

Situation Analysis of Agricultural Information Dissemination: Implication for ICT application among Smallholder Dairy Farmers in Nyamira County, Kenya

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ABSTRACT

Information and Communication Technology (ICT) is a key media for transforming farmers' lives through convenient agricultural information access and sharing knowledge. This paper analyses situation of agricultural information dissemination and its implications on transforming smallholder dairy farmers in Nyamira County, Kenya. Emphasis is given to ICT vis-a-vis print and traditional methods. Field research was conducted in Nyamira County between May and July, 2015 involving 220 dairy farmers. The respondents were identified through systemic sampling technique. Interview schedule was used for data collection. Traditional media (70.6%) were the main source of agricultural information followed by electronic (52.0%) and print media (47.4%). These findings corroborates the fact that ICT application was not being embraced as expected, being the world's most common way of transmitting voice, data and services in the developing world. Farmers were therefore, not benefiting from interactive and real-time delivery of agricultural information that would enable them benefit from this current technological advancement.

Key words : *ICT application, Information Dissemination, Smallholder Farmers, Nyamira County*

The evidence of ICT transforming the way many Africans are conducting business and government delivering services is becoming increasingly clear. Recent World Bank research shows that a 10 percent increase in mobile phone subscribers leads to a 0.8 percent increase in economic growth. Similarly, a 10 percent increase in high-speed internet connections leads to a 1.3 percent increase in economic growth (World Bank, 2016a). With continued increases in access to high-speed communications, the transformative nature of these advances will continue to spread across Africa. ICT is now used in many more ways than before and fundamentally affects people's everyday lives by creating new business and investment opportunities, not only for national and regional economic development, but also smallholder farmers.

According to World Bank (2011), ICT, especially mobile application, has quickly become the world's most common way of transmitting voice, data, and services in the developing world. Given this dramatic change, mobile applications (m-apps) hold significant potential for advancing smallholder farmers' development through access to credible and timely information. They could provide the most affordable ways of linking farmers to markets, finance and governance systems previously unavailable to them.

In Nyamira County, farmers lack access to timely information that would aid their production planning and marketing decisions (Ministry of Agriculture, Livestock and Fisheries [MOALF], 2014). To respond to the problem, Smallholder Dairy Commercialization Programme (SDCP) set up a mobile phone-based portal prototype called Low Cost Market Information System (LCMIS) along with other media of agricultural information dissemination such

as electronic, print and traditional media. However, the application of the platform by farmers was interestingly very low despite the high mobile phone (77.3%) and internet (52.7 %) penetration rates in the country, suggesting they were being used more in non-farm activities (Communications Commission of Kenya [CCK], 2013). The study analyses situation of agricultural information dissemination and its implication on transforming smallholder dairy farmers in Nyamira County, Kenya.

METHODOLOGY

The study was conducted in Nyamira County, Kenya. It employed descriptive survey research design. The choice of this designs was based on its strength to collect information from the sample of the universe and to describe their characteristics, situation, social setting or relationship as expressed by Newman (2011). Systemic sampling techniques was used to identify 250 respondents for the study. According to Kothari and Gaurav (2014; 62), this method is applicable where list of respondents are available. However, during the survey, only 220 farmers were accessed representing 88 per cent responses.

RESULTS AND DISCUSSION

The multiple response results are presented in Table 1. Information source was measured as regularly (2), occasionally (1) and never (0).

Traditional media (70.6%) were the main source of agricultural information in the County while print media (47.4%) was the least. Among the electronic media, radio (88.6%) was the most popular whereas mobile applications (LCMIS) was the least (18.2%). This could be, in part, because LCMIS development is not yet complete, and also because it has not yet been promoted for widespread use. World

Table 1
Distribution of Respondents According to Agricultural Information Source

Sr.No.	Information dissemination method	Multiple responses (N=220)	
		Freq.	%
Electronic Media (52.0%)			
1.	Radio	195	88.6
2.	Television	118	53.6
3.	Mobile applications (LCMIS)	40	18.2
4.	Farmers' telephone calls	105	47.7
Print media (47.4%)			
5.	Newspapers	141	64.1
6.	Farm publications	102	46.4
7.	Personal letters	70	31.8
Traditional media (70.6%)			
8.	Group meetings	169	76.8
9.	Group training	203	92.3
10.	Field days	171	77.7
11.	Farmers' day (shows)	121	55.0
12.	Study tours	142	64.5
13.	Farm visits	211	95.9
14.	Personal letters	70	31.8

Freq. - Frequency, % - Percentage

Bank (2016b) reports that ICT applications would improve agricultural information dissemination to farmers thereby linking them to market. A case in point is India, which is a global leader in ICT application.

For example, Food and Agriculture Organization (FAO, 2016) opined that access to current data and information on commodity prices, marketing, weather, and agricultural services is essential for competitive and efficient transformation of smallholder farmers. Information and communication technologies (ICT) application play a significant role in improving farmers' capacity to plan and manage their farms and, in turn, can improve local livelihoods (Alan & Beck, 2015).

CONCLUSION

The results revealed that traditional media (70.6%) were popular source of agricultural information followed by electronic (52.0%) and print media (47.4%). Of the electronic media, radio (88.6%) was the most popular whereas mobile applications (m-apps)-low cost market information system (18.2%) was the least. This provides support for claims that low creative ICT application is a causal factor to poor agricultural information dissemination in Nyamira County. Farmers were therefore, not benefiting from interactive and real-time delivery of agricultural information that would enable them benefit from this current technological advancement. The findings also provide an additional impetus for a substantial public role on linking smallholder farmers to market through ICT application. Smallholder farmers would thus be able to bargain on a level playing field with middle men and get the best price of their milk hence transforming their livelihood.

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REFERENCES

1. Alan Levitt & Marc Beck. 2015. Global dairy market outlook: Weak sentiment weighs on markets. *U.S. Dairy Export Council*.
2. Communications Commission of Kenya. 2013. Kenya's data and smartphone usage fuelling East African connectivity. Communications Africa. Retrieved April 24, 2015 from <http://www.communicationsafrica.com/internet/kenya>.
3. Food and Agriculture Organization. 2016. Linking farmers to market. Retrieved April 28, 2016 from <http://www.fao.org/ag/ags/agricultural-marketing-linkages/linking-farmers-to-markets/en/>.
4. Kothari, C.R. & Garg, G. 2014. Research methodology. Methods and techniques. Third edition. *New Age International Publishers*.
5. Koul, L. 2013. Methodology of educational research. 4th Edition *Vikas Publishing House Pvt Ltd*. New Delhi.
6. Ministry of Agriculture, Livestock and Fisheries. 2014. Milk production and marketing in Kenya: A preliminary survey 2013 report. Nairobi, Kenya. Retrieved March 24, 2016 from <http://kdb.co.ke/press/publications/report>.
7. Newman, W.L. 2011. Social Science Research Methods, 7th edition: Qualitative and quantitative approaches, *Alln & Bacon, Boston, USA*.
8. World Bank. 2011. Mobile applications for agriculture and rural development. ICT Sector Unit, *World Bank. Rome, Italy*.
9. World Bank. 2016a. Transformation-ready: Using ICT to fast-track Africa's development path. Retrieved May 2, 2016 from <http://siteresources.worldbank.org>.
10. World Bank. 2016b. Using ICT to improve agricultural technology and market information dissemination to farmers in Indonesia. *South-South Knowledge Exchange Hub*. Rome, Italy.