

Information dissemination pathway preferences and needs of commercial urban farmers in Kampala, Uganda

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Abstract

The study mapped and characterized the spatial location of households that practice urban agriculture, assessed and documented the information needs of farmers, developed Geo-spatial database for the households identified, documented the effective and preferred information dissemination channels that are used to enhance the productivity of farmers and identified and documented the information sources that urban farmers consider useful for making production and marketing decisions. Preliminary findings show that social economic characteristic of farmers highly influence the type and frequency of using a given information dissemination pathway and that the type of agriculture practiced influences the preference of a given pathway. Inter personal pathway types are deemed to be more effective than printed and broadcast kinds. Cooperative extension services, marketing specialist and radio, are generally taken to be more useful for making marketing and production decision than both electronic and printed media.

Key words: Information dissemination pathways, Kampala, urban agriculture

Résumé

L'étude a cartographié et caractérisé la localisation spatiale des ménages qui pratiquent l'agriculture urbaine ; elle a évalué et documenté les besoins en information des agriculteurs, a développé la base de données géo-spatiales pour les ménages identifiés, a documenté des voies efficaces et privilégiées de la diffusion d'informations qui sont utilisés pour améliorer la productivité des agriculteurs et a identifié et documenté les sources d'information que les agriculteurs urbains estiment utiles pour prendre des décisions de production et de commercialisation. Les résultats préliminaires montrent que les caractéristiques socio-économiques des agriculteurs influent fortement sur le type et la fréquence d'utilisation d'une voie de diffusion d'information donnée et que le type d'agriculture pratiquée influe sur la préférence d'une voie donnée. Les types

des voies interpersonnelles sont réputés d'être plus efficaces que les voies utilisant les imprimés et celles de diffusion. Les services de vulgarisation coopérative, le spécialiste en marketing et la radio sont généralement considérés plus utiles pour la prise de décision de production et de marketing que les médias électroniques et les imprimés.

Mots clés: Voies de diffusion de l'information, Kampala, agriculture urbaine

Background

The global level of urban poverty, currently estimated at 30%, is predicted to grow to 50% by 2020, with nearly this entire growth taking place in the world's less developed countries (UN-HABITAT, 2004). The urban poor have resorted to urban agriculture to provide answers to problems like food insecurity, unemployment and poor livelihood. In Nairobi, for example in the early 1990s, agriculture provided the highest self-employment earnings among small-scale enterprises and the third highest earnings in all of urban Kenya (Karanja *et al.*, 2006). In Tanzania, it plays an important role in the employment sector, income generation and food supply. According to the 1998 Census urban agriculture was ranked as Dar es Salaam's second largest employer, after small scale business enterprises. Urban agriculture occupied 11 per cent of the population aged 10 or more, but 20 per cent of those employed, turning out about 100,000 tons of food crops annually (Kyessi, 2002).

In Kampala, the capital city of Uganda, 36 per cent of the households surveyed within a 5km radius of downtown engaged in some form of agriculture (Maxwell, 2001). However, the effect of the sprawling cities and increase in population has transformed the agricultural land into other land uses especially residential and commercial use. In Kampala agricultural land use has dropped from 35% to 13.5% between 1994 and 2004, and the resident population grew by 83.3%, from 774241 to 1419272 between 1991 and 2006, (KCC, 2006). This coupled with inconsistent knowledge transfer and information flow among stakeholders, low soil fertility, poor farming practices, competition for land from other land use practices, inadequate policies supporting proper urban agriculture practice in the city, has reduced production among urban farmers (IDRC, 2005).

Literature Summary

Use of geospatial databases in agriculture is just recent, but they have been used especially in developed world in regions of intense agricultural production, to map adverse health effects

from pesticide exposures (Lu *et al.*, 2000; Fenske *et al.*, 2002; Ward *et al.*, 2006). Furthermore geodatabases have been used in agriculture to monitor poultry, in order to facilitate disease surveillance and assist in managing the response to outbreaks and other emergencies. In addition, as a planning and decision support tool, GIS of the poultry industry has the potential to provide much useful information to facilitate the siting of new farms, processing plants, and manure pelleting plants where they will have minimal impact on the surrounding environment. A GIS could also assist planners in choosing locations for poultry litter application that will maximize the benefits of providing additional nutrients to cropland while minimizing the potential for nutrient runoff into the surrounding watershed. For regional resource management, such a database would enhance planning and budgeting efforts, provide important data to secure financial support for needed infrastructure improvements, and facilitate projections for future demand for inputs such as energy. In the event of a natural disaster or other emergency, a database of this type would assist in planning relief efforts (Michelle *et al.*, 2003). In addition GIS has been used in agriculture to monitor itineraries for grazing animals (Buerkert and Schlecht, 2007). Here different GPS collars were used to monitor itineraries of grazing animals and the data are entered into a database for monitoring the grazing patterns of the animals.

Study Description

The study was conducted in Kampala city, Uganda. Kampala is situated 32 degrees and 15 minutes east of Greenwich; 0 Degrees and 19 minutes north of the Equator, which is about 45 km north of the Equator. Kampala covers an area of 195 sq km. The geology is comprised of the pre-Cambrian rock systems of undifferentiated genesis and granite rocks. Soils are basically ferrallitic soils with no minerals and mainly Buganda catena, and Kabira Catena and Kaku series. The city is located on about 24 flat topped hills with average altitude of 1120 m above sea level, steeper upper slopes, merging into undulating slopes ending into broad valleys dissected by perennial streams/channels (KCC, 2006). Rainfall is well distributed throughout the year with 1,750- 2,000mm having peaks in March – May and September- November. These are marked with dry seasons in June-July and December to January. The mean annual temperature is 21.9°C. Relative humidity ranges between 53 and 89%. This study used questionnaire survey and face to face interviews to obtain data on information needs, pathways and utilization by farmers engaged in peri-urban agriculture in Kampala city. Analysis was also conducted to establish the

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relationship between social characteristics and information needs of the respondents.

It is evident from Table 1 that respondents rated their information need for proper practice of agriculture in declining order of need; Innovations and best practices was rated as the most important with a mean of 2.92 followed by location of markets for products (mean= 2.90), market demands (mean = 2.85), pests and disease management (2.81), sources of credit facilities (mean = 2.78), high yielding variety (mean = 2.69), storage (Mean = 2.67), sources of farm inputs (2.53), method of weed control (mean = 2.52), levels of competition (2.43), polluted areas (1.95), seed treatment (1.78), methods of weed control (1.72) and land preparation (1.52).

Table 1. Information needs of urban farmers (n = 199).

Variable	Mean	Standard deviation	Rank
Market demands	2.85	0.52	3
polluted areas	1.95	0.74	9
Location of markets for products	2.90	0.51	2
Sources of farm inputs	2.53	0.47	7
Sources of credit facilities	2.78	0.49	4
Levels of competition	2.43	0.69	8
High yielding varieties	2.69	0.68	5
Innovations and best practices	2.92	0.50	1
Methods of weed control	1.72	0.83	11
Pests and disease management	2.81	0.53	4
Seed treatment	1.78	0.88	10
Land preparation	1.52	0.97	12
Storage	2.67	0.6	6

Based on the relationships between the social-economic characteristics of the respondents and the degree of information need among urban farmers in Kampala, farming experience, farm income, type of agriculture and access to extension services were the only significant independent variables (Table 2). This is an indication that farming experience plays a significant role in the identification of the areas where farmers require information. In addition, farm income dictates the type of information, from whom, and frequency of obtaining information. Also, years of experience in farming is a key contributory factor that influences the farmers to seek information about solving persistent production problems. The type of agriculture practiced also influences type of information needed since for example poultry farmers may not necessarily require the same information as crop farmers.

Table 2. Relationship between information needs of farmers and their social economic characteristics.

Variable	X ²	P-value
Age	1.976	0.321
Gender	1.65	0.1120
Marital status	1.87	0.234
Farm experience	77.34	0.0000***
Access to extension services	55.56	0.03***
Level of education	1.98	0.123
Farm size	1.95	0.341
Type of agriculture practiced	65.54	0.003***
Farm income	67.89	0.000***
Nature of ownership	1.77	0.132

*** Significant at 0.05, n=199.

Table 3 shows perspectives on perceived usefulness of each information source for marketing decisions. For example, 11.0% of the farmers indicated that the Cooperative Extension Service and other farmers were the most useful sources when making marketing decisions. The two sources ranked 1st among the 18 information sources as the most useful. Radio broadcasts and marketing consultants respectively received the second and third ratings. Availability and type of information provided by these two sources however differed considerably. Radio broadcasts provided price quotes almost on an immediate basis. However, radio broadcasts gave limited analysis of market conditions. Marketing consultants were considered more readily available, gave more accurate information but were very expensive. They provided more extensive analysis of market conditions than radio broadcasts. Electronic, sources (video and websites) received the least ranking. This is mainly due to the fact that they are not popular with the locals in Kampala, are expensive and many farmers do not have the expertise to access information from the internet.

The results of this study can be used to establish a full scale geo database in the city agriculture department to improve the decision making process to guide farming and policy interventions.

Recommendation

The use of geo information in agricultural sector in general and urban agriculture in particular needs to be scaled up so as to improve and quicken up the analysis, accuracy of decision making processes. The city agricultural department needs to strengthen the information dissemination component of its department so as to improve the rate at which the new innovations are passed to the farmers for its adoption.

Table 3. Information sources declared most useful, useful and not useful at all for making marketing decisions.

Source	Most useful		Useful and not Useful at all	
	Percentage	Rank	Percentage	Rank
TV	4.15	10	6.02	8
Radio	10.68	2	3.68	17
Broadcast	14.83		9.7	
local newspaper	4.15	10	6.09	7
Government Publication	3.11	11	6.48	6
Agricultural Networks	2.70	12	6.52	5
General farm Magazine	1.97	13	6.82	3
Printed	11.93		25.91	
Salesmen	8.30	4	4.56	13
Other farmers	11.00	1	3.53	16
Veterinarian	4.88	8	5.83	9
Production specialists	24.17		13.92	
Cooperative extension services	11.00	1	3.56	15
marketing consultants	10.06	3	3.91	14
Trade fairs	4.36	9	6.02	8
Marketing specialists	25.41		13.49	
Family members	5.60	7	5.56	10
Friends and neighbors	2.70	12	6.63	4
Extension personnel	6.74	6	5.14	11
Farmer organization	7.78	5	4.71	12
Inter personal	22.82		22.04	
video	0.21	15	7.55	1
Website	0.62	14	7.44	2
Electronic	0.83		14.99	

Source data collected from the field.

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