



Improving Agricultural Extension and Advisory Services in Africa South of the Sahara using ICTs: A Report of a Scoping Study for Tanzania

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Introduction



- ▶ In Tanzania, agriculture is the mainstay of the economy
 - It provides livelihood to about three quarters of the population (URT, 2011)
 - contributes 25.7 % to GDP (URT, 2009)
 - dominated by the smallholder farmers
 - Constraints to the growth of the sector are aggravated by lack of agricultural information (reliable & timely)
- ▶ Use of ICTs could help overcome such constraints

What does this study attempt to uncover?



- (A) What is the current status of ICT in Tanzania?
- (B) What are the uses of ICTs for agricultural extension and advisory services?
- (C) What are the Challenges & Opportunities for the use of ICTs for agricultural extension & advisory services?

Methodology



- ▶ Secondary data and interviews on:
 - ICT service providers, types of agricultural services provided through ICT, and the linkage between research and other supportive services;
 - Relevant policies, regulations, and programmes in relation to use of ICT in agricultural sector;
 - Existing challenges & Opportunities for using ICT for agricultural extension & advisory services

Current Status of ICTs in Tanzania

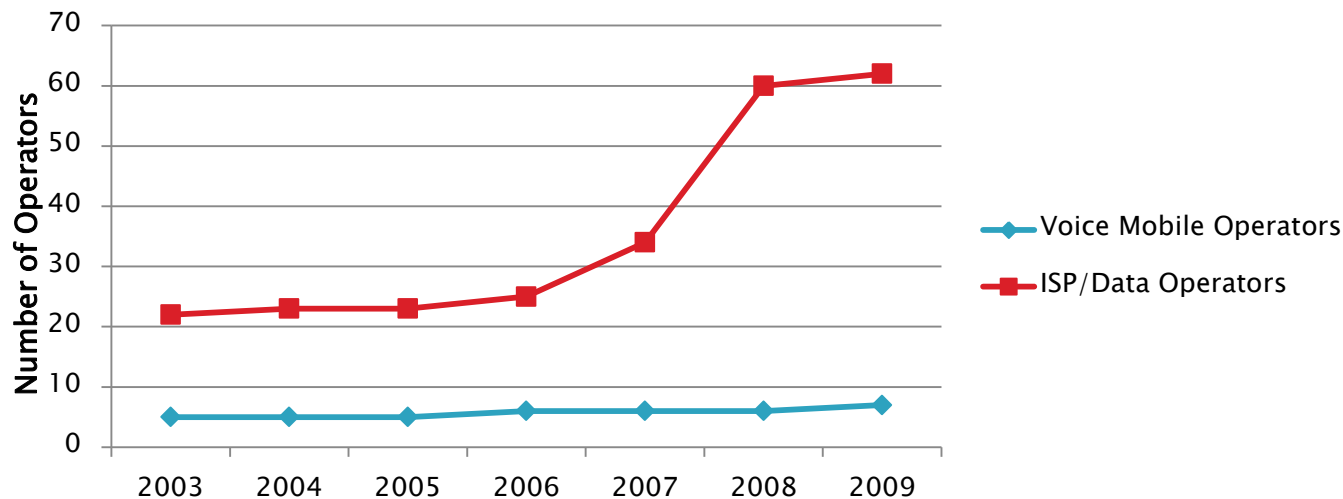
- ▶ 62 Internet Service Providers (ISP)
- ▶ 7 voice mobile operators (Lwoga, 2010)
- ▶ Telecentres for internet and secretarial services, radio broadcasting services and computer training
- ▶ Broadcasting services: 47 radio stations & 29 Tv stations (TCRA).
- ▶ The Information and Broadcasting Policy limits broadcasts to Swahili and English

ICT access indicators and trends



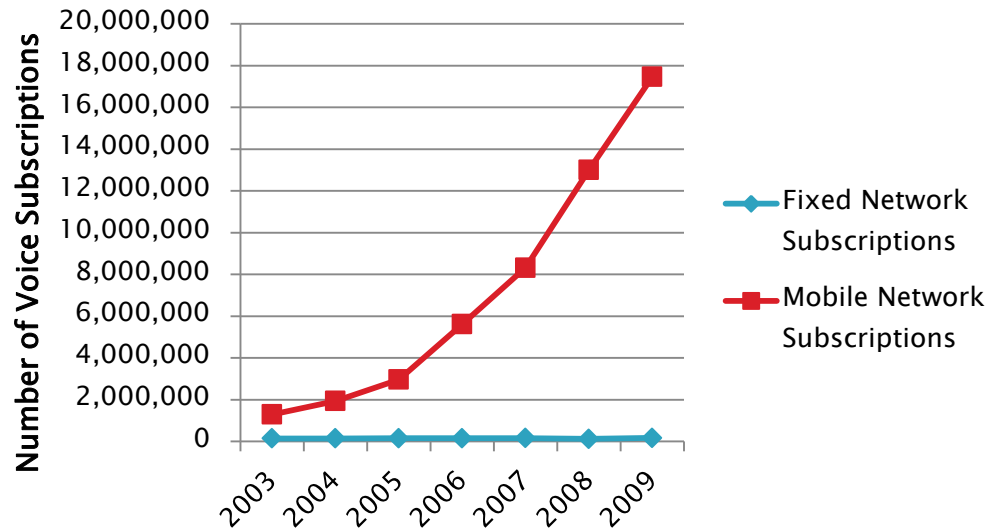
- ▶ There is increasing access to ICT & Growth of ICT service providers .

Graph 1: Licensed Telecommunication Operators
(Source: TCRA)

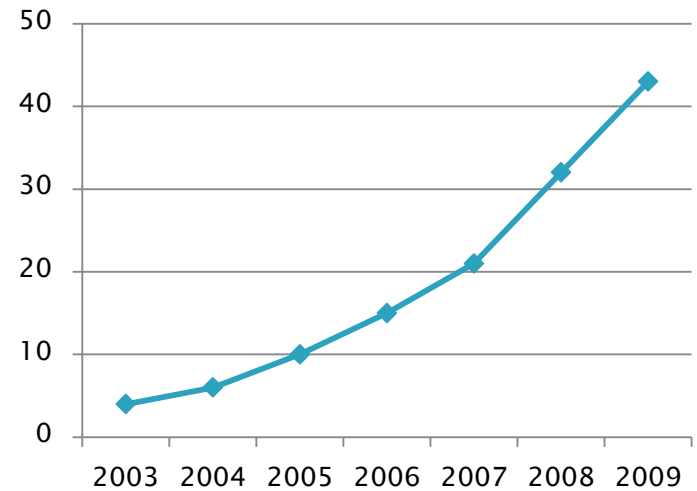


ICT access and trends (cont...)

Graph 2: Voice Subscriptions
(Source: TCRA 2010)



Graph 3: Teledensity
(penetrations - %)



ICT access and trends (cont...)

- ▶ Rural areas: in 2010 more than 33% of rural households owned a cell phone, up from a mere 17% in 2007 (World Bank, 2012).
- ▶ Internet users grew from 115,000 in 2000 to 676,000 (16%) in 2010 (Internet World Stats, 2010).
- ▶ 85% of Tanzanian households own a radio (Batchelor, Scott and Eastwick, 2005:14).

Uses of ICTs for agricultural extension and advisory services



ICT tools are increasingly being used for agricultural extension and advisory services as follows;

- a) crosschecking the price of agricultural produce and organising transactions
 - Farmers use mobile phones to get information from different market places
 - Language: Kiswahili

Uses of ICTs (cont...)

- b) Enabling access to market information for bargaining position (commodity prices)
 - Under the Agricultural Marketing Systems Development Programme (AMSDP) (2002 – 2009)
 - Vodacom & MITM
 - Use of SMS
 - Language: Kiswahili
- c) Services under eSoko platform :
 - Use of SMS & SMS alerts for market prices, weather, matching bids and offers)
 - Use of website for enterprises marketing
 - Language: English (website) and Kiswahili (SMS)

Uses of ICTs (cont...)

- d) Provision of livestock marketing information: prices of livestock & livestock products, volume, transport costs and time
- Under the Livestock Information Network and Knowledge System (LINKS)
 - Use of internet and mobile phones (SMS)
- e) Development of market chains and exchange experiences
- Linking Local Learners (LLL) platform under the First Mile project
 - Use of internet (emails & website); Mobile phones (call & SMS–Bulletins); Radio

Uses of ICTs (cont...)

- f) Establishment of Networks among stakeholders in agricultural sector for agricultural knowledge, technologies, marketing systems and infrastructure
 - ▶ Under the Agricultural Sector Development Programme (ASDP)
 - ▶ Use of mobile phones and Internet
- g) Dissemination & sharing of agricultural information (market prices)
 - ▶ Under the Family Alliance for Development and Cooperation (FADECO)
 - ▶ Use of radio broadcasting & computer centres (CD-ROMs & computer training)
 - ▶ Use of SMS during the Q&A radio service

Uses of ICTs (cont...)

h) Sharing best agricultural practices

- AFRRI in collaboration with 3 Radio stations: Sibuku , TBC, and Radio Maria.
- Use of SMS alerting to an upcoming programme.
- Use of calls & SMS during the Q&A radio program
- Language: Kiswahili (Radio, calls & SMS).

i) Sharing modern agricultural methods through radio and audio visual programme

- ▶ MAFSC offers “Ukulima wa Kisasa” through TBC;
- ▶ Radio Free Africa: “Inuka” for farmers & livestock keepers
- ▶ Language: Kiswahili

Uses of ICTs (cont...)

- j) Sharing knowledge & access agricultural information through telecentres
 - ▶ Kilosa Rural Services and Electronic Communication (KIRSEC)
 - ▶ Use of SMS (commodities & offers, prices & volume)
 - ▶ Use of internet: sale your product, buy from others and consultation)
 - ▶ Language: English (website); Kiswahili (SMS and calls)
- k) Provision of meteorological information
 - ▶ Use of Radio & Tv stations
 - ▶ Language: Kiswahili

Linkages with research & knowledge intermediaries

- ▶ Research in Agricultural sector is under the National Agricultural Research System (NARS)
- ▶ NARS is organised into agro-ecological zones managed under the Division of Research & Development (DRD)
- ▶ Other public & private organisations contribute to research
- ▶ However, most of agricultural research institutes have limitations in information networks owing to
 - poor telecommunications and information infrastructure
 - low level of information management skills;
 - insufficient funds;
 - poor linkage to extension services & farmers

Linkages with supportive services

- ▶ Farmers are linked to professional & small scale farmers associations
- ▶ Universities and research institutes train both researchers and extension service providers. E.g. SUA.
- ▶ Other organisations provide marketing (cooperatives, marketing boards & private sector), e-banking services through mobile phones

Policies and regulations for using ICTs for agricultural extension and advisory services



- ▶ So far, No policy for using ICTs for agricultural extension and advisory services, but MAFSC is drafting an ICT Policy on Agriculture & Master Plan .
- ▶ However, related ICT policies do exist and are expressed in the National development programmes and strategies
- ▶ Emphasis is on ICT to provide information on prices, markets and advisory services in order to contribute to the growth of the agricultural sector (URT, 2010).
- ▶ Policies and laws on ICT sector facilitate market entry, customer services, costs reduction and increased productivity of the telecommunication and other ICT services.

Challenges for the use of ICTs for agricultural extension and advisory services



1. Sustainability of infrastructure provision to support ICT tools in the rural areas such as electricity.
2. Quality of internet infrastructure established in rural areas: Low speed and failure to upload information in time
3. Farmers ICT illiteracy and language barrier
4. Trust in the radio ownership
5. Sustainability of the initiated services after the completion of development programmes.

Opportunities for the use of ICTs for agricultural extension and advisory services



1. The laying of National Optic Fibre cable network;
2. Rural electrification project – A Sustainable Energy System for the Provision of Rural Electrification Services (PITRO III)
3. MAFSC: plan of establishing Agricultural Wards resource Centres
4. Mushrooming of ICT tools & services: cost reduction of devices and services
5. Wireless technologies & other electronic networks exist and are increasingly entering remote rural areas (Kapange, 2010).

Conclusion & recommendations



ICT tools are increasingly being used in the provision of agricultural services. Most of programmes and projects seem to be on marketing, rather than on agricultural productivity, i.e. linking farmers to research.

There are limitations to connecting research to use.

- ▶ Therefore, Agricultural research findings should be organised in the way to reach farmers through SMS.
- ▶ Extension officers should be well equipped with ICT capabilities
- ▶ Electricity (or other power sources) should be fully provided to support ICT initiatives in rural areas.





Thank you very much

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