

Agricultural Information Dissemination to Soybean Farmers in Niger State, Nigeria

Blessing Chika Funom

Samuel Osaigbovo Ogbemudia Library,
University of Abuja

Chikafu2013@gmail.com

Opeyemi Soyemi

Department of Information Resources Management
Babcock University, Ogun State

Soyemiopeyemi@gmail.com .

Abstract

This study investigated agricultural information dissemination to soybean farmers in Niger State, Nigeria. The objectives of the study were to: identify the types and the extent to which agricultural information is disseminated to soybean farmers in Niger state. It also aims to establish the relationship between dissemination of agricultural information and quality of life of farmers. Descriptive survey and multistage sampling technique was used for the study. In the first stage, purposive sampling technique was used to select three Local Government Areas under the Niger State Agricultural and Mechanization Development Authority (NAMDA). In the second stage, stratification of the three Local Government Areas into four extension blocks was carried out. In the third stage, a random selection of respondents from the four blocks in proportionate to size was done. Questionnaire was the instrument used for the collection of data. The data collected were tabulated and analyzed using frequency counts, percentages, mean and standard deviation. The findings revealed that some types of agricultural information were sufficiently disseminated while others need improvement in dissemination efforts. The study also showed that farmers commonly received information from interpersonal sources. Moreover, agricultural information dissemination was found to bear direct relationship with quality of life of soybean farmers ($\beta=.660$, $R^2=.740$, $p<.05$). The study therefore recommended that agricultural information disseminators (particularly state agencies), should disseminate more information on post-harvest activities as this may translate into high income generation and consequently, improve the quality of life of soybean farmers.

Keywords:, Agricultural Information, Agricultural Information dissemination, Quality of life, Soybean Farmers.

Introduction

In Africa, agriculture has remained the largest employer of labour and a key contributor to wealth creation and poverty alleviation. It is one of the sectors that provide a viable prospect for socio-economic development of rural areas. It can be argued that the society cannot have access to affordable and nutritious food from a well-cared and sustainable environment without improvement in agricultural practices. If the farmers are to earn a fair return for their hard work, agriculture has to be improved so as to enrich their quality of

life (QoL). Quality of life is a subjective concept which varies according to one's cultural perspective and values: age, gender, socio-economic status, education, health, religion and occupation all contribute to form individual's perspective about their life which makes people different, one from the other. It is these differences in personal experience and condition in life that shape peoples' beliefs and values about what is crucial, what is good and what is acceptable (Barcaccia, Espositob, Matarese, Bertolasoc, Elvirad & De Marinis, 2013). Gasper (2010) argues that QoL is a concept

that refers to an evaluative judgment about selected aspects or the entirety of a life situation and that it does not refer to one unitary or objective entity alone. In this regard, quality of life encompasses many things. Some of the things that people conceive could improve their QoL are: good housing conditions, higher income, emotional fulfillment in relationship, a healthy life and time to pursue more satisfying leisure; all lived within a safe, caring and supportive environment (OECD, 2011). Several indicators for assessing quality of life includes: education, employment, mental and physical health, shelter and safety, crime rate, recreation and social inclusion. Other aspects such as human rights, gender equality, food security, good governance, happiness, material and spiritual wellbeing, family life and community engagement are also tightly associated with QoL (Streimikiene, 2015).

Studies have argued that information is a basic resource which people may use to improve their quality of life (Li & Baoguo, 2011; OECD and FAO, 2016). Information does not only expand the possibilities of social, political, educational and economic development of any society; it also facilitates awareness and empowerment for its user (Soyemi, 2012; Zaid, 2011). It can be regarded as the agent that is capable of reshaping how people think of themselves with regards to their environment and how they decide to live everyday-life while interacting with the environment. In agriculture, information is needed to bring change in the way people do farming as well as in other dimensions of agricultural production. Agricultural information encompasses innovations, advice, techniques, skills, technologies and regulations on environmentally safe practices. Agricultural information dissemination is the avenue for transferring agricultural innovations and techniques to farmers through an appropriate medium in order to achieve increased level of

productivity and sustainability. Adequate supply of information to and within stakeholders in the agricultural sector is critical to the growth in capacity of the farmer to produce more and linking the surplus to remunerative market where farmers can make reasonable gains that will improve their living conditions (Funom, 2018). It is therefore crucial, for any approach to agricultural information dissemination targeted at improving the quality of life in rural communities, to come from a clear understanding of what farmers information needs are; their socio-cultural background, the communication channels and their general attitude towards new information. The benefit of such information need to be communicated to as many users as possible within farming communities, especially the rural areas where agricultural production is low and food insecurity is prevalent.

Interestingly, agricultural information is not static but needs replenishment through research and development, which is why in order to increase production, farmers need to be provided with the right type of information, at the right time, through the right channel and using the right medium.

Statement of the Problem

Quality of life for farmers is not just about their physical well-being alone but it is a construct that embraces other facets of their social, economic and cultural lives as well. Soybean farmers like any other peasant farmers want to enjoy good financial and social status, enjoy rich cultural experiences and raise a healthy family. However, these aspirations have continued to elude soybean farmers in Niger State, probably due to a variety of factors including major disease outbreaks and pest problems coupled with market fluctuations and a lack of financial capacity.

The aforementioned challenges may largely contribute to the perceived poor productivity of farmers for which inadequate supply of agricultural information may be

partly responsible. Looking at the role that agricultural information plays in ensuring agricultural productivity, the critical question raised in this study is whether agricultural information dissemination could have any influence on the quality of life of soybean farmers in the area under study. This study therefore examined the relationship between agricultural information dissemination and the quality of life farmers in Niger State, Nigeria.

Objective of the Study

The main objective of this study is to establish relationship between the dissemination of agricultural information and quality of life of soybean farmers in Niger State, Nigeria. The specific objectives are to:

1. identify the types of agricultural information disseminated to soybean farmers in Niger State, Nigeria;
2. ascertain the extent to which agricultural information is disseminated to soybean farmers in the study area
3. find information sources used for disseminating agricultural information to soybean farmers in the study area;

Research Questions

The following research questions were answered by the study. The research questions are:

1. What are the types of agricultural information disseminated to soybean farmers in Niger State, Nigeria?
2. To what extent is agricultural information disseminated to soybean farmers in the study area
3. What are the sources of agricultural information to soybean farmers in the study area?

Research hypothesis

The following hypothesis was tested at 0.5 level of significant.

H₀₁: there is no significant relationship between agricultural information

dissemination and the quality of life of soybean farmers in Niger State, Nigeria.

Review of related Literature

One of the greatest challenges facing the agricultural sector in Africa is the delivery of useful information to rural communities whose occupation is predominantly farming. For African smallholders operating in an environment that change rapidly, questions such as when to plant, what to plant, and how to plant have become immensely important. With the advent of new technology for information transfer, the ability to frame the right question and to know whom to contact has become as important as knowing the answer (Brooks, Zorya, Gautam, & Goyal, 2013). This is so because timely, relevant, and accurate information is crucial to the efforts of farmers.

Some studies have shown that there is a direct link between the increased flow of information and agricultural development (Cloete, 2010; Soyemi, 2014). Similarly, Renaldas 2012, agreed that information dissemination and accessibility is an underlying factor not just for sustainable agriculture alone but for economic and social development, as well.

Ayoade (2010) viewed agricultural information dissemination as the process of communicating ideas, skills and technology from extension workers to farmers. He noted that the high output of agricultural research has led to a large pool of new technologies which are yet to be disseminated to the farmers. However, prerequisite to information dissemination is the systematic collection, organization and storage of information that is relevant to the end user. When people come in contact with a piece of information, they are likely to analyze the relevance of that information to their conditions and experiences and are compelled to make certain decisions with regards to the new knowledge acquired (Funom, 2018). Such decision could go a

long way to influence the way farmers carry-out their farming activities.

Agricultural Information Dissemination and Quality of Life

Several studies have linked adequate agricultural information dissemination to increased agricultural production. These studies were able to show how agricultural information availability, accessibility and utilization can improve farmers' socio-economic status (Mtega, 2012; Opara, 2010; Soyemi, 2012). Others have linked information utilization to quality of life women in Nigeria (Zaid, 2011; Zaid & Popoola, 2010). However, while several studies exist on agricultural information provision to farmers in farming communities, only a very few explored agricultural information provision as a factor that could influence the quality of life of farmers.

The European Union (EU) in 2014 affirmed that agriculture is an essential part of rural peoples' economy and have much impact on their quality of life, not only in economic terms but in social and cultural terms as well. Agriculture represents the most significant activity of most rural communities and is of great importance for the way of life in rural areas.

Ayoade (2010) believed that one of the ways to achieving the role of the agricultural sector in Nigeria's economy is by improving the quality of life in rural areas through the effectiveness of information dissemination on improved agricultural practices.

For instance, in 2007, amidst a growing global concern on food security, China's agricultural output became the largest in the world by the year 2009 (CIA World Factbook, 2009). What was responsible for the Chinese success story? Zhang, Wang and Duan (2015) provided the answer –“Informatization” of the agriculture sector. Although the term “*Agricultural Informatization*” has no official definition, it is a specific term used in China to connote the degree and process of transforming the

agriculture sector through the effective use of information and communication technologies (ICTs) in agricultural production, operation, and management. Agricultural information dissemination services played critical role in implementing agricultural “informatization” in China. Through these interventions, farmers were able to improve their income base as well as their quality of life in general (Zhang, et al, 2015).

Evidently, the best way to empower rural people is through their occupations. Agriculture should be sustainable since it is the major occupation of rural dwellers. Sustainable agriculture will increase productivity and income of rural population; attract industries to rural areas and create more auxiliary jobs for the populace (Nchuchuwe, & Adejuwon, 2012). To this end, Uzezi (2014) suggested that adequate dissemination of useful information to local people on ways to boost agricultural production is very crucial to livelihood. Quality of life, particularly in rural areas can therefore be improved by quality information delivery that enables better decision-making in agricultural practices (Milovanović, 2014).

Methodology

A survey research design was adopted for this study. The population consists of 25,600 farmers in Niger State, which include all soybean farmers in the study area. The sample size of the population was 1075. A multi-stage sampling technique was used to select appropriate sample size for the study. In the first stage, purposive sampling technique was used to select three Local Government Areas under the Niger State Agricultural and Mechanization Development Authority (NAMDA). In the second stage, stratification of the three Local Government Areas into four blocks (extension blocks) was carried following NAMDA's table. In the third stage, a random selection of respondents from the four blocks was carried out in proportionate

to the sample size. A structured questionnaire titled “*Agricultural information dissemination questionnaire (AIDQ)*” was used as instrument to collect data from the respondents. The questionnaire has four sections A-D. The questions were tested for validity and reliability using the cronbach’s alpha test. The distribution and retrieval of questionnaire was carried out by the researcher with assistance from two

extension workers and some traditional lead farmers who played a key role in selecting a number of farmers for the survey. This is appropriate because it helps to achieve the set objectives of the research. The questionnaire was analyzed using descriptive analysis such as frequency count, percentage distribution, mean and standard deviation.

Results and discussion of findings

Research Question 1: What are the types of agricultural information disseminated to Soybean Farmers in Niger State?

Note: respondent rating is interpreted as follows; Strongly Agree(SA=5); Agreed(A=4); Undecided(U=3); Disagreed(D=2); Strongly Disagreed(SD=1)

Table 1: types of agricultural information disseminated to soybean farmers.

Agronomic practices	Parameters	SA F(%)	A F(%)	U F(%)	D F(%)	SD F(%)	\bar{X} (Mean)	SD
Preparation Stage	I received information on soil and weather conditions for Soybean production	535(49.8)	539(50.1)	1(0.1)	0 (0)	0(0)	4.50	.502
	I received information on how to till the soil	430(40)	430(40)	215(20)	0(0)	0(0)	4.20	.749
Planting Stage	I received information on planting depth and planting spacing	537(50)	323(30)	215(20)	0 (0)	0(0)	4.30	.781
	I received information on seed treatment before planting (how to spray with fungicides to reduce fungal attack)	430(40)	429(39.9)	108(10)	108(10)	0(0)	4.10	.945
Post Planting Stage	I received information on how to control pests and diseases	0 (0)	431(40.1)	536(49.9)	108(10)	0 (0)	4.20	.874
	I received information on fertilizer types and application	430(40)	322(30)	215(20)	108(10)	0(0)	4.00	1.001
Harvesting Stage	I received information on how to harvest soybean	215(20)	860(80)	0(0)	0(0)	0(0)	4.20	.400
	I received information on when soybean can be harvested	321(29.9)	431(40.1)	215(20)	108(10)	0(0)	3.90	.944
Post-Harvest Stage	I received information on how to clean and store soybean grains to meet standard market requirements.	430(40)	322(30)	107(10)	216(20.)	0(0)	3.90	1.138
	I received information on effective markets for							

Agricultural information dissemination to soybean farmers in Niger state, Nigeria

soybean	215(20)	536(49.9)	216(20.)	108(10)	0(0)	3.80	.873
I received information on prices of soybeans	323(30)	429(39.9)	0(0)	108(10)	215(0)	3.50	1.501

Table 1, shows that information on soil and weather conditions (Mean = 4.50; SD= .502) and information on planting depth and spacing (Mean = 4.30; SD= .781) were mostly disseminated. While information on pests and diseases control (Mean = 4.20; SD=.874) and information on how to harvest soybean (Mean=4.20; SD= .400) were adequately disseminated. However information on soybean prices (Mean=3.50; SD= 1.501), information on effective markets (Mean=3.80; SD= .873) and

Information on how to clean and store soybean grains to meet standard market requirements (Mean=3.90; SD= 1.138) were least disseminated. Notably, information at the post-harvest stage was the least disseminated, while information on the preparation stage was the most disseminated. This implies that information during the post-harvest stage of soybean farming is required by the Soybean farmers because this will translate into more income for them.

Research Question 2: to what Extent is agricultural information disseminated to soybean farmers in Niger State?

The responses to the 11 items were converted to binary options (Yes/No).

Table 2: Extent to which agricultural information is disseminated to soybean farmers

Agronomic practices	Parameters	Response	
		Yes	No
Preparation Stage	I received information on soil and weather conditions for Soybean production	860(80)	215(20)
	I received information on how to till the soil	538(50)	537(50)
Planting Stage	I received information on seed treatment before planting (how to spray with fungicides to reduce fungal attack)	752(70)	323(30)
	I received information on planting depth and planting spacing	752(70)	323(30)
Post-Planting Stage	I received information on fertilizer types and application	646(60.1)	429(39.9)
	I received information on how to control pests and diseases	430(40)	645(60)
Harvesting Stage	I received information on how to harvest soybean	753(70)	322(30)
	I received information on when soybean can be harvested	752(70)	323(30)
Post Harvesting Stage	I received information on how to clean and store soybean grains to meet standard market requirements.	752(70)	323(30)
	I received information on effective markets for soybean	646(60.1)	429(39.9)
	I received information on prices of soybeans	646(60.1)	429(39.9)
Overall Mean and SD		752(70)	323(30)

Table 2 revealed that though majority of the respondents said “Yes”, that they received adequate agricultural information, the results indicates that 60% of the farmers did not

receive information on how to control pests and diseases. This implies that for such farmers, there is likelihood that pest control was a major contending issue that affects

their soybean farming activities. Also, the results suggest that overall, not all soybean farmers totally enjoy agronomic practices when comparing the ratio of those who said “Yes” and those who said “No”. This

implies that more still need to be done for soybean farmers to fully benefit from agricultural information dissemination endeavors.

Research Question 3: what are the sources of agricultural information used by soybean farmers in the study area?

Note: respondents rating is rated as follows; Highly Utilized (HU= 5); Utilized (U= 4); Moderately Utilized (MU = 3); Rarely Utilized (RU = 2); Not Utilized (NU = 1)

Table 3: Sources for agricultural information dissemination to soybean farmers in Niger State

	HU F(%)	U F(%)	MU F(%)	RU F(%)	NU F(%)	\bar{X}	SD
Institutional or organized bodies							
Non-governmental organizations (NGOs)	645(60)	323(30)	0(0)	0(0)	107(10)	4.50	.670
Banks	538(50)	430(40)	0(0)	0 (0)	107(10)	4.20	1.165
Schools	430(40)	431(40.1)	0 (0)	0 (0)	214(19.9)	4.20	.748
Farmers’ cooperative societies	323(30)	536(49.9)	216(20.1)	0(0)	0(0)	4.10	.701
Extension agents/services (NAMDA)	430(40)	215(20)	214(19.9)	108(10)	108(10)	3.70	1.348
Agric. Institute/University	429(39.9)	108(10)	322(30)	108(10)	108(10)	3.60	1.358
Library/ Librarians	322(30)	215(20)	215(20)	108(10)	215(20)	3.30	1.487
Mean and SD						4.01	0.72
Electronic sources							
Radio	646(60.1)	215(20)	107(10)	0 (0)	107(10)	4.20	1.248
Television	538(50)	322(30)	108(10)	0 (0)	107(10)	4.10	1.220
Mobile phone	431(40.1)	214(19.9)	322(30)	108(10)	0 (0)	3.90	1.046
Film shows	215(20)	216(20.1)	430(40)	107(10)	107(10)	3.30	1.187
Billboard	431(40.1)	107(10)	215(20)	0 (0)	322(30)	3.30	1.677
Mean and SD						3.96	0.84
Print sources							
Government Circulars	323(30)	430(40)	107(10)	0 (0)	215(20)	3.80	1.078
Newspapers or magazines	322(30)	108(10)	430(40)	108(10)	107(10)	3.40	1.280
Bulletins/ Newsletters	108(10)	430(40)	429(39.9)	0 (0)	108(10)	3.40	1.022
Extension posters	322(30)	0 (0)	538(50)	0 (0)	215(20)	3.20	1.400
Extension Manuals	107(10)	216(20.1)	322(30)	322(30)	108(10)	2.90	1.136
Mean and SD						3.24	0.78
Interpersonal sources							
Customers	752(70)	107(10)	0 (0)	0 (0)	216(20.1)	4.50	.808
Village heads/Chiefs	431(40.1)	644(59.9)	0 (0)	0 (0)	0 (0)	4.40	.490
Friends	537(50)	430(40)	0 (0)	0 (0)	108(10)	4.40	.664
Family members	431(40.1)	644(59.9)	0 (0)	0 (0)	0 (0)	4.40	.490
Other farmers	646(60.1)	214(19.9)	108(10)	107(10)	0 (0)	4.30	1.005
Overall Mean and SD						4.22	0.60

Table 3 reveals that information from Interpersonal sources (mean =4.22, SD=0.60) was the most utilized, this was closely followed by institutional sources (mean = 4.01, SD=0.72) while information from print sources were the least utilized (mean = 3.24, SD=0.78). The table shows that top among the highly utilized institutional sources in terms of mean scores were Non-Governmental Organization (Mean=4.50, SD=.670); the Banks (Mean= 4.20, SD=1.165), and Schools (Mean= 4.20, SD=.748) while information gotten from the Library/librarians (Mean= 3.30, SD=1.487); Agricultural Institute (Mean= 3.60, SD=1.358) and information from extension agents (Mean= 3.70, SD=1.348) were the least utilized in this category in terms of mean scores.

Also, top among the highly utilized electronic sources were radio (Mean= 4.20, SD=1.248), television (Mean= 4.10, SD=1.220) and Mobile phones (Mean= 3.90, SD=1.046) are highly utilized sources for agricultural information. The use of mobile phone as a source for agricultural information appears to have gained more acceptance of recent, considering the long period that radio and television have existed. Film shows (Mean=3.30, SD=1.187) and

Test of Hypothesis

To test the null hypothesis H_{01} , a regression analysis was carried out

Table 4: relationship between agricultural information dissemination and quality of life

Predictor	Unstandardized Coefficients		Standardized coefficients	T	Sig
	Beta	Standard Error	Beta		
(Constant)	1.033	0.050			
Agricultural information dissemination	0.119	0.015	0.151	7.703	0.000

$R = .860, R^2 = .740, Adj R^2 = .739, F_{(1,1073)} = 3046.933$

The results in table 4 showed that the coefficient of agricultural information dissemination (0.119) is positive and statistically significant at $p < .05$. Increasing agricultural information dissemination will

bill board (Mean=3.30, SD=1.677) do not seem to be common sources among soybean farmers. The use of Mobile phone as a source for agricultural information has shown great prospect.

Meanwhile the print sources tend to have lower rating among soybean farmers in terms of mean score. Nevertheless, among the highly utilized sources under this category include government circular (Mean= 3.80, SD=1.078), newspapers and magazines (Mean=3.40, SD=1.280) and bulletins/newsletters (Mean= 3.40, SD=1.022) are the most utilized sources in this category, while Extension posters (Mean=3.20, SD=1.400) and Extension manuals (mean=2.90, SD=1.136) are the least utilized sources by soybean farmers. Table 3 shows that the interpersonal sources are highly utilized by soybean farmers in Niger State.

Therefore, it implies that the current sources used for disseminating agricultural information to soybean farmers in Niger State were effective, they only need to be repackaged by the concern agencies with a view to maximize improved soybean farming in the State.

increase (though not proportionate) the quality of life of soybean farmers. Based on the P value of the t-test (0.000) which is less than the 5% level of significance, the null hypothesis that agricultural information

dissemination has no significant relationship with the quality of life of soybean farmers in Niger State is rejected. Therefore, agricultural information dissemination bear direct significantly relationship with quality of life farmers.

Summary of Findings

1 The types of agricultural information disseminated to soybean farmers are information on soil and weather condition, planting depth and planting spacing, pest and disease control. It is expected that information may translate into income generation for soybean farmers;

2. Agricultural information disseminated to soybean farmers in Niger State was carried out to a great extent;

3 Non-governmental organization (NGO), banks and schools are the major sources of agricultural information from the institutional or organized bodies. It also revealed that radio, television and mobile phone are the major sources under the electronic sources. It further established that government circulars, newspapers or magazines were not sources preferred by soybean farmers. Interpersonal media such as customers, village heads/chiefs, friends, family members and other farmers appear to be the sources mostly utilized by soybean farmers in Niger State;

4. Adequate dissemination of agricultural information has a significant link to farmers' quality of life. Hence, extension workers should disseminate timely information from preparation stage to post-harvest stage for improved agricultural productivity in Nigeria.

Conclusion

The importance of agriculture, particularly in rural life cannot be overstressed and improving the quality of life of farmers will ultimately involve enhancing agricultural

practices. Agricultural information dissemination is a key factor not just for improving agricultural practices but for improving the quality of life of farmers as well. Despite the challenges to effective dissemination of agricultural information, information on soybean farming was adequately disseminated. The adequate supply of information on production requirements and the multi-dimensional benefits of soybean have led to extensive utilization of agricultural information among soybean farmers in the State. Consequently, this study has confirmed that effective dissemination of agricultural information on soybean production have significantly enhanced production and thereby influencing the quality of life of soybean farmers in Niger State, Nigeria.

Recommendations

The following recommendations were made:

1. Agricultural information disseminators such as Niger State Agricultural and Mechanization Development Authority (NAMDA) should disseminate more post-harvest information as this may translate into high income for the famers and by extension, improve their quality of life.
2. The Ministry of Agriculture at the State and Local Government should adopt strategies that will allow for all inclusive information dissemination at all stages of soybean farming in the State.
3. Soybean farmers in the study areas should be encouraged to source for information from other sources such as those from NGOs, corporate bodies and electronic sources and in particular, the use of mobile phone to link with information disseminators.

References

- Ayoade, A.R. (2010). Effectiveness of Information Sources on Improved Farm Practices among Cowpea Farmers in Oyo State. *Global Journal of Human Social Science*, 10(4), 39 – 45.
- Barcaccia, B., Espositob, G., Mataresec, M., Bertolasoc, M., Elvirad, M., De Marinis, M. G. (2013). Defining Quality of Life: A Wild-Goose Chase? *Europe's Journal of Psychology*, 9(1), 185–203, DOI:10.5964/ejop.v9i1.484
- Brooks, K., Zorya, S., Gautam, A., & Goyal, A., (June, 2013). Agriculture as a Sector of Opportunity for Young People in Africa. The World Bank Sustainable Development Network, Agriculture and Environmental Services Department,
- Cloete, P. C. (2010). *Economic Growth and Development through Agriculture: The Case of the North West Province of South Africa*. Ph.D. Thesis, University of the Free State, Bloemfontein, South Africa.
- European Union (2014). Rural development. Accessed online at <https://ec.europa.eu> on 28th September, 2017.
- Funom, B.C. (2018). *Agricultural Information Dissemination and Utilization as Determinants of quality of life of soybean farmers in Niger State, Nigeria*. Unpublished Ph.D Thesis. Babcock University, Ogun State.
- Gaspar, D. (2010). Understanding the diversity of conceptions of well-being and quality of life. *The Journal of Socio-Economics*, 39(3), 351-360. DOI:10.1016/j.socec.2009.11.006
- Li, Q. & Baoguo, D. (2011) Study on Agricultural Information Service System—Analysis Based on Farmer's Demand of Guangdong. *Guangdong Agricultural Sciences*, 38, 229-231.
- Mtega, W. P. (2012). Access to and Usage of Information among Rural Communities: a Case Study of Kilosa District Morogoro Region in Tanzania. *The Canadian Journal of Library and Information Practice and Research*, 7(1). Retrieved from <https://journal.lib.uoguelph.ca/index.php/perj/article/view/1646/2462#.WMspW9LysdU>
- Milovanović, S. (2014). The role and potential of information technology in agricultural improvement, *Economics of Agriculture*, 2/2014.
- Nchuchuwe, F. F. & Adejuwon, K. D. (2012). The Challenges of Agriculture and Rural Development in Africa: The Case of Nigeria. *International Journal of Academic Research in Progressive Education and Development* 1(3)
- OECD & FAO (2016). *OECD-FAO Agricultural Outlook 2016-2025*, OECD Publishing, Paris. http://dx.doi.org/10.1787/agr_outlook-2016-en.
- OECD (2011). *Quality of Life; Compendium of OECD Well-Being Indicators*, Paris
- Opara, U. N. (2010). Personal and Socio-economic determinants of agricultural Information use by farmers in the Agricultural Development Programme (ADP) Zones of Imo State. *Library Philosophy and Practice*, Retrieved from <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1453&context=libphilprac>
- Renaldas, G. (2012). National information policy, information infrastructure and libraries. A paper presented at IFLA Satellite Conference 2012, Klaipeda, *Libraries in Networks: Creating, Participating, Co-operating*. Available online at

- http://www.lbd.lt/wpcontent/uploads/2012/02/Renaldas_Gudauskas.pdf
- Soyemi, O. D. (2012). *Accessibility and Utilization of Agro Research Information as Determinants of Rural Women's Socio-economic status in North Central Nigeria*. Ph.D. thesis, Babcock University, Ilesha Remo, Ogun, Nigeria.
- Soyemi, O. D. (2014). Women Farmers Agricultural Information Need and Search Behavior in North Central Nigeria. *Information and Knowledge Management*, 4(8), 39-44. Retrieved from <http://iiste.org/Journals/index.php/IKM/article/viewFile/15105/15134>
- Streimikiene, D. (2015), Quality of Life and Housing. *International Journal of Information and Education Technology*, 5 (2).
- Uzezi, O. P. (2015). Challenges of Information Dissemination to Rural Communities: A Case of Niger-Delta Communities, Nigeria. *Journal of Emerging Trends in Computing and Information Sciences*, 6 (7).
- Zaid, Y. A. (2011). *Information Accessibility, Utilization and Socio-Economic Variables as Predictors of Quality of Life of Rural Women in Ekiti State, Nigeria*. Ph. D. thesis, University of Ibadan, Nigeria.
- Zaid, Y.A. & S. O. Popoola (2010). Quality of Life among Rural Nigerian Women: The Role of Information; *Library Philosophy and Practice, (e-journal)*. Retrieved from <http://digitalcommons.unl.edu/libphilprac/513>
- Zhang, Y., Wang, L., & Duan, Y. (2015). Agricultural information dissemination using ICTs: A review and analysis of information dissemination models in China, *Open Access, China Agricultural University*. doi:10.1016/j.inpa.2015.11.002