#ICT4Scale
A Roadmap for Scaling-Up
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
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.
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 ICTs

Ratio of mobile phone subscription to population

Coverage of radio stations associated with FRI & FRT


Sub-Saharan Africa

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
Selection of Projects for Meta-Review and Case Study

1. 196 Projects in agriculture, food and nutrition security selected based on published/ grey literature.

2. 71 Projects selected based on cumulative score of about 20 inclusion/exclusion criteria.

3. 15 Projects with the highest rank on selected criteria for meta-review.

4. 4 Projects that intensely manifest the use of ICTs for scaling ag solutions for 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

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

<table>
<thead>
<tr>
<th>Project</th>
<th>SMS/ USSD</th>
<th>Automated voice call</th>
<th>Voice message</th>
<th>IVR</th>
<th>Interactive Radio</th>
<th>Call Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRIIED/ Malawi</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CHAI/ Uganda</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DIAAE/ Ethiopia</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ESOKO/ Ghana</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
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
Break (15 mins)

Learn more about Farm Radio International while you wait... farmradio.org

Learn more about Farm Radio Trust (Malawi) while you wait... farmradiomw.org
Intervention research:

Scaling of soybean inoculant in Malawi
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
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

Key messages
- Benefits, access, storage & utilisation of inoculant
- Crop stand of inoculated soybean
- Soy crop management in the fields
- Post harvest preparations & marketing
Farmers “beeping” during the radio programs
No farmer fails to profit due to lack of information.

500 calls per day
100,000 calls registered

Messages in pull featured in radio programs

Frequently asked questions featured on radio programs

Mlimi Hotline call center

Global knowledge partners
National knowledge partners
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

<table>
<thead>
<tr>
<th>Month</th>
<th>Outgoing SMS</th>
<th>Incoming SMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>November</td>
<td>9,420</td>
<td>12</td>
</tr>
<tr>
<td>December</td>
<td>29,673</td>
<td>176</td>
</tr>
<tr>
<td>January</td>
<td>17,474</td>
<td>51</td>
</tr>
<tr>
<td>February</td>
<td>10,609</td>
<td>54</td>
</tr>
<tr>
<td>March</td>
<td>18,668</td>
<td>148</td>
</tr>
<tr>
<td>April</td>
<td>18,097</td>
<td>193</td>
</tr>
<tr>
<td>May</td>
<td>8,620</td>
<td>213</td>
</tr>
<tr>
<td>June</td>
<td>4,150</td>
<td>57</td>
</tr>
</tbody>
</table>
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
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
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**

<table>
<thead>
<tr>
<th>Agricultural System Challenge</th>
<th>ICT4Ag Intervention</th>
<th>ICT system that delivers the ICT4Ag intervention</th>
</tr>
</thead>
</table>
| Lack of access to extension and advisory services | ● Provide location-specific & evidence-based agronomic practice info  
● Provide value chain and weather informed advisories | ● Farmer communication systems  
● Digital farmer profile |
| Lack of access to early warning and disaster management information | ● Provide disaster prevention info in advance and in real-time  
● Provide disaster mitigation techniques | ● Farmer communication systems |
| Insufficient access to agricultural inputs and market | ● Link farmers with input suppliers and produce buyers  
● Provide market information for agricultural commodities | ● Market information systems  
● Marketplace platform  
● Supply chain systems |
| Limited access to financial and insurance services | ● Provide access to financial services  
● Provide access to insurance services | ● Mobile money  
● Mobile money linked to insurance services |
| Lack of access to capital intensive agricultural equipment | ● Link farmers with agricultural equipment (such as tractor) rental entities | ● Shared economy applications |
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
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
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
Thank you!

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

Stay tuned for our next #ICT4Scale webinar!