

Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

Number: Twenty-Second Annual Conference

Theme: Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

Date: 23rd -26th April, 2017. Venue: University of Port Harcourt, River State, Nigeria

ISSN: 1595 – 1421. <http://aesonnigeria.org/ConfProc> . Email: editorinchief@aesonnigeria.org

Utilization of Information from Farmers' Forum on Diamond FM Radio, University of Ibadan by Arable Crop farmers in Ibadan Peri-Urban, Oyo State, Nigeria.

<https://dx.doi.org/10.4314/jae.v22i1.6S>

Akinbile L.A* and Oyeboode L.A.**

*Department of Agricultural Extension and Rural Development, University of Ibadan, Ibadan, Nigeria.

**College of Agriculture, Food Science and Technology, Wesley University Ondo, Ondo State, Nigeria.

Corresponding Author: [**abiodunoyeode@gmail.com](mailto:abiodunoyeode@gmail.com), +2348067405322

Abstract

The study assessed the utilization of entrepreneurial information provided through agricultural radio programme on Diamond FM Radio, University of Ibadan for arable crop farmers in Ibadan Peri-Urban. Simple random sampling technique was used in selecting 120 respondents from a list of programme feedback/contact farmers. Most of the respondents (56.7%) were between the age range of 49-56 years, 82.5% were male, 86.7% were married, 52.5% had secondary school education, with an average household size of $\bar{x}=7.58$, years of experience $\bar{x}=24.7$, with average land area cultivated ($\bar{x}= 4.75$ hectares). Entrepreneurial information mostly accessed were on sustainable land preparation practices ($\bar{x}= 0.99$) and exploring early season of farming ($\bar{x}=0.98$). Market information was perceived as most relevant entrepreneurial information to their enterprise, with radio talk ($\bar{x}=1.99$) being the most preferred format for programme delivery. Respondents were mostly constrained by inadequate finance to purchase farm inputs ($\bar{x}=1.99$) in a bid to utilize entrepreneurial information. Entrepreneurial information utilized most were those on market information, soil conservation practices and mitigating the effects of climate change ($\bar{x}=1.99$). Significant relationship existed between membership of farmers' association ($\chi^2 = 5.091$), household size ($r=-0.186$), relevance of entrepreneurial information to enterprise ($r=0.801$), format of programme delivery preferred ($r=0.816$), constraints to utilizing entrepreneurial information ($r=0.374$) and utilization of entrepreneurial information by arable crop farmers. Radio programme is thus an effective means of disseminating entrepreneurial information and its effective utilization is thus advocated.

Key words: Arable crop farmers, entrepreneurial information, farmers' forum, programme format, radio programme.

Introduction

The improvement of entrepreneurial skills in agriculture is an important condition to generate sustainable rural development (de Wolf and Schoorlemmer, 2007). If entrepreneurship is an instrument for improving the quality of life for families and communities, and for sustaining a fit economy and environment, fostering entrepreneurial skills must be regarded as an urgently needed development component (Chandramouli *et al.*, 2007). In a bid to enable farmers have

Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

Number: Twenty-Second Annual Conference

Theme: Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

Date: 23rd -26th April, 2017. **Venue:** University of Port Harcourt, River State, Nigeria

ISSN: 1595 – 1421. <http://aesonnigeria.org/ConfProc> . **Email:** editorinchief@aesonnigeria.org

value for money after investing productive resources, there is an increased call to see their enterprise as a business, hence referring to them as “farmer-entrepreneurs” who see their farms as a business. They see their farms as a means of earning profit. They are passionate about their farm business and are willing to take calculated risks to make their farms profitable and their businesses grow.

Identifying the challenges farmers are going through in a bid to achieve this feat (make profit) leave them with no alternative than to increase their entrepreneurial skill by providing relevant information regarding pre-farming, farming and post-farming activities. Hence relying on adequate information that can equip them to perform these task should be of importance to any research endeavour.

The rural economy has been the subject of an extensive recent study but there has been little consideration of the actual patterns within the literature, i.e. a focus on entrepreneurship (Winter and Rushbrook 2003). McElwee (2004) defines farmers as those occupied on a part or full time basis employed on a range of activities, which are primarily dependent on the farm and agriculture in the practice of cultivating the soil, growing crops and raising livestock as the main source of income. Dollinger (2003) terms entrepreneurship as the creation of an innovative economic organization (or network of organizations) for the purpose of gain or growth under conditions of risk and uncertainty. This definition however assumes that all farmers are engaged in the farm business for financial gain or growth.

Agricultural research is about knowledge generation and its use hence both scientific and local knowledge can contribute towards positive progress in addressing socio-economic and environmental problems. The main problem facing the developing world today is not our lack of technologies and scientific discoveries needed for economic growth and rural development but their conversion into production accomplishment and using them as an instrument of economic growth and social change. However, this will depend to a greater extent on the speed and mode with which the technology is transferred from its source (agricultural research institutes, universities, non-governmental organization etc.) to the ultimate unit of its utilization, so that the users clearly understand, accept and apply it in their day to day practices. This thus demands a suitable and effective communication strategy (Crouch and Chamala, 2001).

Radio is one broadcast medium which almost all experts identify to be the most appropriate for rural emancipation programme. It beats distances, and thus has immediate effect. It has been identified as the only medium of mass communication the rural population is very familiar with (Kuponyi, 2000). This is because a radio set is cheap to obtain and is widely owned in the rural areas. This is made possible by the advent of the battery-operated transistorized sets. Furthermore, radio is favoured as a medium of communication in rural communities because of the advantages ascribed to it in form of (i) transcending the barriers of illiteracy, and (ii) demanding less intellectual exertion than the print media messages (Folarin, 1990).

A more distinct strategy gaining prominence for information dissemination is the use of community radio which is a type of radio service that caters for the interests of a certain area. Chapman *et al* (2003) reports that the growth of rural radio stations reflects both the improvements in information technologies and the shifting of development paradigm towards a

Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

Number: Twenty-Second Annual Conference

Theme: Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

Date: 23rd -26th April, 2017. **Venue:** University of Port Harcourt, River State, Nigeria

ISSN: 1595 – 1421. <http://aesonnigeria.org/ConfProc> . **Email:** editorinchief@aesonnigeria.org

more participatory style of information and knowledge transfer. Community radio is confined to a small geographical area. It depends on low power transmission covering not more than 20-30 km. radius. It serves a community which uses common resources for livelihood, has common development issues and concerns which are relatively localized, never the less connected to national and regional development goals. Owing to the cost of reaching farmers individually and challenges of other media, the need to harp on the potentials of this medium to enable reach (develop entrepreneurial skills) becomes imperative.

Purpose of the study

The study investigated the utilization of entrepreneurial information by arable crop farmers in Oyo state: the case of farmers' forum on diamond FM radio, University of Ibadan.

Specifically, the objectives were to:

1. examine the entrepreneurial information accessed through the programme;
2. examine perceived relevance of entrepreneurial information to their enterprise;
3. identify the preferred programme format for presenting entrepreneurial information;
4. identify the constraints to utilization of entrepreneurial information; and
5. determine the utilization of entrepreneurial information accessed through the programme.

Methodology

Ibadan is located in south-western Nigeria in the southeastern part of Oyo State. It lies completely within the tropical forest zone but close to the boundary between the forest and the derived savanna. Ibadan has a tropical wet and dry climate. The climate supports the growth of crops such as bananas, plantains, maize, cassava, soybean, cowpea and yam. Multi stage sampling procedure was used in the selection of respondents. The first stage involved the purposive sampling of Ibadan less-cities local government areas (Akinyele, Egbeda, Ido, Lagelu, OnaAra and Oluyole) been the major hubs for arable crop production taking into cognizance the reception of the radio programme. The second stage involved simple random sampling of twenty arable crop farmers per local government area from a list of programme feedback/contact farmers already compiled at the inception of the programme. Data were collected using structured interview schedule and assessed using descriptive and inferential statistics.

Variables assessed included socio-economic characteristics of respondents, entrepreneurial information accessed through the programme (this was appraised as either accessed or not accessed with response options of yes or no which attracted scores of 1 and 0), perceived relevance of entrepreneurial information accessed to their enterprise which was appraised as 'not relevant', 'relevant' and 'very relevant' with scores of 0,1 and 2 assigned respectively. Utilization of entrepreneurial information accessed was operationalized as: not utilized, partially utilized or totally utilized with scores of 0,1 and 2 assigned respectively. Programme format preferred for presenting entrepreneurial information was ascertained by presenting respondents with formats used in presenting the programme from which preference was rated as: not preferred, preferred and most preferred with scores of 0, 1 and 2 assigned. Constraints to utilization of entrepreneurial information was measured by the degree to which they rate identified constraints on the basis of severity as: not a constraint, mild constraint and severe constraint with scores of 0,1,2 assigned respectively. Frequency, percentage, mean and

Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

Number: Twenty-Second Annual Conference

Theme: Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

Date: 23rd -26th April, 2017. **Venue:** University of Port Harcourt, River State, Nigeria

ISSN: 1595 – 1421. <http://aesonnigeria.org/ConfProc> . **Email:** editorinchief@aesonnigeria.org

weighted mean were calculated and used in discussing the variables while chi square and Pearson Product Moment Correlation were used to test for relationship between the variables.

Results and Discussion

Socio-Economic Characteristics

Table 1 reveals that 56.7% of the respondents were between 49-56 years old, with mean age of 51.7 years. This portrays respondents as not been in their productive age, hence their quest for entrepreneurial information may be dampened. This view is corroborated by Bature, Sanni and Adebayo (2013) that people in their 40s have the highest aspirations and anxieties and thus have the highest tendency to seek help to achieve their aspirations. The majority (82.5%) were male, with a significant proportion (86.7%) married. Data portray notable share of the respondents as having secondary education (52.5%) while primary and secondary education had 35.0% and 9.2% respectively. This result is supported by earlier finding of Ann et al., (2013) that the majority of farmers in South-western Nigeria had one form of educational qualification or the other. It is noted that educational attainment can play an appreciable role in the accessing and utilization of entrepreneurial information. Notably, respondents cultivate an average of 3.48 hectares of land. This is made possible by the possession of various farm locations within their geographical base. They will be willing to access and maximize production resource (entrepreneurial information). This finding is not in tandem with that of Ajani and Igbokwe (2012) that the majority of farmers in Nigeria are small scale farmers that cultivate between 0.8 and 1.3 hectares of land. Respondents have a fairly large ($\bar{x}=7.58$) household size. Significant proportion (83.3%) of the respondents are members of farmers' association, this they are more likely to access and share entrepreneurial information via this platform. Respondents had a considerable ($\bar{x}=24.7$ years) wealth of experience. With this, respondents can dictate what is of utmost need to them and apply information accessed to meet that need.

Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

Number: Twenty-Second Annual Conference

Theme: Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

Date: 23rd -26th April, 2017. **Venue:** University of Port Harcourt, River State, Nigeria

ISSN: 1595 – 1421. <http://aesonnigeria.org/ConfProc> . **Email:** editorinchief@aesonnigeria.org

Table 1: Socio-economic characteristics of respondents

Variable	Percentage	Mean
Age		
25-32	1.7	51.7
33-40	5.0	
41-48	15.8	
49-56	56.7	
57-64	15.0	
65 and above	5.8	
Sex		
Male	82.5	
Female	17.5	
Marital status		
Single	1.7	
Married	86.7	
Divorce	4.2	
Widowed	7.5	
Educational attainment		
No formal education	3.3	
Primary education	35.0	
Secondary education	52.5	
Tertiary education	9.2	
Farm size cultivated (Ha)		
<1	5.8	3.48
1-2	19.2	
3-4	20.8	
5-6	32.5	
Above 6	21.7	
Household size		
3-7	58.3	7.58
8-12	35.0	
13-17	5.0	
18-22	0.8	
28-30	0.8	
Membership of farmers association		
No	16.7	
Yes	83.3	
Years of farming experience		
5-17	5.8	24.7
18-30	40.0	
31-43	35.0	
44-59	19.2	

Source: Field Survey, 2015.

Entrepreneurial Information Accessed

Table 2 depicts that sustainable land preparation practices was accessed most (\bar{x} =0.99). It is plausible to say because of scarcity of this resource owing to competing factors for it, the need to put the available land to sustainable use informed the need to assessing this component. Early season cropping (\bar{x} =0.98), cropping systems (\bar{x} =0.98), and market timing (\bar{x} =0.95) were also notable accessed. The need to take advantage of climatic predictions would have informed their access of this component of entrepreneurial information. The need to also maximize the use of this productive resource would have informed their access to information on cropping

Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

Number: Twenty-Second Annual Conference

Theme: Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

Date: 23rd -26th April, 2017. Venue: University of Port Harcourt, River State, Nigeria

ISSN: 1595 – 1421. <http://aesonnigeria.org/ConfProc> . Email: editorinchief@aesonnigeria.org

system. Also of reference is the advantage of market information which reveals the demand for arable crops and market that are open for sale of their produce across the state would have informed their access to this entrepreneurial information.

Table 2: Entrepreneurial information accessed through the programme

Entrepreneurial Information accessed	Weighted mean
Early season cropping	0.98
Weeding and use of herbicides	0.92
Sustainable land preparation practices	0.99
Market information	0.95
Value addition of harvest /quality improvement	0.94
Soil conservation practices	0.90
Mitigating the effects of climate change in production	0.93
Cropping systems	0.96
Improved variety of crops	0.89
Pre-harvest and post-harvest techniques	0.93

Source: Field Survey, 2015.

Perceived Relevance of Entrepreneurial Information Accessed

Table 3 reveals that market information ($\bar{x}=1.97$) was perceived most as relevant to the enterprise of the respondents. The goal of every entrepreneur is to make profit hence this component will enable them enhance the sale of their produce across the state. Entrepreneurial information on mitigating the effects of climate change in production ($\bar{x}=1.96$), soil conservation practices ($\bar{x}=1.95$) and cropping system ($\bar{x}=1.93$) were also perceived as relevant to their enterprise. This establishes the need to sustain production despite the negative consequences of climate change on production, hence this entrepreneurial information would have enabled them cope in the midst of its attendant consequences, as the knowledge of its effect from past experience has been established. This view corroborates Roudier, et al. (2014) who opined that farmers in Nigeria are aware of climate change, which is manifested in changes in rainfall intensity and distribution, increase in temperature and declining soil fertility.

Table 3: Perceived relevance of entrepreneurial information accessed

Entrepreneurial Information	Weighted mean
Early season cropping	1.82
Weeding and use of herbicides	1.83
Sustainable land preparation practices	1.88
Market information	1.97
Value addition of harvest/quality improvement	1.90
Soil conservation practices	1.95
Mitigating the effects of climate change in production	1.96
Cropping systems	1.93
Improved variety of crops	1.81
Pre-harvest and post-harvest techniques	1.86

Source: Field Survey, 2015.

Preferred Programme Format for Presenting Entrepreneurial Information

Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

Number: Twenty-Second Annual Conference

Theme: Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

Date: 23rd -26th April, 2017. **Venue:** University of Port Harcourt, River State, Nigeria

ISSN: 1595 – 1421. <http://aesonnigeria.org/ConfProc> . **Email:** editorinchief@aesonnigeria.org

Table 4 shows that radio talk was the format respondents preferred most ($\bar{x}=1.97$) for presenting entrepreneurial information. This suggests that this format appealed more to their senses and relayed clear information particularly owing to the fact that this format involves inviting experts to speak on the specific entrepreneurial information presented. Also preferred was interview ($\bar{x}=1.93$) and radio discussion formats, while documentary/feature ($\bar{x}=1.02$) was least preferred.

Table 4: Preferred programme format for presenting entrepreneurial information

Programme format	Weighted mean
Radio documentaries/feature	1.02
Radio interview	1.93
Radio talk	1.97
Radio discussion	1.87

Source: Field Survey, 2015.

Constraints to Utilization of Entrepreneurial information

Inadequate finance to purchase farm inputs was ranked as most severe constraint ($\bar{x}=1.99$) to utilization of entrepreneurial information. It is noted that in a bid to put information accessed to use, their inability to finance ancillary inputs associated with making practical use of information was a hindrance. Inadequate follow-up of entrepreneurial information programme and inadequate explanation by resource persons were also identified as constraints ($\bar{x}=0.98$). The need to reinforce entrepreneurial information assessed through proper explanation and follow up are considered germane to its utilization. Hence, the observed lax in these areas did impede utilization. This finding conforms to the European Commission (2004) report that barrier to farmers' entrepreneurial development was poor information dissemination. However presenting programme using unfavourable format ($\bar{x}=1.58$) and programme content have been inconsistent with needs ($\bar{x}=0.94$) ranked least by the respondents as constraints to utilization of entrepreneurial information.

Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

Number: Twenty-Second Annual Conference

Theme: Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

Date: 23rd -26th April, 2017. Venue: University of Port Harcourt, River State, Nigeria

ISSN: 1595 – 1421. <http://aesonnigeria.org/ConfProc> . Email: editorinchief@aesonnigeria.org

Table 5: Constraints to utilization of entrepreneurial information

Constraints to utilization of entrepreneurial Information	Weighted mean
Inadequate finance to purchase farm inputs	1.99
Inadequate follow-up of entrepreneurial information programme	1.98
Inadequate explanation of entrepreneurial information content by resource person	1.98
Irregular feedback opportunity	1.93
Programme content inconsistent with needs	0.94
Presenting programme using unfavourable format	1.58
Ambiguous programme content	1.71

Source: Field Survey, 2015.

Utilization of Entrepreneurial Information Accessed Through the Programme

Utilization of entrepreneurial information was recorded most for market information ($\bar{x} = 1.99$), soil conservation practices ($\bar{x} = 1.99$) and mitigating the effects of climate change ($\bar{x} = 1.99$). The attendant benefits derived from these information would have informed its utilization. It is also noted that the pressure placed on land by climate change would have informed their utilization of the latter, which will enable them mitigate the effects of this change in climate by adopting measures to conserve the soil and sustain production. Also appreciably utilized information was on value addition of harvest/quality improvement and sustainable land preparation practices with ($\bar{x} = 1.93$) and ($\bar{x} = 1.91$) respectively. However, utilization was least recorded for improved variety of crops ($\bar{x} = 0.95$) and cropping systems ($\bar{x} = 0.98$).

Table 6: Utilization of entrepreneurial information accessed through the programme

Entrepreneurial Information	Weighted mean
Early season cropping	1.98
Weeding and use of herbicides	1.83
Sustainable land preparation practices	1.91
Market information	1.99
Value addition of harvest/quality improvement	1.93
Soil conservation practices	1.99
Mitigating the effects of climate change in production	1.99
Cropping systems	0.98
Improved variety of crops	0.95
Pre-harvest and post-harvest techniques	1.02

Source: Field Survey, 2015.

Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

Number: Twenty-Second Annual Conference

Theme: Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

Date: 23rd -26th April, 2017. Venue: University of Port Harcourt, River State, Nigeria

ISSN: 1595 – 1421. <http://aesonnigeria.org/ConfProc> . Email: editorinchief@aesonnigeria.org

Relationship Between Socio-Economic Characteristics, Relevance, Preferred Format, Constraints and Utilization of Entrepreneurial Information

Significant relationship ($\chi^2 = 5.091$, $p=0.024$) existed between membership of farmers' association and utilization of entrepreneurial information. This suggests that confirmation and reinforcement of the entrepreneurial information accessed would have been made through this platform hence supporting its utilization. Significant but negative ($r=-0.186$) relationship was established between household size and utilization of entrepreneurial information. This may be informed by the competing demand from the households for resources (finance, time etc.) at the disposal of the respondents. Also Table 7 shows a significant relationship ($r=0.801$) between relevance of entrepreneurial information accessed to their enterprise and utilization of entrepreneurial information, depicting that that the relevance of information assessed translated to its use. This suffices to say that because of the importance of the entrepreneurial information to boost their enterprise, it influenced their utilization of it. Relationship ($r=0.816$) was established between preferred programme format for presenting entrepreneurial information and utilization of entrepreneurial information. This indicates that the methods used availed the respondents the opportunity to understand the information accessed in clear terms which translated to its utilization. Astonishingly significant relationship ($r=0.374$) was established between constraints to utilization of entrepreneurial information and utilization of entrepreneurial information. This implies that the constraints faced in a bid to utilize entrepreneurial information were not enough to deter its utilization. This is attributed to the attendant benefits derived from the entrepreneurial information accessed.

Table 7: Relationship between respondents' socio-economic characteristics, relevance, preferred format for presentation, constraints and utilization of entrepreneurial information

Variable	χ^2	r-value
Membership of farmers association	5.091	
Household size		-0.186*
Relevance of entrepreneurial information to enterprise		0.801*
Preferred format for presenting entrepreneurial information		0.816*
Constraints to utilization of entrepreneurial information		0.374*

* $P \leq 0.05$. Source: Field Survey, 2015.

Conclusion and Recommendation

Information utilized and relevant from the radio station were sustainable land preparation practices and market information. Talk on radio was adjudged as the most preferred format for presenting entrepreneurial information. Inadequate finance to purchase farm inputs ranked highest among constraints to the utilization of entrepreneurial information. Market information,

Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

Number: Twenty-Second Annual Conference

Theme: Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

Date: 23rd -26th April, 2017. **Venue:** University of Port Harcourt, River State, Nigeria

ISSN: 1595 – 1421. <http://aesonnigeria.org/ConfProc> . **Email:** editorinchief@aesonnigeria.org

soil conservation practices and mitigating the effects of climate change were utilized most by the respondents. Significant relationship was established between membership of farmers' association, household size, relevance of entrepreneurial information to their enterprise, preferred format for presenting entrepreneurial information, constraints to utilization of entrepreneurial information and utilization of entrepreneurial information. In view of the foregoing, it is recommended that entrepreneurial information on market information be made a regular feature in agricultural radio programmes, with priority given to appropriate explanation and review of entrepreneurial information presented, while the use of talk on radio be sustained as format for relaying entrepreneurial information on radio.

References

- Ajani, E. N. and Igokwe, E. M. (2012). Promoting entrepreneurship and diversification as a strategy adaptation among rural women in Anambra State, Nigeria. *Journal of Agricultural Extension*, 16(2): 71 – 78.
- Ann, O., Ndubisi, E.L., and Wilfred, U..(2013); Risk management and challenges of climate change in Nigeria. *Journal of Human Ecology*, 41(3) : 221-235.
- Asenso-Okyere, K. and Davis, K. (2009). Knowledge and innovation for agricultural development. International Food Policy Research Institute (IFPRI), Policy Brief 11 www.ifpri.org/bp/bp0011.asp. Accessed 9 February 2016.
- Bature, W.M, Sanni, A.A and Adebayo F.O. (2013). Analysis of impact of national fadama development project on Beneficiaries' income and wealth in FCT, Nigeria. *Journal of Economics and Sustainable Development*, 4 (17),: 11-24
- Chapman R., Blench R., Kranjac-Berisavljevic' G. and Zakariah A.B.T. (2003). "Rural Radio in Agricultural Extension: the Example of Vernacular Radio Programmes on Soil and Water Conservation in Northern Ghana"; Agricultural Research & Extension Network; Network Paper No. 127 January 2003. ISBN 0 85003 640 2.
- Chandramouli, P., KS Meti., LV Hirevenkangoudar and SN Hanchinal (2007). Comparative analysis of entrepreneurial behaviour of farmers in irrigated and dry land areas of Raichur District of Karnataka. *Karnataka Journal of Agricultural Science*, 20, (2), 320–322,
- De Wolf, P., and H. Schoorlemmer(2007). *Exploring the Significance of Entrepreneurship in Agriculture*, Research Institute of Organic Agriculture FiBL, ISBN 9783037360088, Ackerstrasse, Switzerland
- Dollinger, M. J. (2003), '*Entrepreneurship – strategies and resources*'. Pearson International Edition, New Jersey.
- European Commission (2004). Com Green Paper Entrepreneurship in Europe. www.esofarmers.org.

Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

Number: Twenty-Second Annual Conference

Theme: Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

Date: 23rd -26th April, 2017. **Venue:** University of Port Harcourt, River State, Nigeria

ISSN: 1595 – 1421. <http://aesonnigeria.org/ConfProc> . **Email:** editorinchief@aesonnigeria.org

Folarin B (1990). Broadcasting for Rural Development. In: L. Oso and L. Adebayo (eds) Communication and Rural Development in Nigeria. Abeokuta: Millennium Investments Ltd. ISBN 978-39006-0-7. 74 – 90.

Kuponiyi FA (2000). Mass media in agricultural development: The use of radio by farmers of Akinyele Local Government Area of Oyo State, Nigeria. Nig. Agric. Devpt Studies.1 (1), .26 – 32.

McElwee, G. (2004), '*A segmentation framework for the farm sector*'.3rd Rural Entrepreneurship Conference University of Paisley.

Roudier, P., Muller, B., d'Aquino, P., Roncoli, C., Soumaré, M. A., Batté, L. & Sultan, B. (2014). The role of climate forecasts in smallholder agriculture: Lessons from participatory research in two communities in Senegal. I, 2, 42-55.

Winter, M., and Rushbrook, L. (2003), '*Final report to DEFRA: Literature Review of the English Rural economy*'. Centre for Rural Research University of Exeter