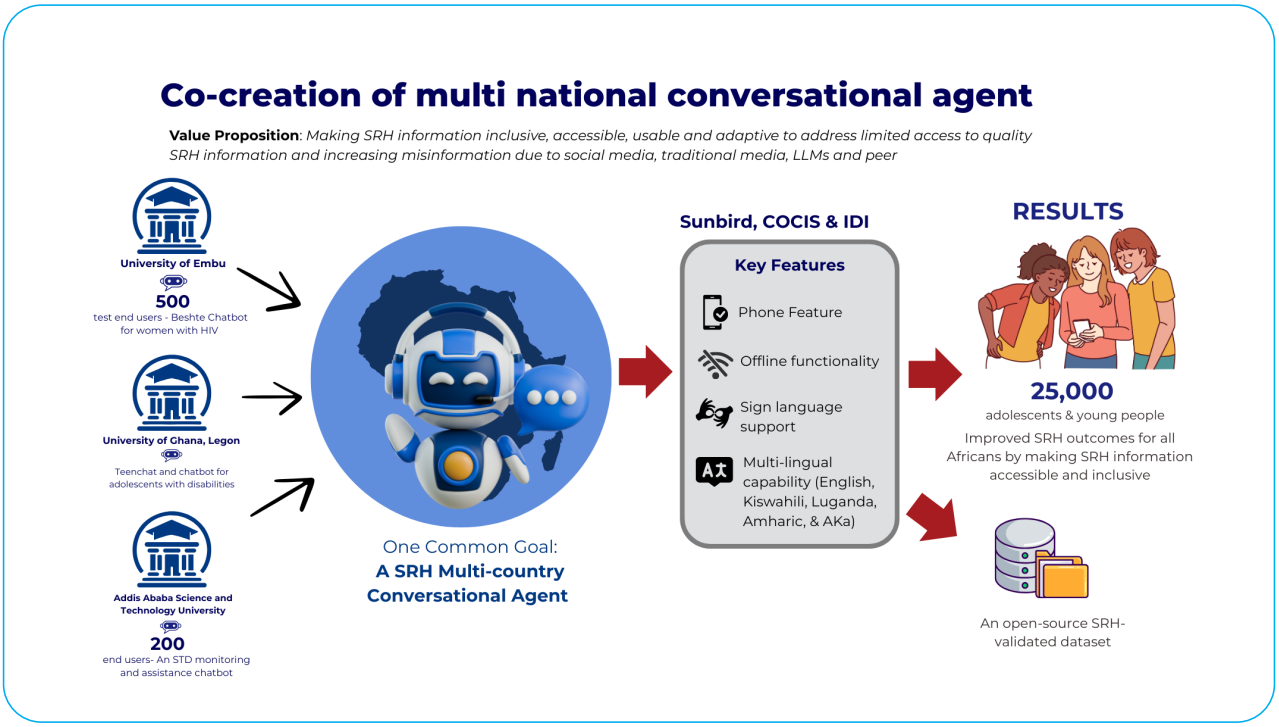
Meeting attendees were divided into three groups, each representing a social style, and tasked to develop a proposed value proposition for the co-creation and scale-up of the conversational agent. Groups rotated to review and refine each other's statements. Proposed value proposition themes:

- Limited access to quality SRH information among vulnerable and marginalized adolescents and young people
- Addressing increasing misinformation on MSRH driven by social media, traditional medicine, LLMs, and peers
- Making SRH information inclusive, usable, and adaptable

Following a final review exercise, meeting attendees selected the final value proposition:

Making SRH information inclusive, accessible, usable, and adaptable to address limited access to quality SRH information and increasing misinformation due to social media, traditional media, LLMs and peers

Figure 5: A diagram of the agreed conversational assistant and functionalities



Session 2: Project Working streams, Monitoring and Evaluation

Session 2 focused on identifying workstreams that individual country teams could initiate independently while remaining aligned to the overall project objectives. Participants also discussed and agreed on the anticipated flow of activities across the project lifecycle and plans for evaluation:

Agreed Project Implementation Flow

Step 1: Dataset Review, Validation, and Merging

Participants agreed that all country teams will share their validated datasets with the IDI Data Scientist. The datasets will be uploaded to Hugging Face to enable access by Sunbird AI and Makerere University (MUK) COCIS for further translation and integration.

Step 2: Model Review, Fine-Tuning, and Testing

Following dataset consolidation, Sunbird AI will undertake model review, fine-tuning, and testing to ensure performance, reliability, and contextual relevance across countries.

Step 3: Stakeholder Engagements

Participants agreed on the need for stakeholder engagements to:

- Inform the user interface design, and
- Guide deployment and scaling pathway of the conversational assistant within each country context.

Step 4: Monitoring and Evaluation (M&E)

The session emphasized continuous monitoring and learning throughout development and deployment. The following agreements were reached:

- Progress Monitoring:

Work plan and weekly coordination meetings will be held to:

  - » Track progress across activities
  - » Identify and address implementation challenges

- Key Evaluation Dimensions:

The following aspects were identified for evaluation:

  - * Reach: Targeting 25,000 beneficiaries across all participating countries
  - * Access
  - * Stability and functionality of the application
  - * Usability of the innovation
  - * Health outcomes

  - » Evaluation Scope and Limitations: Participants noted that certain outcomes, particularly health outcomes, may not be measurable within the project's short implementation timeline.

  - » Rigorous Impact Evaluation: It was agreed that a randomized controlled trial (RCT) would be the most appropriate approach for rigorous evaluation, although this may be more suitable for a later phase and will require extra funding.

  - » Process Evaluation: Participants proposed conducting a process evaluation alongside the development of the conversational assistant to document implementation learnings, adaptations, and challenges in real time.
    - * Reference Frameworks:Some participants recommended reviewing and aligning the evaluation approach with the WHO Digital Health Evaluation Framework.

07 Next Steps

Following the brainstorming sessions and discussions held in the three day workshop, the meeting attendees agreed to;

i. Finalize the cocreation technical requirements document following feedback from the meeting attendees on the meeting. This document will guide the development of the conversational agent
ii. Create working groups or blocks that will lead the different aspects of the development process.
iii. Review the WHO digital health evaluation framework and other frameworks to guide the documentation and evaluation of the cocreation process of the AI conversational assistant.
iv. Develop manuals for community engagement, dataset translation and contextualization to offer guidance to future projects.
v. Resource mobilization to evaluate the AI conversational assistant in a randomized clinical trial
vi. Obtain extra funding to add sign language functionality to the AI conversational assistant

08 References

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09 Appendix

Appendix 1: Summary of Subgrantees

Subgrantee	Country	Project title
University of Embu	Kenya	BESHTE: Leveraging AI for the Improvement of Access to Adolescent and Young People's Reproductive Health and HIV related Information
University of Ghana, Legon	Ghana	Harnessing Artificial Intelligence to Transform Sexual and Reproductive Health Outcomes for Adolescents with Disabilities in Africa.
Addis Ababa University of Science and Technology	Ethiopia	Sexually transmitted disease monitoring and assistance tool design in Ethiopian higher education institutes and beyond

PICTORIAL


Hub for Artificial
Intelligence in Mater
Sexual and Reproduc
Health (HASH)


(Peter Hawkins)
TASK
PROCESS


ED GENERATION (LIVE DEMO)
Sunbird AI