



ICT4Scale

Major presentations

November 2019

Submitted by:

Farm Radio International
1404 Scott Street
Ottawa, Canada

Submitted to:

International Development Research Centre

FARM RADIO  **RADIOS RURALES**
INTERNATIONAL INTERNATIONALES

The following document contains slide presentations from several of the following presentations at conferences during the project period.

- **September 6, 2017 (Ottawa, Canada).** Presentation at the Global Affairs Canada Feminist International Aid Policy Event.
- **October 30, 2017 (Durban, South Africa).** Presentation and booth at the 3rd AFAAS Africa-Wide Agricultural Extension Week.
- **Nov. 2, 2017 (Ottawa, Canada).** Oral Presentation (B.Pelletier) about ICT4Scale project at the University of Ottawa (Department of Geography) as part of the Phips-Langlois Seminar Series, titled Scaling-up agricultural innovations in sub-Saharan Africa: The role of information and communication technologies. Presentation was attended by faculty members and students.
- **Feb. 8, 2018 (Ottawa, Canada).** Learning Event and Webinar held at Farm Radio International, Ottawa titled Going Big for the Long-term. Insights from scaling-up & sustaining ICT-enabled approaches. The event included an oral presentation (B.Pelletier) about the ICT4Scale project and presentations about two CIFSRR projects involving FRI: Achieving Impact at Scale and Economic Viability of Extension Services (AIS) in Ghana, and the Scaling-up Improved Legume Technologies (SILT) in Tanzania.
- **Feb. 21, 2018 (Lilongwe, Malawi).** National Consultative Meeting. Learning Event introducing and launching the ICT4Scale project and its learning platform. A range of stakeholders from the Malawi government and civil society attended the event.
- **March 9, 2018 (Washington, DC).** Panelist (B.Pelletier) in a break-out session at the event Digital Development – the next 10 years, organized by USAID, in Washington, DC. The 75-minute session was titled How Digital Tools are Transforming Agriculture Extension.
- **March 15-16, 2018 (Lusaka, Zambia).** Oral Presentation (C. Mloza-Banda) at the 2nd African Conference of the International Telecommunications Society. The presentation was titled Her Voice on Air: Using Radio and ICTs to support Women Farmers in Africa by Hudson H.E., Hampson K., Leclair M., Montpetit C., Mweruka P., Pelletier B., Mloza-Banda C., and Chapota R.
- **May 8-10, 2018 (Lusaka, Zambia).** ICT4D conference. C. Mloza-Banda participated in a panel titled Digital Agriculture: Scale and Sustainability through Government Partnership and Ownership.
- **June 14, 2018 (Washington, DC).** The ICTforAg conference (June 14, 2018, Washington, DC) where B.Pelletier was a panelist with D. Spielman (IFPRI) and M. Persaud (Viamo) on a session titled: How to Reduce Gender Divides in ICTforAg Programs?
- **September 25-27, 2018 (Purdue University, West Lafayette, IND).** B. Pelletier attended and presented a poster at the Scale-up Conference at Purdue University on some of our preliminary framework ideas.
- **April 11, 2019 (Lilongwe, Malawi).** Harnessing ICT4scale Stakeholder workshop. The entire research team engaged directly with key government, NGO and other stakeholders. Attendees gave feedback on the intervention research and overall research approach.



- **April 31, 2019 (Kampala, Uganda).** ICT4D Conference. G. Vilili presented our approach in our intervention research, focusing on Mlimi Hotline and the participatory radio programming.
- **May 17, 2019 (Montreal, Canada).** Canadian Association of African Studies, Annual Conference: Presentation on ICT4Scale research project as part of a panel of 4 presenters.
- **September 3, 2019 (Accra, Ghana).** AGRA Forum (AGRF). Rex Chapota (FRI staff) general presentation on ICT4Scale at IDRC side meeting.
- **October 24, 2019 (Ottawa, Canada).** Final ICT4Scale results sharing webinar with live and online participants.

#ICT4Scale

A Roadmap for Scaling-Up



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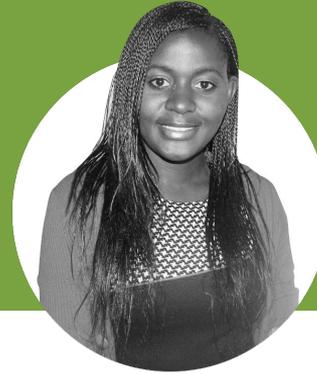
Today's speakers:



Dr. Bernard Pelletier
Lead Researcher
Farm Radio International



Berhane Gebru, Msc
Director of Programs
TechLab, FHI360



Eluby Kanyenda, MSc
Agricultural Innovation
Systems Specialist
Farm Radio Trust (Malawi)



George Vilili
CEO
Farm Radio Trust (Malawi)

The #ICT4Scale learning platform

- This is just the beginning...
- We want this research to be “living” and learn from your experiences
- Future webinars to feature guest speakers from our case studies, meta review and others

- Next webinar: **December 2019**
- Topics for the future:
 - ICT4Scale Strategies
 - ICT4Scale & Gender
 - ICT4Scale & M&E
 - *and more...*





ICT4Scale research project

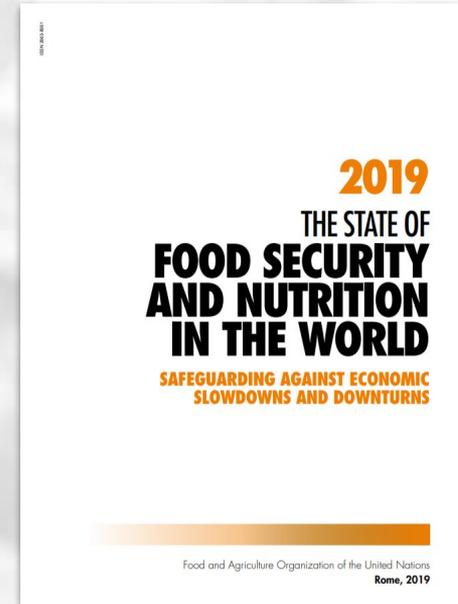
Dr. Bernard Pelletier

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Context of research initiative

- Achieving **impact at scale** remains a key challenge facing the international development community
- E.g., FAO's SOFI 2019 confirms rise in world hunger, despite important efforts by international development community
- SDGs (2015) emphasize need to achieve sustainable and equitable at impact scale by 2030
- G7 Whistler Principles (2018) include need to *"identify scalable solutions"* for development impact





Scaling means **expanding, replicating, adapting** and **sustaining** successful policies, programs or projects in geographic space and over time to reach a greater number of rural poor

Hartmann & Linn (2008), "Scaling Up: A Framework and Lessons for Development Effectiveness from Literature and Practice" Brookings Institution

Scaling dimensions



Scaling out (horizontal): The process of expanding impact of an innovation through replication, dissemination, extension



Scaling up (vertical): Changing the policy / institutional environment through higher level influencing, to support scaling out initiative



Scaling deep: Transforming social-cultural norms and practices and attitudes through awareness raising and capacity building (CIMMYT model)

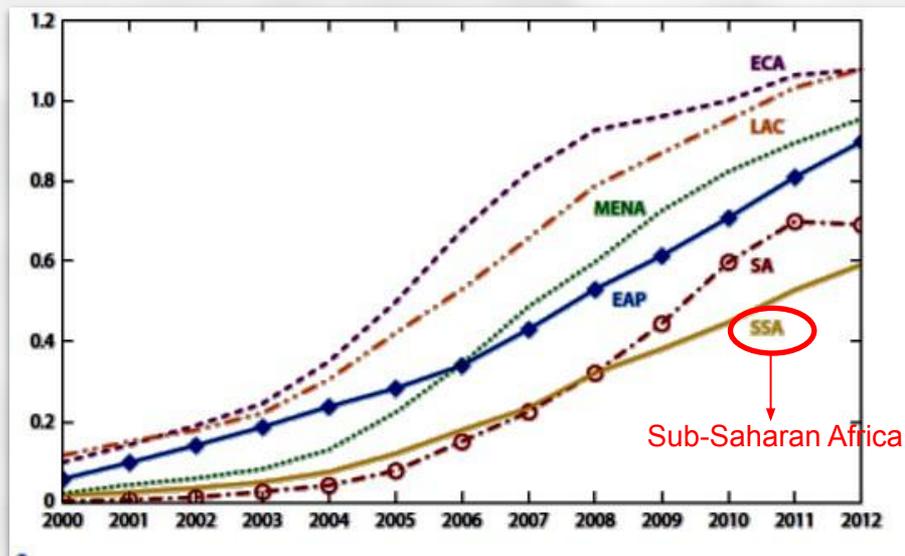
Role of ICTs in achieving impact at scale

ICT has immense potential to **speed up and scale** ... a very wide range of cutting-edge technologies, applications and platforms across the economy, helping low-income countries to leapfrog to achieve key development milestones while contributing to a growth economy ... it can also dramatically reduce the costs of service delivery.”

Ericsson and The Earth Institute,
Columbia University (2017). ICT and SDGs

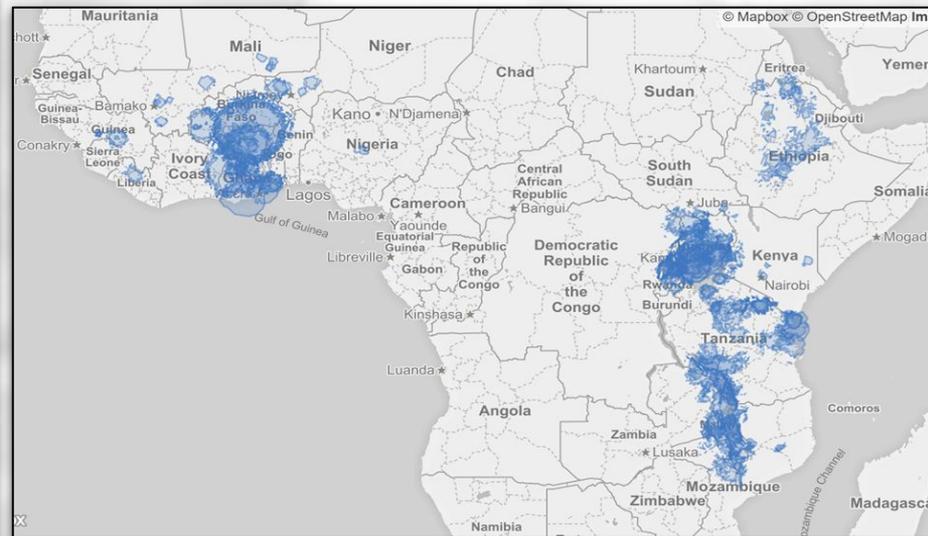
Reach of ICT's

Ratio of mobile phone subscription to population



Nakasone et al. Annu. Rev. Resour. Econ. 2014. 6:533-50

Coverage of radio stations associated with FRI & FRT



Farm Radio International, 2019

Potential role of ICTs in scaling up

- Rapid penetration of mobile phones and increased access by smallholder farmers
- Radio reaching millions of people
- Strengthened interactions, linkages and networking among key stakeholders
- Increase access to timely and relevant agricultural information, financial services, and/or input and output markets.

Evidence gap regarding the specific ability of ICTs to enhance the scaling process

Research questions:

1. What **combinations** of ICT, actors and institutional arrangements are most effective in scaling agricultural solutions?
2. What are the **gender equality** considerations of ICT-enabled scaling of agricultural solutions?
3. What **barriers** may limit the reach or effectiveness of ICTs in scaling initiatives?

**Focus of research is not on the Scaling of ICTs but, more broadly, on the use of ICTs as tools to Scale (any) agricultural solutions*

Research components



Meta-review

Impact assessments and findings from a set of existing ICT-enhanced scaling-up initiatives implemented worldwide are being synthesized using content analysis of documents, surveys, and interviews.



Case study

Case study involving four initiatives in Malawi, Uganda, Ethiopia and Ghana conducted using interviews and analysis of document to examine in more detail the functioning and impact of concrete scaling-up initiatives.



Intervention research

Implementation and testing of elements of ICT4Scale model in initiative aiming at scaling up the use of soybean inoculants in Malawi using multiple ICT tools - interactive radio, SMS, call center, social media



Learning platform

Consistent sharing of success stories in ICT-enabled scale-up. Involvement of various stakeholders in inputting into, and utilizing our ICT4Scale framework.



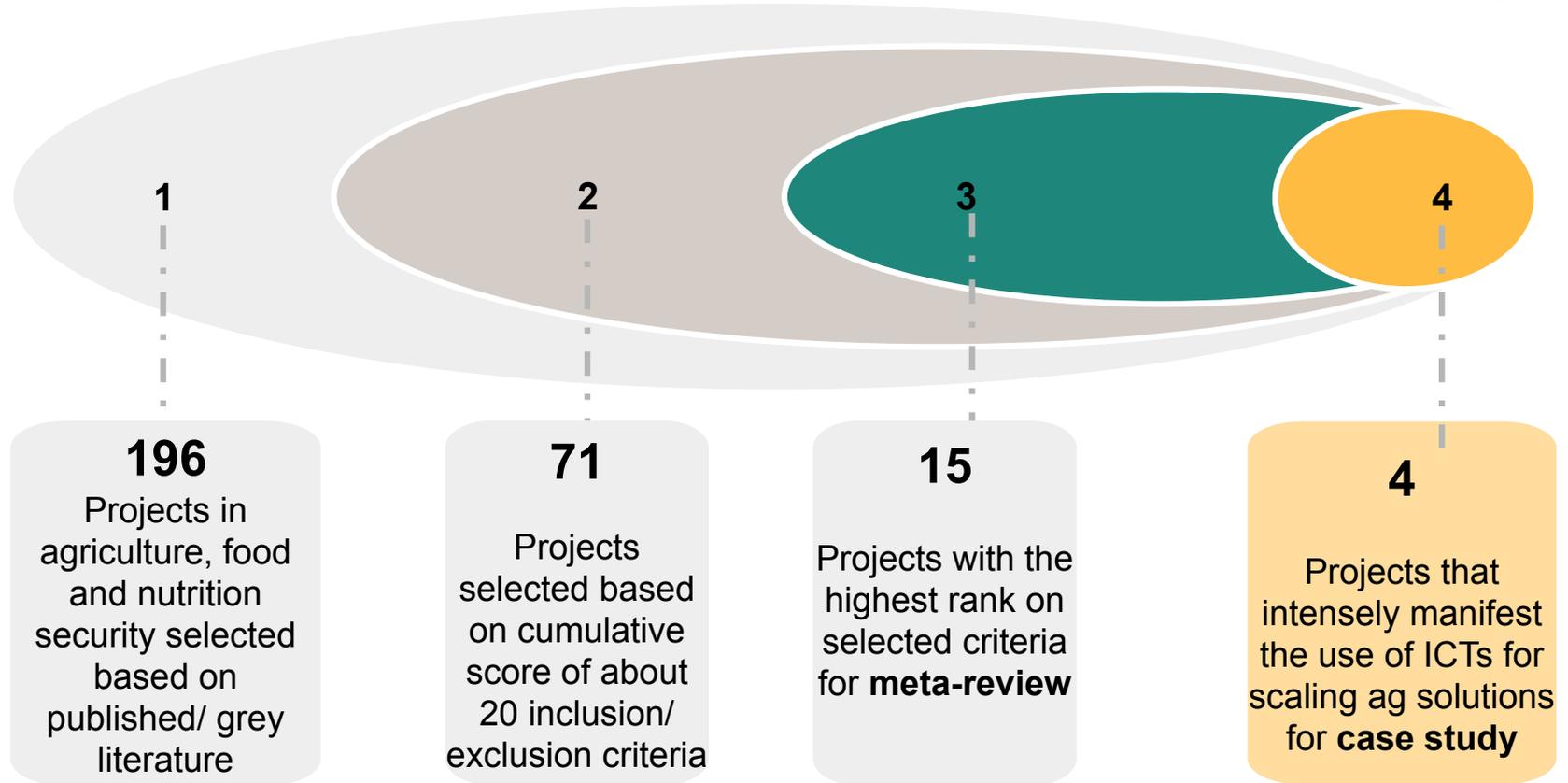
Meta-Review & Case Studies

Berhane Gebru, Msc

farmradio.org



Selection of Projects for Meta-Review and Case Study



Meta-Review

Geographic Representation of Selected Projects

Africa

Ethiopia, Ghana, Kenya, Malawi, Rwanda, Senegal, Tanzania, Uganda

Asia

Bangladesh, Myanmar, Pakistan, Sri Lanka

South America

Columbia, Guatemala, Nicaragua

Primary focus of projects selected for case study



Project Name	Focus	Scaling pathway
Scaling-up Radio and ICTs for Enhanced Extension Delivery (SRIED, Malawi)	Delivery of extension services to farmers using interactive radio, SMS, IVR and call center	Knowledge sharing and inform policy
Climate Change Adaptation and ICT (CHAI, Uganda)	Delivery of climate and agricultural advisories and market information to farmers via interactive radio and SMS	Knowledge sharing and inform policy
Digital Integration to Amplify Agricultural Extension, (DIAAE, Ethiopia)	Delivery information on improved agronomic practices through interactive radio, IVR and call center	Enhance knowledge
Digital Farmer Services, (ESOKO, Ghana)	Market access, climate smart agriculture via automated voice calls, voice messages, IVR and SMS; mobile money and micro-insurance	Market based approach for service delivery and financial services

Combinations of ICTs Used

Project	SMS/ USSD	Automated voice call	Voice message	IVR	Interacti ve Radio	Call Center
SRIIED/ Malawi	✓			✓	✓	✓
CHAI/ Uganda	✓			✓	✓	
DIAAE/ Ethiopia	✓			✓	✓	✓
ESOKO/ Ghana	✓	✓	✓	✓		✓



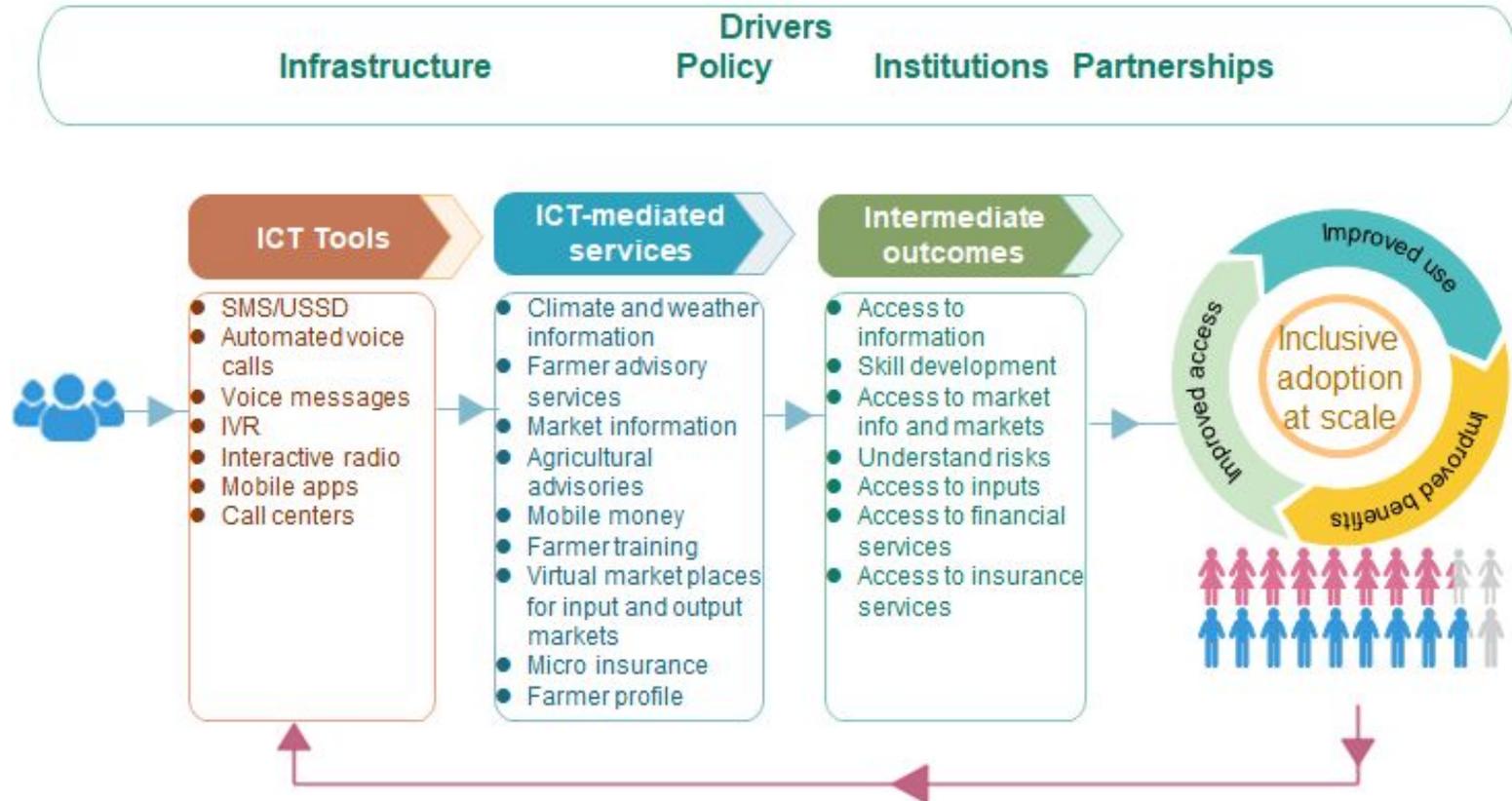
Role of ICTs in Scaling-up Agricultural Solutions

Role of ICTs in Scaling-up Agricultural Solutions

1. Improved adoption of agricultural solutions because of:
 - Improved **access** to information on the solution
 - **Ability** to apply solution into action
 - Enhance **income generation** potential
2. Avoid dilution of content
3. Enhanced inclusion of women



1) Improve Adoption of Agricultural Solutions



2) Enhanced inclusion of women

- Enabled dissemination of information tailored for women's needs
- Limited ownership of technology impediment to inclusion of women
- Projects provided radio and smartphones to women's groups
- Women-only call in lines
- Engaging women in radio programs

3) Avoid Dilution of Content

- Consistency in messages exchanged between research institutions, extension, and farmers

Key Findings

- Use of ICTs can enhance agricultural extension by reaching farmers, facilitating their participation and **improving adoption**
- Use of **multiple ICT-based communication channels** expands reach and use of promoted solutions. However, push of *generic* SMS messages does not account for complexity of situations faced by smallholder farmers.
- Disseminate **hyper-local evidence-based agricultural practices**
- Establish effective **multi-stakeholder partnership** and allow enough time to build partnerships - there is no shortcut
- **Strengthen and use existing local institutions** - integrate innovations within existing public institutions to garner political and institutional support
- **Use of ICT increases demand** for promoted ag solution -- strengthen supply chain to respond to the increased demand
- Better access to ICTs is **necessary to achieve women's empowerment but not sufficient** - need also to address social norms underlying inequalities

Barriers

- Limited availability of localized content
- Available content is primarily masculine
- SMS broadcasts are expensive
- Lack of mechanism for standardizing content disseminated to farmers
- Poor supply chain to support promoted practices
- Poor infrastructure
- Smallholder farmers', especially women, limited access to technology
- Projects focus on increasing information access to women and less on challenging the status quo
- Low willingness to pay in cash for agricultural information
- Funding agencies preference for short/medium project duration



Learn more about
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International while
you wait...

farmradio.org

Break (15 mins)

Learn more about
Farm Radio Trust
(Malawi) while you
wait...



**FARM RADIO
TRUST**

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Intervention research:

Scaling of soybean inoculant in Malawi : Eluby Kanyenda

farmradio.org



Why soybean inoculant

- Addressing practical needs of farmers
- Low cost
- Implementable in the 2018/19 cropping season (production)
- Measurable
- Seasonal crop based solution
- Has supporting systems, institutions & infrastructure
- Gender dimension



ICTs Used in the Scale-Up



- Participatory Radio Programs
- Call Centre - **“Mlimi Hotline”**
- SMS push and pull
- Social media - WhatsApp



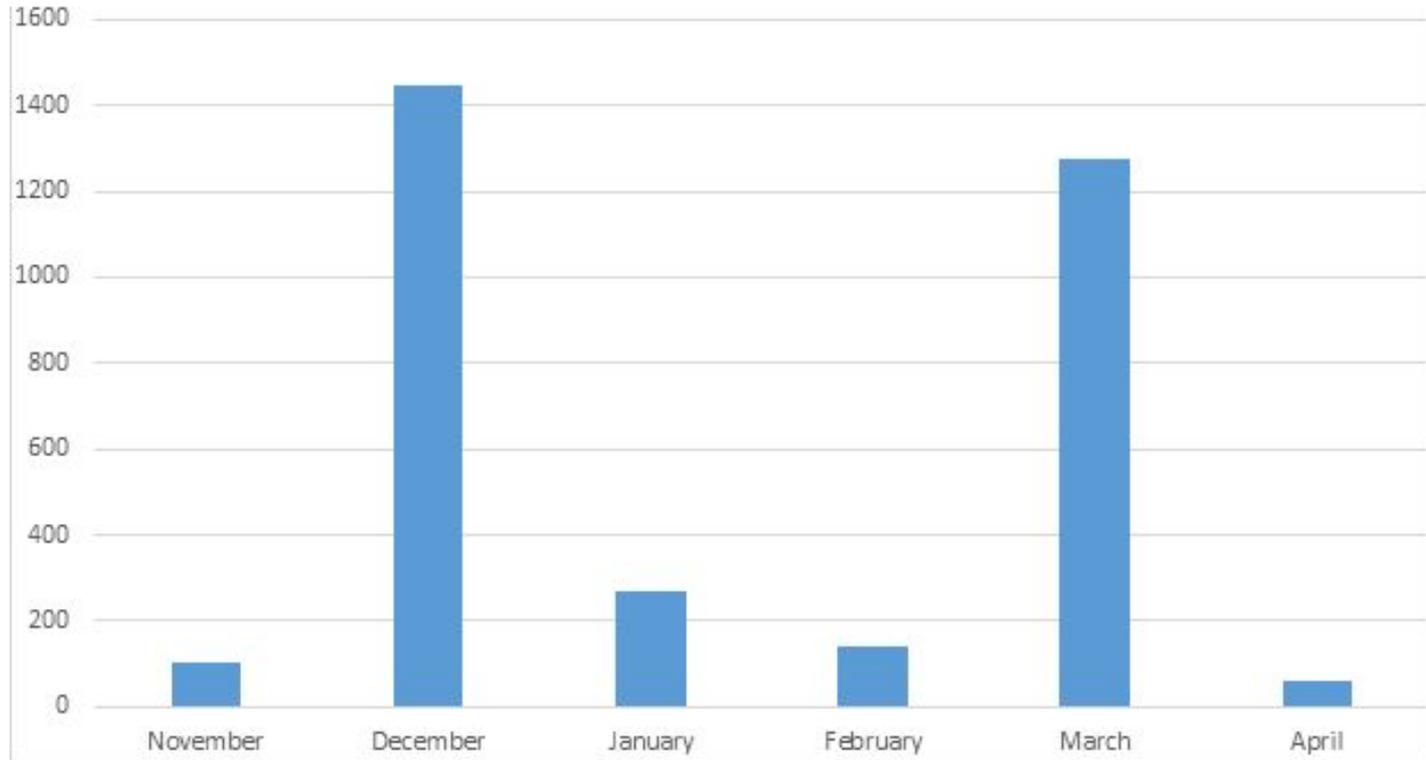
Key messages

- Benefits, access, storage & utilisation of inoculant
- Crop stand of inoculated soybean
- Soy crop management in the fields
- Post harvest preparations & marketing

Participatory radio programs

- Content for PRC generated through NACDC, baseline survey & rapid assessment
- Various resource persons including farmers; govt. dept. (DARS, DAES); NGOs; private sector, & FRT
- Aired on **'Mudzi Wathu' Community radio station** in Mchinji on Tuesdays at 2:00 PM, a repeat on Saturdays at 16:10 PM

Farmers “beeping” during the radio programs





messages in pull featured in radio programs

No farmer fails to profit due to lack of information

Frequently asked questions featured on radio programs



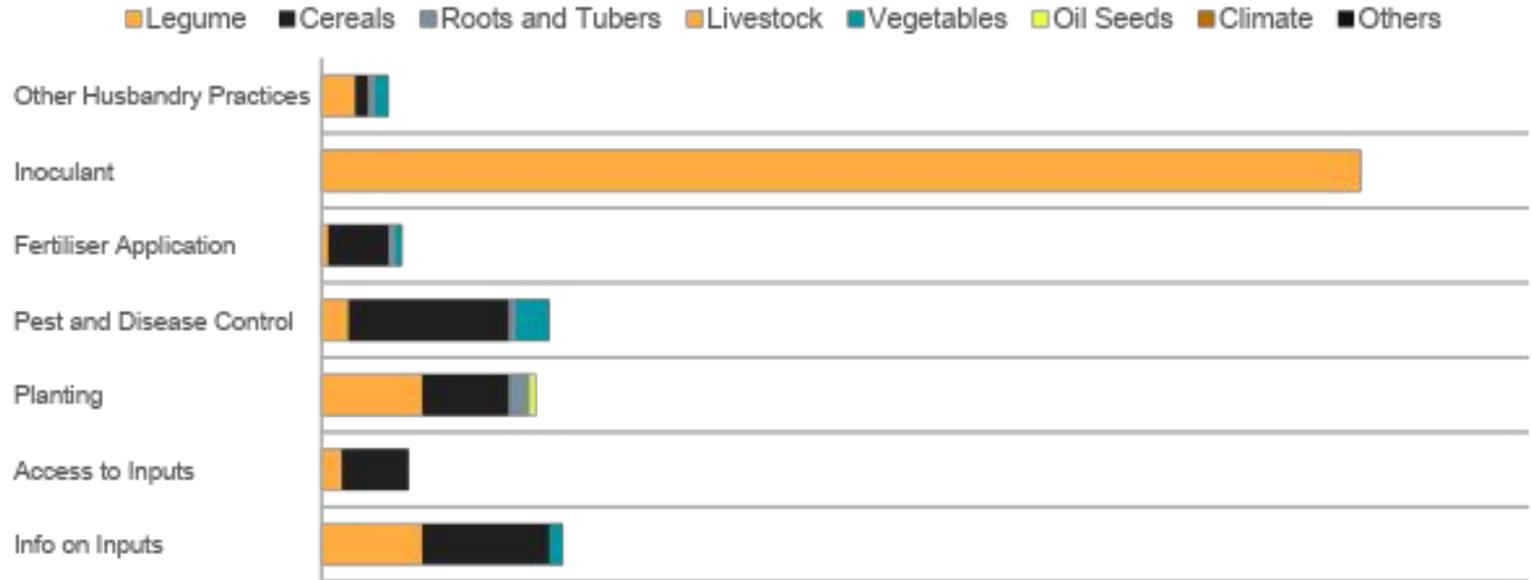
500 calls per day
100,000 calls registered



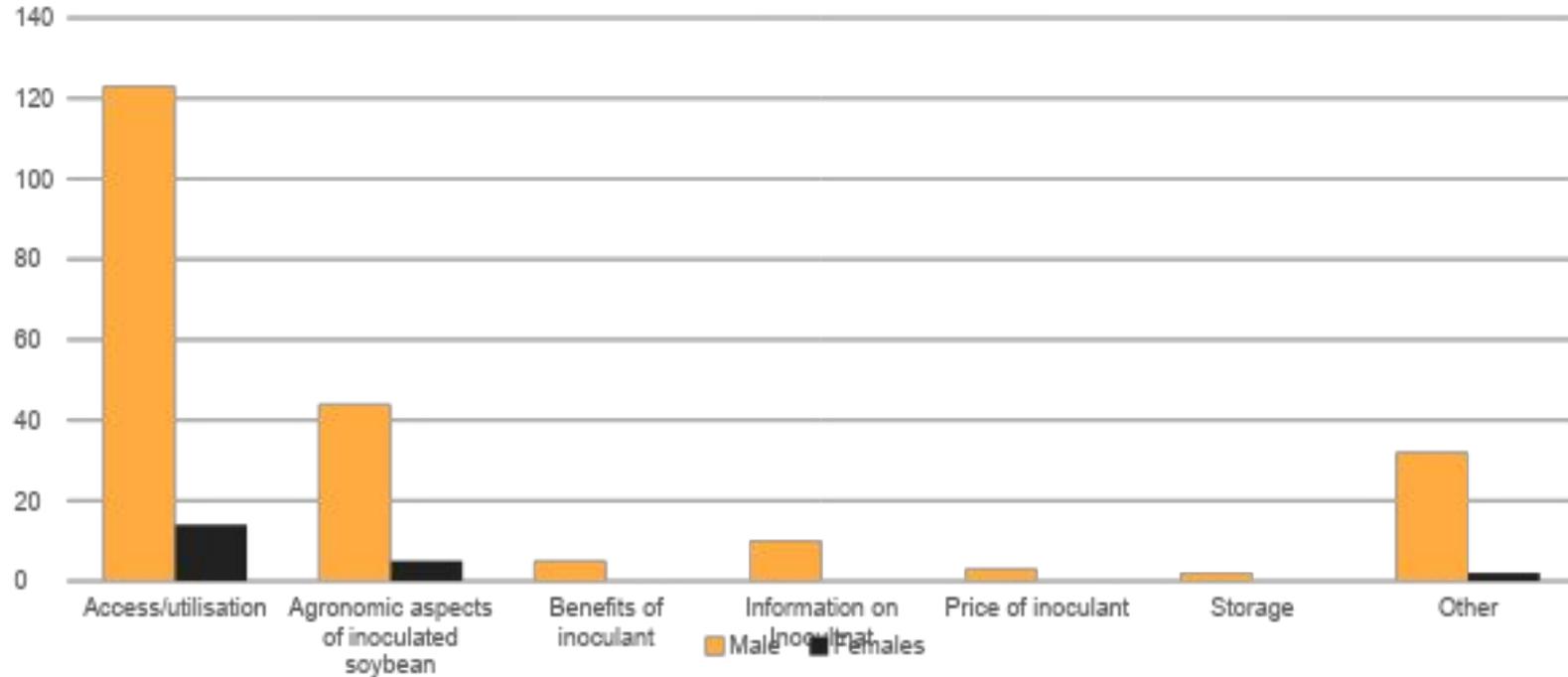
Global knowledge partners
National knowledge partners

Mlimi Hotline call center

Call centre cases by topic (December 2018)



Call centre specific inoculant cases (December 2018)





Key messages

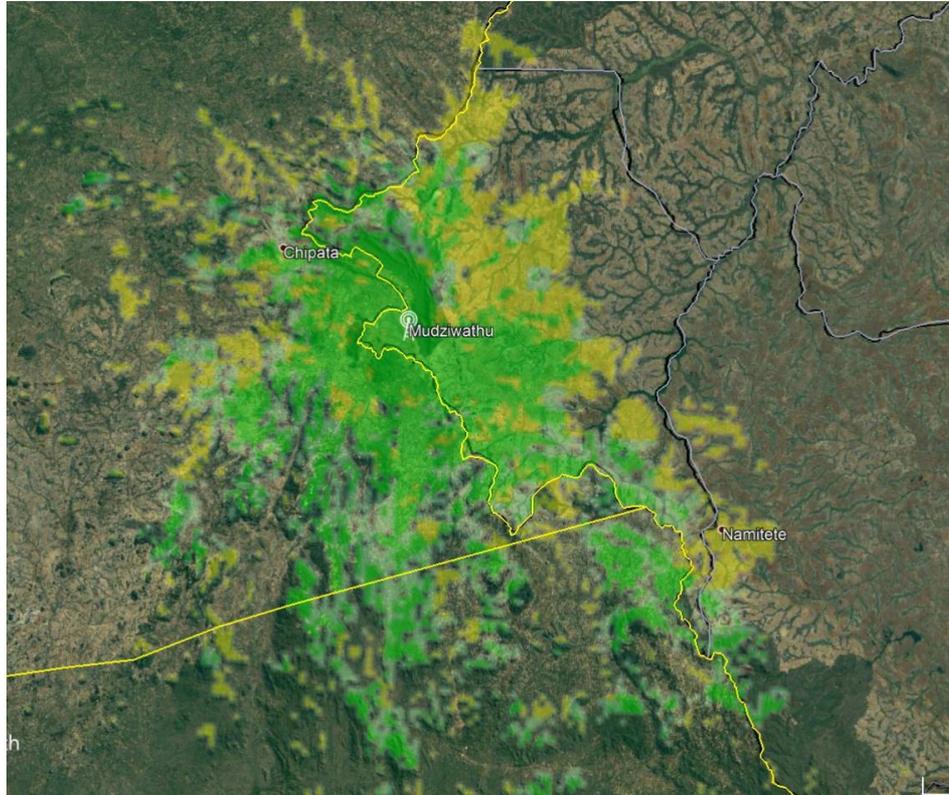
- Benefits, access, storage and utilisation of inoculant, crop husbandry practices of inoculated soybean, harvesting, gender, and airing times
- Incoming SMS messages from farmers
 - Access, utilisation, storage, markets, appreciation of the program, etc.

SMS Push/Pull

- 21 SMS pushed to 2,317 farmers

	Outgoing SMS	Incoming SMS
November	9,420	12
December	29,673	176
January	17,474	51
February	10,609	54
March	18,668	148
April	18,097	193
May	8,620	213
June	4,150	57

Number of Farmers Reached



- Participatory Radio Programs-
Approx. **235,000 people reached**
- Call Centre/ Mlimi hotline - **259 cases** on soybean inoculant
- SMS push and pull platforms-
2317 farmers (2067 males: 250 females)

Use of inoculant - Before and After

- Increase in inoculant packets sold by agro dealers in Mchinji
 - *Before*
 - 2017/2018 season:
41,000 packets sold
 - *After*
 - 2018/2019 season:
87,000 packets sold



Photo: IDRC/ Bartay

Sources of information on inoculant

- Majority of farmers get information on inoculant from **radio (49.5%)** followed by **extension worker (31.9%)**
- Very few farmers get information on inoculant from mobile phones (3.3%)

However:

- Only 38.3% own radios (access is much higher)
- 41.9% own mobile phone but 68.8% have access to a phone
- High ratio of farmer to extension worker (3,000:1) |

Access to information on inoculant is still a challenge
Availability of inoculant is also a challenge

Barriers

- Cost of ICTs / willingness to pay
- Gender barriers
 - Low ownership of ICTs
 - Cultural barriers
 - Household expenditure on ICTs
- Infrastructure issues
- Technological know-how on the use of the ICTs





Gender considerations

Gender-sensitive actions

- Targeted radio programs
- Women's-only call in lines
- Use of women groups in the programming to air out their issues
- Debates on specific gender issues on-air



Key lessons learned from the intervention research

- ICTs work best in **combination** to complement each other. For instance, radio programs using feedback from the call center and SMS platforms informing influencing listenership
- Farmers are **willing to pay** for an agricultural solution or an ICT platform if it gives them more value than what was invested
- Institutions can support farmers to act on the knowledge acquired by supporting the method of acquisition for agricultural technologies - for instance NASFAM giving out inoculant as a loan or on credit to member farmers thereby aiding accessibility
- **Promotion and demonstration** are necessary to enhance uptake of both the technology and ICTs



Policy Environment

George Vili

farmradio.org



Policy development process

- Inclusion of role of ICT innovation in the National Agriculture Policy
- FRT engaged Department of Extension Services to spearhead the role of ICT in the National Agriculture Extension Strategy

Coordination

- Establishment of National Agriculture Content Development Committee
- Standardization of content for yearly agriculture season

Institutionalization

- Review curriculum of institutions of higher learning to incorporate role of ICT in information delivery : adjunct faculty to department of extension
- Capacity building of Agriculture Communication Officers in the Department of Agriculture Extension Services

Public private partnerships

- Involvement of public and private partnership in the use of radio and ICT services (call centre and SMS platforms)
- Plans to set out agriculture radio station under PPP arrangement

Advocacy

- Advocate for removal of duty on ICT equipment for ICT based extension service
- Engage department for development of e-extension strategy for greater use and coordination of ICTs
- Advocate for standards in the extension approaches and methods i.e privacy for both private and public actors

Policy environment key lessons

- Shift from project approach to formal and institutionalized system
- Leadership in driving the ICT agenda
- Garner support for ICT agenda and pathways through policy actors





ICT4Scale Conceptual Framework

=



Elements of scaling framework

VISIONING

Assessing scalability & responsible scaling

SCALING STRATEGY

Identifying scaling pathways

GENDER

Examining the potential transformative change

ENABLING ENVIRONMENT

Including sustainability of intervention

MONITORING & EVALUATION

Assessing outcomes from scaling intervention



ICT component

ASSESS DIGITAL DIVIDE

Including responsible data management

ICT4SCALE STRATEGY

Access to information and services: Ag. extension, markets, weather, finance, etc.
Role of communication: Social and Behaviour change

GENDER DIVIDE

Transformative potential of ICTs

ICT INSTITUTIONAL SUPPORT

Government policies support to improve ICT access

ICT-BASED DATA

Real time ICT-enabled data collection; ICT4scale specific indicators

ICT4Scale Framework (2)

Visioning: Assessing scalability & Responsible scaling

Multiple frameworks already developed

Should agricultural innovation be scaled? What is the optimal scale?

Anticipated impacts of both the innovation being scaled and the scaling process itself

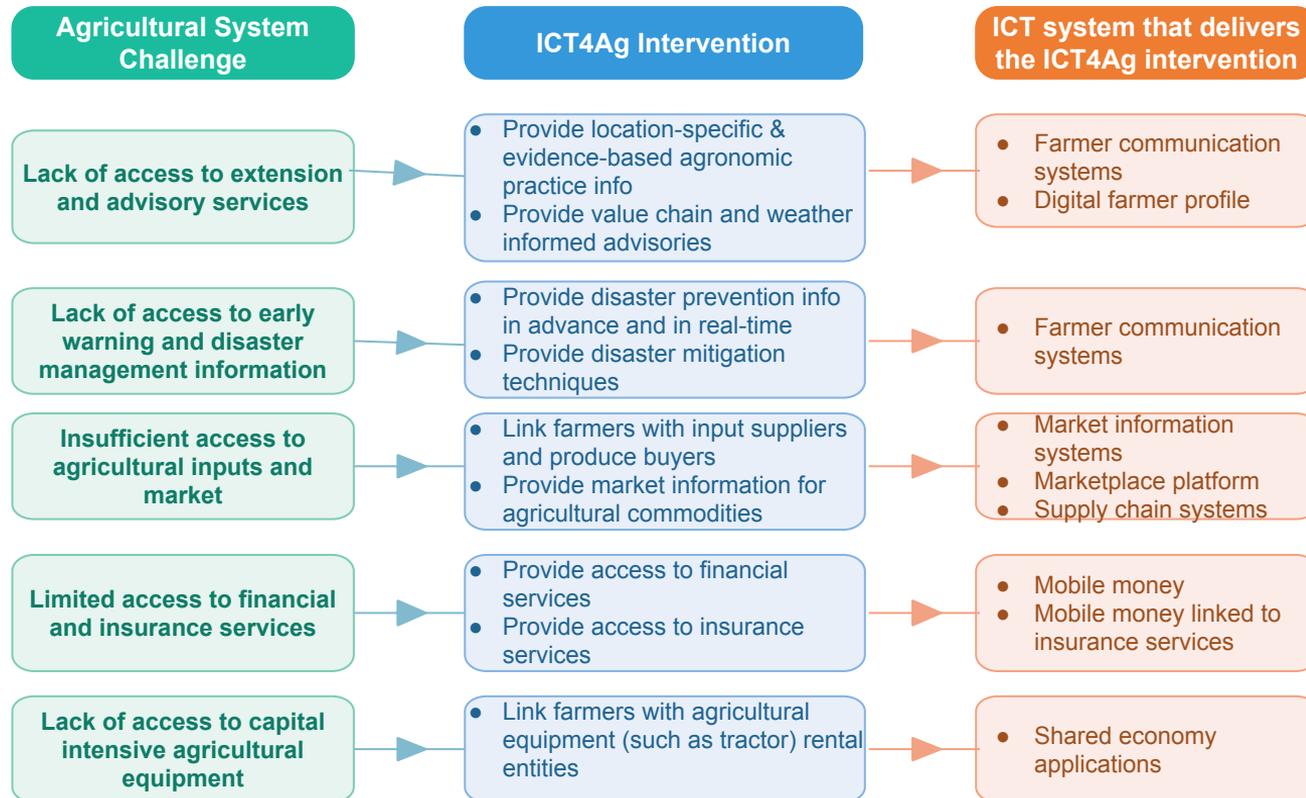
Particular to ICT-enhanced scaling initiatives:

- Risk of exacerbating digital divide
- Need responsible data handling procedures.
- Technology is not neutral - different interests at stake
- Can amplify 'demands' that systems cannot meet

In projects we looked at, this visioning was often not explicitly described

ICT4Scale Framework (3)

Scaling strategy - agricultural system challenge being addressed



ICT4Scale Framework (4)

Scaling strategy - role of communication

ICT: not only about one-way dissemination of information but also about **multi-way communication**

- Communication not explicitly included in most scaling frameworks
- ICTs can strengthen farmers social and interpersonal networks - contributing to local innovative capacity
- ICTs can facilitate interactivity and dialogue between farmers and other stakeholders in the system
- ICTs can contribute to Social and Behaviour Change Communication (SBCC) strategies that influence social norms and strengthen scaling process
- Use of multiple communication channels and strategies more effective

ICT4Scale Framework (5)

Gender

Lower access and use of ICTs by women observed across projects

Many projects could be viewed as gender-responsive by

- improving women's access to ICTs
- facilitating their participation and interactivity
- building capacity of women to use ICTs
- ensuring relevant content

These can lead to increased knowledge and adoption of promoted practices and an increased sense of self-confidence.

Most projects do not attempt to tackle the social-cultural norms underlying gender inequality and women's disempowerment

Potential of ICTs to play a transformative role

ICT4Scale Framework (6)

Enabling environment + sustainability

- Sustainability is a challenge across most projects
- Innovations being scaled need to be integrated within existing public institutions and infrastructure to garner political agency and support
- Government policies required to address low ICT access (power, connectivity, availability, affordability)
- ICT-enabled market-based approaches can reduce transaction costs and strengthen market linkages
- Effective multi-stakeholder partnerships need to be build to support and sustain scaling process - e.g., interactive radio platforms

ICT4Scale Framework (7)

Monitoring, Evaluation & Learning

- Most projects focus on usual development indicators - changes in knowledge, attitude, and practices.
- Large 'reach' of ICT4scale initiatives presents methodological challenges
- MEL strategy for scaling initiatives also needs to assess the scaling process itself
- Scaling takes place in complex system - non-linear and dynamic processes, which require flexible, iterative, adaptive MEL approach
- ICTs offer opportunity to collect quality data in real-time and on an on-going basis along the scaling process.
- Need "indicators" specific to ICT4Scale initiatives



Moving forward

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Moving forward

- Research initiative confirms potential of ICTs to contribute to enhancing scaling process
- For vulnerable smallholder farmers (especially women), there remain significant barriers around access and use of ICTs
- There remain important challenges around the development of sustainable 'business' models, and MEL strategies.
- More research to be done on applying the ICT4Scale framework
- Learning platform (YOU) to help us learn from each other

Discussion





Special thanks to:



IDRC | CRDI

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Canada

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Stay tuned for our
next **#ICT4Scale**
webinar!



Thank you!

Get in touch:
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Gender-responsive approach to harnessing ICTs to scale-up agricultural innovations

Bernard Pelletier
Farm Radio International



ICTforAg 2018, Washington, DC, June 14, 2018

Increased interest in the issue of scaling-up

Impact at scale

Achieved when large or significant proportions of potential beneficiaries or users are reached and have, in some way or another, benefited from the innovations resulting from research.

Scaling-up

Scaling up means expanding, replicating, adapting and sustaining successful policies, programs or projects in geographic space and over time to reach a greater number of smallholder farmers



How can ICTs enhance the scaling-up process?

1. **REACH:** Make info available, accessible and affordable to a large number of farmers
2. **PARTICIPATION:** Facilitate the participation of beneficiaries in the design and implementation of scaling-up initiatives
3. **COLLABORATIVE PLATFORMS:** Strengthen interactions, linkages and networking among key stakeholders



Women, Agriculture and ICTs in Africa

- Women living in rural areas have the least access to ICTs.
 - *Lack of financial resources*
 - *Higher levels of illiteracy*
 - *Norms that discourage women and girls from using technology*
 - *Lack of control over and ownership of technology*
- Women are at a disadvantage in making informed choices about production, increasing their productivity and participating in decision making in their households and communities.
- ICT-enhanced scaling-up could potentially exacerbate that gender divide



Her Voice on Air approach

- Farm Radio International has developed the **Her Voice on Air** approach which involves:
 - **Training of radio broadcasters** to incorporate a gender-sensitive approach in their programming to address information needs of women
 - Assisting women farmers in forming **community listening groups (CLGs)** and **using mobile phones** to call into the radio programs and to record and contribute content for the programs.
 - Presenting **practical information** on farming practices tailored for the crops grown in each area using **interactive radio**



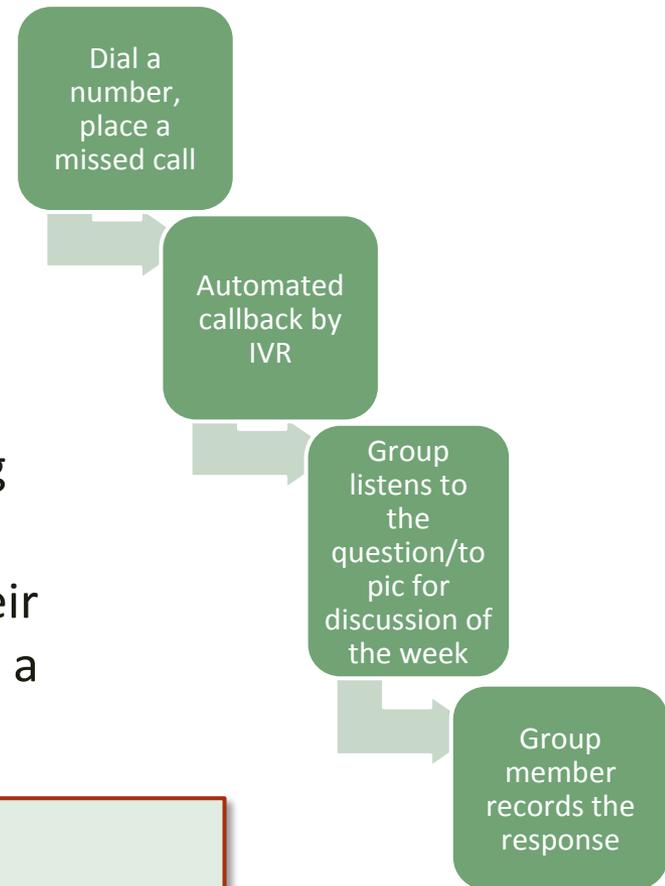
The Her Farm Radio Project

- The Her Voice on Air approach was developed and piloted during the **Her Farm Radio Project** funded by IFAD (2016-17).
- In partnership with 13 radio stations in Ethiopia, Malawi, Tanzania and Uganda, the project included and engaged women in rural radio programs about agriculture
 - 134 community listening groups (CLGs) were formed:
 - 2300 members, 80 percent of them women.



Interactivity System: Uliza

- Purpose-built dashboard for radio stations
 - for managing on-air listener interactions, including incoming and outgoing calls, conference calls, and SMS.
- Each radio station set up dedicated segment in each week's program for the messages and discussion that came from the women's listening groups to the Uliza dashboard.
- Each week two groups were selected to have their messages played, to ensure that every group got a turn.



Content is gathered from remote, hard-to-reach communities with **no travel, no cost to the caller, and high quality audio** for inclusion in radio programs.

Evaluation – Focus Group Discussions

- Focus Group Discussions were performed with a number of community listening groups

Some statements by participating women

- *“I used to fear speaking on phone because I thought I would press a wrong button and spoil everything. But now I even pick up my husband’s phone when it is ringing.”*
- *“I was so happy when I heard myself educating others on air. This made me realize everyone has something to contribute in this world even if you are just a farmer with no education.”*
- *“I thought no one could believe in me because am uneducated and a woman. But my group members chose me as their chairperson. This gave me confidence to even contest for the Local Council 1 position which I got.”*



Evaluation in Western Uganda (n =378)

Farmers asked about their level of agreement with following statements

1. Men and women should share productive and domestic tasks more equally

2. Both man and woman should agree on when to sell bananas

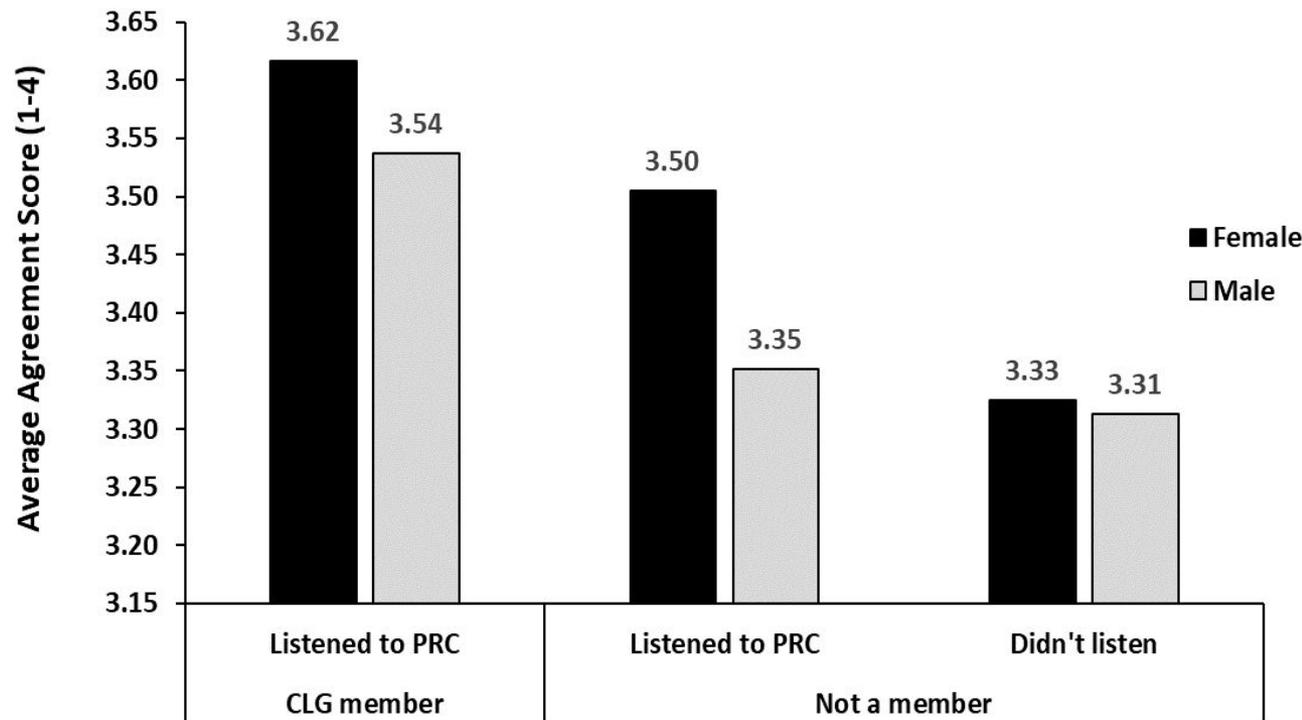
3. Women who have access and control over land are better banana farmers

4. Women should contribute more to decisions about farming and use of income

5. There should be more women's voices on the radio and other media



Evaluation – Western Uganda



Agreement score
Strongly Agree = 4
Agree = 3
Disagree = 2
Strongly Disagree = 1

Listening and participating in community listening groups resulted in significantly more positive responses to five (5) statements on gender equality

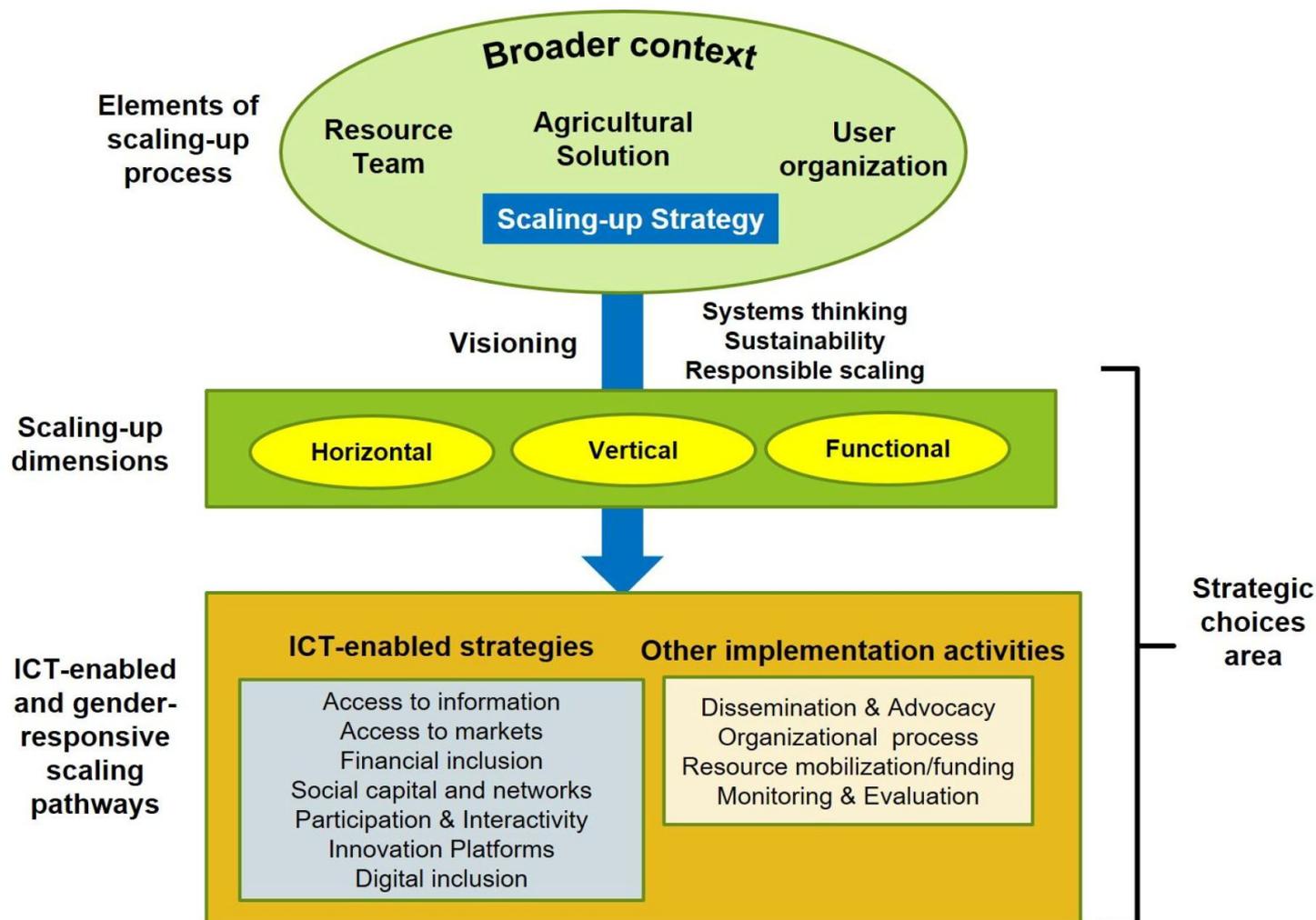


Lessons Learned

- **Women have a voice; they also really need a platform**
 - If women are given a chance to voice out their issues concerning any development challenge, they are willing and able to articulate their issues in their own ways.
- **Capacity development in ICT skills-** Critical for women's use of ICTs
 - To make a positive link between rural women's livelihoods and ICTs, capacity development must be rooted in project design and linked to outcomes for all project stakeholders especially women who most of the times are disadvantaged.
- **'Women's issues' cannot be dealt with by women only**
 - For change in the plight of women to occur, there is need for open discussion of women's issues and concerted efforts by various stakeholders.



Integrating Her Voice on Air in ICT4Scale conceptual framework



Next steps

- **Integrate gender-responsive ICT approaches in scaling-up initiatives**
 - Elements of the Her Voice on Air approach will be adapted for a research initiative implemented by FRI and Farm Radio Trust, Malawi to develop a gender-sensitive framework for using ICTs in initiatives aiming at achieving sustainable impact at scale.
- **Increased use of Her Voice on Air approach in future projects by FRI and FRT**
 - The Her Voice on Air approach will be integrated/adapted in an increasing number of projects by FRI and FRT.
- **Further development of Monitoring and Evaluation strategy**
 - Additional work is required to develop M&E tools that can provide solid evidence of the impact of the Her Voice on Air approach on gender-sensitive and gender-transformative developmental outcomes



The ICT4Scale initiative: Harnessing ICT to scale-up agricultural solutions

Bernard Pelletier^a, Berhane Gebru^b, Catherine Mloza-Banda^c, Stanley Khaila^c, George Vilili^c, Mark Leclair^a, Rex Chapota^a

^a Farm Radio International, Canada; ^b Independent researcher; ^c Farm Radio Trust, Malawi



Poster presented at the Scale Up Conference, Purdue University, West Lafayette, USA, Sept. 25-27, 2018

ABSTRACT

Information and Communication Technologies (ICTs) can play a significant role in enhancing the uptake and impact at scale of agricultural solutions. The speed of diffusion of mobile phones, their declining costs, the increased reach of wireless broadband, and the broader access to technologies by smallholder farmers, indicate the potential of ICTs to give large numbers of people access to timely and relevant agricultural information, financial services, and input and output markets. ICTs also contribute to strengthening social networks while facilitating participation and interactivity through innovation platforms that can support scaling-up initiatives.

The ICT4Scale project, funded by the International Development Research Centre in Canada, aims at developing, testing and sharing a conceptual framework for implementing and assessing gender-responsive ICT-for-scale initiatives in sub-Saharan Africa. Implemented by Farm Radio International, Canada, and Farm Radio Trust, Malawi, the project investigates the use of different combinations of ICTs across past and current scaling-up initiatives to identify best practices and challenges, with an emphasis on gender-related issues. In Malawi, a scaling-up model based on mobile technology and interactive radio platforms that brings together key stakeholders from the public and private sectors while giving women and men farmers a voice, is also being tested.

INTRODUCTION

- Achieving impact at scale remains one of the key challenges facing the international development community.
- Recent years have seen an increase in efforts to develop frameworks to inform the theory and practice of scaling-up initiatives^{1,2,3,4}
- The rapid penetration of mobile phones and their increased access by smallholder farmers⁵, suggest that information and communication technologies (ICTs) could play an important role in enhancing the scaling-up of agricultural solutions⁶.
- Evidence about the ability of ICTs to enhance scaling-up processes remains scarce. In particular, with regards to the issue of the gender digital divide⁷.
- This project aims at developing, testing and sharing a conceptual framework for implementing and assessing gender-responsive ICT-for-scale (ICT4Scale) initiatives in sub-Saharan Africa.
- Project is implemented by Farm Radio International (FRI), Canada, and Farm Radio Trust (FRT), Malawi.

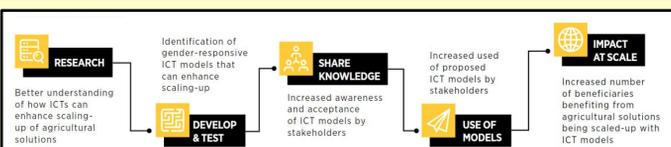


Figure 1. Impact pathway of the ICT4Scale initiative

ICT4SCALE FRAMEWORK

Many theoretical frameworks have been proposed to describe the contribution of ICTs to development outcomes, and can thus inform the building of an ICT4Scale conceptual framework.

Some of the key ICT outcomes to consider include⁸:

- Increased access to relevant and timely public information
- Improved participation and interactivity
- Improved coordination of input and output supply chains
- Improved access by farmers to financial services
- Strengthened social and interpersonal networks
- Strengthened agricultural innovation platforms
- Expanded digital inclusion through systematic consideration of inequalities



The interpretation of these different outcomes within a broader scaling-up conceptual framework (Figure 2) can provide insights into scaling processes and pathways potentially influenced by ICTs.

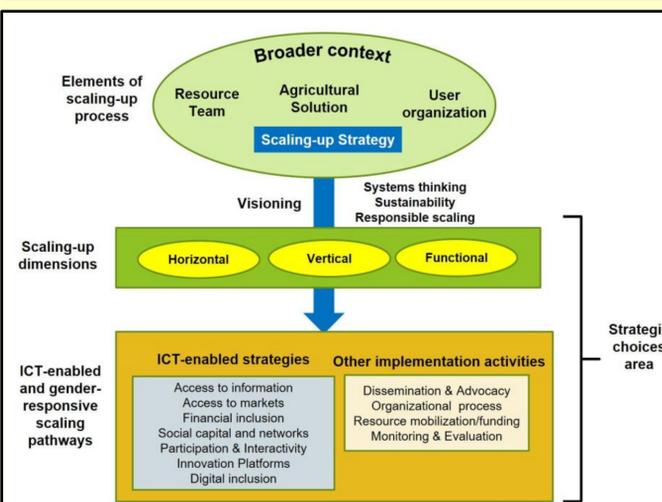


Figure 2. ICT4Scale gender-responsive conceptual framework (modified from ExpandNet framework¹)

RESEARCH QUESTIONS

The ICT4Scale initiative is built around the following research questions:

- What combinations of ICT, actors and institutional arrangements are most effective in scaling agricultural solutions?
- What are the gender equality considerations of ICT-enabled scaling of agricultural solutions?
- What barriers may limit the reach or effectiveness of ICTs in scaling initiatives?

LITERATURE REVIEW

Academic and grey literature on scaling concepts, business models and practices, gender dynamics, and recent advances on scaling solutions using ICT, is being reviewed and synthesized.

META-REVIEW

A Meta-review of current and past scaling-up initiatives using ICTs is being undertaken. From an initial dataset of 72 projects identified in sub-Saharan Africa, Asia, Latin America and the Caribbean, a sub-set of 25 projects has been identified using a set of pre-determined criteria.

The Meta-review includes:

- A content analysis (using NVivo) of project documents using a coding scheme representing the key elements of the ICT4scale conceptual framework
- A series of semi-structured interviews with project implementers

CASE STUDIES

Four of the projects included in the Meta-Review have been selected for the Case Studies. These are limited to projects in sub-Saharan Africa (Malawi, Ghana, Uganda and Ethiopia) and will include more in-depth interviews with rural communities and key informants.

INTERVENTION RESEARCH

The Intervention Research component of the ICT4Scale aims at assessing the effect of a specific combination of ICT interventions and institutional arrangements on the number of smallholder farmers up-taking the application of soybean inoculants. Its implementation will start in October 2018.

Details of Intervention Research

Agricultural solution: Use of soybean inoculant by smallholder farmers

Scaling-up strategy: Combination of mobile telephony and Interactive Radio Platforms⁹ (Participatory Radio Campaigns, SMS, IVR and Call Center) with gender-responsive activities based on FRI's Her Voice on Air approach. The platforms also bring together key stakeholders/institutions involved in agriculture.

Scope of scaling-up initiative: Mchinji District, Malawi

Study design: Baseline and endline household surveys administered following a probabilistic sampling method allowing extrapolation of reach estimates at District level. Comparison of changes in Knowledge, Attitude and Practice for different levels of exposure to the various ICT channels will be made.

LEARNING PLATFORM

The ICT4Scale project is establishing a collaborative learning platform to share the project's lessons and research findings across a diverse set of stakeholders - donors, NGOs, policy makers, researchers, and private businesses both in Canada and internationally, but also to facilitate knowledge sharing among them.

CONTACT: Bernard Pelletier, bpelletier@farmradio.org

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ACKNOWLEDGMENTS

The ICT4Scale initiative is a 30 month research project funded by the International Development Research Center, Canada.

Use of ICT's to Increase
Uptake of Agricultural
Technologies among Malawian
Farmers



FARM RADIO
TRUST



farmradio.org





Small-scale farmers produce most of the food in Africa, but too often can't make ends meet. That's why we turn to a simple and accessible tool: **RADIO.**

Farm Radio Trust



We promote innovative Radio and ICT based farmer advisory and extension services throughout Malawi since 2011.

We want to see a world filled with information for sustainable livelihoods of farming communities

Current challenges we are solving...

- Inaccessible Agricultural Extension services due to limited extension worker,
 - Limited access to information
 - Lack of accessible markets
 - Inaccessible & unaffordable Inputs (seeds, fertiliser, chemicals etc)
- ❖ FRT provides extension services through use of ICTs such as radio, SMS, farmer mediated video, IVR and the Mlimi Hotline call centre.
 - ❖ FRT Partnered with Farm Radio International (FRI), to implement a project to examine the role of ICT in scaling up agricultural technology adoption.
 - ❖ We focus on the adoption of agricultural technology e.g soya bean inoculants and chemicals to treat FAW in one district.
 - ❖ We searching for availability of inputs and long distance travel to obtain inputs.

Scaling dimensions

Horizontal Scaling (scaling-out): The process of expanding impact through replication, - e.g., from one geographical area to another (quantitative)

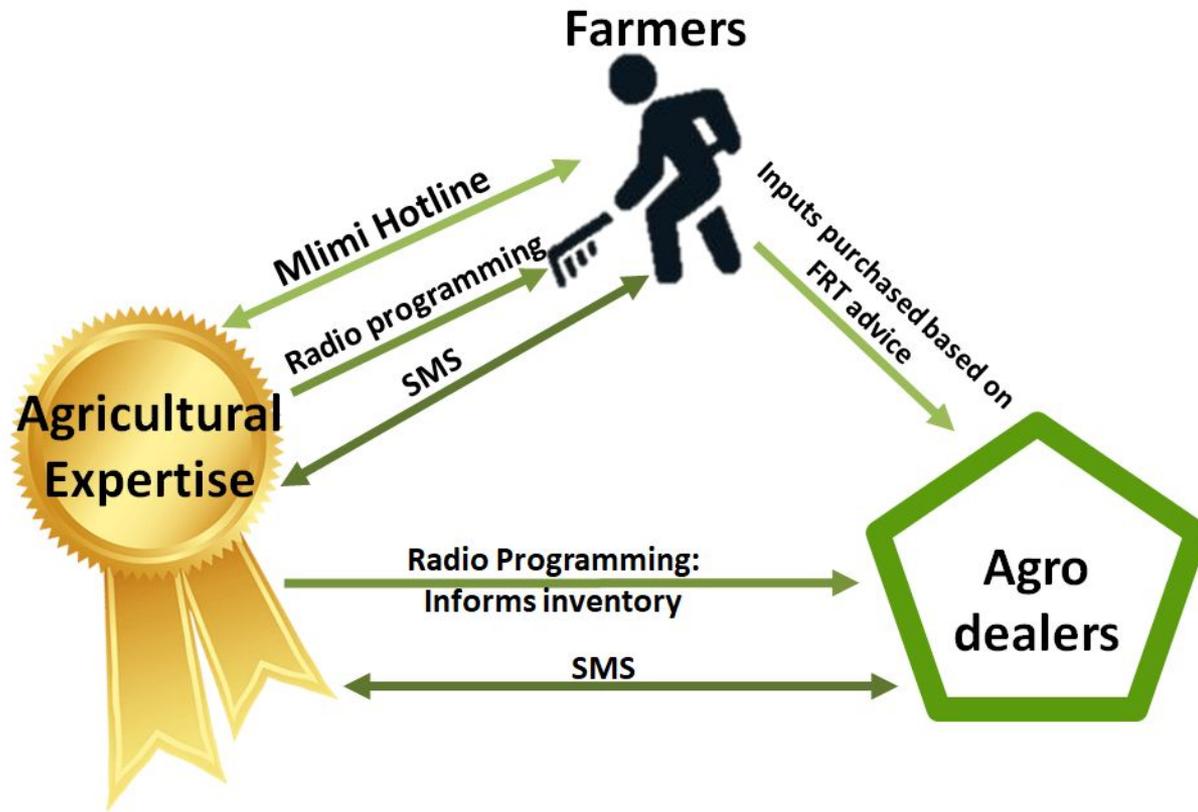
Vertical Scaling: Changing the policy / institutional environment through higher level influencing, - e.g., moving from a local or provincial engagement to a nationwide engagement (institutional)

Functional Scaling: Expanding the functional scope of an innovation, - e.g. adding processing and marketing components to a project initially focusing on crop production (diversification)

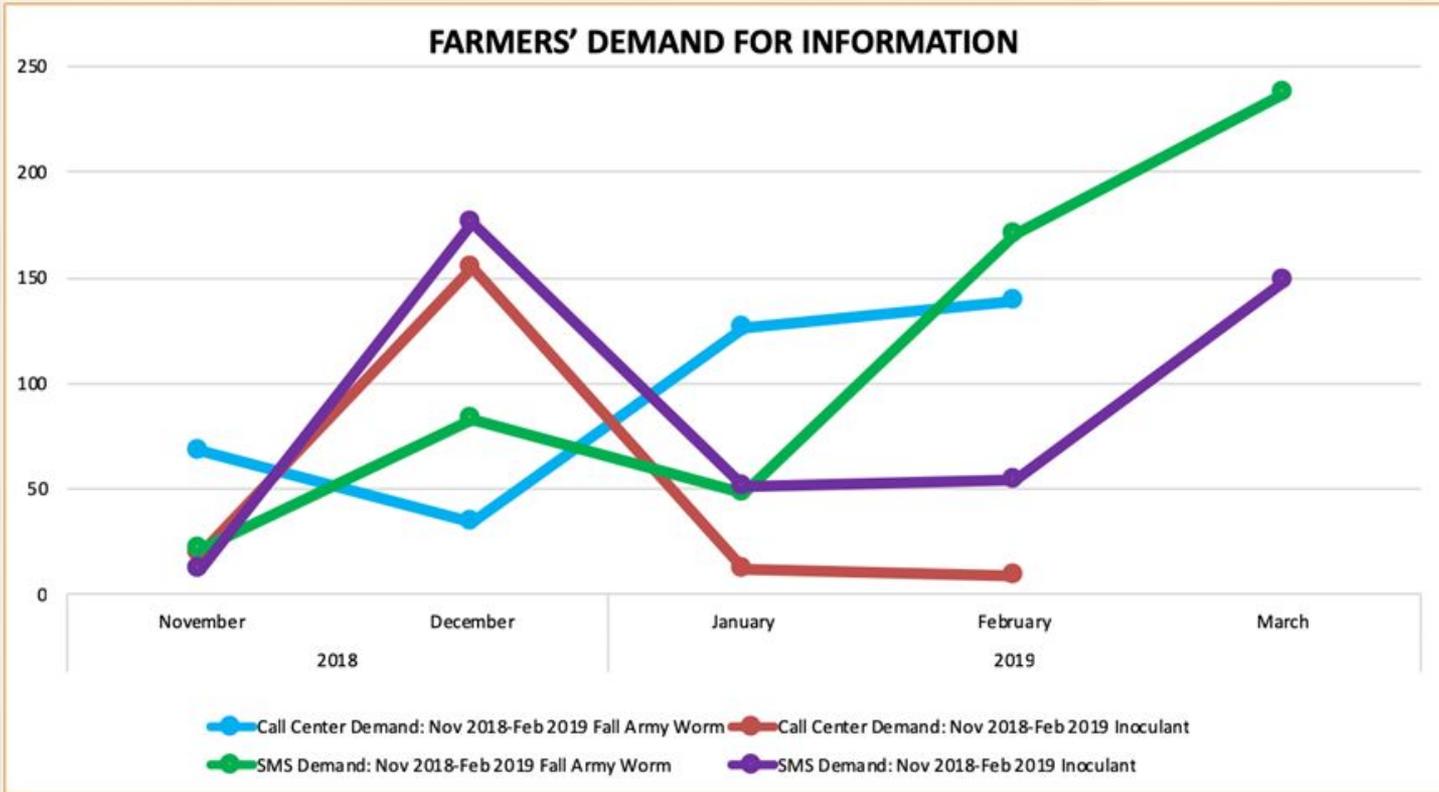
ICT Model

- We Promote use of inoculant & FAW in the Mchinji district through multimedia platforms such as radio, call centre, SMS, and social media, enhanced with GIS
- Mlimi Hotline: A toll free line accessible on the two major mobile networks (Airtel & TNM) that allows farmers and extension workers to obtain expert agricultural assistance for different value chains.
- Using GIS to pinpoint the exact locations of agro dealers and input demand (farmers location)





Demand Generation



GIS Database

- Name of dealer
- GPS coordinates
- Hours of operation
- Extension Planning Area (EPA)
- ICT Hub name and location
- Seasonal or all year round
- Regular stock supplied
- Contact number



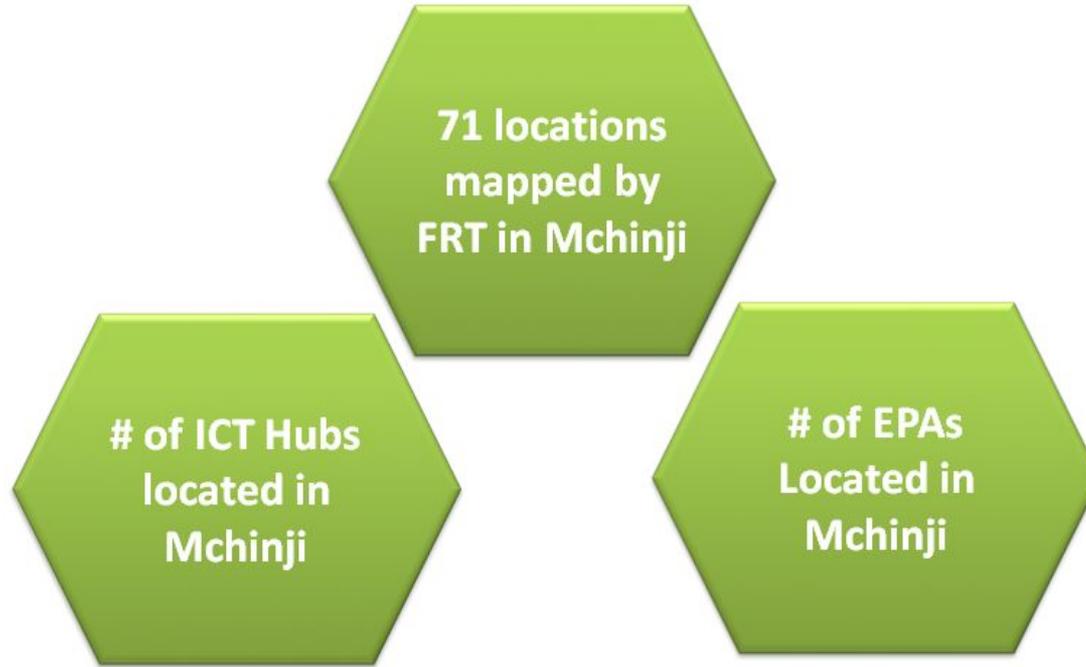
Subscription model

Agro dealers in our GIS database pay a subscription fee to have access to a larger customer base and insight to input demand to improve their inventory and ultimately increase sales.

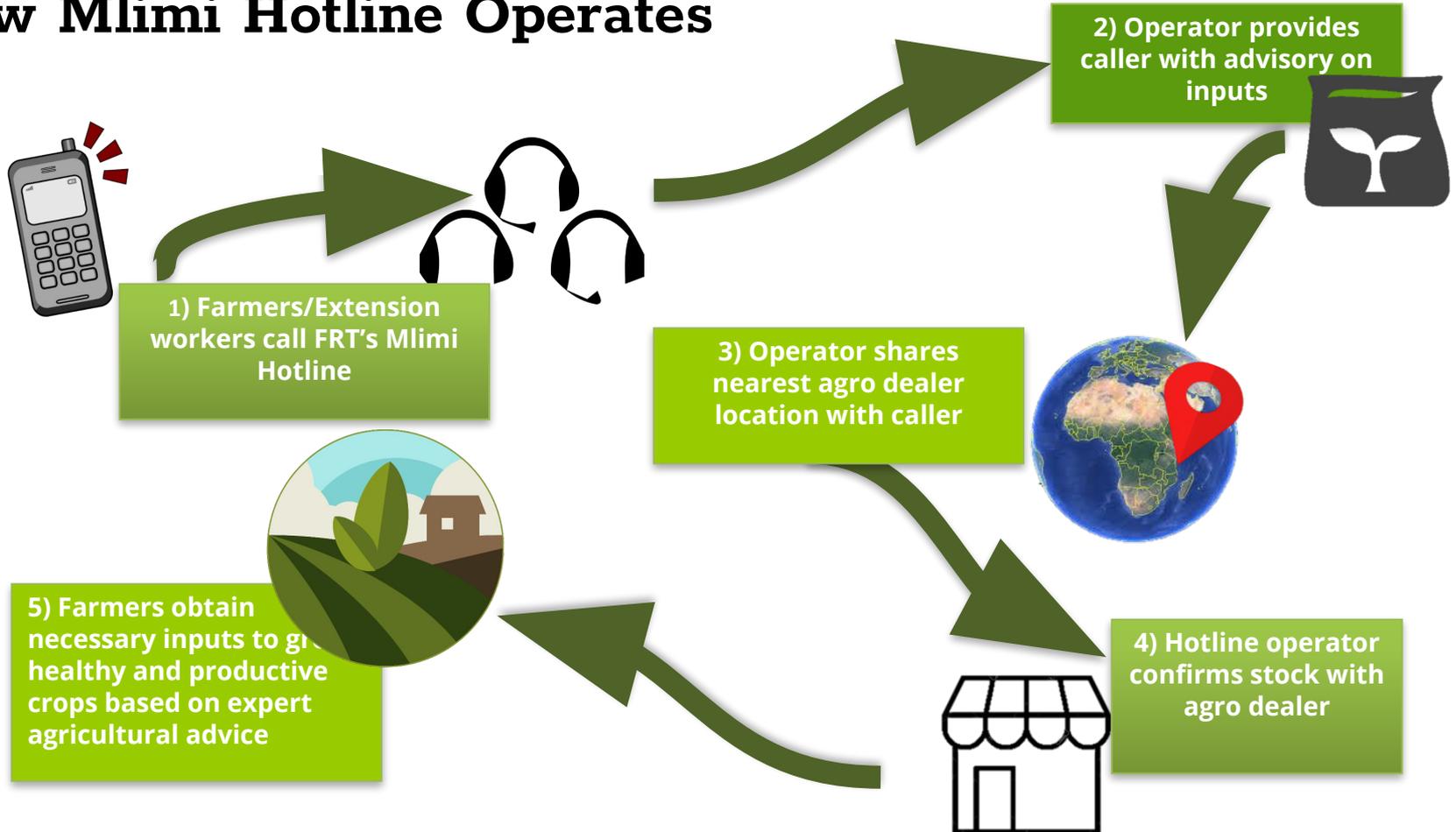
Farmers pay a small fee for push SMS and call backs from the Mlimi Hotline that provide them with agro dealer inventory and hours of operation.



Agro Dealer Locations in Mchinji



How Mlimi Hotline Operates



FRT Operations In Mlimi Hotline

Push SMS from Mlimi Hotline to the agro dealer to inquire about:

- Input inventory
- Price

Push SMS, Whatsapp, or provide a call back to the farmer to provide agro dealer's inventory of the specific input they are seeking:

- Small fee charged for push and call back service
- Agro dealer can decide to deliver to communities if demand is justified.

Results of the ICT use

- Demand for Soya bean inoculant among agro dealers in Mchinji increased by at least 15%
- Demand for chemicals to control FAW such as Steward, Decis Forte, Snowcrown, Deltanex and Belt increased among agro dealers

Future Opportunities

In the process of developing a mobile application to streamline the system

Upscaling to make the database applicable to all of Malawi:

- Over 100 GPS locations and contact numbers already obtained for nation wide agro dealers
- Mapping farm lands and crop distributions across Malawi





Thank you! Zikomo!

Get in touch:
gvilili@farmradiomw.org

farmradio.org



#ICT4Scale Stakeholder Meeting

Malawi, April 2019



farmradio.org





Scaling up means **expanding, replicating, adapting** and **sustaining** successful policies, programs or projects in geographic space and over time to reach a greater number of rural poor

Scaling dimensions

Horizontal Scaling (scaling-out): The process of expanding impact through replication, - e.g., from one geographical area to another (quantitative)

Vertical Scaling: Changing the policy / institutional environment through higher level influencing, - e.g., moving from a local or provincial engagement to a nationwide engagement (institutional)

Functional Scaling: Expanding the functional scope of an innovation, - e.g. adding processing and marketing components to a project initially focusing on crop production (diversification)



Success rates for ICT for development projects in general are **mixed**, including those projects targeting the agricultural sector

1. Emphasis on dissemination, adoption and diffusion are not sufficient
2. Major interest by funding agencies about how to scale ag projects
3. Too many projects stuck in piloting phase
4. ICT has a major contribution to make





Harnessing ICT for Scaling-up Agricultural Solutions

At a glance

- **30 month** research initiative funded by International Development Research Centre (IDRC), Canada
- April 2017 - November 2019
- Researchers from **Malawi, USA, Canada**
- Examining projects across the world



Which **technologies** and under what **circumstances** and with what configuration of actors will ICT enable scale?

What principles and strategies will guide the use of ICT and are essential to achieve success in scaling up solutions for sustainable development?

Research questions:

1. What **combinations** of ICT, actors and institutional arrangements are most effective in scaling agricultural solutions?
2. What **strategies** for the use of ICT are successful in facilitating the scaling of solutions, e.g. interaction with audiences, type and quality assurance of information and content?
3. What are the **gender equality** considerations of ICT-enabled scaling of agricultural solutions?
4. How and by whom are ICT being designed, applied and tested as part of **business models** that lead to successful scaling of solutions and practices?
5. What **barriers** may limit the reach or effectiveness of ICTs in scaling initiatives?

Research components



Meta review

Impact assessments and findings from a set of existing ICT-enhanced scaling-up initiatives implemented worldwide are being synthesized using content analysis of documents, surveys, and interviews.



Case studies

Case studies are being conducted in sub-Saharan Africa to examine in more detail the functioning and impact of concrete scaling-up initiatives.



Intervention research

We are testing elements of our ICT4Scale models within existing initiatives, and the assessment of their impact on beneficiaries. This includes radio, call-centres, SMS and more...



Learning platform

Consistent sharing of success stories in ICT-enabled scale-up. Involvement of various stakeholders in inputting into, and utilizing our ICT4Scale framework.



Intervention research

farmradio.org



Inoculant in soybean production in Malawi



- Participatory Radio Programs
- Call Centre/ Mlimi hotline
- SMS push and pull platforms
- WhatsApp groups



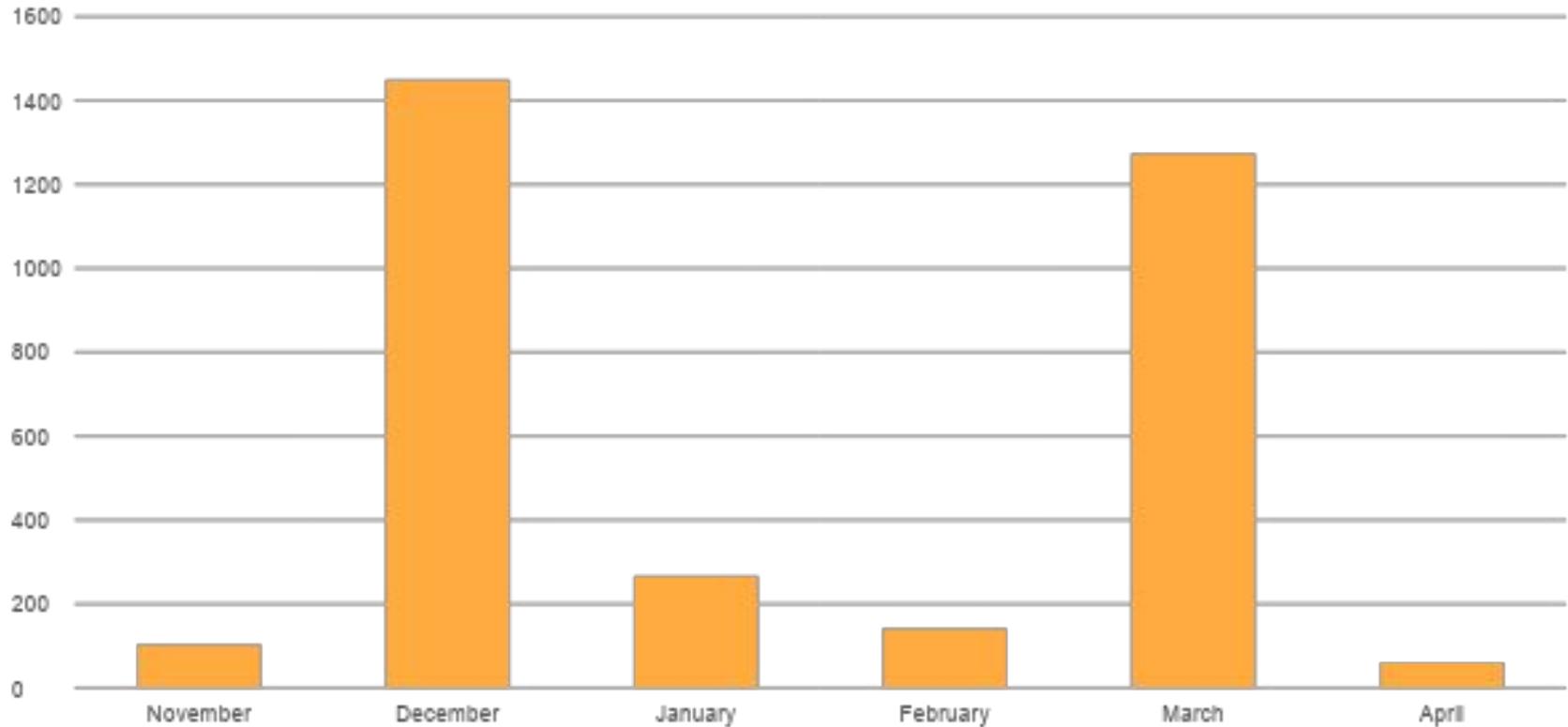
Key messages

- Benefits, access, storage & utilisation of inoculant
- Crop stand of inoculated soybean
- Soy crop management in the fields
- Post harvest preparations & marketing

Participatory radio programs

- Content for PRC generated through NACDC, baseline survey & rapid assessment
- Various resource persons including farmers; govt. dept. (DARS, DAES); NGOs; private sector, & FRT
- Aired on **'Mudzi Wathu' Community radio station** in Mchinji on Tuesdays at 2:00 PM, a repeat on Saturdays at 16:10 PM

Listeners Beeping during the Radio Program





FARM RADIO TRUST

No farmer fails to profit due to lack of information

500 calls/day
100,000 calls registered



Frequently asked questions featured on radio programs



- National Knowledge Partners
- Global Knowledge Partners

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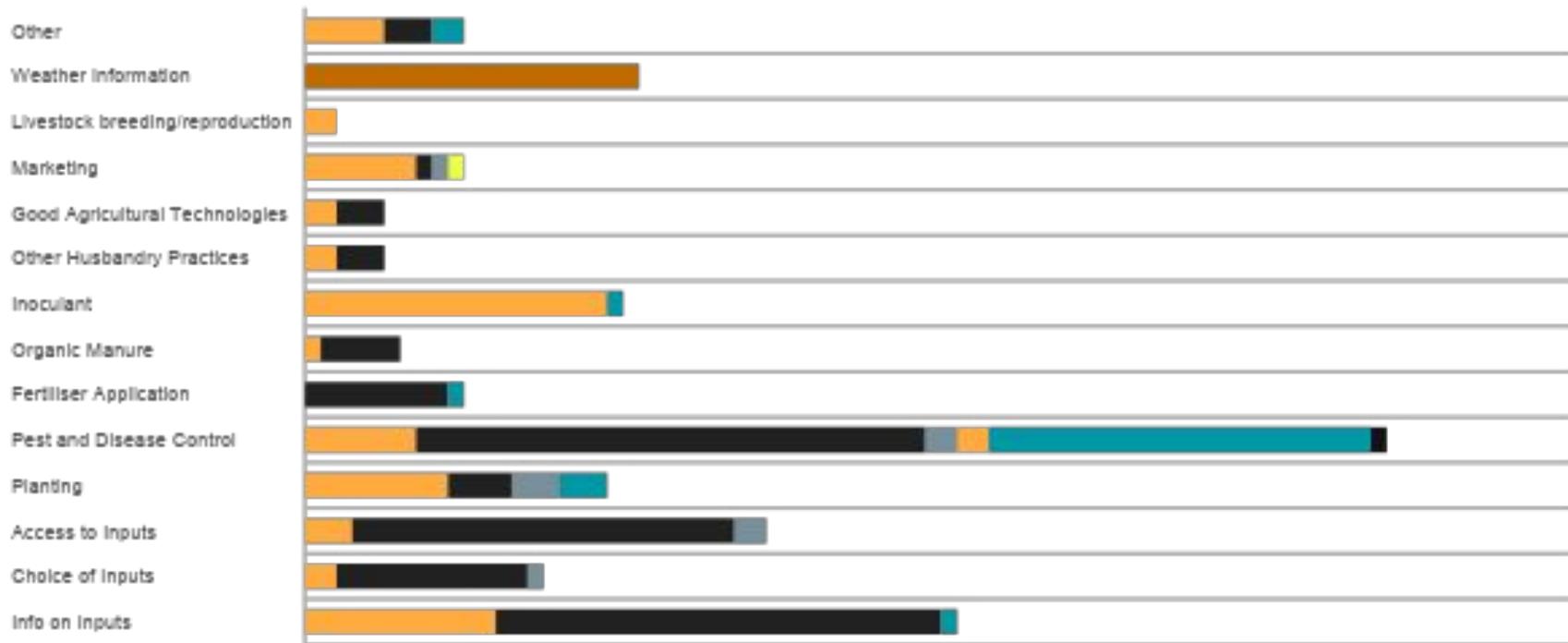
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Potential for business, markets, advisory services & research

November 2018

Call Centre Cases by Value Chain

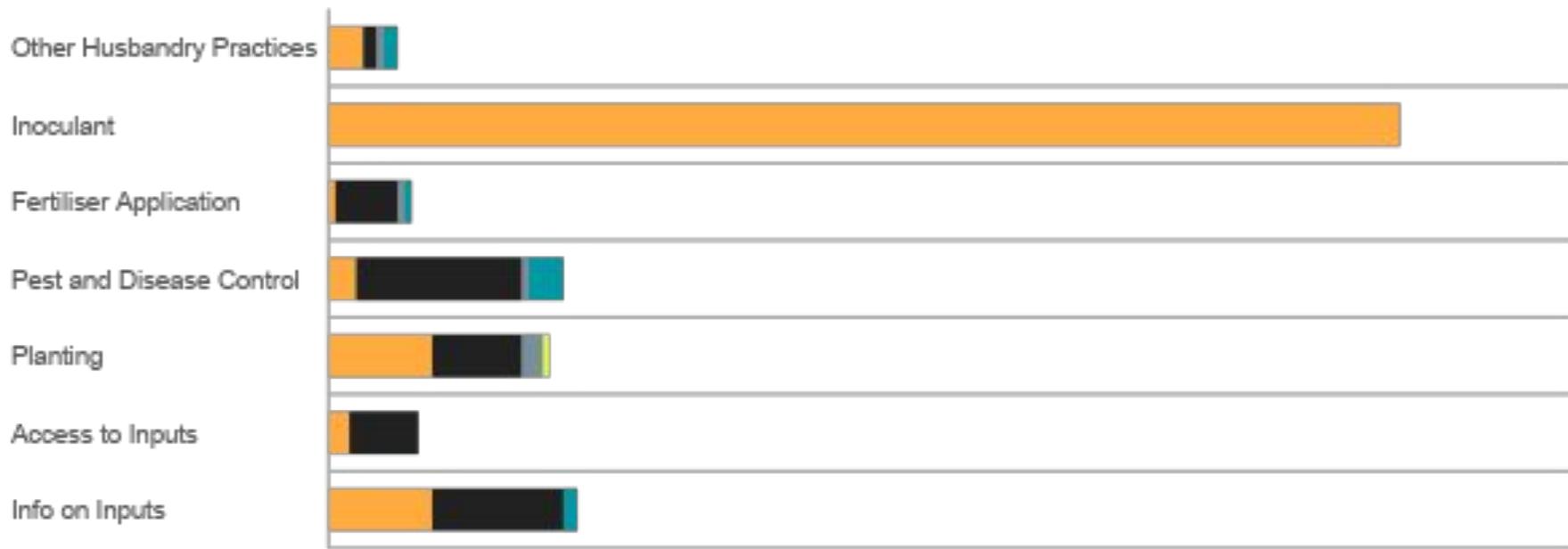
Legend: Legume (orange), Cereals (black), Roots and Tubers (grey), Livestock (light orange), Vegetables (teal), Oil Seeds (yellow), Climate (dark orange), Others (dark grey)



December 2018

Call Centre Cases by Value Chain

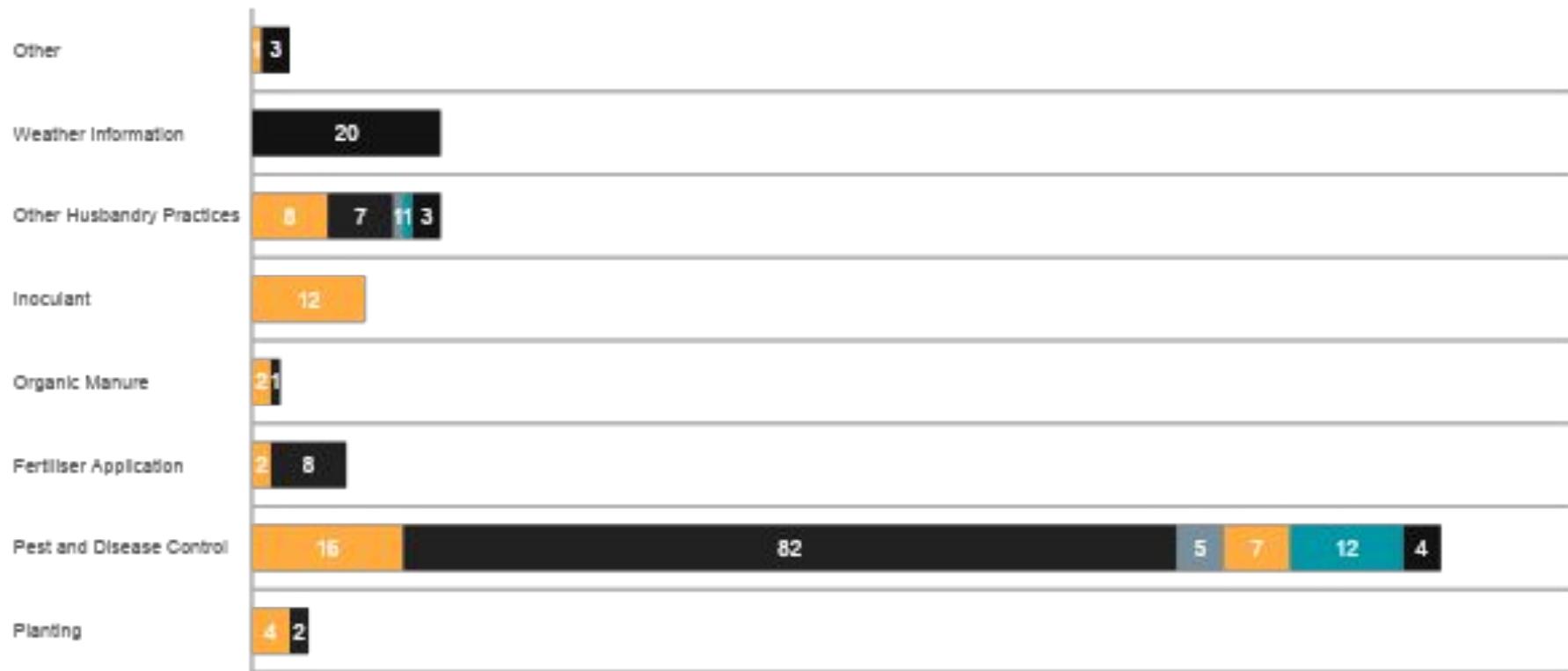
Legend: Legume (orange), Cereals (black), Roots and Tubers (grey), Livestock (light orange), Vegetables (teal), Oil Seeds (light green), Climate (dark orange), Others (black)



January 2019

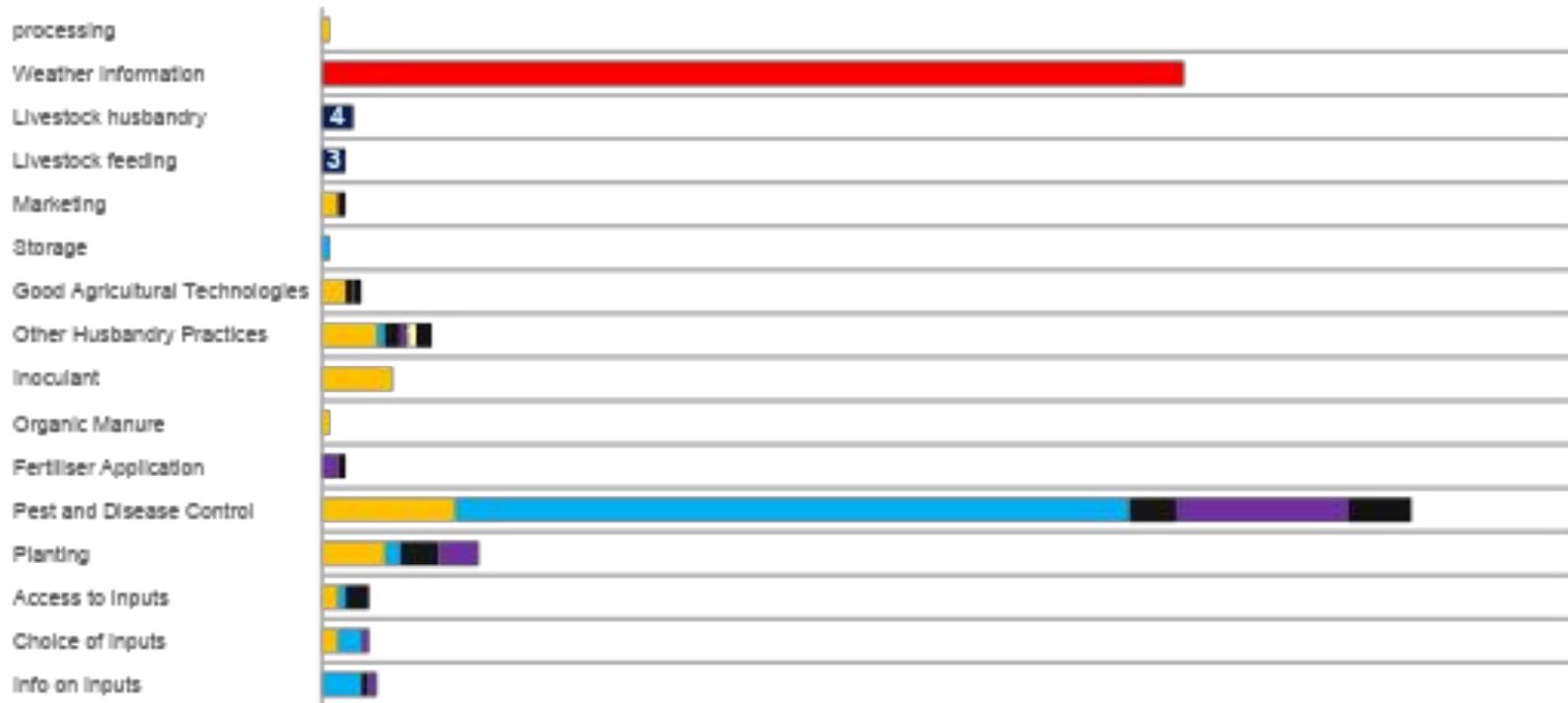
Call Centre Cases By Value Chain

Legume Cereals Roots and Tubers Livestock Vegetables Oil Seeds Climate Others

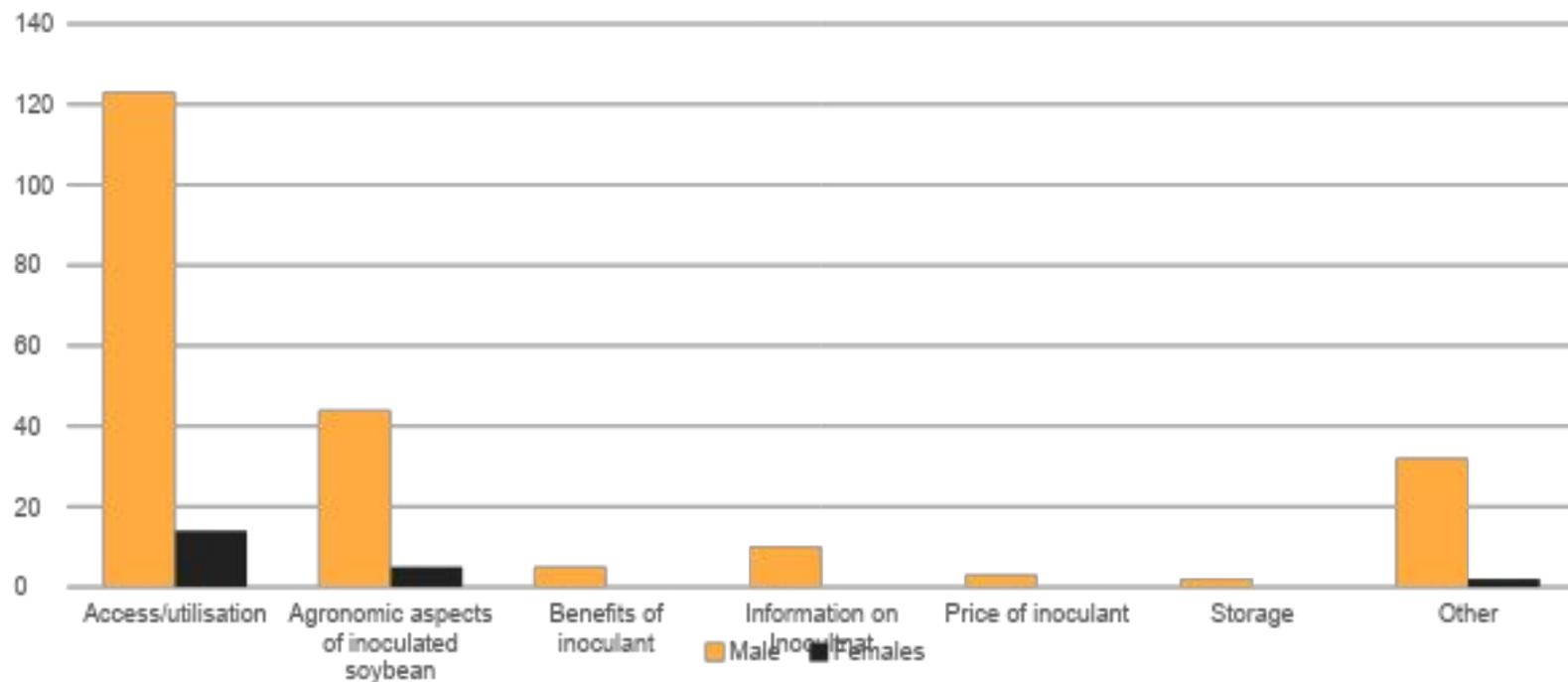


Call Centre Cases by Value Chain

■ Legume ■ Cereals ■ Roots and Tubers ■ Livestock ■ Vegetables ■ Oil Seeds ■ Climate ■ Others



Specific Inoculant Cases





Key messages

- Benefits, access, storage and utilisation of inoculant, crop husbandry practices of inoculated soybean, airing time, and themes
- Incoming SMS messages from farmers
- Access, utilisation, storage etc.

SMS Push/Pull

- 14 SMS pushed to 2,317 farmers

	Outgoing SMS	Incoming SMS
November	9,420	12
December	29,673	176
January	17,474	51
February	10,609	54
March	18,668	148

WhatsApp in Mchinji

- A district WhatsApp group in Mnchinji called **'Bwalo la Ulimi'**
- The farmers were demonstrated on how WhatsApp works irrespective of their illiteracy levels for instance sharing of relevant information through, voice messages and pictures.
- Cost-effectiveness of using mobile phones and WhatsApp in terms of minimising cost of travel to seek extension services & the amount of airtime saved through the use of volume bundles
- Lessons around gender-usage have led to mid-course correction





Gender considerations

PRC had the several strategies put in place to ensure **womens' participation** and enhance their uptake of the technology including: time of airing, combinations of different ICT platforms, use of listening clubs/ ICT hubs

Gender-sensitive actions

- Targeted radio programs
- Women's-only call in lines
- Use of women groups in the programming to air out their issues
- Debates on specific gender issues on-air





Challenges & Observations

Challenges & Observations

- Low ownership of mobile phones by the majority of the female farmers
- ICT limitations and failures
- Women are not taking a proactive role
- Women have a tendency to always let men take the lead in making the decision & the men are accustomed to this.
- Some women reported that sometimes the men threaten to end the marriage if they tend to take the leading role in making decisions at the household
- Other radio programs promoting use of inoculant

Challenges & Observations (cont'd...)

- More farmers are yet to pay for services, if a farmer sees values, then they are likely to take up and pay for the technology
- Promotion & demonstration is necessary in uptake of ICT platforms, especially for female farmers
- ICTs work well in combination to compliment each other
- There is need to empower more females to participate in decision making processes at household level. Men should be included in such trainings to ensure that they support the females too.



What is your organisation's view/perspective on scaling up?
What is your experience in use of ICT in scaling up Ag solutions?
In these projects, how do you consider gender?



Thank you!

Get in touch:
info@farmradio.org
info@farmradiomw.org

farmradio.org



BREAK OUT SESSIONS



What is your organisation's view/perspective on scaling up?

DAES- horizontal-more farmers to be reached with extension, increase geographical coverage; & functional- adoption & practice of agricultural technologies through individual & group methods (lead farmer), mass media (Mega phones, Esoko- an e platform to reach farmers with advisories), TV.

LUANAR- TOTs to reach more coverage (horizontal & functional approach), media by training broadcasting, both radio and TV, research, innovation hubs, lobby (vertical approach)

ARET- Vertical & horizontal-to reach more coverage and enhance adoption of practices with a focus on Tobacco production; radio programs, leaflets, demonstrations, open days, research, mobile phones

MaFAAS- Horizontal, functional & Vertical (reach more coverage, influence adoption, innovation, policy interventions/lobby), using of ICTs (mobile phones, radio, videos)

What is your experience in use of ICT in scaling up Ag solutions?

- DAES, bias towards the use of radio- positives-, its fast, more coverage, coming in of community radios, they have terra made messages specific to that region; Challenges- less feedback from the farmers due to the type of ICTS used, monitoring of the impact of the messages disseminated, access due to affordability, technological know how on the use of the ICTS , ICT infrastructure, e.g. Networks,
- LUANAR- contribution of human resource in the scale up, engagement in consultancies, lack of equipment e.g. radio station on campus, and other resources on teaching and learning, lack of employment to contribute to scale up,

What is your experience in use of ICT in scaling up Ag solutions?

- ARET- Positives- reach out to more masses, challenges cost of airing on national radio stations, so more community radio stations would help as they are relatively cheaper, cost of airtime on the part of the farmer
- MaFAAs- the positive- more coverage, challenges - affordability, access, utilisation of the ICTs, categorization of the ages (youth/adults) gender in the use of the ICTs to customise outreach; network challenges, content challenges, creation of demand without supply, regulations on the Ag solutions,

In these projects, how do you consider gender?

- more emphasis on women does not work well with gender, men need to be involved, value propositions to the men to bring women on board
- Vertical scaling, for instance making network accessible to all including women,
- Understanding the gender dimensions in the area when bringing in the technologies that are enhanced through the ICTs
- Gender policies to ensure more female extension workers where female farmers would engage more females

Group 2: What is your experience in use of ICT in scaling up Ag solutions?

NO.	ORGANISATION	VIEW/PERSPECTIVE ON SCALING UP
1	FRT/FRI	Moving from of pilot phase to wider populace. Increase the reach from demonstration plot to wider masses as well as adoption of the technology adoption. It involves technologies, mode of communication and corroboration with partners in the agriculture sector
2	DAES	Transfer technologies from sister departments to farmers and making sure farmers are adopting new technologies beyond demonstration
3	ARET	To reach every farmer who grows tobacco regardless of land holding size.
4	DARS	Making available of released technologies to other departments in the ministry of agriculture and other stakeholders in the agriculture sector.
5	FEED THE FUTURE	Reaching out to the marginalized segregated by gender (Marginalized refers to people in the rural areas and those hard to reach)

Group 2

	PAES	<ul style="list-style-type: none">• Radio, publication (farmer magazine, leaflets, flyers, posters brochure, booklet, training manual), video, outdoor media, SMSs, e-platform• Feedback: through frontline staff and SMS platform
	ARET	<ul style="list-style-type: none">• Use cellphone for push and pull (SMS), radio programmes aired on MBC and Zodiak twice a week, publications such as newsletters and field calendar• In terms of feedback: They depend on extension workers• Adoption: tobacco buyers (Merchant) plays a big role on promotion of use of certified seed. They buy certified seed and provide to farmers who on contract with them.
	DARS	<ul style="list-style-type: none">• Circular, demonstration, videos, publication, radio programme,
	FEED THE FUTURE	<ul style="list-style-type: none">• Use of videos to promote different technologies• Whatsapp group is also used to promote picsbag• Newspaper (FUKO) to promote agri• Brochures for every technology they promote• Radio programmes in partnership with FRT. Both national and community radio station• Feedback: through surveys

Gender considerations on group 2

- FEED THE FUTURE: - They mainstream gender in every training they
- They use gender action learning systems approach
- ARET: They provide trainings specifically to women in terms of farm records
- DARS: every technology released, they make sure is gender sensitive. Gender friendly technology
- DAES: there is a special branch mainstreaming gender in the projects. Through household approach farmers gender is mainstreamed in farm household. Issues of 50-50 in farmer groups. Every training conducted with farmers, a top about gender is incorporated



Her Voice on Air

Using Radio and ICTs to support Women Farmers in Africa

Authors: Hudson H.E., Hampson K., Leclair M., Montpetit C., Mweruka P., Pelletier B., Mloza Banda C., and Chapota R.

Paper presented during the 2nd Regional African Conference of the International Telecommunications Society, Intercontinental Hotel Lusaka, Zambia March 15 – 16, 2018.

Farm Radio International

NGO established in 1979

“to support African broadcasters to provide radio services that share knowledge and amplify the voices of small scale farmers, their families and their communities”

600+ radio partners in 38 countries
in sub-Saharan Africa

40+ development partnerships

8 offices in Africa:

Ethiopia, Ghana, Kenya, Mali, Malawi,
Niger, Tanzania, Uganda



Women, Agriculture and ICTs in Africa

- ▶ Women represent 50 per cent of agricultural workforce on the continent;
- ▶ Women lag behind men in access to land, productive resources, income from land, education, financial services, and information.
- ▶ Women living in rural areas have the least access to ICTs.
 - ▶ *Lack of financial resources*
 - ▶ *Higher levels of illiteracy*
 - ▶ *Norms that discourage women and girls from using technology*
 - ▶ *Lack of control over and ownership of technology*
- ▶ Women are at a disadvantage in making informed choices about production, increasing their productivity and participating in decision making in their households and communities.



Women, Agriculture and ICTs in Africa



- ▶ To contribute more meaningfully to farm management and decision-making, women farmers must have access to relevant and reliable **agricultural information** provided through **easily available means** that suit their daily lives and schedules.



- ▶ Women also need opportunities to **participate** in the conversations, sharing their own experiences, perspectives and needs.



Her Voice on Air approach

- ▶ Farm Radio International has developed the **Her Voice on Air** approach which involves:
 - ▶ **Training of radio broadcasters** to incorporate a gender-sensitive approach in their programming to address information needs of women
 - ▶ Assisting women farmers in forming **community listening groups (CLGs)** and **using mobile phones** to call into the radio programs and to record and contribute content for the programs.
 - ▶ Presenting **practical information** on farming practices tailored for the crops grown in each area using **interactive radio**

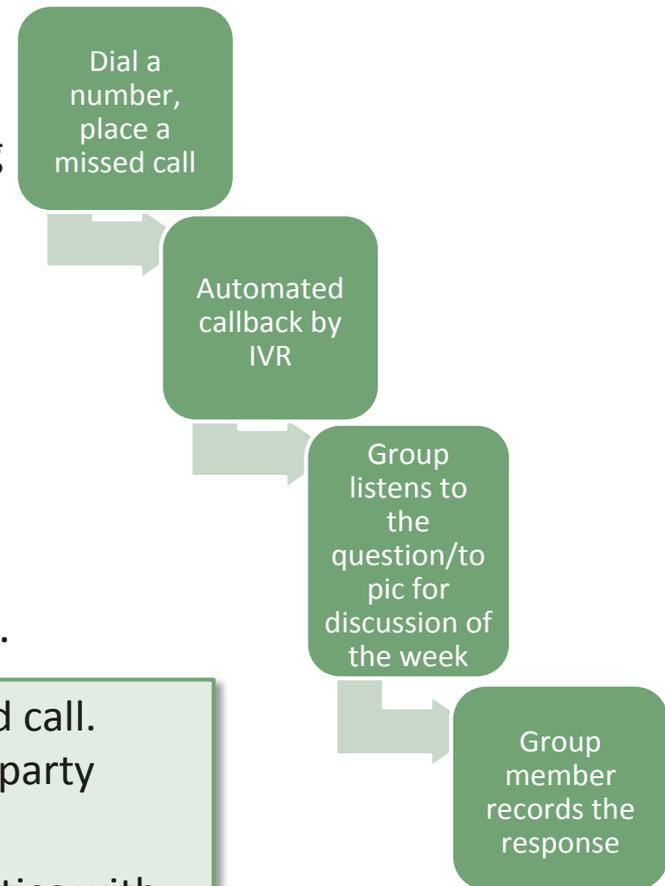


Interactivity System: Uliza

- ▶ **Uliza**= ‘to ask’ in Swahili
- ▶ Purpose-built dashboard for radio stations
 - ▶ for managing on-air listener interactions, including incoming and outgoing calls, conference calls, and SMS.
- ▶ Each radio station set up a dedicated segment in each week’s program for the messages and discussion that came from the women’s listening groups to the Uliza dashboard.
- ▶ Each week two groups were selected to have their messages played, to ensure that every group got a turn.

No cost to the respondent, because no charge for a missed call. (Received calls are free to the recipient under the “calling party pays” model used by mobile operators.)

Content is gathered from remote, hard-to-reach communities with **no travel, no cost to the caller, and high quality audio** for inclusion in radio programs.



Uliza Live (Voxbox)

Farm Radio's Voxbox technology provides radio hosts and studio operators with an interface for managing on-air listener interactions, including incoming and outgoing calls, conference calls, and SMS.

Voxbox:

- ▶ Powered by Raspberry Pi
- ▶ Accommodates several USB modems, loaded with ordinary GSM SIM cards.
- ▶ Runs on any device with a web browser, including desktop or laptop computers, smartphones and tablets.
- ▶ Compatible with studio equipment in most African radio stations
- ▶ Does not rely on Internet connectivity



The Her Farm Radio Project

- ▶ In partnership with 13 radio stations in Ethiopia, Malawi, Tanzania and Uganda, Farm Radio International (FRI) developed the Her Farm Radio project to include and engage women in rural radio programs about agriculture using the **Her Voice on Air** approach



- ▶ 134 listening groups were formed:
 - ▶ 2300 members, 80 percent of them women.
- ▶ Funded by the **International Fund for Agricultural Development (IFAD)**.

This presentation discusses the implementation, experiences and lessons learned in the project with specific focus on Uganda and Malawi.



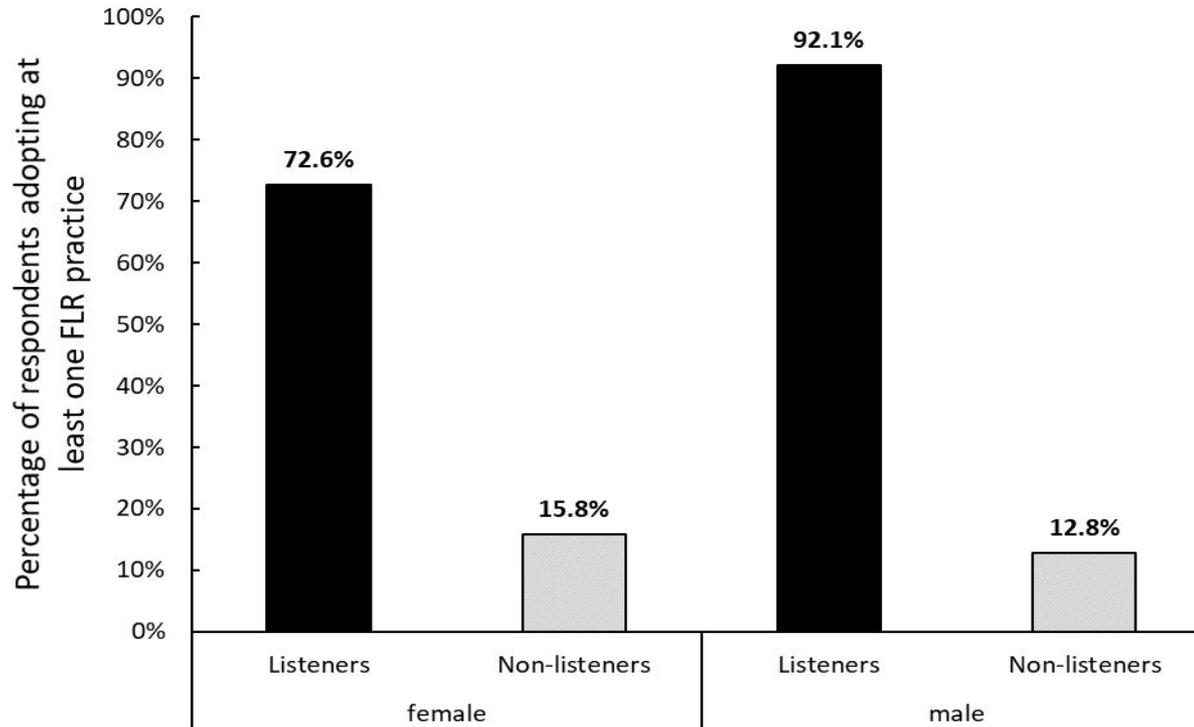
Northern Uganda: Evaluation

- ▶ Project on Forest Landscape Restoration (FLR) implemented in Aswa -Agago catchment area (funded by **International Union for Conservation of Nature**)
- ▶ A Participatory Agricultural Radio Series (PARS) on FLR and its capacity to build resilience to drought
- ▶ Household survey (N = 457) was administered to assess effect of interactive radio on **knowledge** and **adoption** of FLR practices
 - ▶ 60 percent of women had radios or access to a radio
 - ▶ 54 percent of women had mobile phones or access to a phone

Ownership of radios and mobile phones	Female	Male
Radio		
Own	47%	65%
Do not own but have access to one	13%	9%
Do not own	40%	25%
Mobile phone		
Own	41%	71%
Do not own but have access to one	13%	4%
Do not own	46%	25%

Difference in ownership between female and male

Evaluation 1 – Northern Uganda



Percentage of respondents **adopting at least one FLR practice** in the last 5 months (since start of the project)

Highly significant difference between those who listened (participated in the interactive radio series) and those who did not



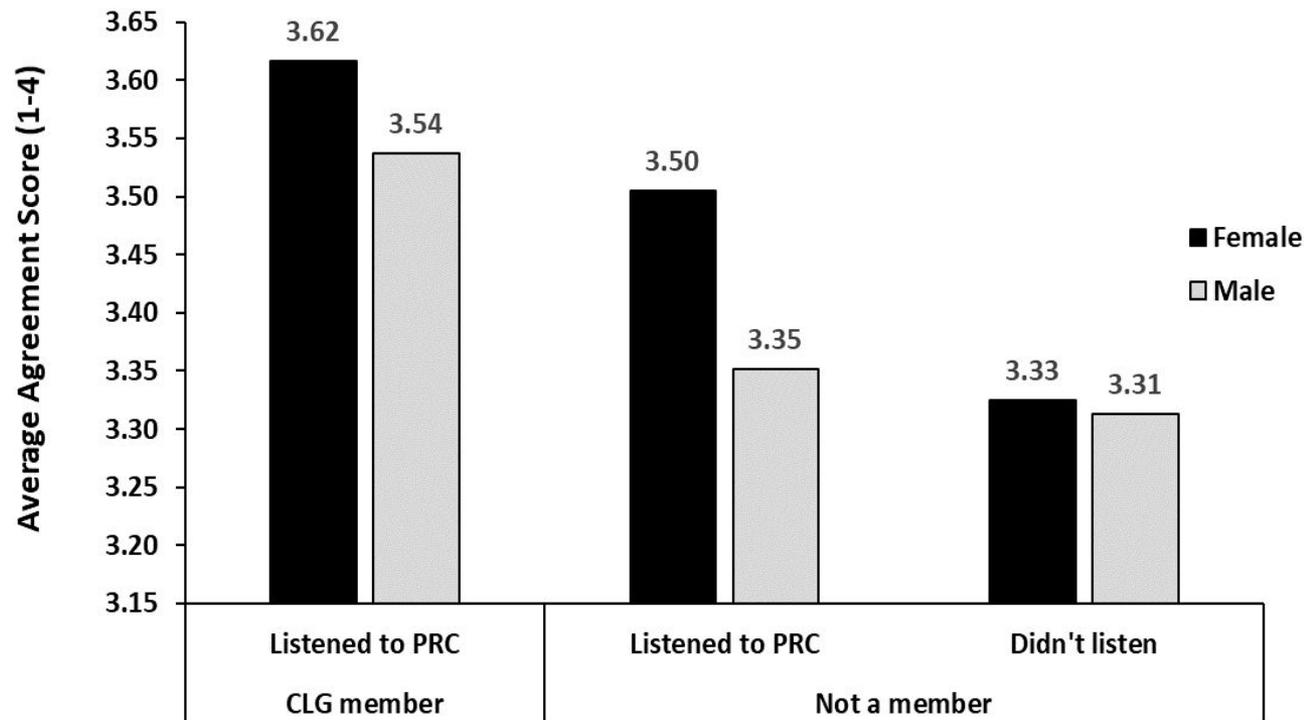
Evaluation 2 – Western Uganda

- ▶ Project on Banana production in Western Uganda.
- ▶ Participatory Radio Campaign (PRC) was implemented by FRI on various aspects of banana cultivation.
- ▶ A random sample of 378 respondents was surveyed using both an SMS survey (n = 300) and a voice survey (n = 78) using FRI's internal Uliza IVR system.
- ▶ Survey assessed percentage respondents **adopting improved practices** but also asked whether respondents agreed with a series of statements on **gender equality**.

	Gender		Listening to PRC		Member of CLG	
	Male	Female	Yes	No	Yes	No
Implementing new practice	84.6%	86.4%	88.9%	74.0%***	92.7%	76.9%***

NOTE: Significant effect of **PRC listenership and membership in CLG** on **uptake of at least one improved practice**

Evaluation 2 – Western Uganda



Agreement score
Strongly Agree = 4
Agree = 3
Disagree = 2
Strongly Disagree = 1

Listening and participating in community listening groups resulted in significantly more positive responses to five (5) statements on gender equality

Qualitative Evaluation – Focus Group Discussions

- **8 community listening groups** were visited (126 people, including 87 females and 39 males).
- Participants generally reported **positive impacts** of the Her Voice on Air program.
- 17 women who previously had no knowledge of how to use phones before the training said that they **could now participate** in the radio programs.
- Women participants also gained **confidence** in their ability to educate others.

- ▶ *“I used to fear speaking on phone because I thought I would press a wrong button and spoil everything. But now I even pick up my husband’s phone when it is ringing.”*
- ▶ *“I was so happy when I heard myself educating others on air. This made me realize everyone has something to contribute in this world even if you are just a farmer with no education.”*
- ▶ *“I thought no one could believe in me because am uneducated and a woman. But my group members chose me as their chairperson. This gave me confidence to even contest for the Local Council 1 position which I got.”*



Malawi:

Interactivity System: WhatsApp

- ▶ Broadcasters were supported to **install WhatsApp** on mobile phones **and trained** on basic technical issues android phones
- ▶ **Group chats** created for the listening groups
- ▶ Groups alternated which member would record the response to the weekly question.
- ▶ Each radio station set up a **dedicated segment** in each week's program for the messages and discussion that came from the women's listening groups to the WhatsApp group.
- ▶ Each week, two groups were selected to have their messages played, to ensure that every group got a turn.

Broadcaster posts question/topic for discussion on group chat

Group listens to the question/topic for discussion of the week

Group member records and posts the response on the group chat

NOTE: WhatsApp was not initially part of the design of ICT-services to be used in the project.

However, it was included as a result of the failure to use Interactive Voice Response (IVR) systems, which were abandoned during the initial stages of project implementation due to high internet costs and low literacy levels.

Evaluation

10 Focus Group Discussions (FGDs) and 147 Individual Interviews were conducted in Nkhotakota district, Central Malawi.

The WhatsApp group had expanded to include agricultural experts and extension workers!!

- ▶ The radio station received 2-4 recordings weekly, and an average of 25 text messages per program from listeners commenting on the segment and the content of the radio program.
- ▶ The topics covered broadly related to gender roles and relations: in compost manure making, nutrition, livestock production, irrigation, agroforestry and decision making at household and community level.

'One community listening club called Chigumukile said that women and other villagers touched a smart phone for the first time when they received one from the project.

Three months later, three other members of the village bought their own low cost smart phones just to have WhatsApp on them and be able to join fellow farmers on the group chat moderated by the radio station broadcasters.

According to the farmers, they have found it interesting to interact with other farmers and share information about farming and other development issues of common interest daily.

While extension workers were confined to [their own areas], the WhatsApp group chat broke the boundaries, allowing extension workers to share tips and respond to farmers from other [areas].'

Lessons Learned

- ▶ **Women have a voice; they also really need a platform**
 - ▶ If women are given a chance to voice out their issues concerning any development challenge, they are willing and able to articulate their issues in their own ways.
- ▶ **Capacity development in ICT skills-** Critical for women's use of ICTs
 - ▶ To make a positive link between rural women's livelihoods and ICTs, capacity development must be rooted in project design and linked to outcomes for all project stakeholders especially women who most of the times are disadvantaged.
- ▶ **'Women's issues' cannot be dealt with by women only**
 - ▶ For change in the plight of women to occur, there is need for open discussion of women's issues and concerted efforts by various stakeholders.



Next steps

- ▶ **Integrate gender-responsive ICT approaches in scaling-up initiatives**
 - ▶ Elements of the Her Voice on Air approach will be adapted for a research initiative implemented by FRI and Farm Radio Trust, Malawi to develop a gender-sensitive framework for using ICTs in initiatives aiming at achieving sustainable impact at scale. This ICT4Scale project is funded by Canada's **International Development Research Centre (IDRC)**.
 - ▶ The ICT4Scale project will establish a collaborative learning platform to share the project's lessons and findings across a diverse set of stakeholders
- ▶ **Increased use of Her Voice on Air approach in future projects by FRI and FRT**
 - ▶ The Her Voice on Air approach will be integrated/adapted in an increasing number of projects by FRI and FRT.
- ▶ **Further development of Monitoring and Evaluation strategy**
 - ▶ Additional work is required to develop M&E tools that can provide solid evidence of the impact of the Her Voice on Air approach on gender-sensitive and gender-transformative developmental outcomes



Conclusions

- ▶ **ICTs can have positive effects** on rural development – for **female farmers** and for **food security**.
- ▶ **Interactivity** not only **increases engagement**, but also contributes to greater knowledge and adoption of practices presented in radio broadcasts
- ▶ **Interactivity can be achieved inexpensively** using technologies and applications such as mobile phones, Uliza, and WhatsApp.
- ▶ The Her Farm Radio project produced valuable insights into **using ICTs to amplify womens' voices and participation** in development.
- ▶ Best results from development projects could be achieved when **gender issues** are deliberately and consistently brought to light and addressed.
- ▶ If properly designed and contextualized, **ICT-based communication strategies** can effectively contribute to **social change and economic development** amongst community members.
- ▶ This approach could be adapted for **other sectors** in rural Africa, and in **other developing regions**.



Thank you!



For more information see:

www.farmradio.org (Farm Radio International)

www.farmradiomw.org (Farm Radio Trust, Malawi)





Going Big for the Long-term
Insights from scaling-up & sustaining
ICT-enabled approaches

Webinar instructions

- Please introduce yourself:
 - Name and organization in the chat
- Kindly note that it will not be possible to have audio for attendees online, therefore please write any questions and comments in the chat
- This event is recorded and it will be shared following the event

Welcome

- **Farm Radio International** and **Grameen Foundation** are pleased to share results and ideas concerning two questions that occupy a lot of our time and deliberations:
 - How ICT enables us to scale results?
 - How we can sustain the programs and services that make this scale possible?

Bernard Pelletier, Research Lead and M&E Support at Farm Radio International

Sybil Chidiac, Senior Director for West Africa at Grameen Foundation

Benjamin Kudjoe Fiafor, Country Director at Farm Radio International Ghana

Mark Leclair, Knowledge Management Team Lead at Farm Radio International

Karen Hampson, Senior Manager for Program Development at Farm Radio International

Rex Chapota, Regional Program Manager for East and Southern Africa at Farm Radio International and former Executive Director of Farm Radio Trust in Malawi

Caroline Montpetit, Senior Program Officer for West Africa at Farm Radio International

Sylvie Harrison, Radio Craft Team Lead at Farm Radio International



When you think about scale and sustainability what are the three words that come to mind?



PART 1

ICT-enabled scaling up

SCALING UP

“

Scaling up means expanding, replicating, adapting and sustaining successful policies, programs or projects in geographic space and over time to reach a greater number of rural poor

IMPACT AT SCALE

“

Achieved when large or significant proportions of potential beneficiaries or users are reached and have, in some way or another, benefited from the innovations resulting from research.

SCALING DIMENSIONS

Horizontal Scaling (scaling-out): The process of expanding impact through replication, - e.g., from one geographical area to another (quantitative)

Vertical Scaling: Changing the policy / institutional environment through higher level influencing, – e.g., moving from a local or provincial engagement to a nationwide engagement (institutional)

Functional Scaling: Expanding the functional scope of an innovation, - e.g. adding processing and marketing components to a project initially focusing on crop production (diversification)

EXAMPLES OF SCALING PATHWAYS

Many scaling pathways can be used depending on agricultural solution and socio-economic and institutional context

- Knowledge sharing
- Market-based approaches
- Informing policy
- Financial services

Over the years, Farm Radio International, together with key partners, has developed models and approaches to scaling-up based on the use of radio and information and communication technologies (ICTs).



INFORMATION AND COMMUNICATION TECHNOLOGIES

ICTs: All devices, network components, applications and systems, which can be combined to allow individuals and organizations to interact in the digital world. ICT encompasses the internet sphere and the mobile sphere powered by wireless networks, but can also include landline telephones, radio and television broadcast used alongside ICTs.

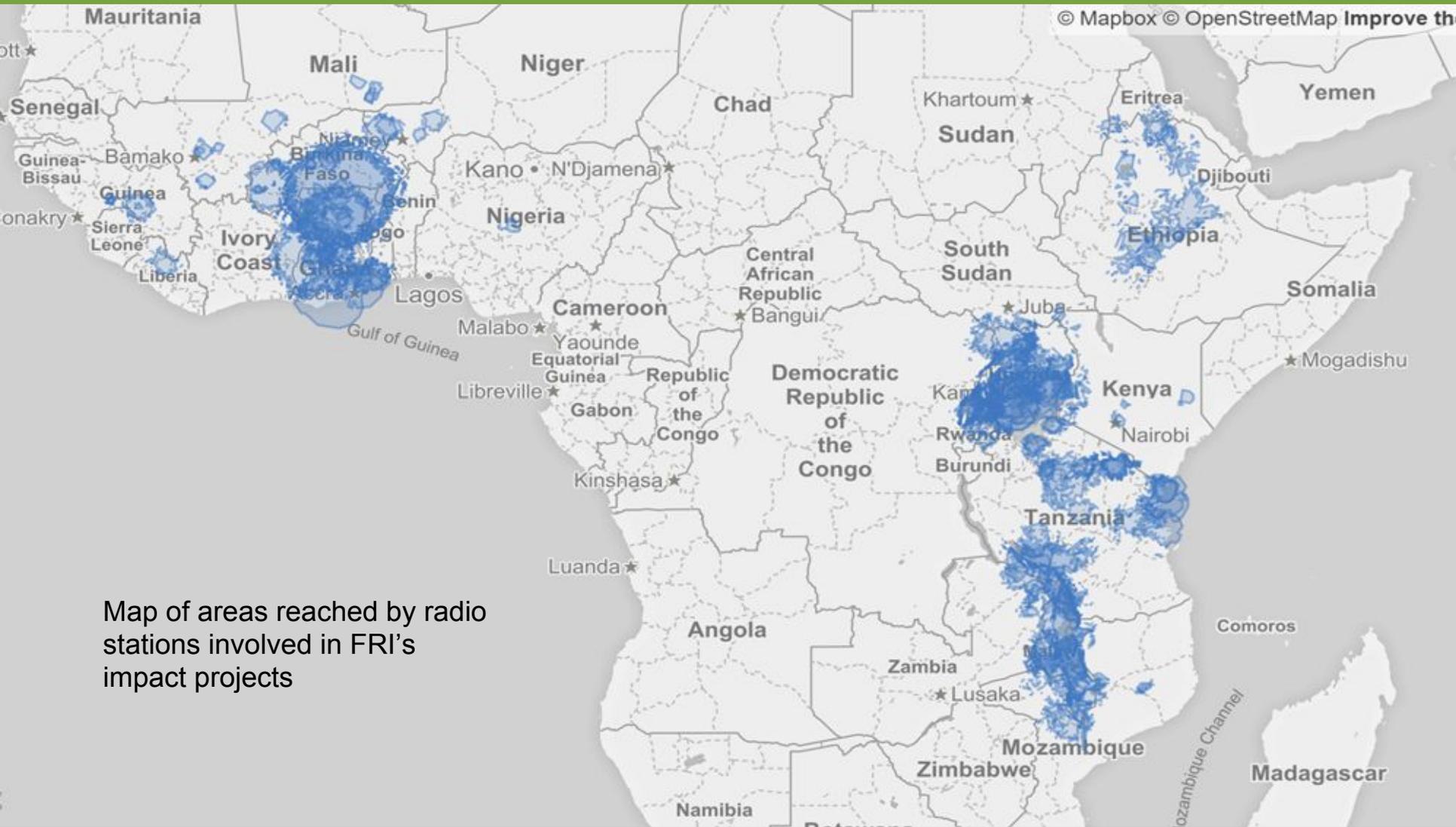
ICT-for-development (ICT4D): The use of Information and Communication Technologies (ICTs) to achieve developmental goals such as education, gender empowerment, health and poverty eradication.

■ ICT for Scale (ICT4SCALE)

How can ICTs enhance the scaling-up process?

Three key components:

1. **REACH:** Making information about innovations, markets, and weather available, accessible and affordable to a large number of farmers
2. **PARTICIPATION:** Facilitating the participation of beneficiaries in the design and implementation of scaling-up initiatives.
3. **COLLABORATIVE PLATFORMS:** Strengthening interactions, linkages and networking among key stakeholders



Map of areas reached by radio stations involved in FRI's impact projects

REACH

Increase in penetration rate of mobile phones

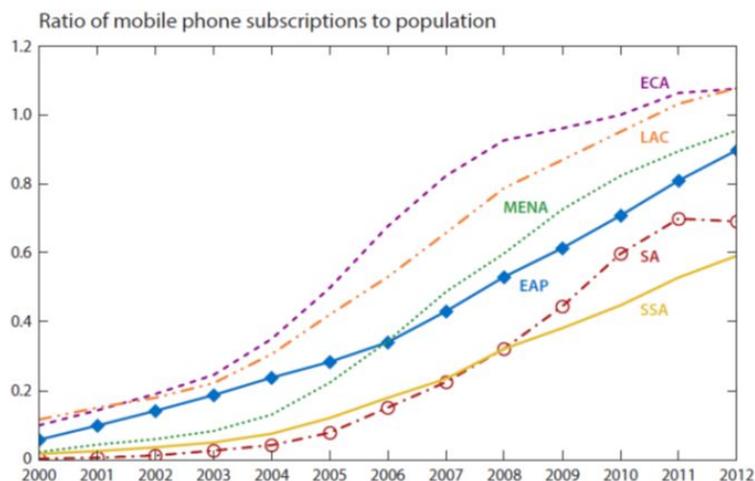


Figure 2

Penetration rates (2000–2012) of mobile phones in developing countries, by region. Abbreviations: EAP, East Asia and Pacific; ECA, Europe and Central Asia; LAC, Latin America and the Caribbean; MENA, Middle East and North Africa; SA, South Asia; SSA, sub-Saharan Africa. High-income (OECD and non-OECD) countries are excluded from the sample. Data from International Telecommunication Union (ITU) (mobile phone subscriptions) (<http://tinyurl.com/poehsmu>) and World Bank (country categories) (<http://tinyurl.com/346ptef>; accessed December 10, 2013).

Example: Preliminary results from endline household survey of project Scaling-up Improved Legume Technologies (SILT) administered in rural northern Tanzania (n =1896).

- 74.8% of respondents own a mobile phone
- 11.1% do not own but have access to one

RADIO + ICT & PARTICIPATION

Reach is necessary but not sufficient to achieve sustainable impact at scale

Radio+ICTs can also be used to facilitate participation of beneficiaries in the design and implementation of scaling-up initiatives - e.g., by having their voice heard on air or by participating in IVR polls.

- Integration of gender component
- Facilitates the adaptation of innovations by the beneficiaries to local conditions

RADIO+ICT

Impact on knowledge, attitude, and practice

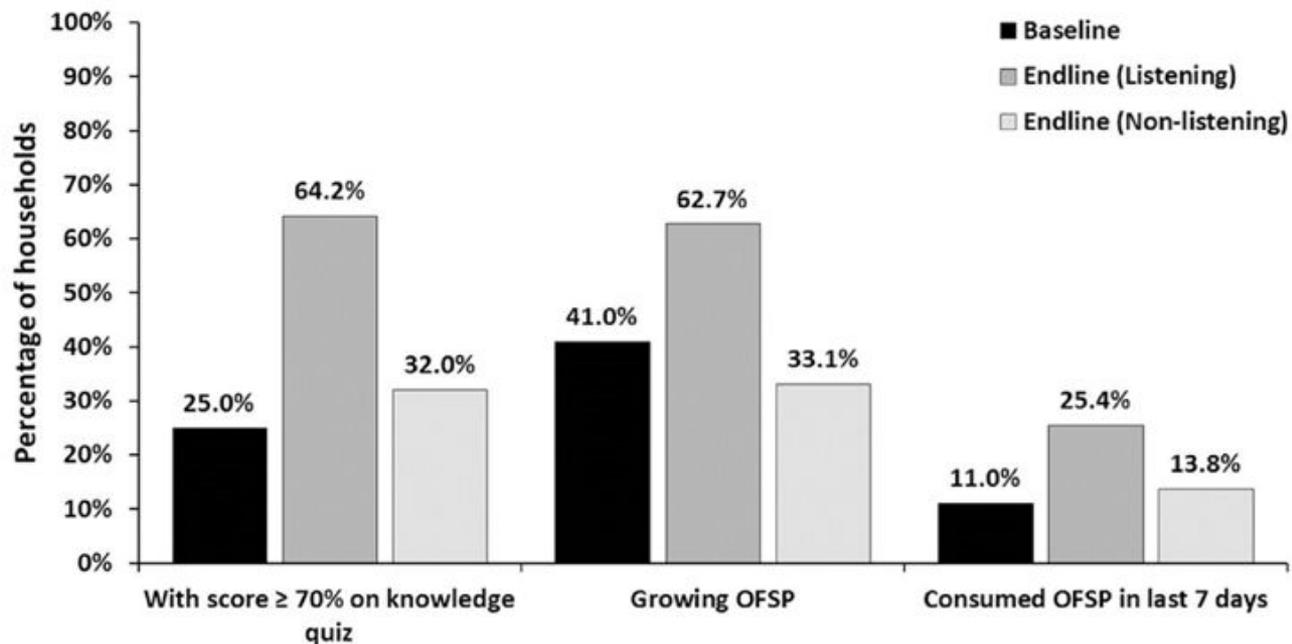
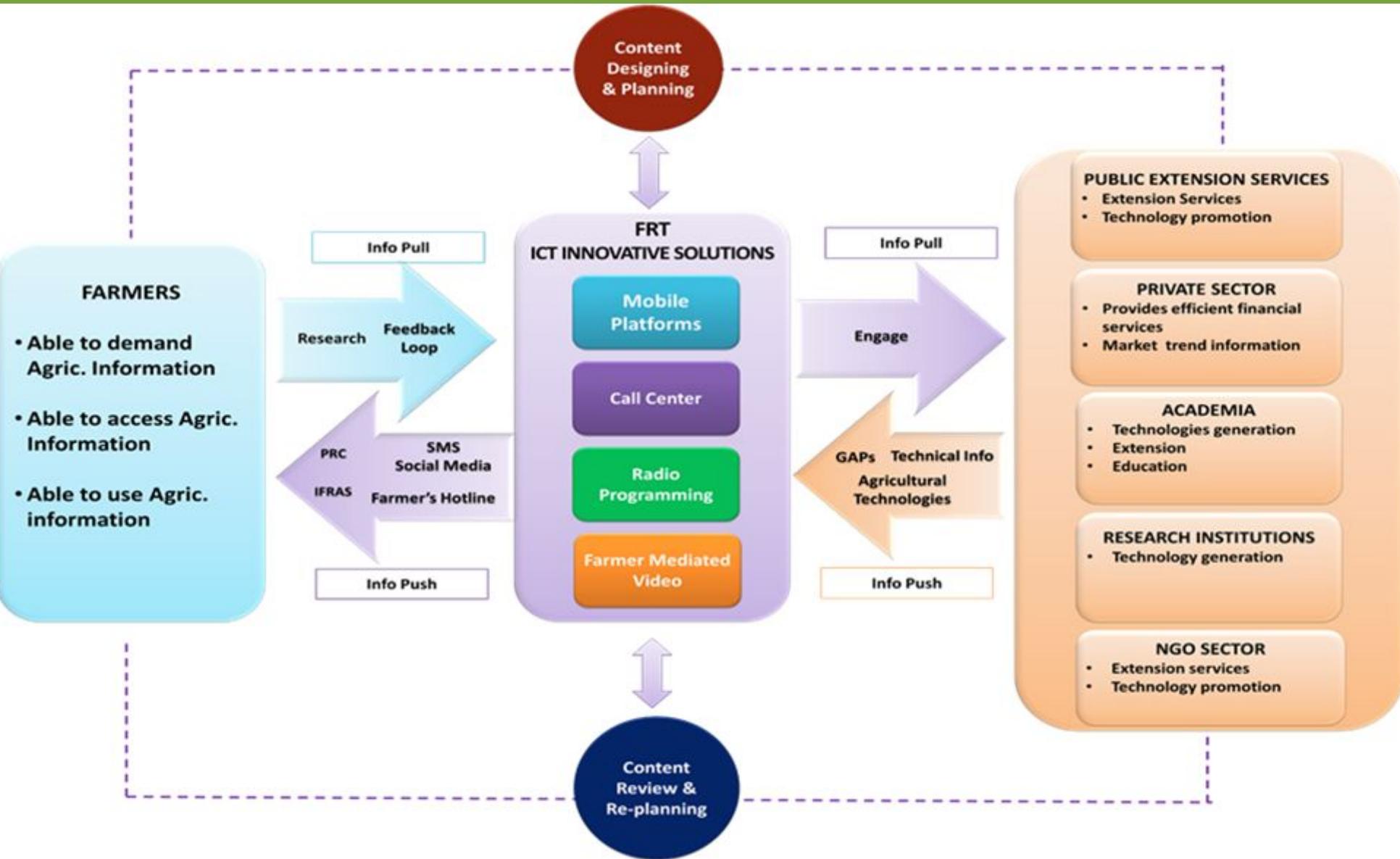


Fig. 12. Percentage of households from baseline and endline – listening and non-listening, surveys that had a score of 70 percent or more on the knowledge quiz; are growing OFSP; and consumed OFSP in the last 7 days. Sample size is 2219 for baseline; 1542 for endline (listening) and 1739 for endline (non-listening).



■ IMPORTANT CHALLENGES REMAIN

- Need to better integrate gender analysis in scaling-up initiatives
- Need for clearer evidence of impact of ICTs on developmental outcomes (and scaling-up processes)
- Need to address the 'digital divide' challenge - i.e., are we excluding the most vulnerable people?
- Need guidelines to design and implement ICT-enabled scaling-up initiatives

HARNESSING ICT TO SCALE-UP AGRICULTURAL SOLUTIONS (ICT4SCALE)

Thirty (30) month research initiative implemented by Farm Radio Trust, Malawi and Farm Radio International and funded by IDRC

Objective: To develop and test a gender-responsive conceptual framework and guidelines for the efficient use of ICTs in scaling-up initiatives

Methodologies: Meta-review of current/past projects; Analysis of case studies in sub-Saharan Africa; Intervention Research in Malawi

Learning Platform: The project will establish a collaborative learning platform to share the project's lessons and research findings across a diverse set of stakeholders - donors, NGOs, policy makers, researchers, and private businesses



What role does ICT have to play in scaling up?



PART 2

Experience and
evidence of scale



ACHIEVING IMPACT AT SCALE



IDRC | **CRDI**

International Development Research Centre
Centre de recherches pour le développement international



Global Affairs
Canada

Affaires mondiales
Canada



ACHIEVING IMPACT AT SCALE (AIS) PROJECT IN GHANA

To generate data driven information on sustainable models to deliver ICT-based extension and services to SHFs in Ghana

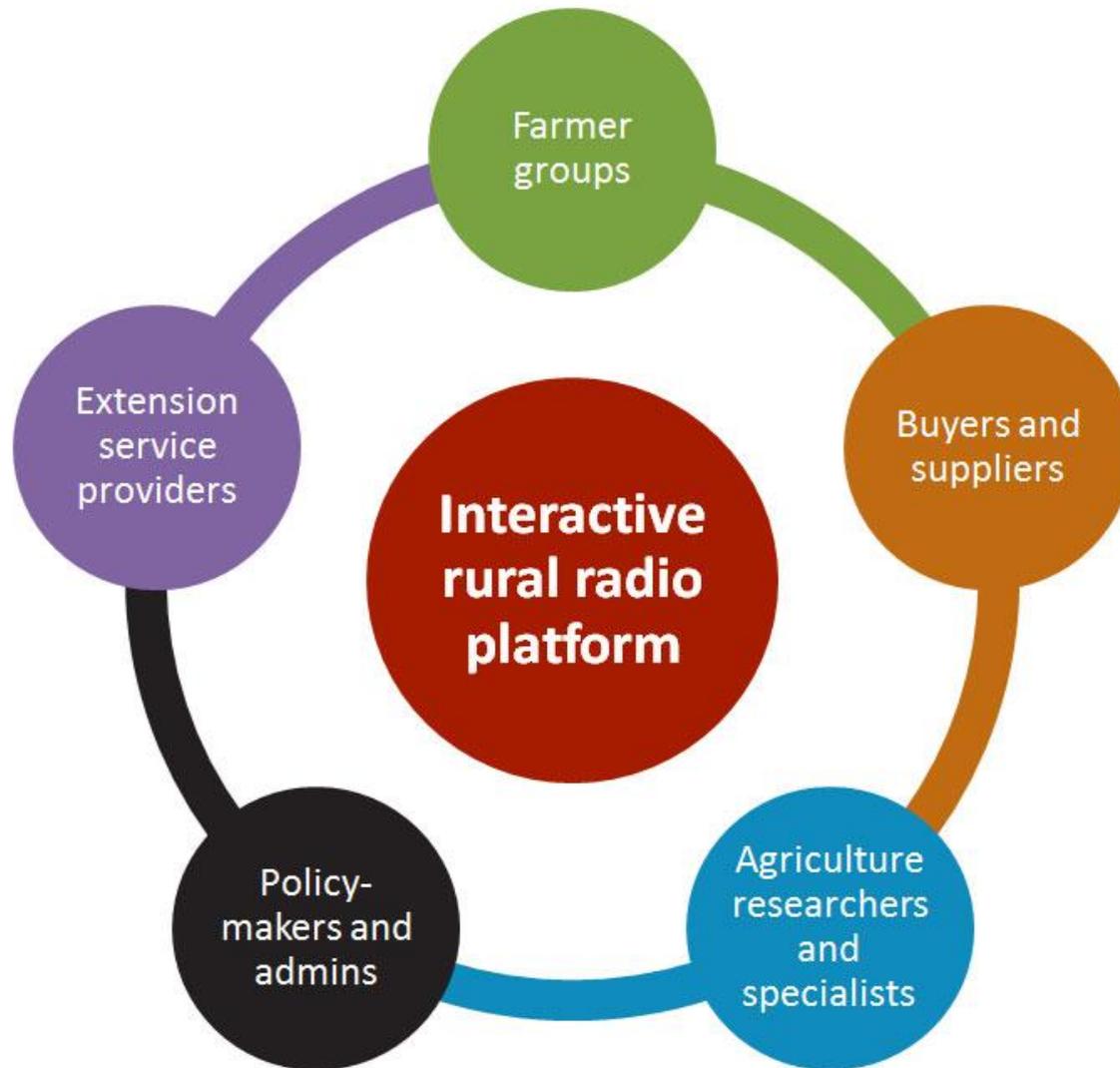
To test the effectiveness of different scaling up approaches

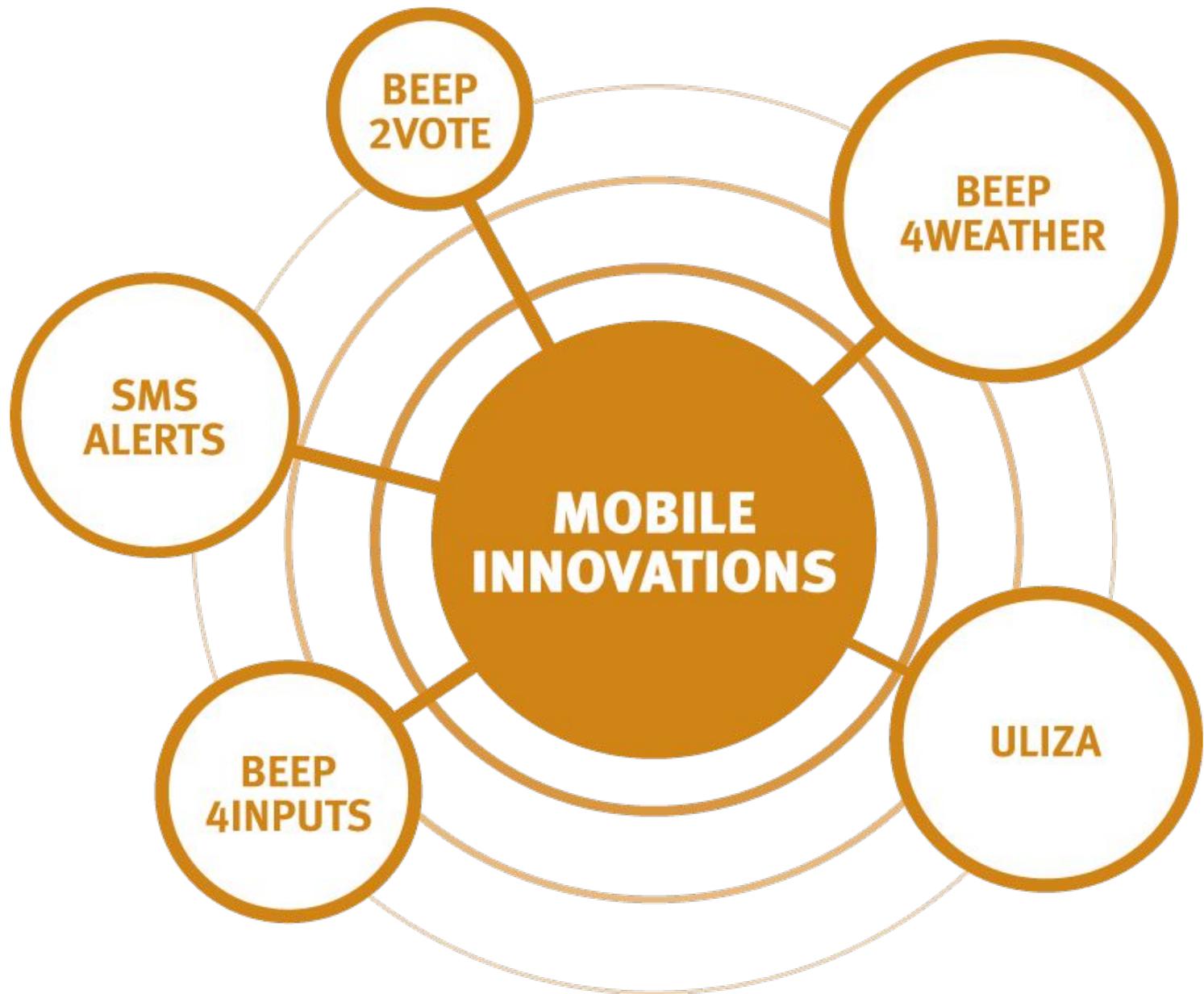
■ AIS AT A GLANCE

- Tested during the USAID Funded “New Alliance ICT Extension Challenge Fund” Project with two radio stations
- Radio Program created as platform to provide large scale extension service
- Designed to be the same quality at all 6 radio stations
- Uses ICTs to create interactive and responsive programming
- Not a replacement of extension service but integration to enhance the delivery beyond information to skills

■ AIS AT A GLANCE

- Provide knowledge and skills on:
 - Production
 - Climate change
- Question and answer service
- Linkage to market actors
- Linkage to credit and finance
- Quality agricultural inputs
- Machinery services





**BEEP
2VOTE**

**BEEP
4WEATHER**

**SMS
ALERTS**

**MOBILE
INNOVATIONS**

ULIZA

**BEEP
4INPUTS**



Manage User Accounts



Campaigns



Users



Log Out



Language



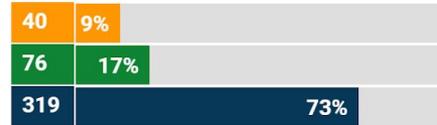
Wed Sep 13 2017

upcoming

Akyeaa Fm - AIS - PRC n RFP - Episode 18

Using standard bags to store and sell maize guarantees good monetary value for grains.

- False
- I don't know
- True



435 Responses 4 Questions

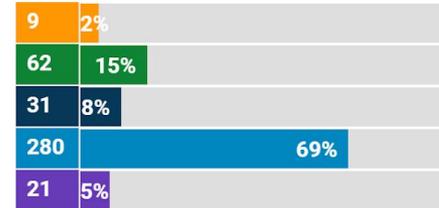
Wed Sep 06 2017

upcoming

Akyeaa Fm - AIS - PRC n RFP - Episode 17

Which of the following must be stored ALONE in storage bags?

- Clean grains
- Debris
- Insects
- Sticks
- Stones



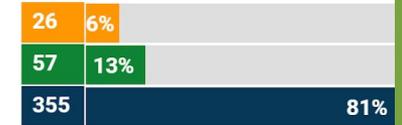
403 Responses 4 Questions

Wed Aug 30 2017

Akyeaa Fm - AIS - PRC n RFP - Episode 16

Maize should be harvested as soon as grain is dry and grain moisture is below degrees Celsius

- False
- I don't know
- True



438 Responses 4 Questions





■ ESSENTIAL COMPONENTS

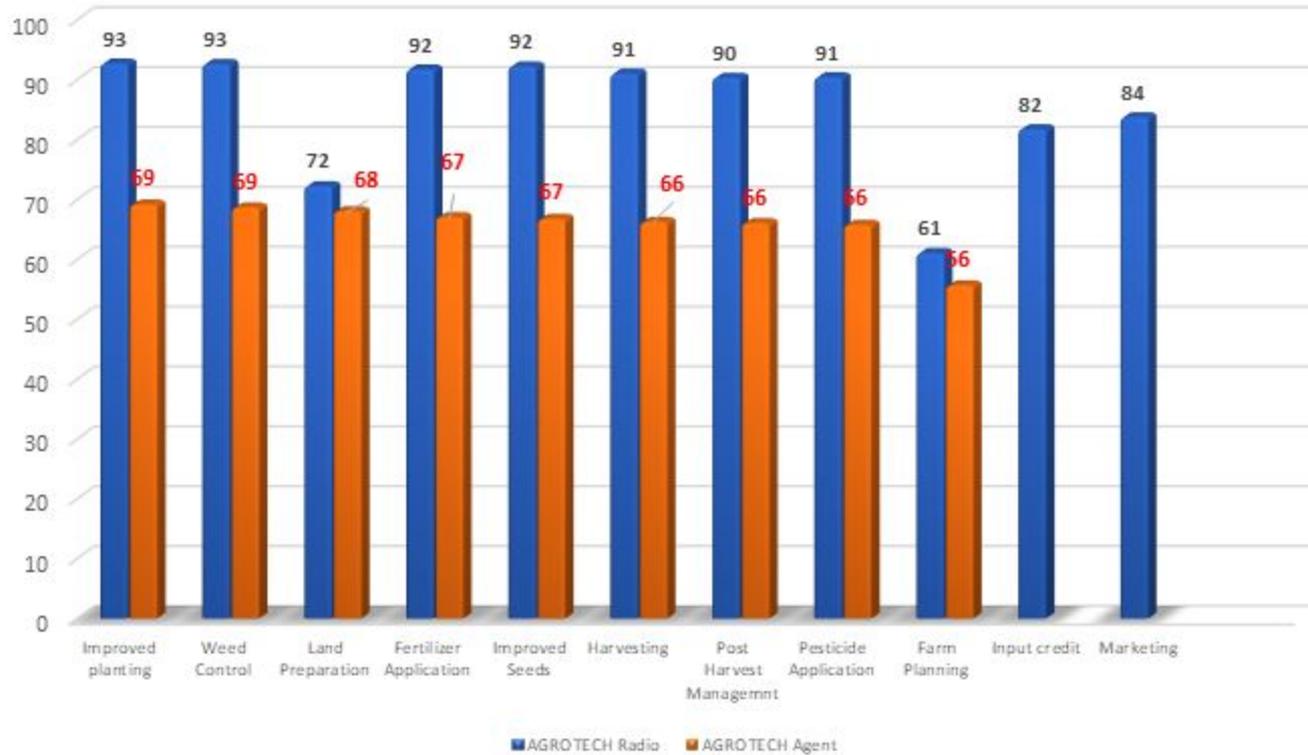
- Effective monitoring and evaluation
- Radio stations that are willing and able to support change
- Capacity building was essential for long lasting quality program
- A pathway for scale and sustainability

INTEGRATION WITH GRAMEEN

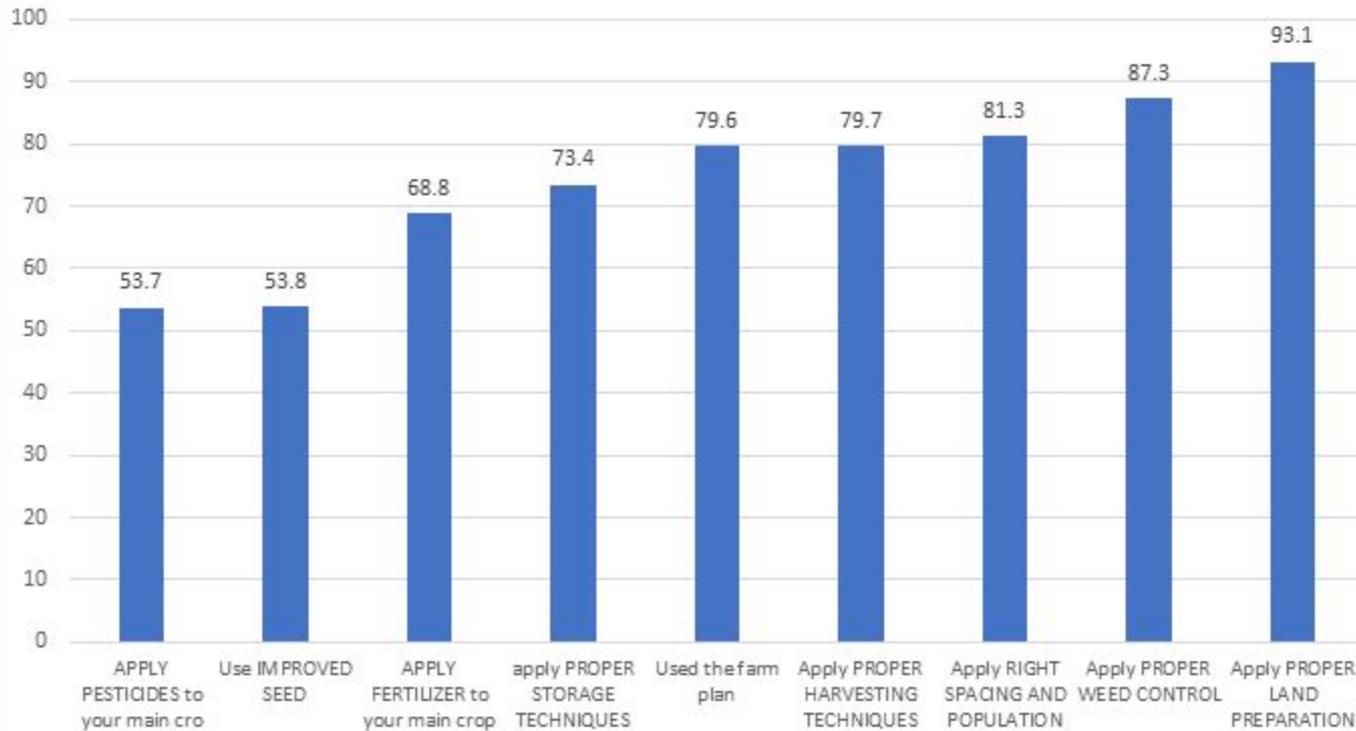
AGENT NETWORK

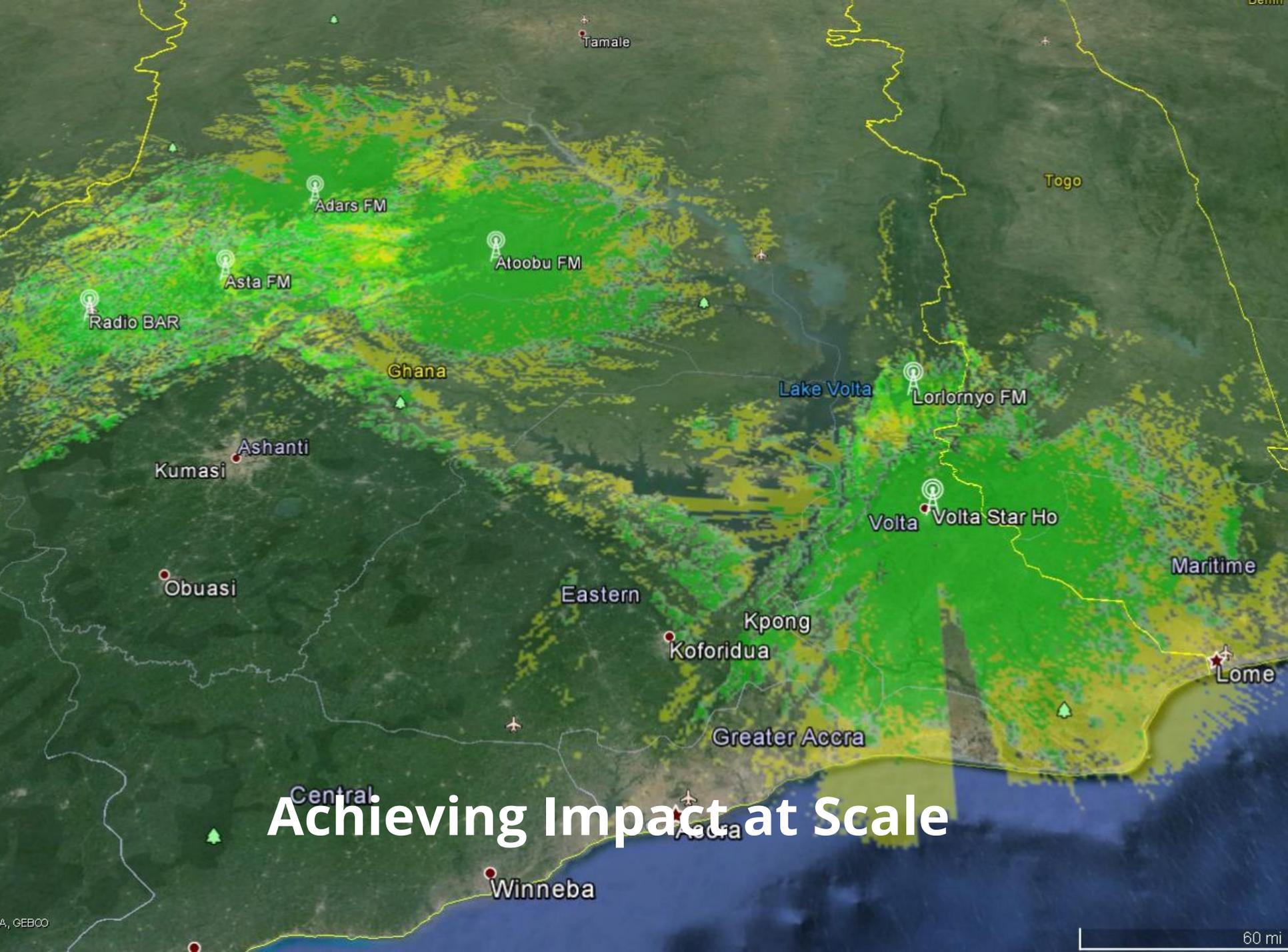
- Radio program design used complimentary content
- Cross promotion by radio and agent network
- Leaders of community listener groups worked as Agents
- Agents serving as resource persons on selected radio programs

AIS: Knowledge on Improvements

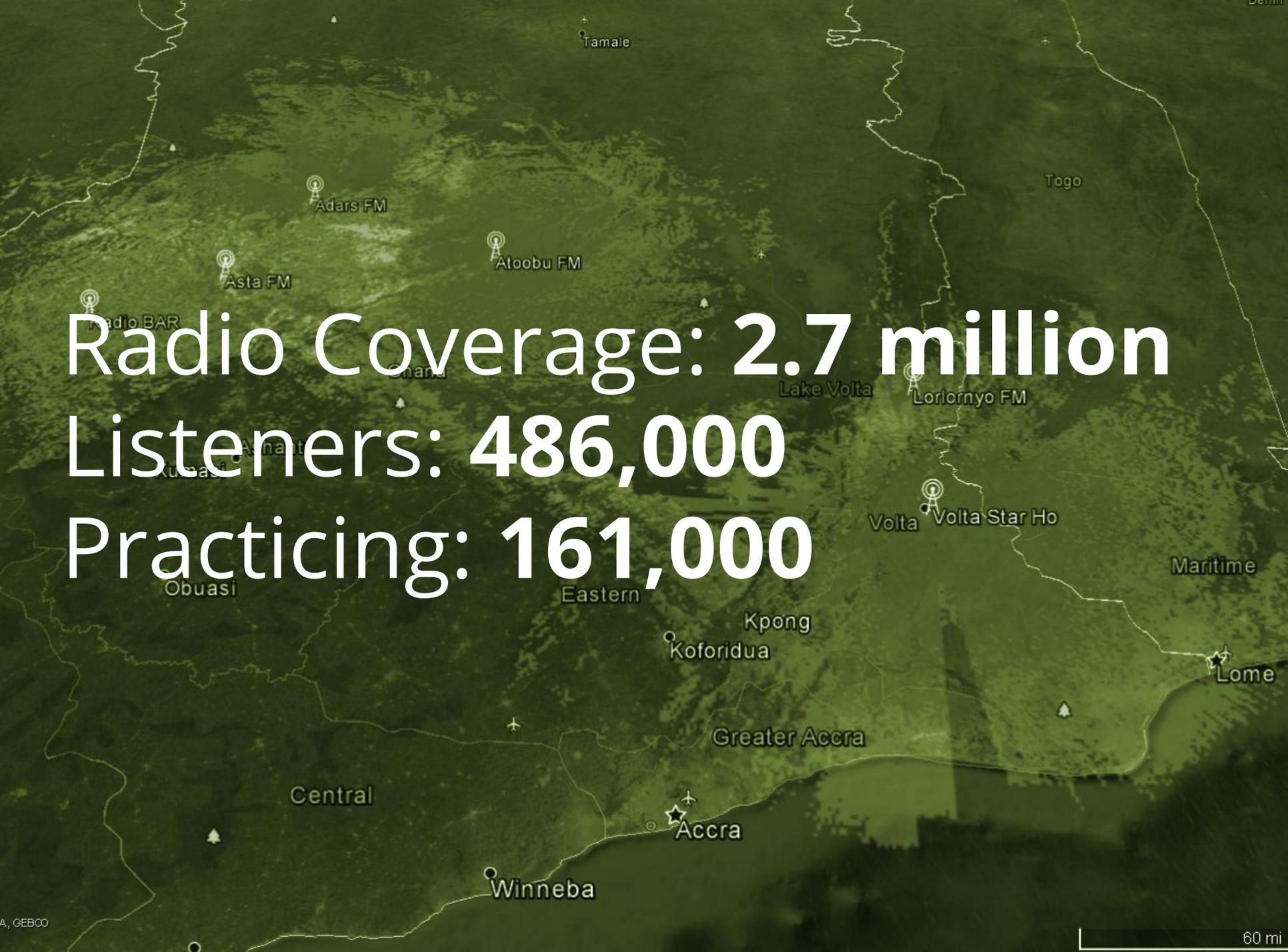


AIS: Applied Knowledge on Improvement





Achieving Impact at Scale

A satellite-style map of Ghana with a green tint. Several radio stations are marked with antenna icons and labels: Radio BAR, Adars FM, Asta FM, Atoobu FM, Lorlorlonyo FM, and Volta Star Ho. Major cities and regions are labeled: Tamale, Obuasi, Kumasi, Ashanti, Volta, Eastern, Greater Accra, Central, Winneba, Accra, Kpong, Koforidua, Lome, and Maritime. A scale bar at the bottom right indicates 60 miles. The text 'A, GEBCO' is visible in the bottom left corner.

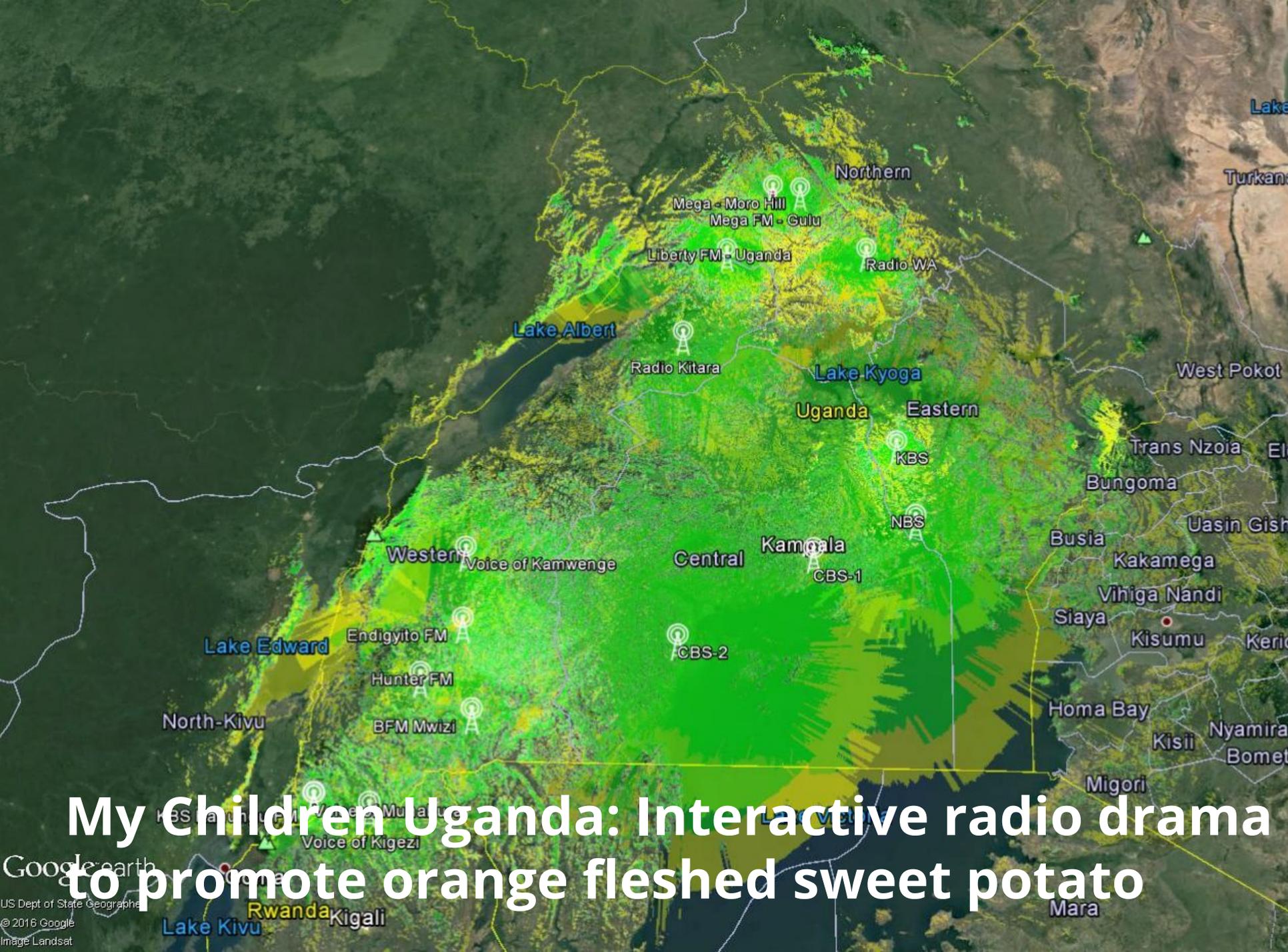
Radio Coverage: 2.7 million
Listeners: 486,000
Practicing: 161,000



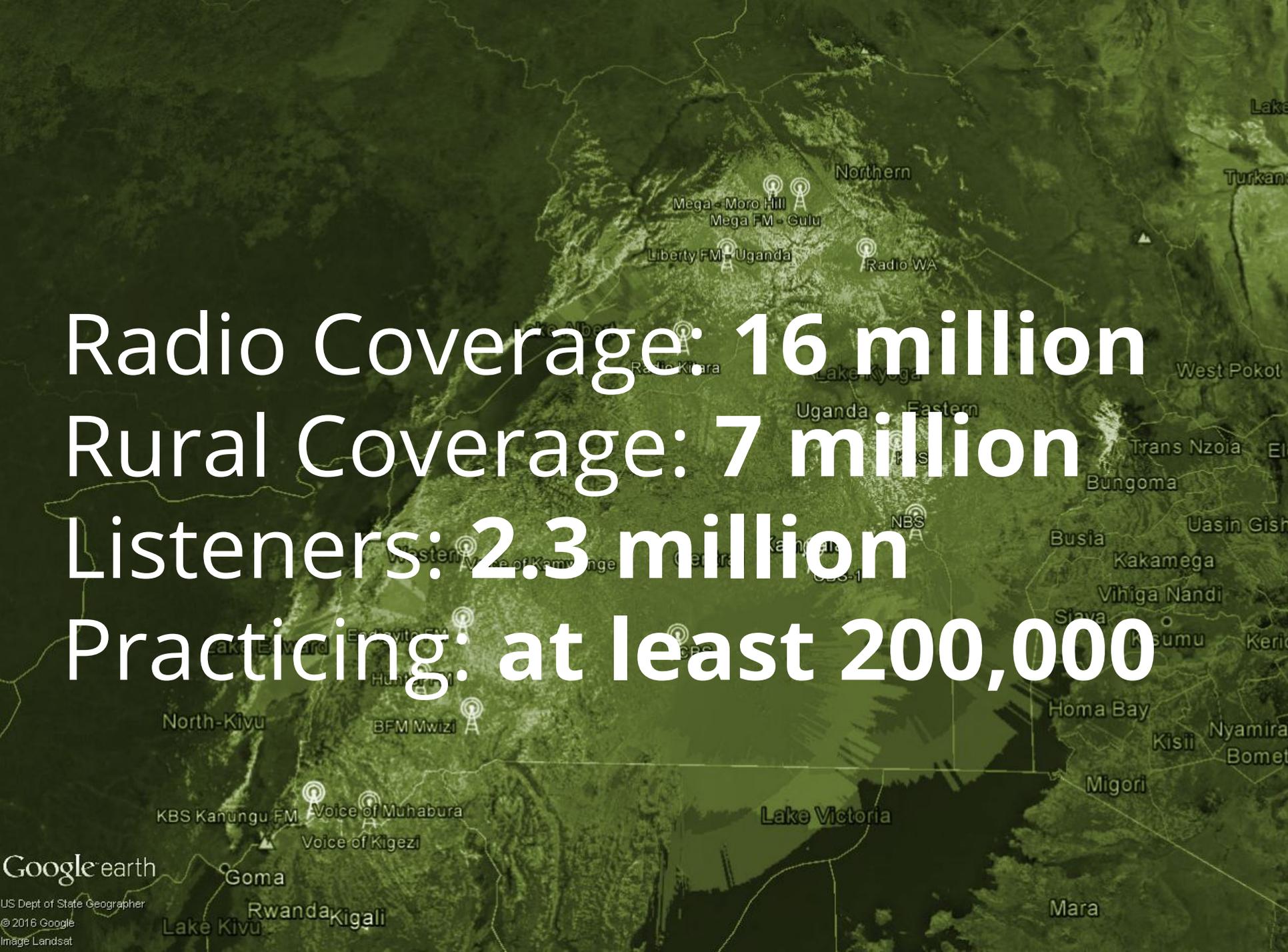
USAID New Alliance ICT Extension Challenge Ethiopia



Listeners: **437,000**
Practicing: **53,000**

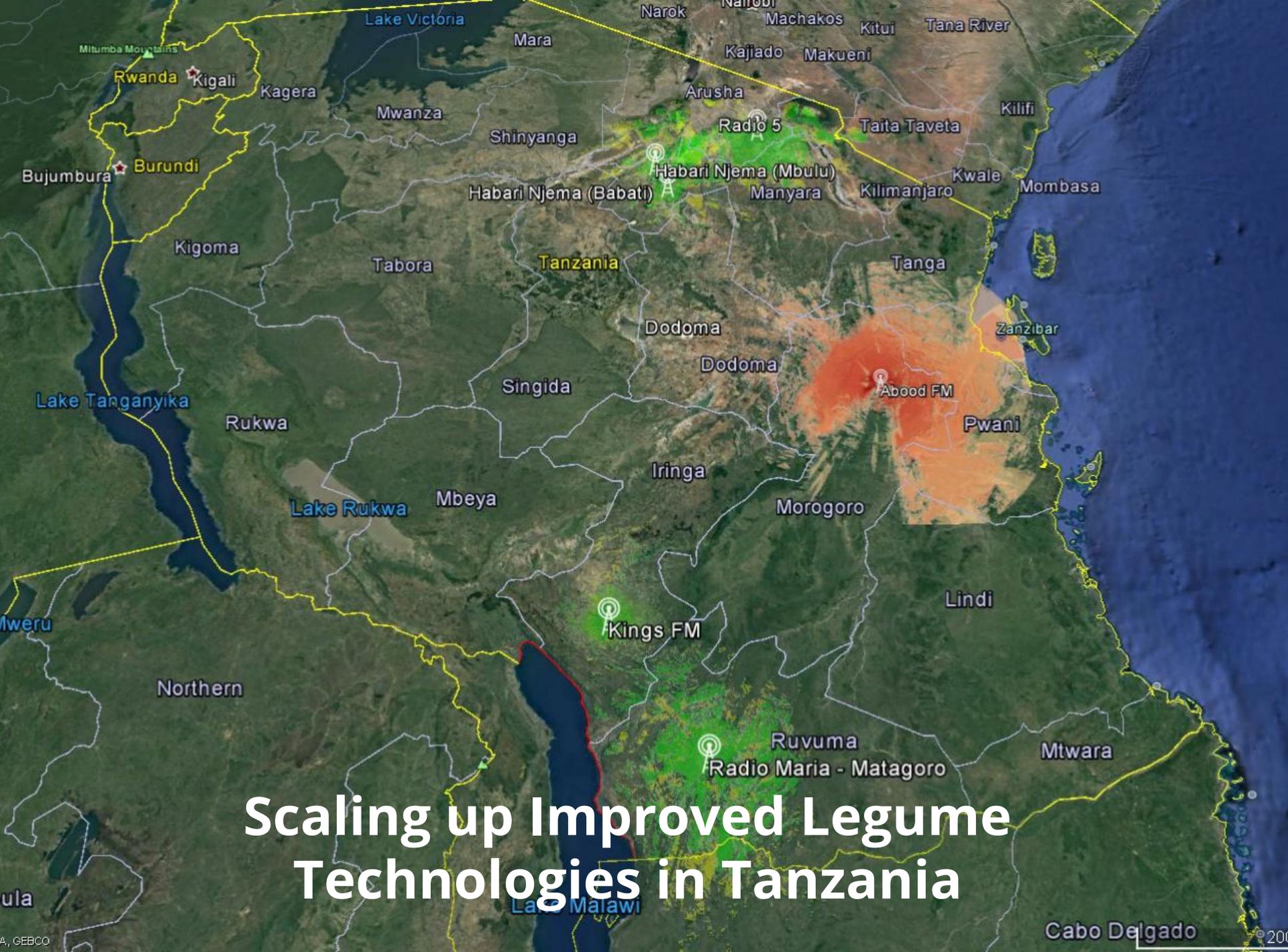


My Children Uganda: Interactive radio drama to promote orange fleshed sweet potato

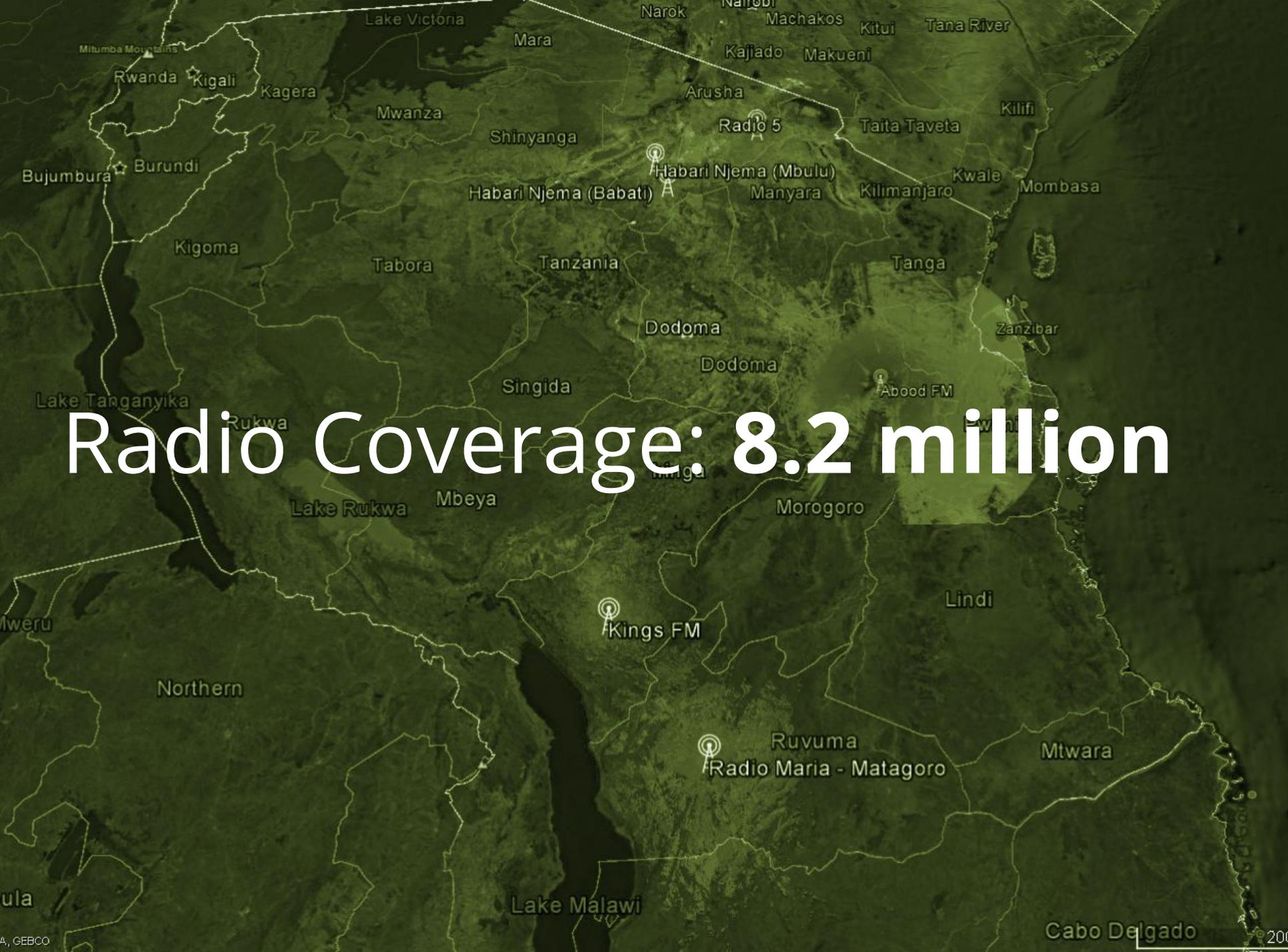


Radio Coverage: **16 million**
Rural Coverage: **7 million**
Listeners: **2.3 million**
Practicing: **at least 200,000**

The map displays radio coverage across East Africa, with antenna icons indicating station locations. Key stations include Mega - Moro Hill, Mega FM - Gulu, Liberty FM - Uganda, Radio WA, Radio Kiara, NBS, BFM Mwizi, Voice of Muhabura, Voice of Kigezi, and KBS Kanungu FM. Geographic features like Lake Albert, Lake Kyoga, Lake Kivu, and Lake Victoria are also visible.



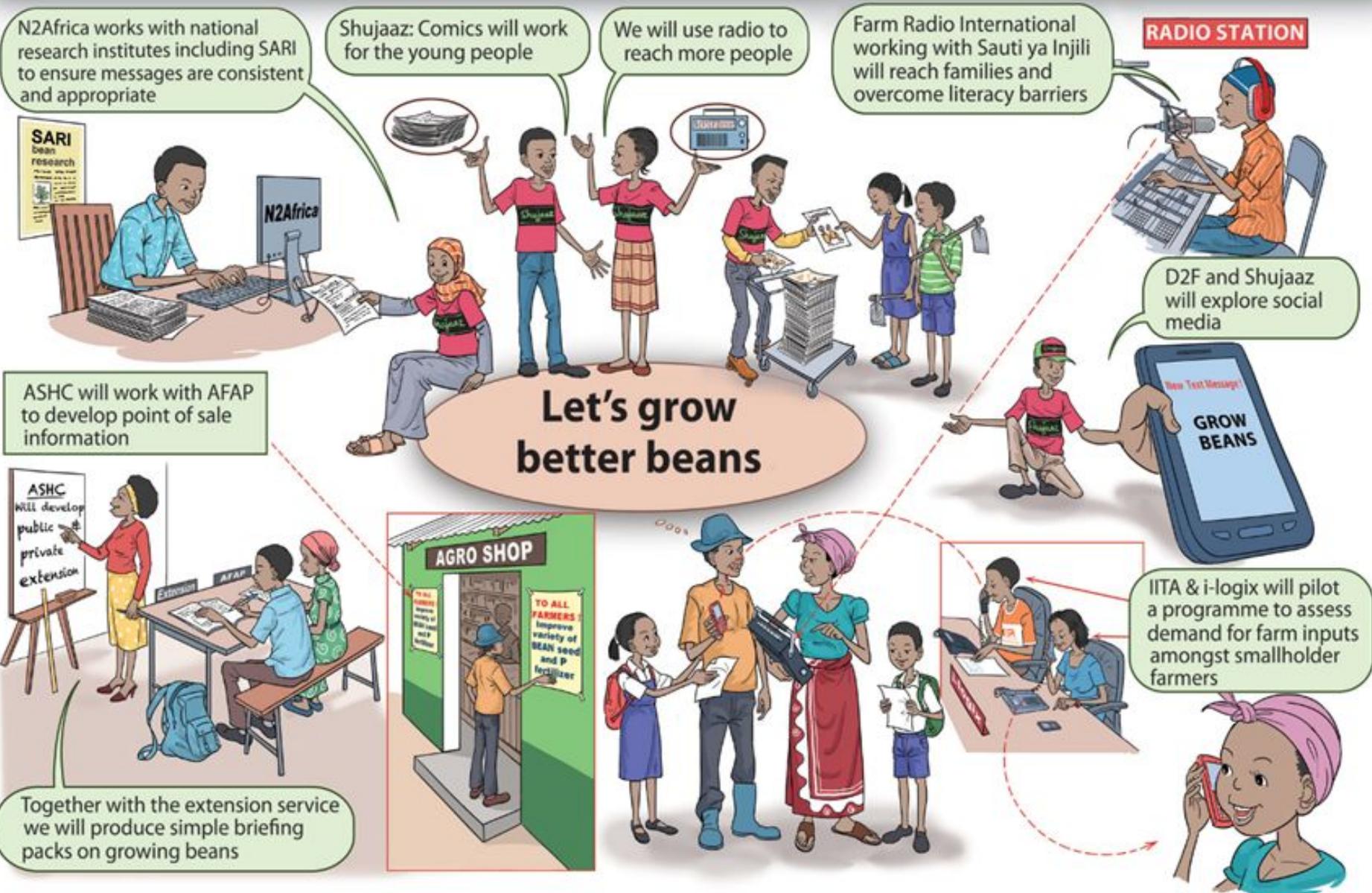
Scaling up Improved Legume Technologies in Tanzania

A satellite-style map of Tanzania with a greenish tint. The map shows regional boundaries and names such as Mara, Arusha, Kilimanjaro, Morogoro, and Lindi. Several radio stations are marked with circular icons and labels: 'Radio 5' near Arusha, 'Habari Njema (Mbulu)' near Mbulu, 'Habari Njema (Babati)' near Babati, 'Abood FM' near Abood, 'Kings FM' near Morogoro, and 'Radio Maria - Matagoro' near Matagoro. Major lakes like Lake Victoria, Lake Tanganyika, Lake Rukwa, and Lake Malawi are also labeled. A large white text overlay is centered on the map.

Radio Coverage: 8.2 million

Bean Thinking: Maharage bingwa

Smallholder farming families in Tanzania receive information from the radio, mobile phones, posters, comics, social media and extension explaining the importance of growing improved varieties of common bean using good agricultural practices and fertilizer...





Think about a time you were involved in a project that included ICT enabled solutions.

What worked in terms of achieving scale? What needs to be included?

PART 3

It works. But is it viable?



Envisioning sustainable ICT-enabled extension in the form of Agricultural Radio Programming

■ WHAT'S THE PROBLEM?

- Current extension not up to the job, at least the numbers
- Extension bodies are slow to step up to change
- Better methods have new costs that have proven difficult to meet

■ THIS IS NOT A NEW PROBLEM

- Popular, successful communication programs have been failing at sustainability for decades.
- The challenges is not limited to communication programming or ICT-enabled approaches



THE CONTEXT

Ghana: Ashanti, Brong Ahafo, Volta

Existing quality programs but irregular ARPs sustained by project funds

Local radio stations leading on delivery (production, broadcast, engagement)

Farm Radio facilitating

- Models and methods
- Training
- Tools: mapping, mobile-interaction
- Research, Evaluation

■ WHAT WE SET OUT TO DO

- Develop a framework for sustainability
- Assess market viability of a quality agricultural radio+ program
 - Users
 - Potential investors
- Test out the willingness to pay / invest
- Develop the mechanisms to make it work

METHODS

- 56 individual depth interviews were done with Input Suppliers, Aggregators, Financial Institutions, Development Intermediaries (NGOs), Radio Stations Government Agencies and Other Businesses
- Workshops held with 1) potential stakeholder-investors, 2) radio station partners
- Surveys
 - 2,617 farmers completed a 12-item questionnaire in the by IVR/phone
 - 111 private businesses completed a 16-item questionnaire via a phone interview
 - 17 completed a 19-item questionnaire via a phone interview



FRAMEWORK FOR SUSTAINABILITY

Social

- Programming needs to be relevant, to speak to farmers' & others' issues
- Farmers need to trust and value the program

Institutional

- Radio stations need to have commitment and capacity to deliver
- Key stakeholder groups must be active collaborators

Financial

- Traditional advertising is NOT the approach to take
- The value generated by the program for farmers and value chain actors is the best proposition for investment, including financial investment

WHAT WE LEARNED - SOCIAL

Farmers listen to agricultural radio programs

- 94% of farmers surveyed Always (53%) or Sometimes (41%) listen to their farm radio programs

Farmers feel agricultural radio programs help increase their incomes

- 83% indicate that agricultural radio helps connect them with market actors
- 96% indicate that programs help them to increase or improve crop yields
- 92% indicated that agricultural radio helps increase their incomes

WHAT WE LEARNED - INSTITUTIONAL

Radio stations prioritise farmers as listeners

- 100% of radio stations (engaged by the research) have farmer programs; however 18% were less than 6 months old

Institutional sustainability connects financial and social elements of sustainability for long-term success.

The mechanisms to deliver sustainability are many and complex, e.g. arrangements and agreements with radio stations and investors

WHAT WE LEARNED - FINANCIAL

Farmers indicate a willingness to pay small fees for programming: Though small, farmers are many and represent a significant source of financing

- 62% of farmers reported willingness to pay a small fee deducted from their phone credits to support agricultural radio programming

Input suppliers and buyers are willing to invest in quality programs, i.e. that deliver results; however the funds are modest

- 70% of input suppliers are Likely (40%) or Very likely (30%) and 66% of buyers are Likely (40%) or Very likely (26%) to consider investing in agricultural radio programming that delivers measurable results for farmers and other market actors

CONCLUSIONS

- There is a strong foundation and significant potential for sustainable ICT-enabled extension in the form of interactive radio:
 - Farmers, radio stations and market and development actors value ICT-enabled extension and are ready to invest to grow this value
- Market actors' identified a barrier: they perceive that development monies create a false economy, which is not investment positive
- Development funds are needed in the short/medium-term, though perhaps they can more geared to investment

CONCLUSIONS

- Further research needs to deepen the focus on
 - Models and mechanisms that will enable the investment
 - Social Franchise, e.g. GreenLeaf Radio
 - Means for ensuring quality services at scale
 - Means for investment
- Securing investment
 - Direct to radio stations (licence fee to GreenLeaf)
 - Direct to GreenLeaf (service fees paid to stations)



***Does “donor funding” stand as an
impediment to local
sustainability?***

***Can we do project-less
development and instead think of
investment?***



PART 4
Going forward

A woman with a white headwrap, wearing a green t-shirt and a blue patterned skirt, stands in a field of tall green grass. She is holding a wooden staff in her left hand and a black electronic device in her right hand. The background shows a line of trees under a bright sky.

THANK YOU



■ GET IN TOUCH

 farmradio.org

 info@farmradio.org

 [@farmradio](https://twitter.com/farmradio)

Scaling-up agricultural innovations in sub-Saharan Africa: The role of information and communication technologies

Le passage à l'échelle des innovation agricoles en Afrique subsaharienne: Le rôle des technologies de l'information et de la communication

Phipps-Langlois Seminar Series

November 2, 2017

Bernard Pelletier, PhD

Research Lead and M&E Support, Farm Radio International, Ottawa

Part-time Professor, Department of Geography, Environment and Geomatics, University of Ottawa



Plan of presentation

- Introducing the *ICT4Scale* research initiative
- The problem addressed by the initiative
- Scaling-up agricultural solutions
- Potential role of information and communication technologies (ICTs)
- Gender dimension
- The *ICT4Scale* approach
- Next steps

ICT4Scale Project

Title: *Harnessing ICT to Scale-up Agricultural Solutions (ICT4Scale)*

Duration: 30 months

Dates: April 24, 2017 to October 24, 2017

Amount: \$701,750 CAD

Funder: International Development Research Centre (IDRC),
Canada.

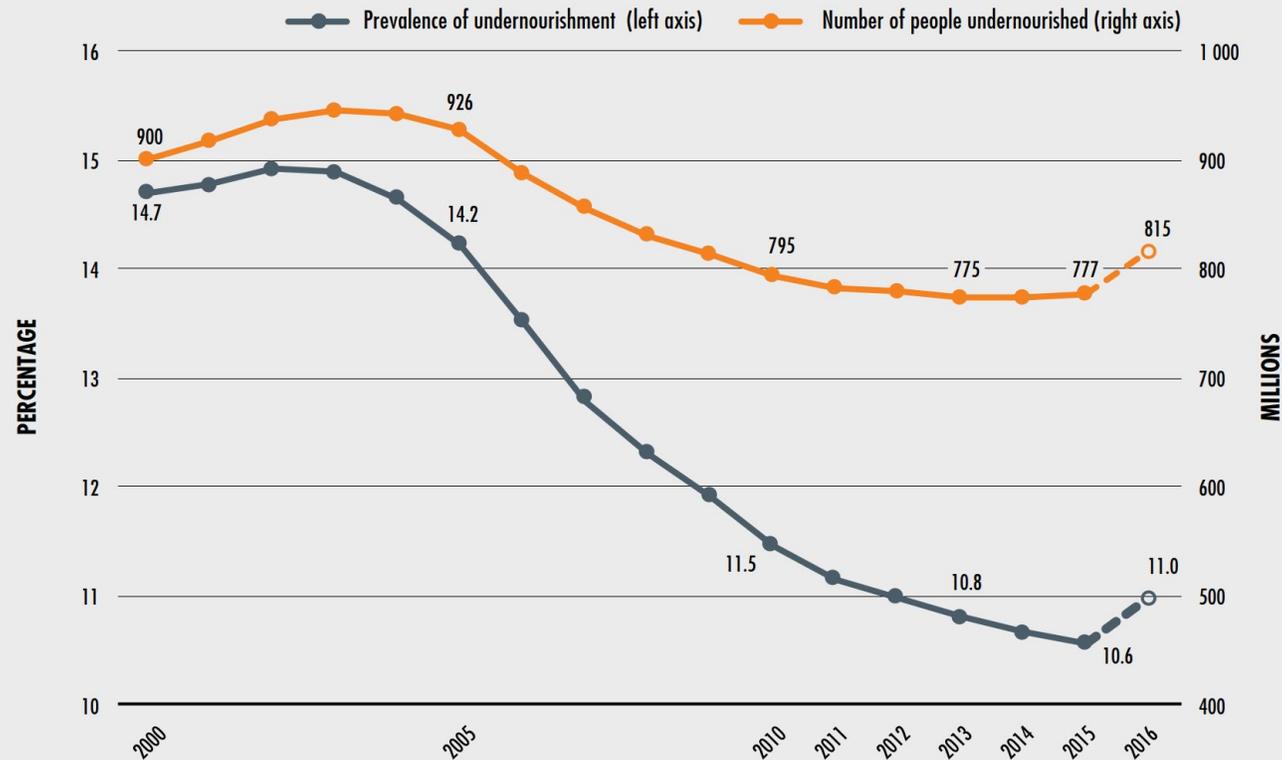
Implementing institutions: Farm Radio Trust (FRT), Malawi and
Farm Radio International (FRI), Canada

Main goal: To develop and test a **gender-responsive** conceptual
framework and guidelines for the efficient use of **ICTs** in **scaling-up**
initiatives



Trends in undernourishment worldwide

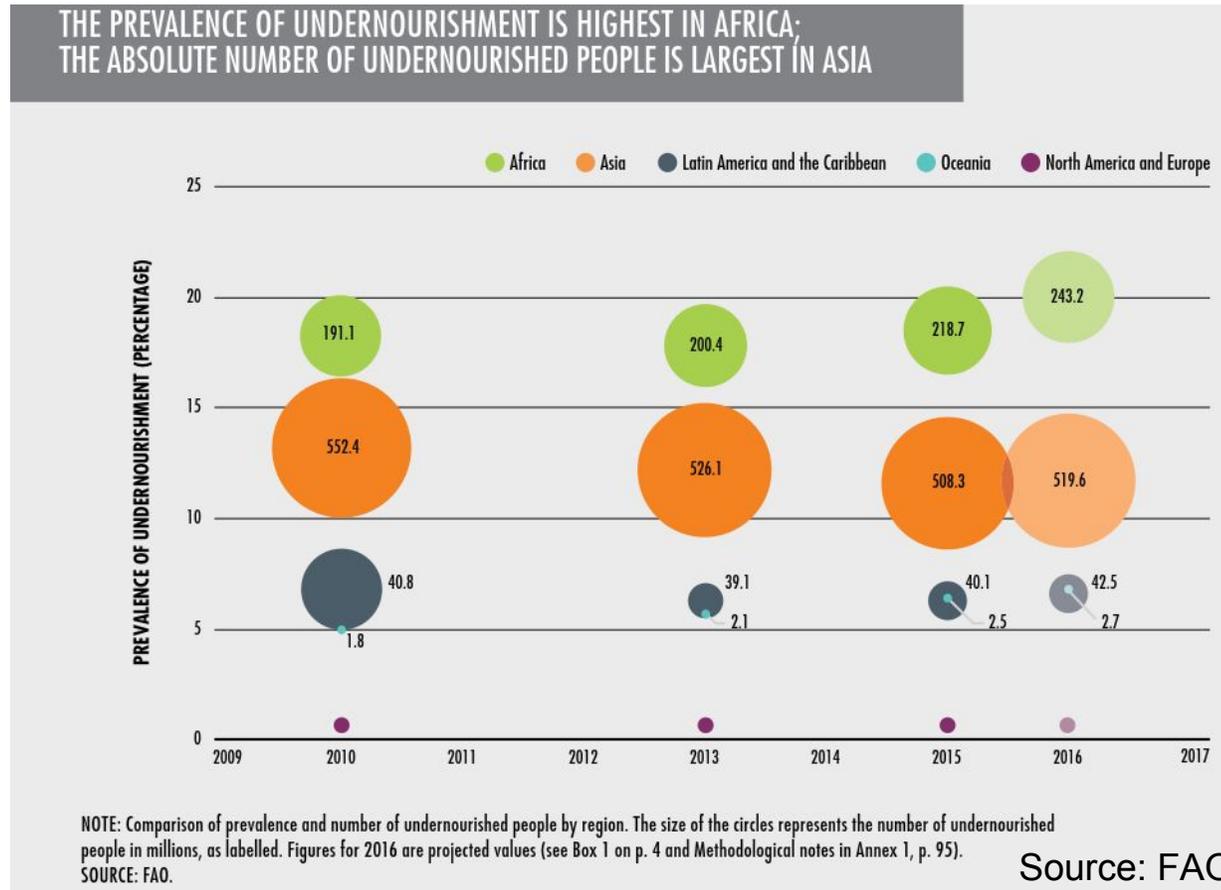
THE NUMBER OF UNDERNOURISHED PEOPLE HAS BEEN ON THE RISE SINCE 2014, REACHING AN ESTIMATED 815 MILLION IN 2016



NOTE: Prevalence and number of undernourished people in the world, 2000–2016.
Figures for 2016 are projected estimates (see Box 1 on p. 4 and Methodological notes in Annex 1, p. 95).
SOURCE: FAO.

Source: FAO

Prevalence of undernourishment highest in Africa



Source: FAO

	2000	2005	2010	2011	2012	2013	2014	2015	2016 ¹
Sub-Saharan Africa	28.1	23.7	20.6	20.2	20.0	20.0	20.4	20.8	22.7

Poverty situation in rural Africa

CHANGES IN PROPORTIONS OF RURAL AND URBAN POOR, AND NON-POOR, IN TOTAL POPULATION OF SELECTED COUNTRIES, BY REGION, 1990s–2010s

Source: FAO



Challenges facing smallholder farmers

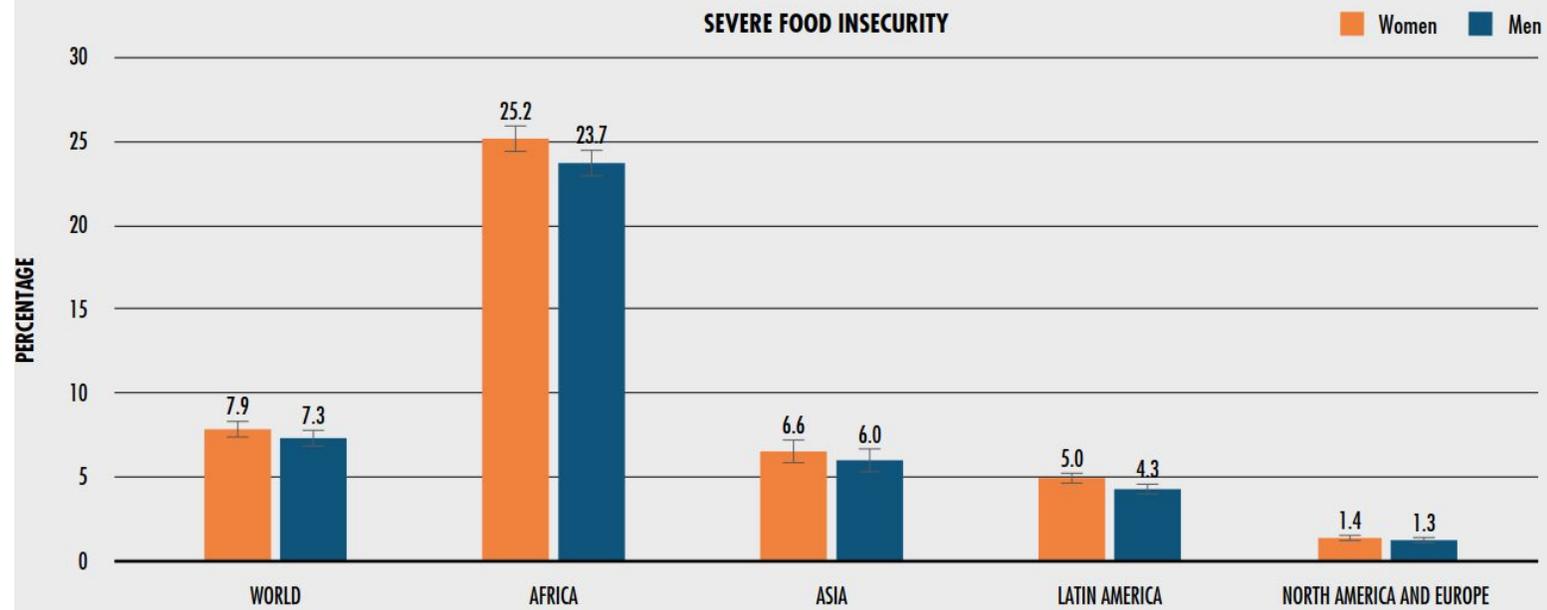
- High reliance on natural resources and ecosystem services makes them vulnerable to diverse shocks and stressors - climate change, market volatility, environmental degradation, political/social unrest
- Rural institutions may not be able to provide adequate social protection, financial services, insurance programmes, early warning systems, or market governance.



Gender vs. Food Insecurity

WOMEN ARE SLIGHTLY MORE LIKELY TO BE FOOD INSECURE THAN MEN IN EVERY REGION OF THE WORLD

Based on Food Insecurity Experiential Scale



NOTE: Comparison of the prevalence of severe food insecurity among men and women aged 15 years and older (2014–16 three-year averages).
SOURCE: FAO Voices of the Hungry project.

Source: FAO

Approaches/Solutions

- Many agricultural innovations have been developed over the years - improved varieties, soil and water management practices, integrated pest management, post-harvest technologies, vaccines for livestock, micro-credit, etc.
- There remain, however, important challenges to their uptake at scale by smallholder farmers and rural communities.
- Impact of development projects are still localized and short-lived (not sustainable).
- How can we achieve sustainable and equitable impact at scale to meet the SDGs?



Scaling-up - Increased interest from international community

Scaling-up agricultural innovations that can contribute to food and nutrition security is one of the key challenges facing development organizations, research institutions, governments and the civil society.

Example: The International Development Innovation Alliance (IDIA)



First working paper is titled “Insights on Scaling Innovation” (June 2017)



Scaling-up - IDRC's and GAC's CIFSRF Program

Canadian International Food Security Research Program¹ (CIFSRF):
\$124M CAD, 39 projects in 22 countries,

Phase 1 (2009-2014). Supports applied research that seeks to solve food security challenges on the ground in the developing world - i.e., to reduce postharvest losses, increase the genetic potential of crops, develop new livestock vaccines, strengthen crop resilience, increase the nutritional value of crops and control infectious diseases in crops and animals, among other things.

Phase 2 (2013-2018). Focus on developing and testing models to scale-up innovations identified in Phase 1.

¹ **Fonds canadien de recherche en sécurité alimentaire internationale**



Scaling-up - Definitions (1)

Scaling-up: The process of increasing the reach, breadth, scope and sustainability of the changes, benefits and ultimate impacts that innovations bring to people.

Impact at scale: Achieved when large or significant proportions of potential beneficiaries or users are reached and have, in some way or another, benefited from the innovations resulting from research.

Scaling-up - Definitions (2)

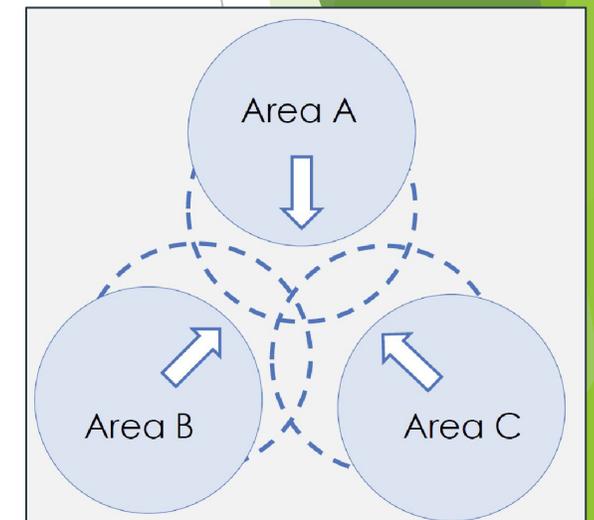
Horizontal Scaling (scaling-out): The process of expanding impact through replication, - e.g., from one geographical area to another



Vertical Scaling: Changing the policy / institutional environment through higher level influencing, - e.g., moving from a local or provincial engagement to a nationwide engagement.



Functional Scaling: Expanding the functional scope of an innovation (diversification), - e.g. adding TB and Malaria interventions to an innovation focusing on HIV/AIDS



Source: D'Agostino et al. 2014. SPRING Working paper. USAID

Scaling-up - Stages



Source: IDIA. 2017. Insights on scaling innovation

Scaling-up - Drivers

Ideas and Models. There has to be an idea or model that works at a small scale or has been promoted successfully elsewhere.

Vision and leadership. A vision is needed to recognize that the scaling up of an idea is necessary, desirable, and feasible. Visionary leaders or champions often drive the scaling- up process.

External catalysts. Political and economic crises or pressure from outside actors (donors, NGOs, and so forth) may drive the scaling-up process forward.

Incentives and accountability. Incentives and accountability for results are needed to drive actors and institutions. They include rewards, competitions, and political pressure or community demand, peer reviews, and independent evaluations

Source: Linn 2012, In IFPRI's *Scaling-up in Agriculture, Rural Development, and Nutrition*.

Scaling-up - Spaces

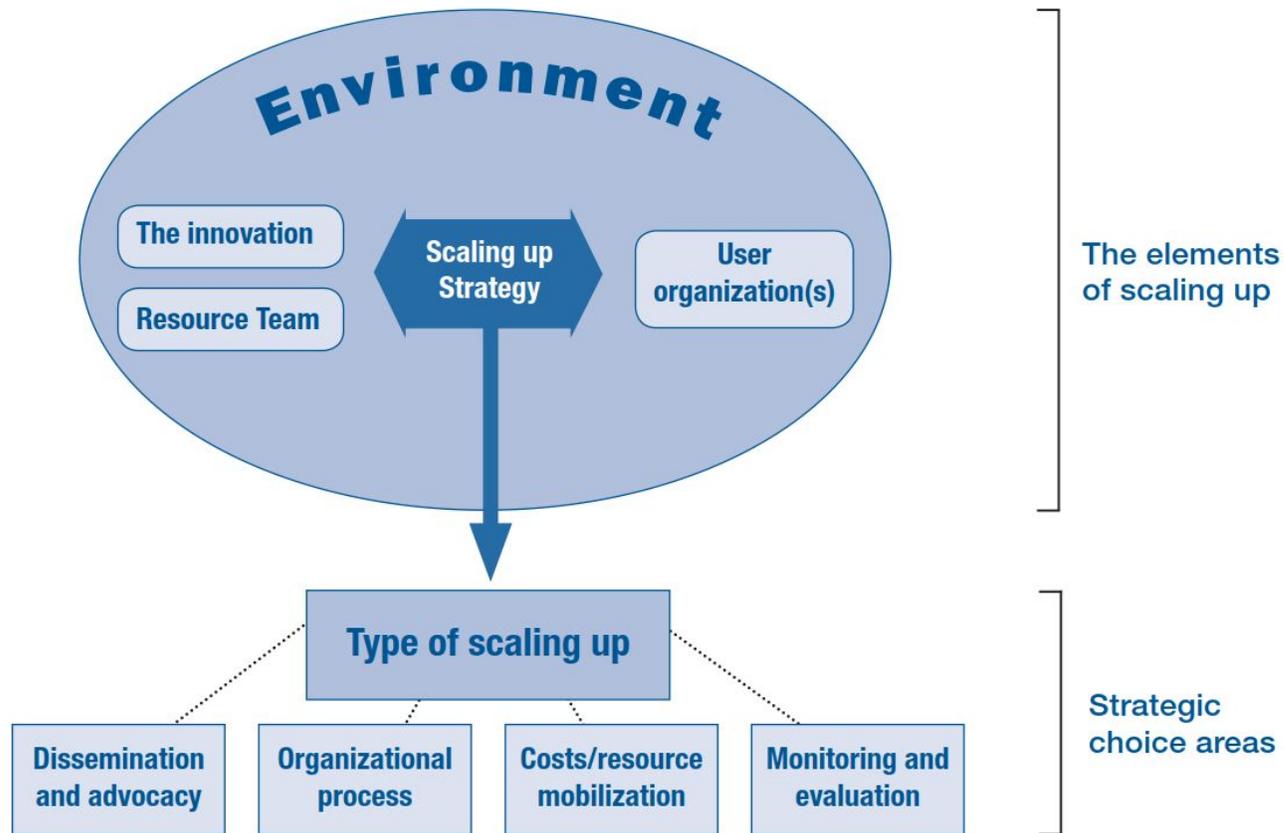
Successful scaling up requires effective spaces—enabling environments — in which an initiative can grow:

- **Fiscal/financial space**
- **Policy space**
- **Market space**
- **Institutional capacity space**
- **Political space**
- **Natural resource/environmental space**
- **Cultural space**
- **Partnership space**
- **Learning space**

Source: Linn 2012, In IFPRI's *Scaling-up in Agriculture, Rural Development, and Nutrition*.

Scaling-up - Example of scaling-up framework

Figure 1. The ExpandNet/WHO framework for scaling up



WHO. 2010. Nine steps for developing a scaling-up strategy

Scaling-up - Examples of scaling pathways/strategies

Knowledge sharing to multiply the impact of a solution by directly interacting with men and women farmers. For example, using information and communication technologies (ICT) and farmer field schools.

Market-based approaches to ensure timely access and distribution of affordable solutions. For example, through commercialization of safe and nutritious food products, and through franchises to make inputs and seeds widely available.

Informing policy to facilitate the adoption of policy recommendations and new regulations. For example, informing national food security policies, influencing regulatory frameworks for new technologies, and creating local food safety certifications.

Financial services to empower farmers, expand production, and reduce price and market risks. For example, through the use of micro-credits, and targeted financial products. Source: IDRC

Scaling-up - Challenges

- Scaling-up takes place within the context of complex social-ecological systems.
- The impact of scaling may not be linear. Need to foresee potential effects (positive or negative) of scaling-up an innovation.
 - - effect on market prices
 - - environmental/social impacts
- Need coordination among multiple stakeholders
- Theoretical and conceptual framework still relatively weak. Important gaps in our understanding of scaling-up processes

Scaling-up & ICTs

ICTs could play an important role in enhancing scaling-up processes by facilitating interactions, linkages and networking among key stakeholders and making information about innovations, markets, and weather available, accessible and affordable to farmers.

ICT4D - Definitions

ICTs: All devices, network components, applications and systems, which can be combined to allow individuals and organizations to interact in the digital world. ICT encompasses the internet sphere and the mobile sphere powered by wireless networks, but can also include landline telephones, radio and television broadcast used alongside ICTs.

ICT-for-development (ICT4D): The use of Information and Communication Technologies (ICTs) to achieve developmental goals such as education, gender empowerment, health and poverty eradication.

ICT4D - Potential role of mobile phones in agriculture

- Mobile phones can improve the circulation of information within interpersonal networks
- Mobile phones can improve farmers' access to “public” information (market, weather, extension)
- Mobile phones can improve coordination of input and output supply chains
- Mobile phones can facilitate data collection and linkages with the research sector
- Mobile phones can facilitate farmers' access to financial services

[J.C. Aker et al./Agricultural Economics 47 \(2016\) supplement 35–48](#)

ICT4D - Potential role of mobile phones in agriculture

Table 3 Overview of ICT platforms for agricultural development

Project distribution by delivery channel ^a		Project distribution by type of information ^a	
Mobile phone	81	Market prices	43
SMS/voice message	56	Ag extension	35
Phone call	18	Weather	19
IVR ^b	20	Match supply and demand	17
App ^c	13	Social network	5
Email/Internet	18	Other	15
Radio	1	Total	87
Other	5		
Total	87		

Nakasone et al. Annu. Rev. Resour. Econ. 2014. 6:533–50

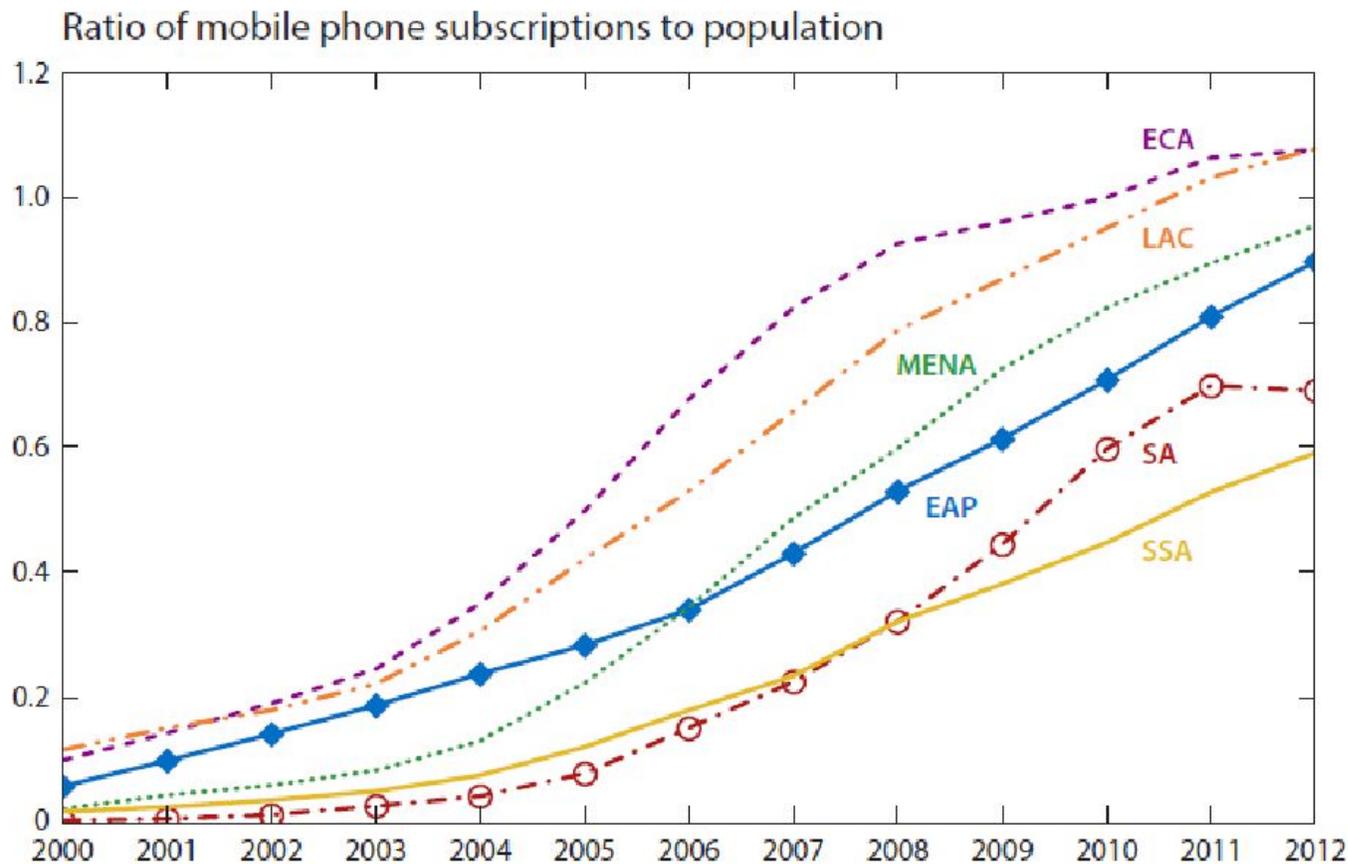
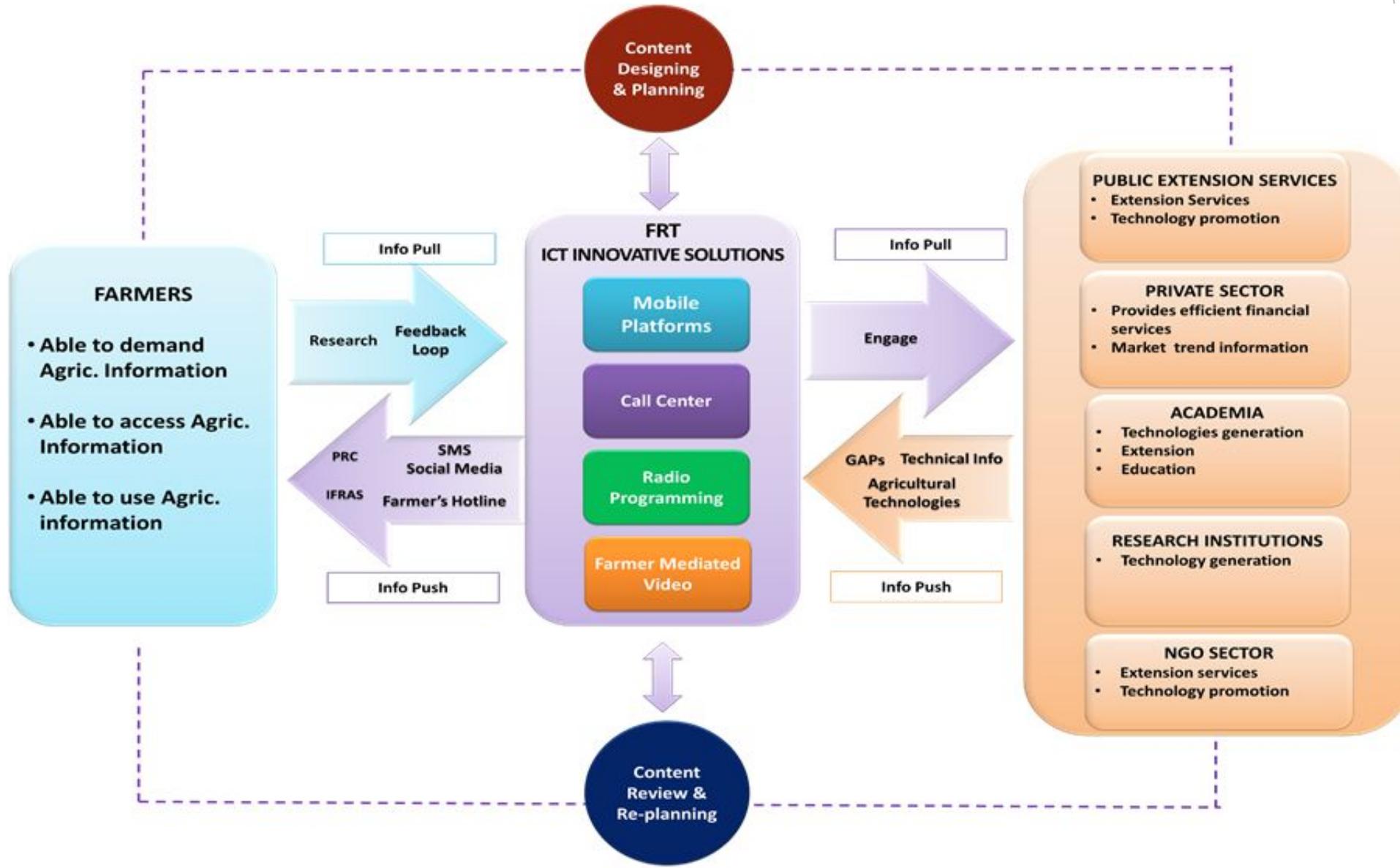


Figure 2

Penetration rates (2000–2012) of mobile phones in developing countries, by region. Abbreviations: EAP, East Asia and Pacific; ECA, Europe and Central Asia; LAC, Latin America and the Caribbean; MENA, Middle East and North Africa; SA, South Asia; SSA, sub-Saharan Africa. High-income (OECD and non-OECD) countries are excluded from the sample. Data from International Telecommunication Union (ITU) (mobile phone subscriptions) (<http://tinyurl.com/poehsmu>) and World Bank (country categories) (<http://tinyurl.com/346ptef>; accessed December 10, 2013). Nakasone et al. *Annu. Rev. Resour. Econ.* 2014. 6:533–50

ICT4D - Pathway to change (Farm Radio Trust, Malawi)



Example: Uliza system for interactive radio

Uliza, from the Swahili word for "ask".

It is built on an interactive voice response (IVR) system developed by Voto Mobile that enables listeners to vote on poll questions, leave messages and request the delivery of specific information.

Information can be used in 'real-time' by broadcasters.



ICT4D - project on Orange-flesh sweet potatoes

(Burkina Faso, Ghana, Tanzania, Uganda)

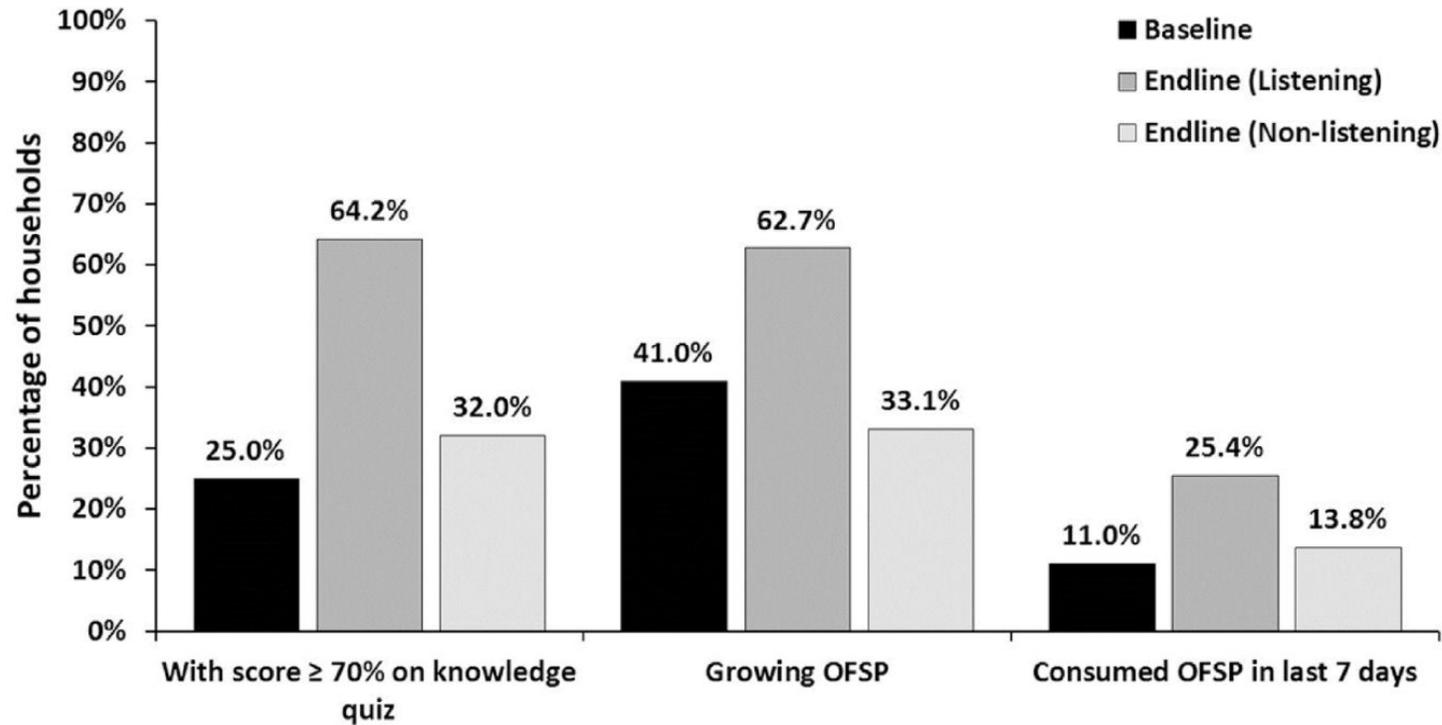


Fig. 12. Percentage of households from baseline and endline – listening and non-listening, surveys that had a score of 70 percent or more on the knowledge quiz; are growing OFSP; and consumed OFSP in the last 7 days. Sample size is 2219 for baseline; 1542 for endline (listening) and 1739 for endline (non-listening).

Hudson, Leclair, Pelletier, & Sullivan (2017). Telecommunications Policy, 41(7/8): 670-684

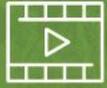
BY THE NUMBERS

COVERAGE OF THE ENTIRE CONTRY OF TANZANIA



2

Radio stations



4

Radio episodes in Kiswahili



2800

Tanzanians participated



9K+

Unique Interactions



1.5K+

Comments via audio message

Q2 WHAT CHANGE WOULD DO THE MOST TO HELP TANZANIAN WOMEN AND GIRLS TO MEET THEIR GOALS AND HAVE EQUAL STATUS AND OPPORTUNITY IN SOCIETY?

Most Popular!

- A. Better access to education, food, schools and training
- B. Better health services, especially related to pregnancy, childbirth, childcare and care for new mothers
- C. Better laws and law enforcement to support and protect women and girls**
- D. Better partnerships at home so that men share work with women equally and fairly

22% vs. 21%

Better partnerships at home so that men share work with women equally and fairly

Respondents who chose this option were then asked:

Follow up question

What work should men get more involved in so that it is a more equal partnership?

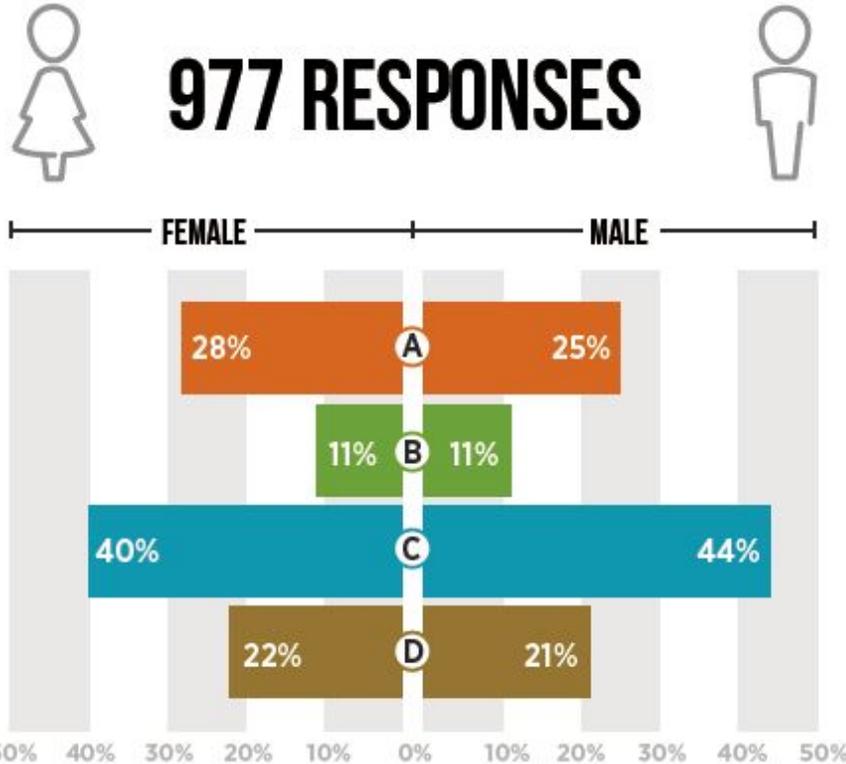
The most popular responses were:



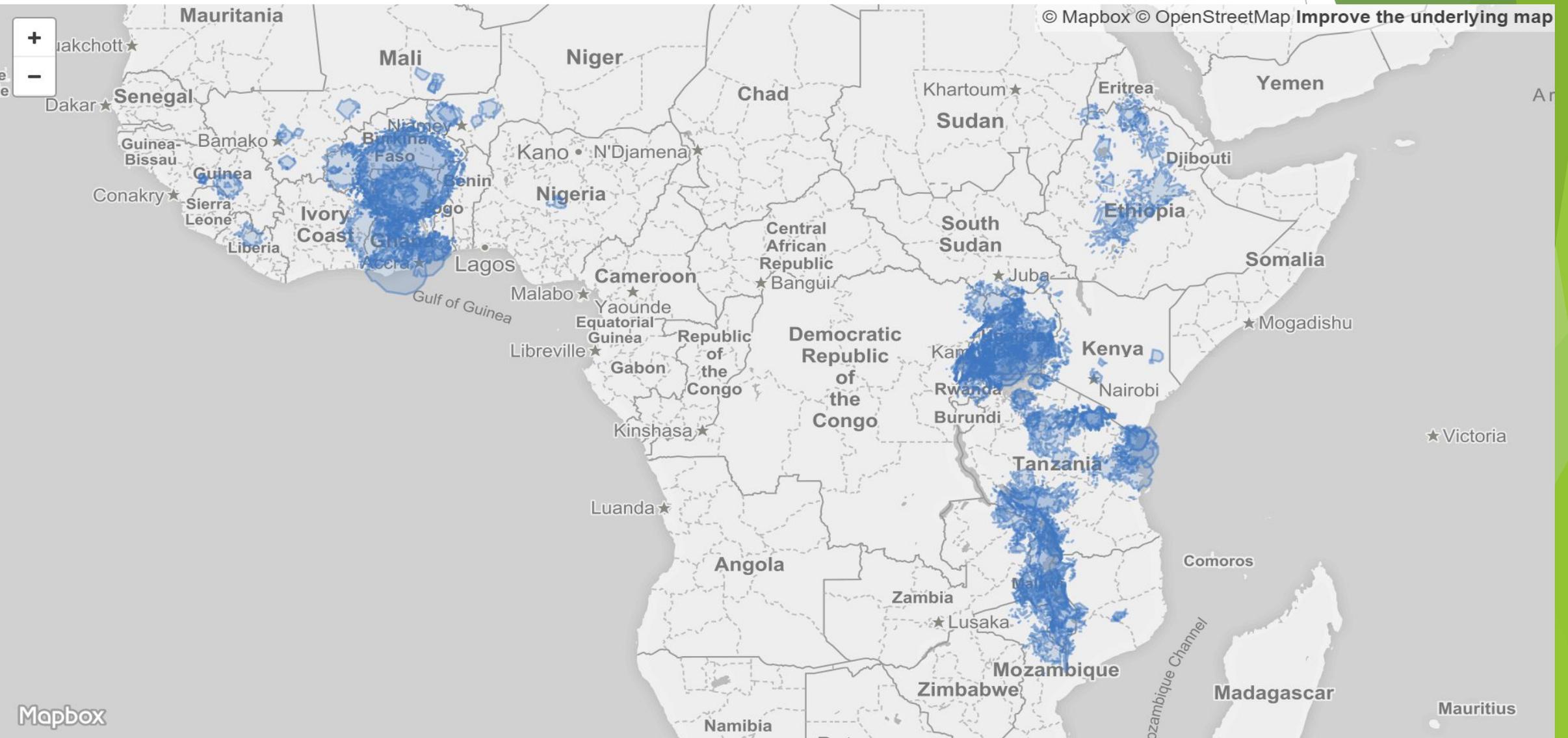
(40%) Child care



(31%) Work in the garden or on the farm



ICT4D - Reach of interactive radio



ICT4D - Pathway to change

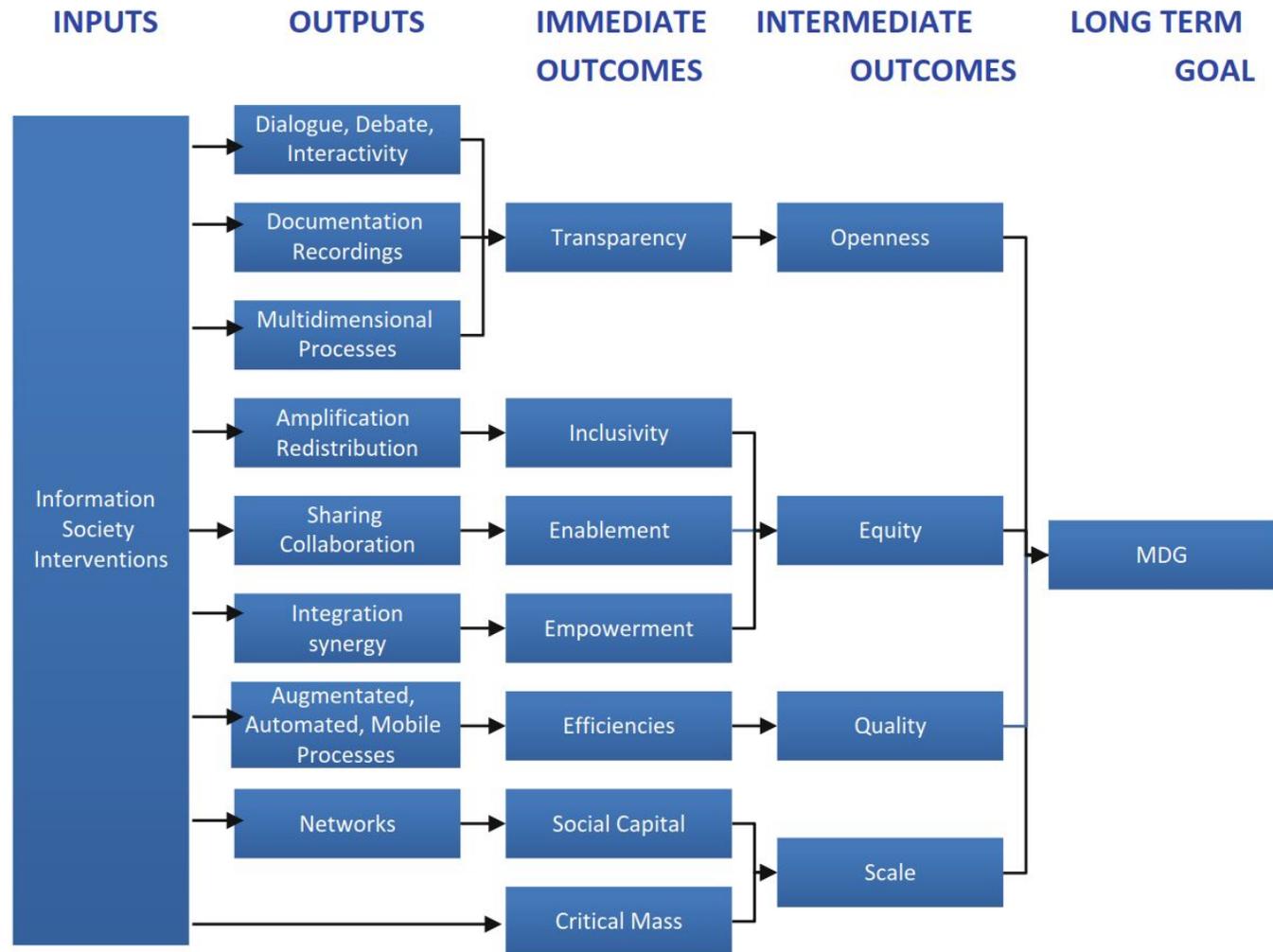


Fig. 2 Information society pathway to change

Source: Flor 2015. Constructing theories of change for information society impact research, IN Impact of Information Society Research in the Global South (Chib, May, Barrantes, eds), IDRC, Springer

ICT4D challenges

- Evidence of developmental impact of ICTs is still very scarce - Methodological challenges in assessing attribution of impact to ICTs
- Digital divide or exclusion - issue of access to ICT technologies and services

Gender component of project: Addressing inequalities

- Rural women generally have more limited access than men to inputs, services, rural organizations, productive infrastructure and technologies, including ICTs
- Rural women are often demotivated because they do not fully share in the benefits of their endeavours.
- Rural women lack voice in decision-making at all levels -household, community, national
- Rural women are overburdened by their daily workload.

IFAD. 2012. Gender equality and women's empowerment

Gender analysis frameworks

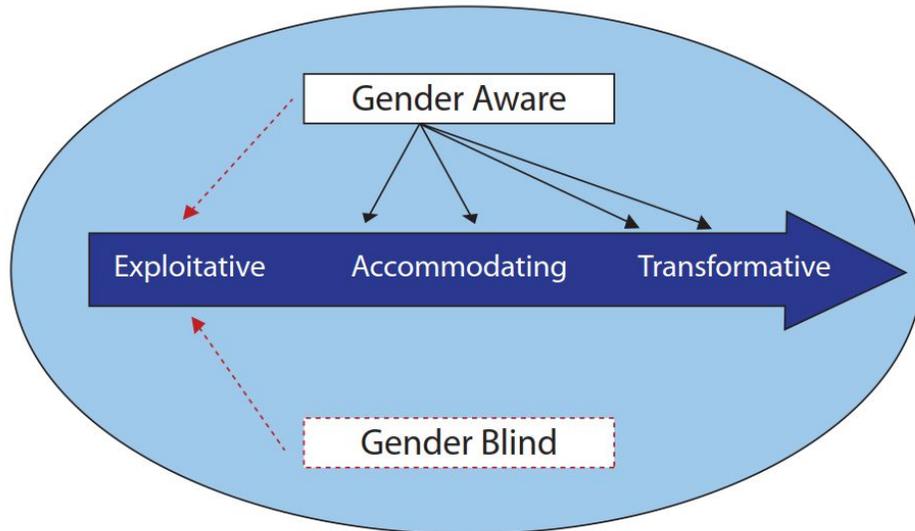
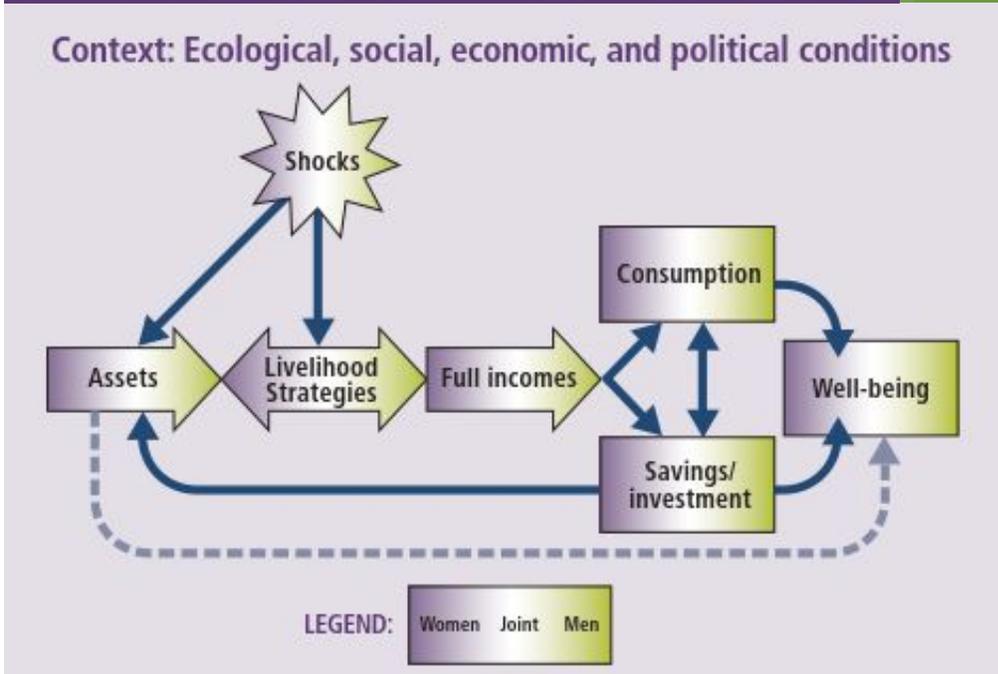


Figure 1. Gender and women's empowerment continuum
 Njuki and Miller. 2013. Gender responsive Livestock Research

FIGURE 1 Schematic representation of a gendered livelihoods conceptual framework



Quisumbing et al. 2013. Learning from Eight Agricultural Development Interventions in Africa and South Asia

Gender analysis frameworks

FIGURE I. THE FIVE DOMAINS OF EMPOWERMENT IN THE WEAI

Domain	Indicators	Weight
Production	Input in productive decisions	1/10
	Autonomy in production	1/10
Resources	Ownership of assets	1/15
	Purchase, sale, or transfer of assets	1/15
	Access to and decisions on credit	1/15
Income	Control over use of income	1/5
Leadership	Group member	1/10
	Speaking in public	1/10
Time	Workload	1/10
	Leisure	1/10

IFPRI. 2012. Women's Empowerment in Agriculture Index

ICT4Scale Project - Objectives

Objective 1: To develop a theoretical framework for analysing and presenting ICT for scale initiatives covering key considerations including gender, type of innovation, types of partners driving and involved, market context, success factors.

Objective 2: To research, and propose working models for integrating ICT (and combinations thereof) for innovation at scale that consider partnerships, gender, business models, types of solutions, and institutional, social and political contexts.

Objective 3: To conduct field trials to test, refine and validate early findings.

Objective 4: To extend the use of ICT for innovation at scale through sharing the project lessons and research findings across diverse sets of stakeholders.

ICT4Scale Project - Developing ICT4Scale framework

Q1. What combinations of ICT, actors and institutional arrangements are most effective and efficient in scaling agricultural solutions?

Q2. What strategies for the use of ICT are successful in facilitating the scaling of agricultural solutions, e.g. interaction with audiences, type and quality assurance of information and content?

Q3. What are the gender equality considerations of ICT-enabled scaling of agricultural solutions?

Q4. How and by whom are ICT technologies and applications being designed, applied and tested as part of business models that lead to successful scaling of solutions and practices?

Q5. What barriers may limit the reach and/or effectiveness of ICTs in scaling initiatives?

ICT4Scale Project - Research Activities

Literature Review: Academic and grey literature on scaling concepts, business models and practices, gender dynamics, and recent advances on scaling solutions using ICT, will be reviewed and synthesized.

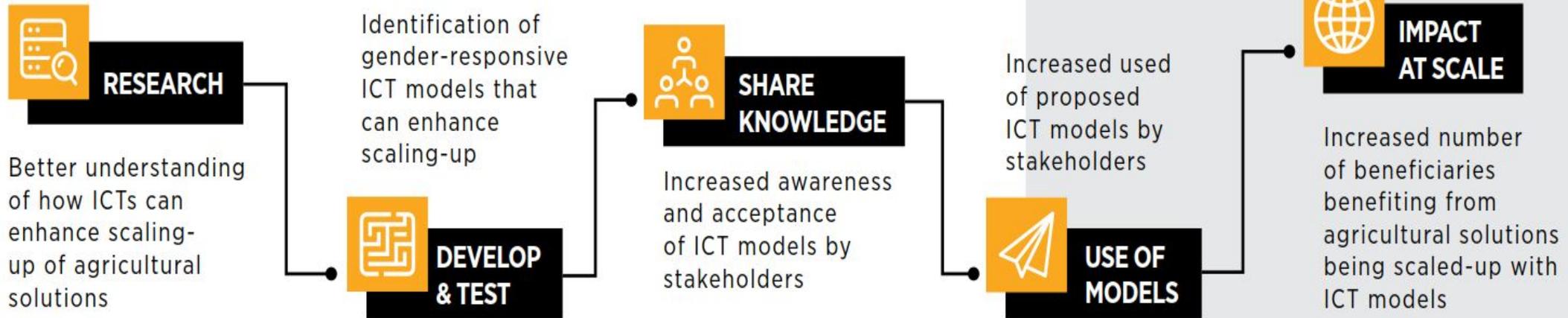
Meta-review of existing projects: Impact assessments and findings from a set of existing ICT-enhanced scaling-up initiatives implemented worldwide will be synthesized using content analysis of documents, surveys, and interviews.

Field Case Studies: Field Case studies will be conducted in sub-Saharan Africa to examine in more detail the functioning and impact of concrete scaling-up initiatives.

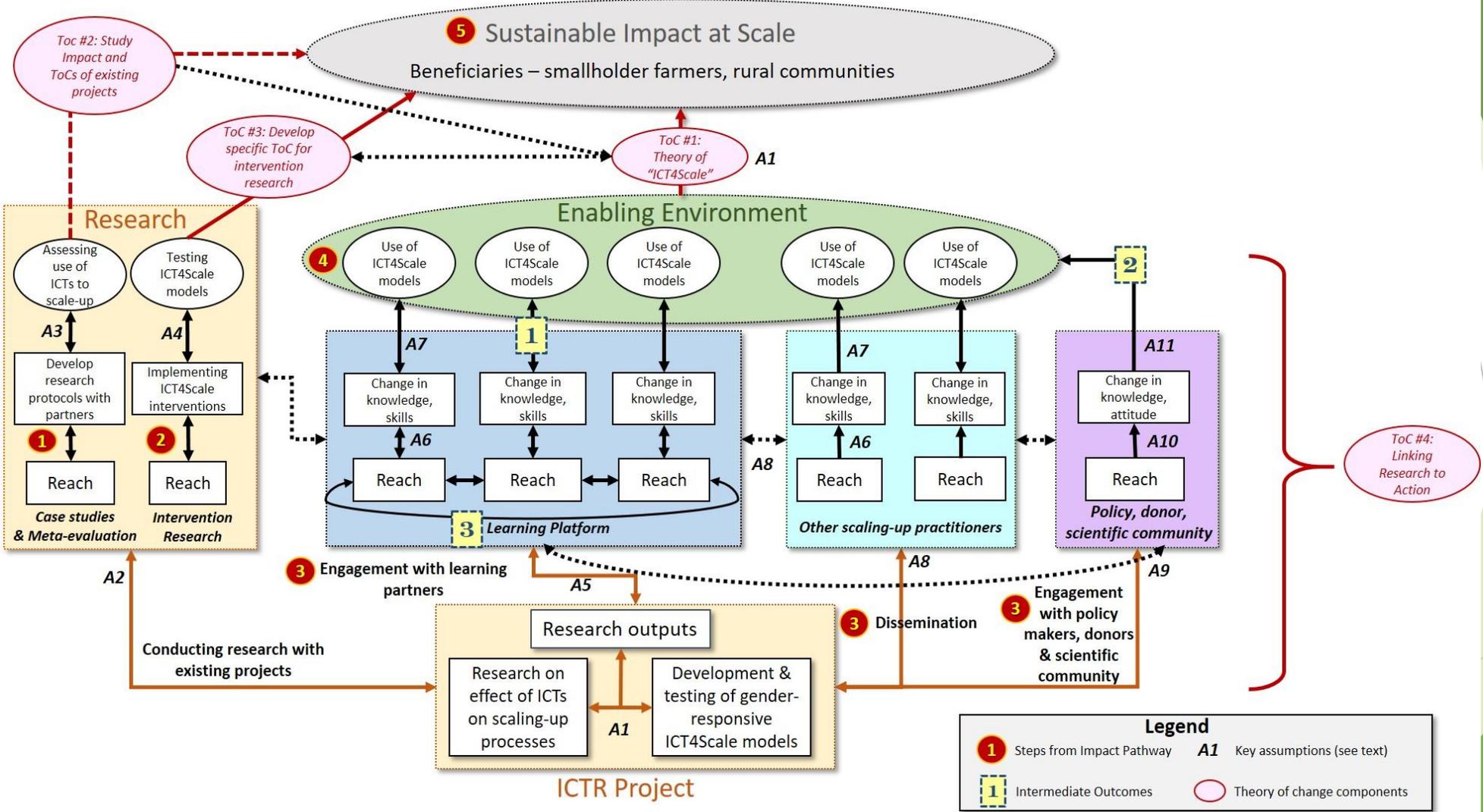
Intervention Research: This component will involve the implementation and testing of elements of our ICT4Scale models within existing initiatives, and the assessment of their impact on beneficiaries.

ICT4Scale - Impact pathway

IMPACT PATHWAY



ICT4Scale - Theory of Change



Conclusions

- Progress towards solving food and nutrition insecurity in SSA is very slow
- International development community recognizes the need to achieve sustainable and equitable impact at scale of agricultural innovations (technological, institutional, social, policy)
- Need to develop a better understanding of scaling processes to identify appropriate strategies
- ICTs have potential to enhance scaling-up processes but important gaps remain in our knowledge of their effect on developmental outcomes and scaling-up processes

Harnessing ICTs to Scale up Agricultural Solutions

National Consultative Meeting

Sunbird Capital Hotel
Lilongwe, Malawi
21st February 2018



Challenge of Agricultural EAS and International Development Community

Many agricultural innovations have been developed over the years – improved varieties, soil and water management practices, integrated pest management, post-harvest technologies, vaccines for livestock, micro-credit, etc.

There remain, however, important challenges to their uptake at scale by smallholder farmers and rural communities.

Impact at Scale

Achieved when large or significant proportions of potential beneficiaries or users are reached and have, in some way or another, benefited from the innovations resulting from research.

Scaling up

Scaling up means expanding, replicating, adapting and sustaining successful policies, programs or projects in geographic space and over time to reach a greater number of rural poor

Scaling-up Dimensions

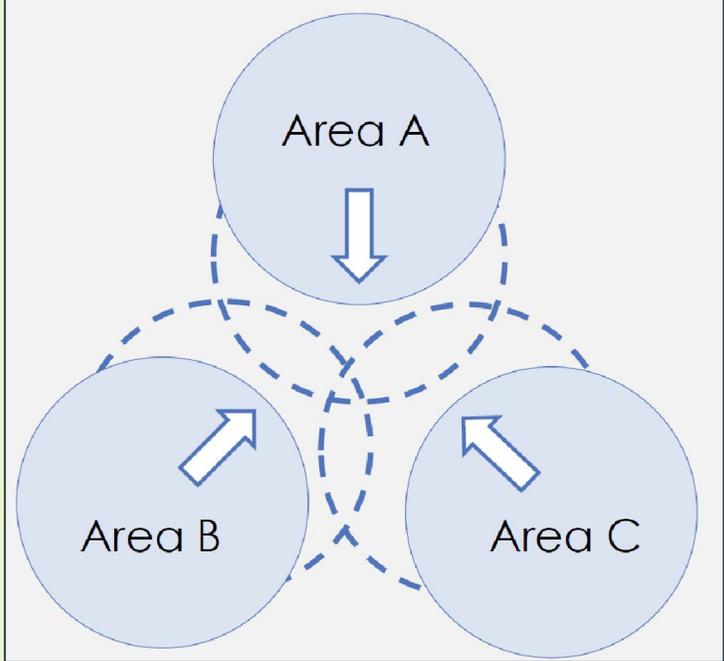
Horizontal Scaling (scaling-out)



Vertical Scaling (institutionalization)

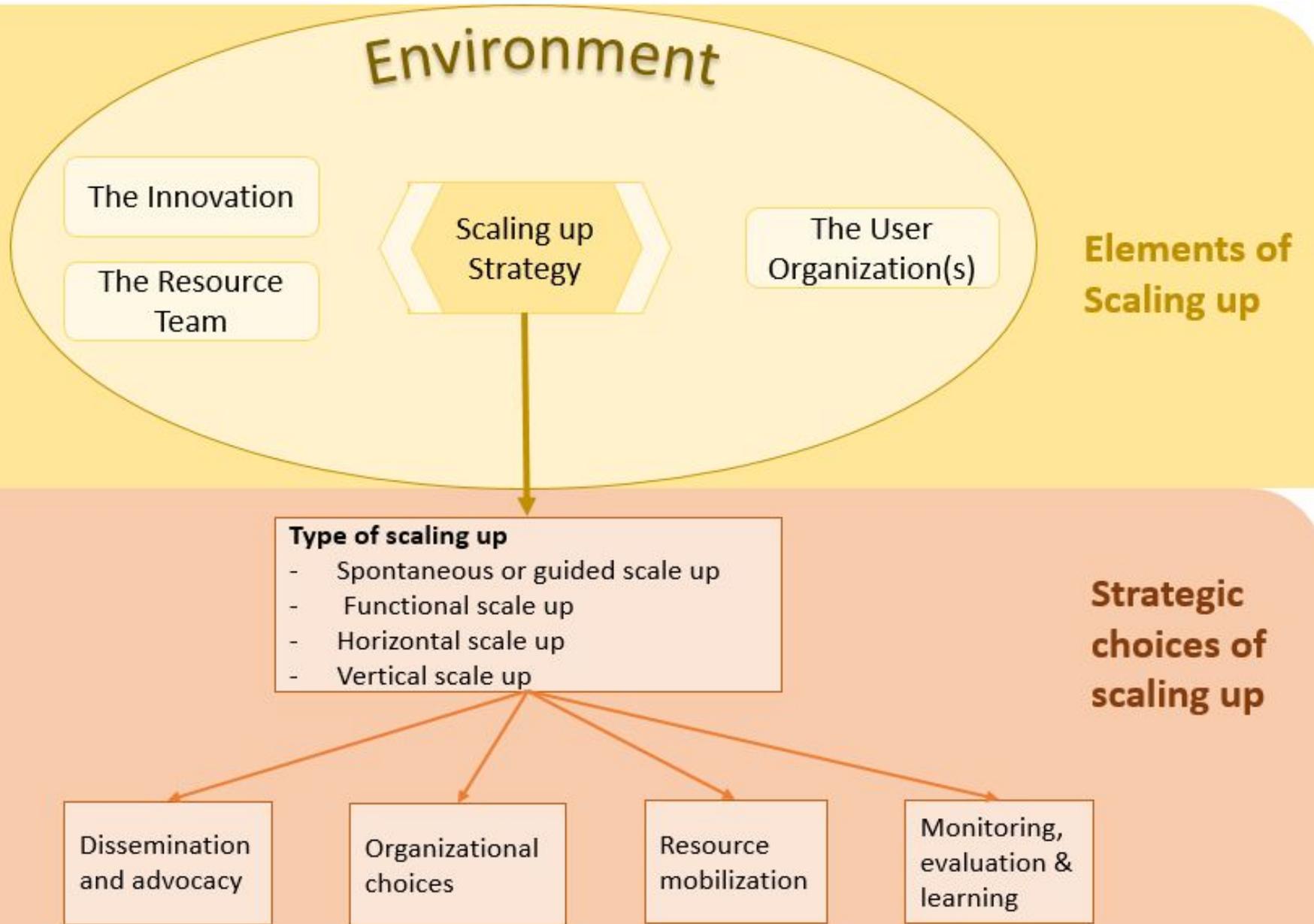


Functional Scaling (diversification)

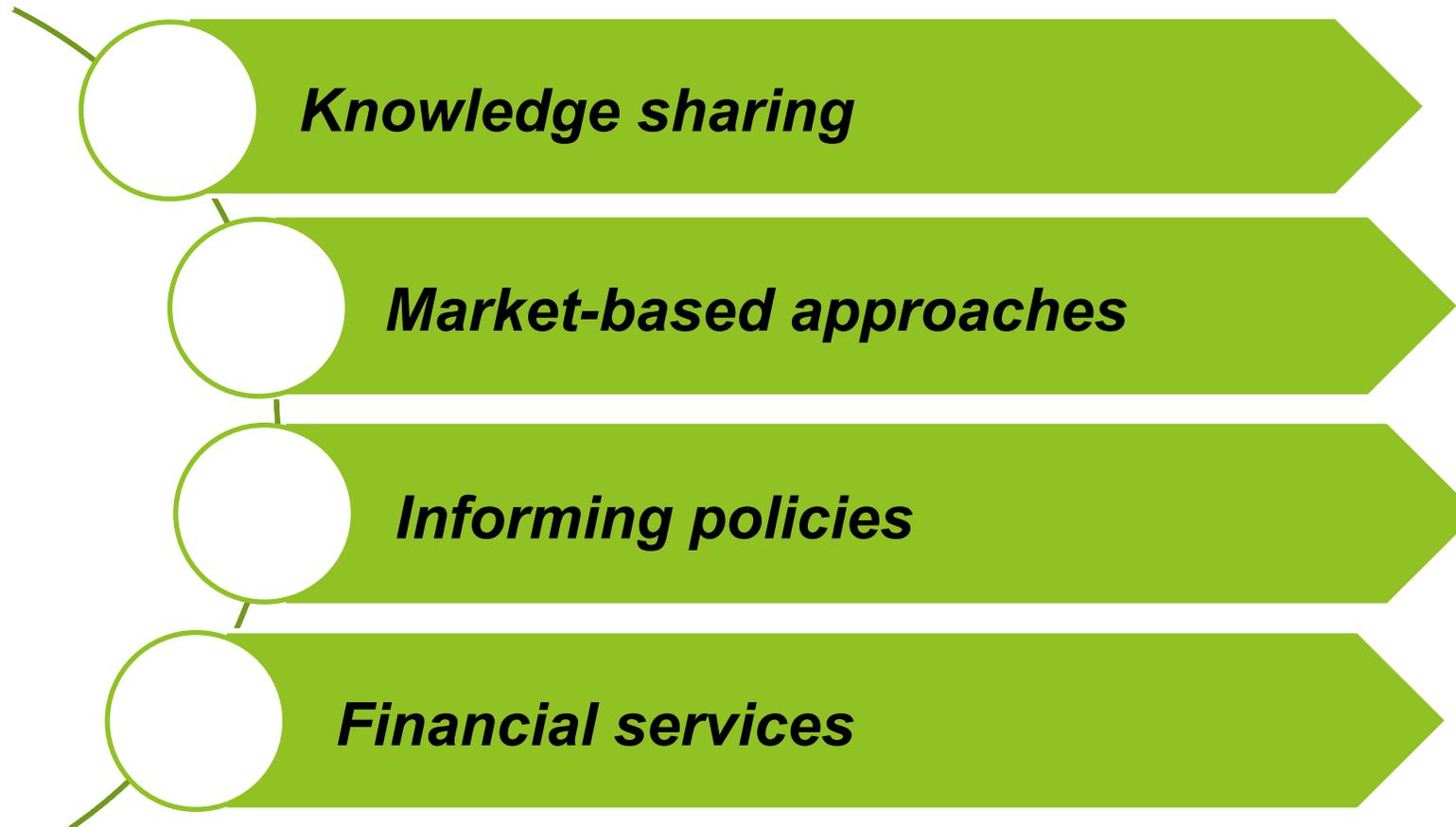


Source: D'Agostino et al. 2014. SPRING Working paper. USAID

Scaling-up Framework

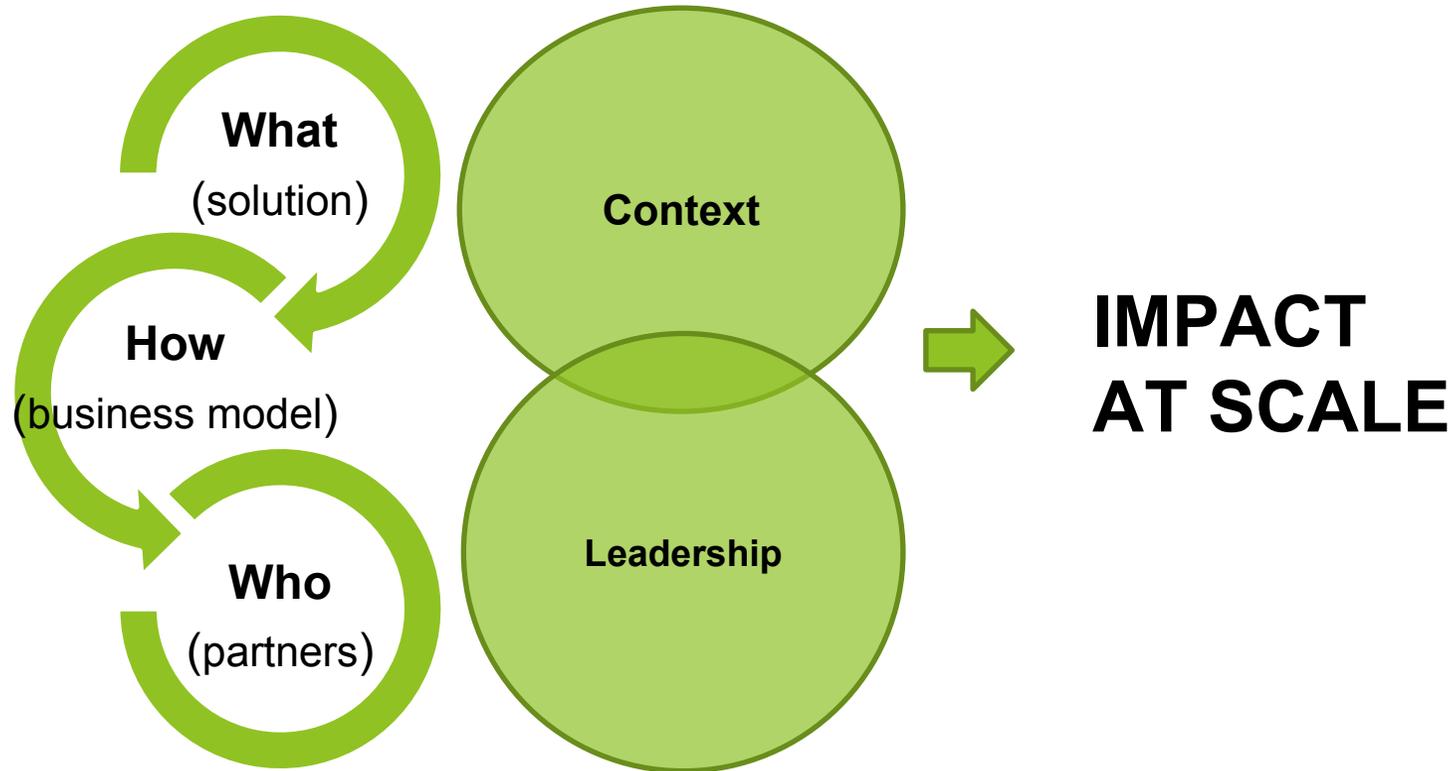


4 Main Scaling up Pathways (not exclusive)



Source: IDRC

5 Conditions for Scaling up Innovations



Source: IDRC

ICTs - Definition

All devices, network components, applications and systems, which can be combined to allow individuals and organizations to interact in the digital world.

ICT encompasses the internet sphere and the mobile sphere powered by wireless networks, but can also include landline telephones, radio and television broadcast used alongside ICTs.

ICT4D - Definition

The use of Information and Communication Technologies (ICTs) to achieve developmental goals such as education, gender empowerment, health and poverty eradication.

ICTs can contribute to:

- Increased freedom
- Expanded digital inclusion
- Increased economic productivity (country level)
- Increased well-being

How can ICTs enhance the scaling-up process?

1. **REACH:** Make info available, accessible and affordable to a large number of farmers
2. **PARTICIPATION:** Facilitate the participation of beneficiaries in the design and implementation of scaling-up initiatives
3. **COLLABORATIVE PLATFORMS:** Strengthen interactions, linkages and networking among key stakeholders

Reach – Mobile Phones

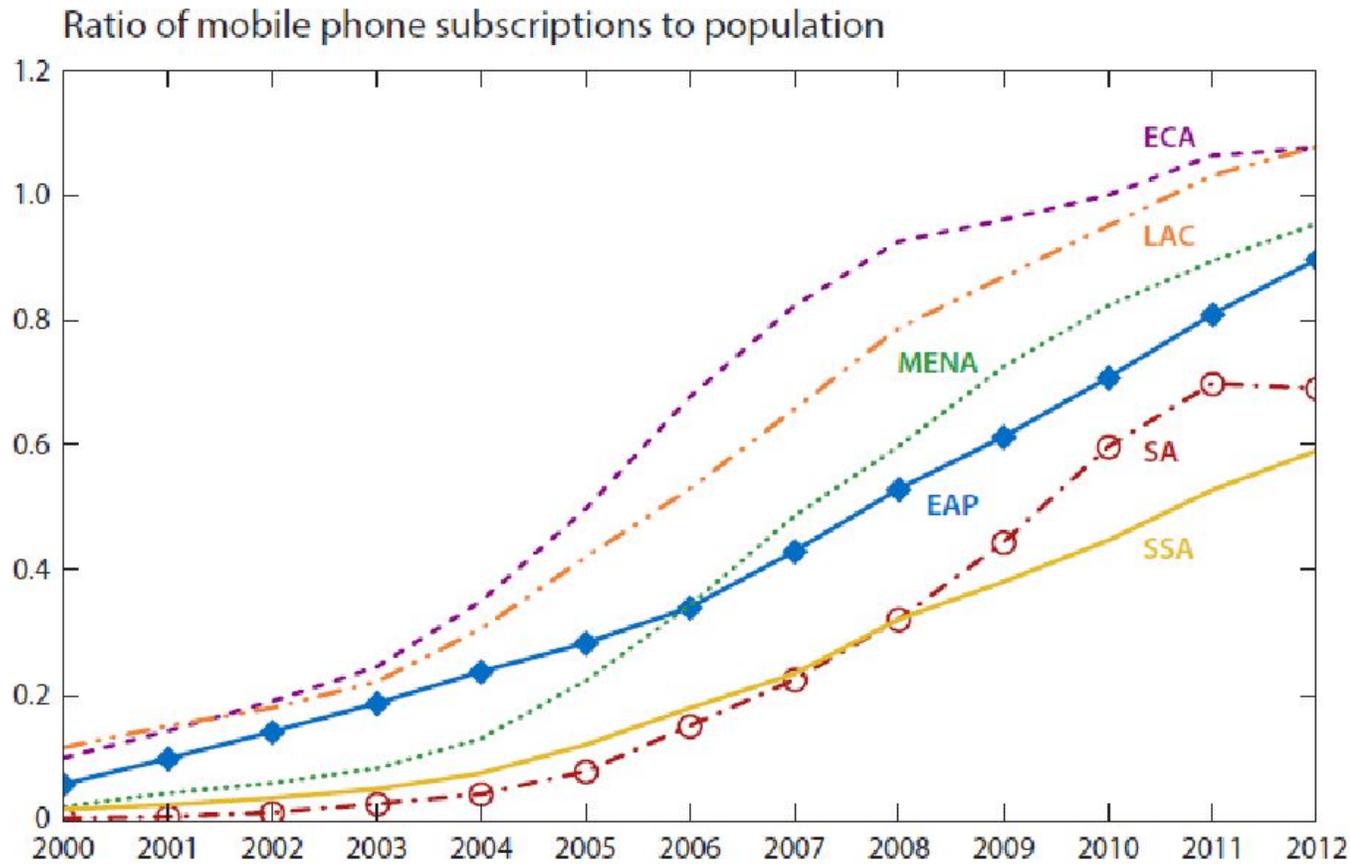


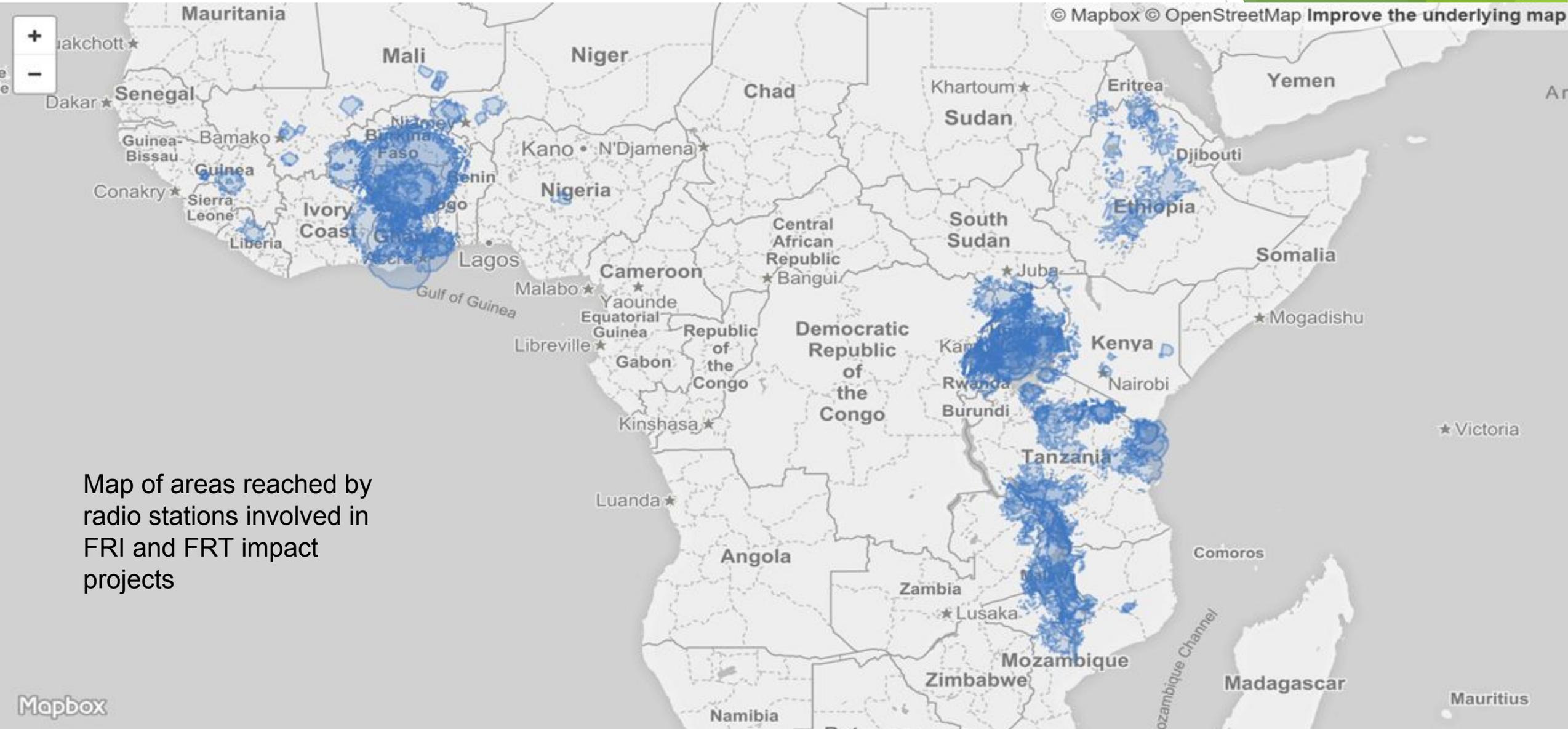
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Nakasone et al. Annu. Rev. Resour. Econ. 2014. 6:533–50



Reach – Rural Radio



Map of areas reached by radio stations involved in FRI and FRT impact projects

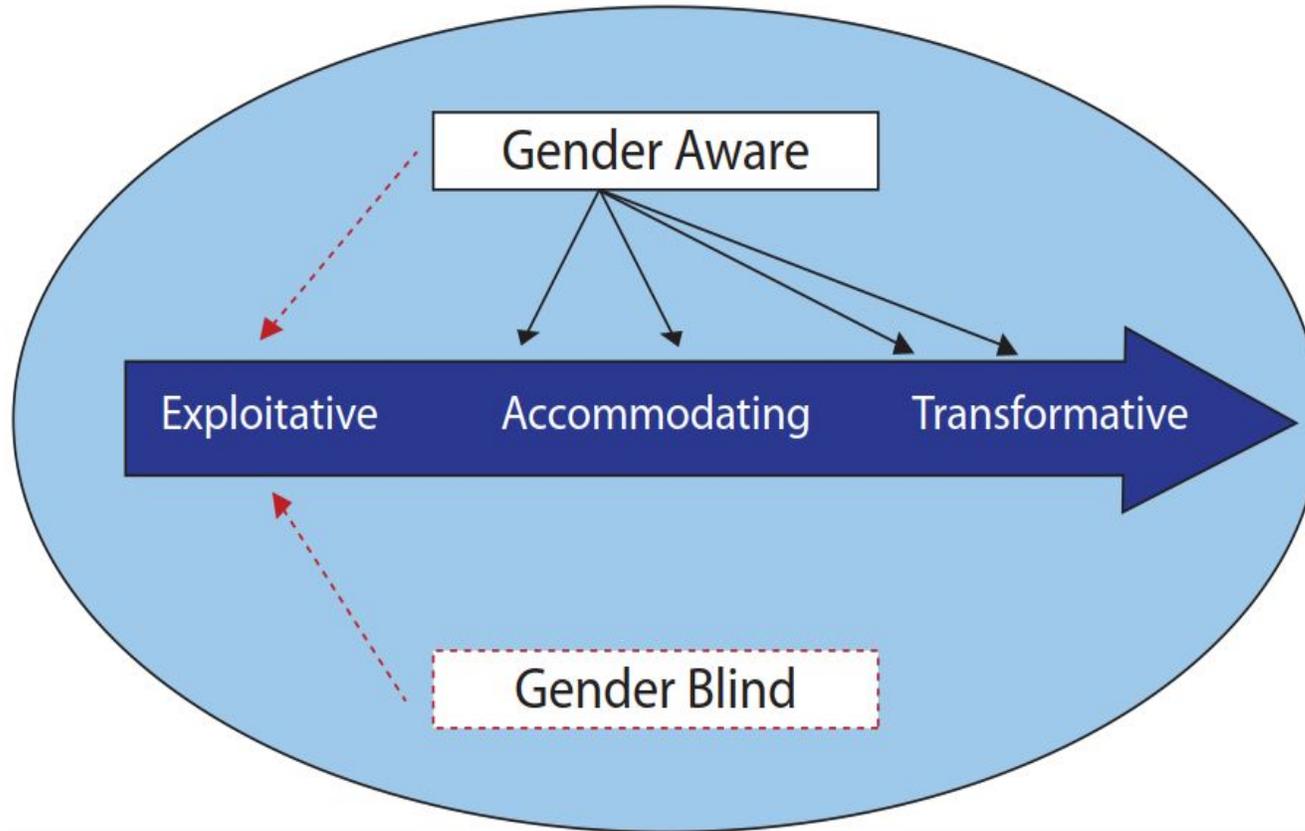
Interactive Radio & Participation

Interactive Radio can be used to facilitate participation of beneficiaries in the design and implementation of scaling-up initiatives - e.g., by having their voice heard on air or by participating in IVR polls.

→ Integration of gender component

→ Facilitates the adaptation of innovations by the beneficiaries to local conditions

Incorporating the Gender Dimension



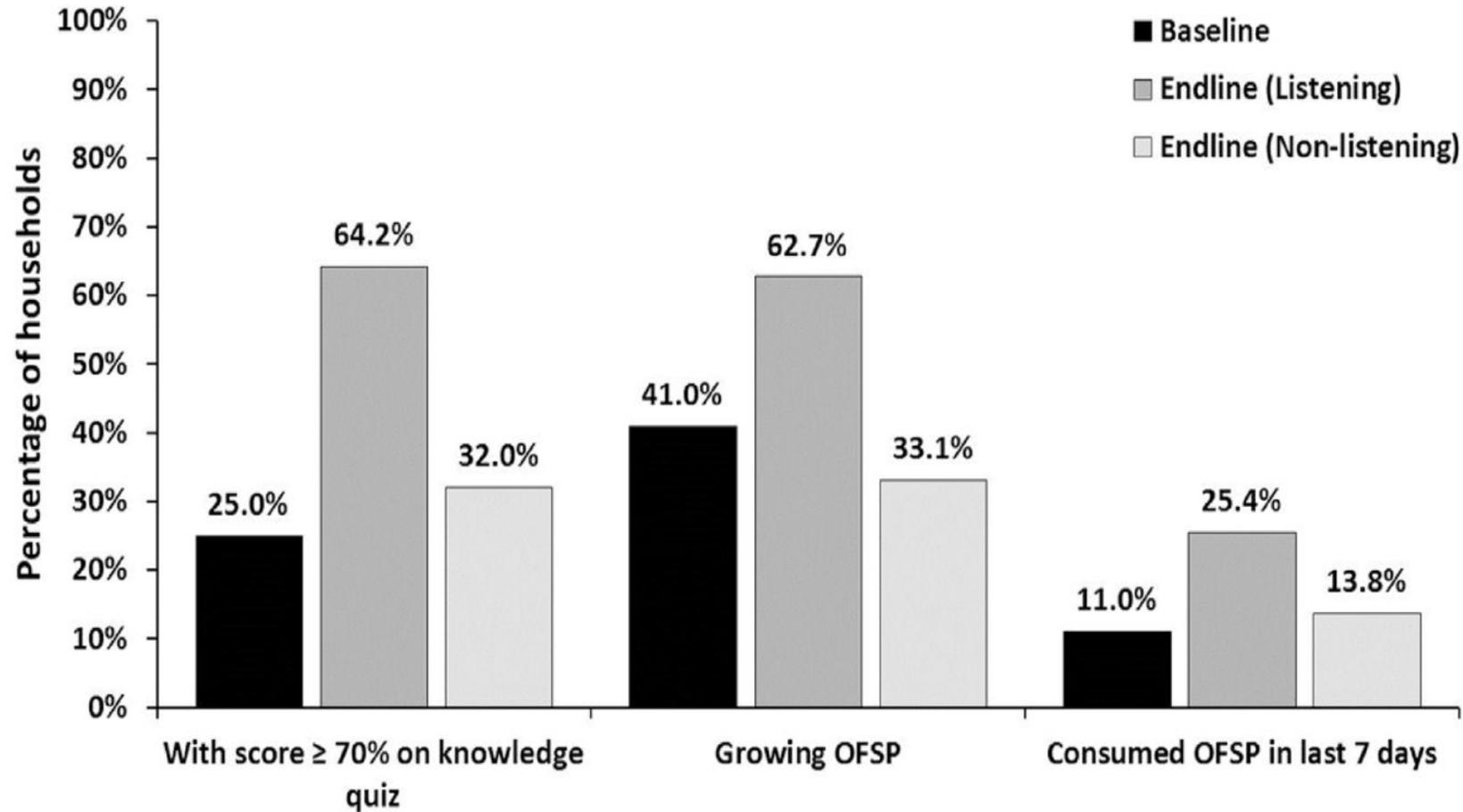
- Gender vs. agricultural solutions
- Gender vs. ICTs
- Gender vs. Scaling-up

Figure 1. Gender and women's empowerment continuum

Njuki and Miller. 2013. Gender responsive Livestock Research

Project on Orange-flesh sweet potatoes

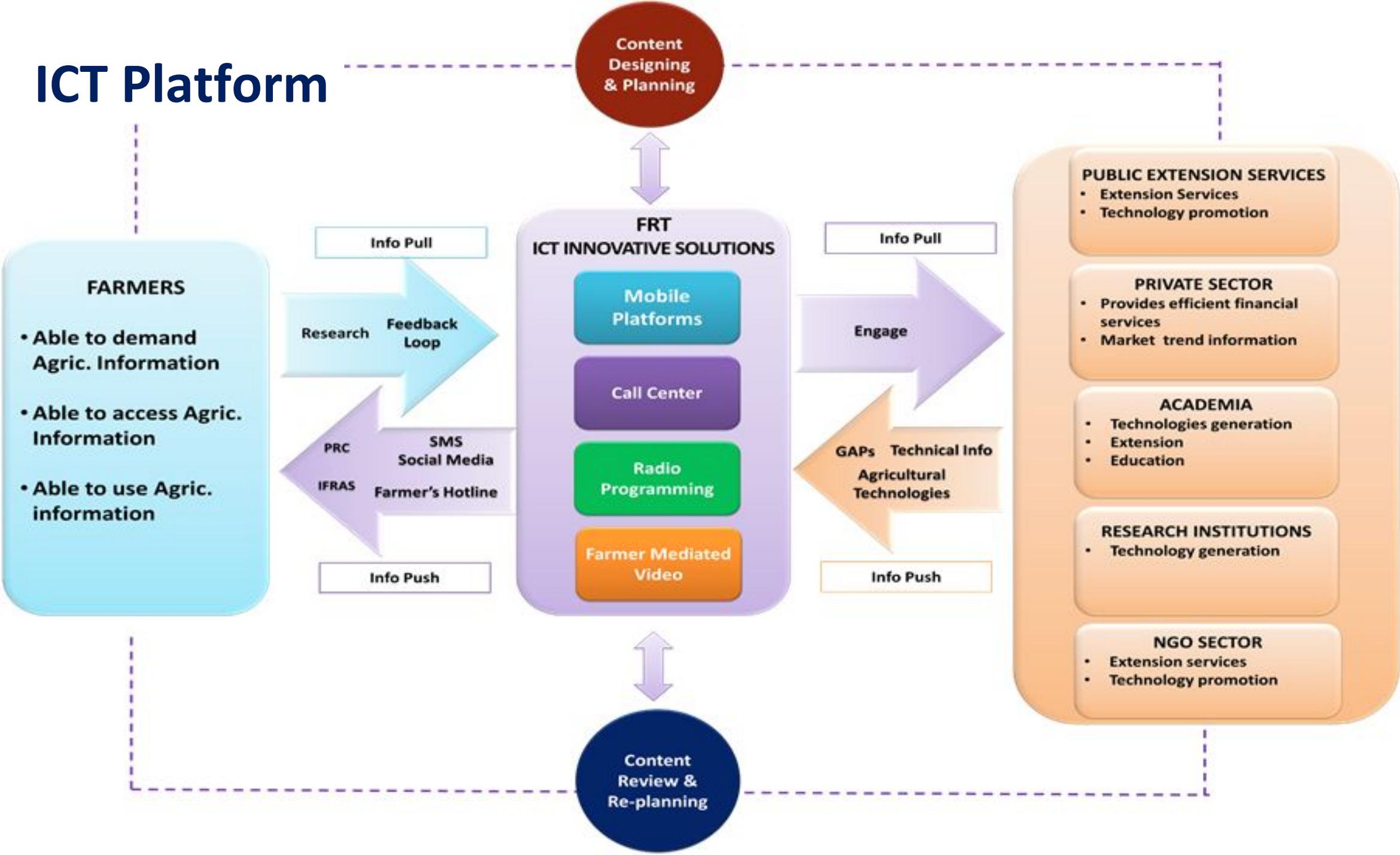
(Burkina Faso, Ghana, Tanzania, Uganda)



Hudson, Leclair, Pelletier, & Sullivan (2017). Telecommunications Policy, 41(7/8): 670-684

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ICT Platform



Content Designing & Planning



FRT
ICT INNOVATIVE SOLUTIONS

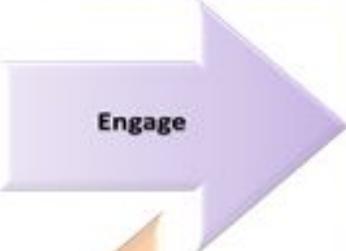
Mobile Platforms

Call Center

Radio Programming

Farmer Mediated Video

Info Pull



GAPs
Technical Info
Agricultural Technologies

Info Push

PUBLIC EXTENSION SERVICES

- Extension Services
- Technology promotion

PRIVATE SECTOR

- Provides efficient financial services
- Market trend information

ACADEMIA

- Technologies generation
- Extension
- Education

RESEARCH INSTITUTIONS

- Technology generation

NGO SECTOR

- Extension services
- Technology promotion

FARMERS

- Able to demand Agric. Information
- Able to access Agric. Information
- Able to use Agric. information



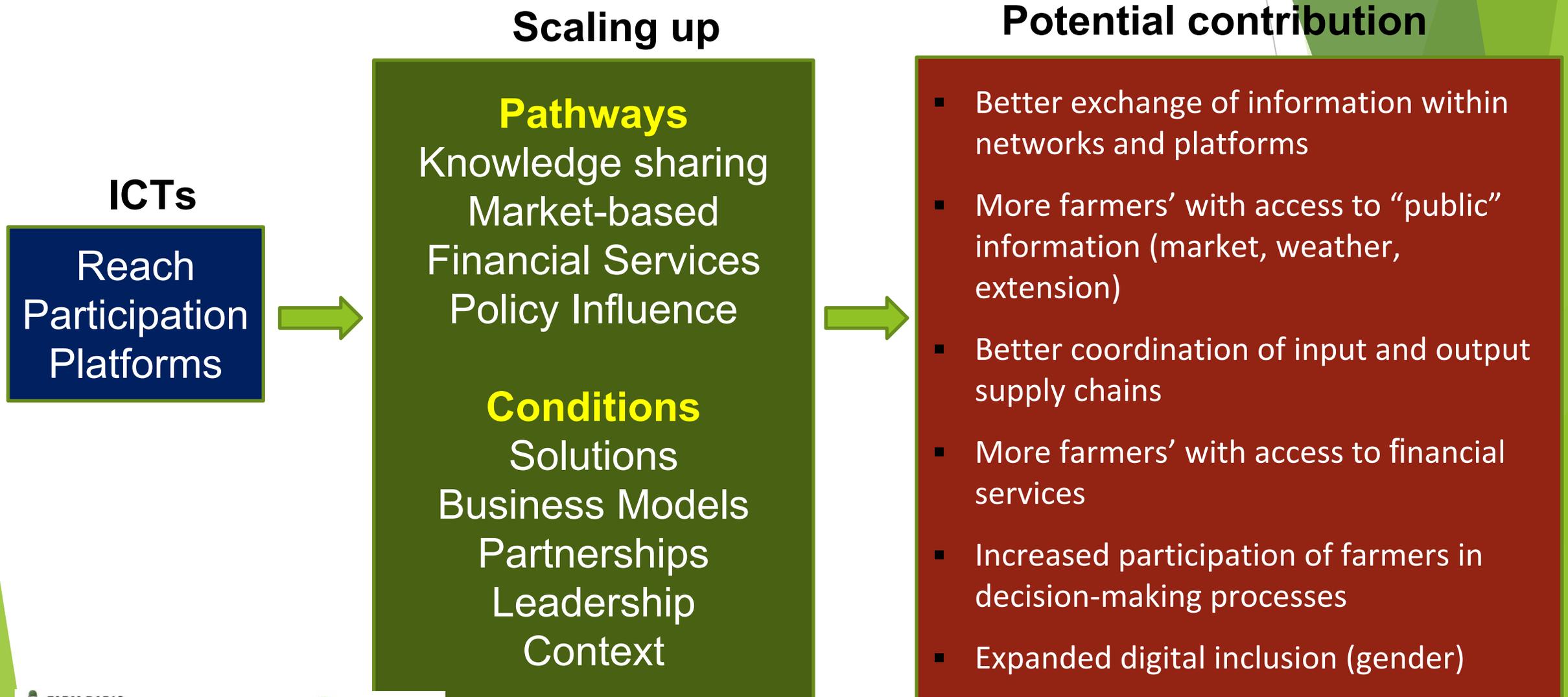
PRC
IFRAS
SMS
Social Media
Farmer's Hotline

Info Push



Content Review & Re-planning

Building the ICT4Scale conceptual framework



Harnessing ICTs to Scale up Agricultural Solutions - ICT4Scale project

- 30 month research project by Farm Radio Trust, Malawi and Farm Radio International
- To develop and test a gender-responsive framework and guidelines for the use of ICTs in scaling-up ag initiatives
- Meta-review of current/past projects; Case study analyses in SSA; Intervention research in Malawi
- Learning Platform: establish a collaborative learning platform to share lessons and research findings



Impact Pathway of ICT4Scale project

