Innovative Farmer Advisory Services using ICTs

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Ghana
Motivation, problem area

- The past 10 years have seen remarkable progress in the use of information and communication technology (ICT) in African agriculture, especially for facilitating farmers’ access to market information.
- The Forum for Agricultural Research in Africa (FARA) analyzed 60 farmer advisory services in Africa that are currently being designed, currently operating or recently terminated.
- The countries which are represented are Benin; Burkina Faso; Cameroon; Egypt; Ethiopia; Ghana; Kenya; Malawi; Mali; Niger; Nigeria; Senegal; South Africa; Tanzania; Uganda; Zambia; Zimbabwe and 10 projects operating in more than 3 countries.
The projects have been divided into four categories:

1. **VOICE INFORMATION DELIVERY SERVICES**

2. **RADIO: DIAL-UP (AGRICULTURAL INFORMATION ON DEMAND) AND REGULAR RADIO BROADCASTS**

3. **EXTENSION SERVICES BASED ON MOBILE PHONE AND DATABASE MONITORING**

4. **E-LEARNING FOR BASIC SKILLS, AGRICULTURAL EDUCATION AND VIDEO-BASED APPROACHES**
Major Outcomes/Results (1)

Figure 1: Duration of the Projects

- 0-2 years: 8
- 2-6 years: 19
- More than 6 years: 7
- Unknown: 1
- Not in operation: 1

Figure 2: Scale of the Projects

- 1 community: 1
- More than 1 community: 13
- 1 country: 28
- More than 1 country: 16
- Not in operation: 2
<table>
<thead>
<tr>
<th>Technology Used</th>
<th>Number of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet</td>
<td>47</td>
</tr>
<tr>
<td>Radio</td>
<td>17</td>
</tr>
<tr>
<td>Television</td>
<td>2</td>
</tr>
<tr>
<td>CD-Rom/video/DVD</td>
<td>6</td>
</tr>
<tr>
<td>Mobile phone</td>
<td>22</td>
</tr>
<tr>
<td>IVR</td>
<td>4</td>
</tr>
<tr>
<td>SMS</td>
<td>16</td>
</tr>
<tr>
<td>Telephone (call-in)</td>
<td>4</td>
</tr>
<tr>
<td>Dial-Up Radio</td>
<td>1</td>
</tr>
<tr>
<td>GIS</td>
<td>1</td>
</tr>
</tbody>
</table>
## Major Outcomes/Results (3)

<table>
<thead>
<tr>
<th>Type of Organization</th>
<th>Project Implementer</th>
<th>Project Partner/Funder</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Organization</td>
<td>11</td>
<td>39</td>
</tr>
<tr>
<td>Local/National NGO</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td>Government Department/Agency</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>National Agricultural Research Centre</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Private Company</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>
Written/Text-based Projects

Benefits
- Provides high number of useful resources

**Web-based solutions**
- Can provide pictorial illustrations
- Can provide lengthy, detailed explanations

**SMS**
- Can be Customised for language
- Cell phone use rapidly expanding throughout the continent

Costs
- Requires a basic level of literacy

**Web-based solutions**
- Entails ploughing through many publications
- Often unreliable internet connectivity
- Limited access to and ability to use computers among many rural populations
- Often not updated regularly

**SMS**
- Contains only a small amount of information

*Zambian National Farmers’ Union SMS Service, IFAD*
<table>
<thead>
<tr>
<th><strong>Benefits</strong></th>
<th><strong>Costs</strong></th>
</tr>
</thead>
</table>
| • Can be easily customised for language  
  • Readily accessible and easy to use | **IVR**  
  • Costly to develop  
  • Complicated: requires machines to produce good speech synthesis  
  • Often does not provide detailed info such as pictorial illustrations |
| **IVR**  
  • Can provide ready researched and prepared answers for commonly asked questions | **Video-based solutions**  
  • Can provide demonstrations |
| **Video-based solutions**  
  • Can provide demonstrations | **Call Centres**  
  • Can receive feedback from professionals immediately |
| **Call Centres**  
  • Can receive feedback from professionals immediately | **Call Centres**  
  • Call congestion  
  • Often requires follow-up if info is not currently available |

*Allo Ingenier Call Centre, Cameroon*
Most successful short message service (SMS)

Esoko (Tradenet)

- Any individual, business or producers group can set up on Esoko
- Works with web and mobile devices
- Operating in 10 countries
- Offers 4 main services
  - Live market feeds using SMS
  - Direct SMS marketing
  - Scout polling
  - Online profiling and marketing
Overcoming written text with pictures

- Developed by the Swiss Biovision Foundation
- Web-based service promoting organic farming
- Attempts to overcome constraints of written work through pictorial illustrations
- Rollover function is implemented on the pictures so information pops up when the cursor is moved over a photo
Voice solutions combined to SMS

Freedom Fone

National Farmers Information Service (NAFIS)

Collecting and Exchange of Local Agricultural Content (CELAC -)

Maputo, 2 April 2009     Session II (4.00p – 5.00p): Application Agriculture     W3C workshop 2009     Copyright 2009 Forum for Agricultural Research in Africa
ANNEX A: HOW LIFELINES MIGHT WORK

Note: these are very much initial outline ideas that will be refined and developed during phase 1 of the project, which will involve appropriate pilots and trials.

Caller rings Lifelines number.

Logs question on automated voice recording (VR) system.

VR system responds with question registration code.

Knowledge manager picks up question....

...and interrogates FAQ database.

If answer not already recorded on FAQ then question sent to an expert via e-mail.

If answer already recorded in voice format as FAQ then transferred to VR system.

New answer recorded on FAQ database and transferred to VR system.

caller rings back, identifies herself using registration code and retrieves automated answer.
LifeLines Agriculture – Project Updates

Types of Queries Received: Jan’08 – Mar’08

<table>
<thead>
<tr>
<th>Category</th>
<th>Queries Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crops Related</td>
<td>2531</td>
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<tr>
<td>Agriculture</td>
<td>2950</td>
</tr>
<tr>
<td>Agronomy</td>
<td>55</td>
</tr>
<tr>
<td>Soil Science</td>
<td>316</td>
</tr>
<tr>
<td>Floriculture</td>
<td>3731</td>
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<tr>
<td>Penology</td>
<td>8863</td>
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<tr>
<td>Horticulture</td>
<td>168</td>
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<tr>
<td>Medicinal Plant</td>
<td>16</td>
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<tr>
<td>Bio-Fuel Plant</td>
<td>743</td>
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<tr>
<td>Spices</td>
<td>10</td>
</tr>
<tr>
<td>Plantation Crops</td>
<td>223</td>
</tr>
<tr>
<td>Dairy Science</td>
<td>131</td>
</tr>
<tr>
<td>Forestry</td>
<td>23</td>
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<tr>
<td>Fishery</td>
<td>144</td>
</tr>
<tr>
<td>Animal Health</td>
<td>291</td>
</tr>
<tr>
<td>Animal Production &amp; Others</td>
<td>922</td>
</tr>
</tbody>
</table>
Video solutions: futuristic mobile?

**Africa Rice Centre (WARDA): Enhanced rural learning systems**

developed according to ZIZO approach:

- Land preparation and water management
- Rice seed bed preparation
- Rice transplanting
- Rice weed management
Conclusion and outlook (1)

Barriers to Up-scaling

- Difficult to attract the private sector to invest
- Difficult to address local needs
- Difficult to develop appropriate info dissemination technology for each context
- Difficult to gain consensus about the content from the many competing stakeholder interests
- New projects influenced by availability/functioning of input supply, credit systems, land-tenure arrangements, organization of marketing, distribution of benefits, etc
Conclusion and outlook (2)

- Create different platforms to respond to different information needs
- Develop a model to implement farmers’ feedback
- Reconcile servicing the community (for free) and sustainable business model (for profit)
- Create Public Private Partnerships (eg. mobile phone operators)
- Public sector should focus on content creation and repackaging
- Private sector to focus on technological upgrades
- Civil society to develop active utilizers constituency and community knowledge management, rather than direct interventions and implementations
Conclusion and outlook (end)