PAT December, 2019; 15 (2):80-90 ISSN: 0794-5213
Online copy available at www.patnsukjournal.net/currentissue
Publication of Nasarawa State University, Keffi

Socio-Cultural Practices Associated With Small Scale Yam Production in Kogi State, Nigeria

[1]SIMPA, Ondeku James and [2]NMADU, N. Job
[1]*Department. of Agricultural Bio-Environmental Technology, The Federal Polytechnic, Nasarawa, Nigeria (jamessimpa2014@gmail.com)*
[2]*Department of Agricultural Economics and Extension Technology, Federal University of Technology, Minna, Nigeria (job_nmadu@yahoo.co.uk)*

Abstract
The study examined the socio-cultural parameters associated with yam production in Kogi State. A multi-stage random sampling technique was used. Structured questionnaire and interview schedules were used to elicit the data from 180 yam farmers randomly selected from six villages in three Local Government Areas of Kogi State. Descriptive statistics was used to analyze the data collected. The study concluded that socio-cultural parameters influence yam production. It is recommended that the farmers be encouraged to adopting modern technology of yam production as these socio-cultural parameters are shrouded in some form of secrecy and most of them are not tangible, and have potential to delay timely operations and difficult to manipulate to improve yam production.
Keywords: Socio-cultural practices, Yam production, Timely operation, Yam farmers

Introduction

Millions of people in West Africa and in particular, Nigeria, eat yam (Babaleye, 2005). Yam is a rural food security item due to its seasonal availability and storability in all its producing regions (Ile *et al.,* 2006; Zannou, 2009). In places where yams are produced in Nigeria, yam is food and food is yam (Babaleye, 2003). No other crop is highly celebrated like yam in yam producing areas of West Africa. In fact in yam producing communities; yam is farm and farm is yam. If one does not have yam farm, he is said to be lazy and; considered not be a serious minded farmer. Yam is a measure of wealth and prestige in yam farming communities. For this reason, an aspiring farmer aims at producing in larger quantity as much as he could to gain recognition. Accordingly, the size of yam enterprise of a farmer shows his social status in many communities in Nigeria and other West African nations (Salami, 2011). The groom's wealth is measured by the number of big yams he can produce (Migap and Audu, 2012). Additionally, it is a source of income and foreign exchange to its producing nations. Equally important is the fact that, Nigeria has a comparative advantage in yam production and it produces about 71% of the world output; thereby making it a leading nation in its production (Babaleye, 2005). However, productivity of yam in Nigeria is on decline and this needs to be redeemed (Zannou, 2009). Again, increase in yam output by small-scale farmers depends on expansion of cultivated crop area and not increase in productivity (Adeniyi, 2012). This also contributes to the declining yam production, because expansion in cultivated area is being limited by dwindling farm population and lack of mechanization of yam farm operations. Furthermore, the present corps of farmers is aging and farming population is dwindling due to decline in new entrants (Udoh and Etim, 2008). This is a consequence of farmers' children being enrolled in schools, the resultant effect of practice of Planned Parenthood by couples (Udoh and Etim, 2008; Ehimony, 2011) and lack of youth motivation.

In addition, yam production inputs are limited in supply and are competitively demanded and this is aggravated farm resource poverty of the farmers (Awoyemi, 1981; Asogwa *et al.,* 2006). This implies that farmers are poorly endowed with factors of production; therefore, yam production inputs need to be efficiently utilized for maximum returns and poverty reduction. For example, Ephariam *et al.* (2010), confirmed that increase in yam production in the central and humid forest parts of Nigeria have the potential of reducing poverty by 6%. Similarly, increase in production of yam would result in reduction in food importation that is draining the scarce foreign exchange of the nation and as well guarantee food security for the nation. In the light of these, all the factors including socio-cultural variables that influence yam production needed to be identified for maximum output were analyzed in the study.

A lot of rituals are observed in cultivation and consumption of yam (Justin, 2010; Salami, 2011). Therefore, in order to improve yam output in Nigeria, there is need to examine the observed socio-cultural practices in yam production as agriculture itself is a cultural phenomenon and comprises the largest collection of socio-cultural practices worldwide (Masalu *et al.,* 2010). These practices are farm-specific factors that affect yam production. For instance, a variety of beliefs, taboos, ceremonies and superstitions surround the planting, harvesting and consumption of yam in West Africa (Orkwor *et al.,* 1998). Henceforth, if Nigeria wants to achieve increased yam production and self-sufficiency in food, the importance of description of socio-cultural practices in yam production cannot be overstated.

In spite of the influence of socio-cultural practice on yam production, it has received little attention in economies. It is of recent, economists begun to study the possible effects of specific customs, taboos and superstitions on agricultural productivity. As a matter of fact, some of these customs have either positive or negative effects on increasing agricultural production (Stifel *et al.,* 2009). In like manner, a number of scholars have studied how cultural beliefs either help in improving or retarding agricultural production, for example; Ruud (1960), Orkwor *et al.,* (1998), Anyanwu *et al.*, (2003), Masalu *et al.* (2010), Colding and Carl (2010), Simpa (2011) and Simpa (2014). From the findings of the above studies; socio-cultural practices have a lot of implications on agricultural productivity as well as well-being of the farmers. In that case, socio-cultural practices might be important factors in yam production as yam is surrounded with observance of socio-cultural practices. In general, yam is socio-culturally and economically important to millions of families in Nigeria, therefore; whatever affects its production should be examined more critically. Based on these background; the objectives of the study are to describe the socio-economic characteristics of the yam farmers in the study area and examine the socio-cultural practices in yam production.

Theoretical Framework of Socio-Cultural Practices of Yam Production

Socio-cultural practices are present virtually in all societies; past and present (Encyclopadia Britannica, 2010). As an illustration, root and tuber communities in West Africa still maintain yam culture they inherited (Jochen, 1993). Cultural practices such as taboos, beliefs, rituals and superstitions of local communities indirectly protect, promote, improve or hinder agricultural production. For instance some lands (evils forests) which might be fertile are not used for yam production or farmed at all due to a negative cultural belief. In the same way, production methods, feeding methods and habits and the types of crops grown are influenced by culture (Ehimony, 2011). In other words, indigenous knowledge and customs enable producers to choose production methods that might minimize cost and help in poverty alleviation of the community (Masalu *et al.,* 2010). Comparatively, there are many ‘dos’ and ‘don’ts’ (taboos and customs) as par yam cultivation in all rural African societies until today. For example; it is a serious offence to dig up

planted seed yam, a heinous crime for females to plant cassava on soils ear-marked for yam production, women in their monthly periods is prohibited from entering yam farm and barn, special knives are set aside for cutting yam sett and it is a taboo to cook yam and cassava in the same pot at the same time in traditional Igbo communities (Chukwu and Ikwelle, 2000; Simpa, 2011).
Again, in some communities, a staple crop such as yam is provided a goddess status. Such crop is traditionally treated as the goddess of other crops. The entire acts of farming from seed selection, to sowing, to reaping the harvest are centered on treating the goddess crop as a living being (Jhamtani, 2007). Just before harvest, some yam farmers conduct ceremony. This is a ritual where farmers offered part of their harvest and various kinds of food to the goddess and asked her to bless their harvest. Such rituals are being gradually abandoned with the introduction of religion and Western education, but still exist in West Africa, albeit in a reduced form (Jhamtani, 2007).
On the contrary, these rituals may be seen as a waste of time and effort from scientific and technological point of view, but in sustainable agriculture, it not so. Sustainability is the modern agricultural focus. Sustainable agriculture is all about providing nutritious food, medicine and fibre without taking cultural identities and power away from communities which may be detrimental to the environment (Jhamtani, 2007; Simpa, 2014, Nmadu and Simpa, 2014). In sustainable agriculture ritual observances is seen as a communion with nature, cultural identification, as well as part of the development of knowledge about local agro-ecological systems. In fact, observance of socio-cultural practices has effect on crop production practices and productivity. Therefore, the study identified some socio-cultural practices observed in yam production in study area in particular and Nigeria in general.

Methodology

The study was conducted in Kogi state which is located in the Guinea forest-savanna ecological zone of Nigeria within latitude 6°30′N and 8°30'N and longitude 5°51′E and 8°00'E. There are three major tribes in the state; namely Okun, Ebira and Igala. The population of the state is 3,314,043 (NPC, 2006). The state has a total land area of about 30,354.74 square kilometers (KO-SEEDS, 2004). Kogi State has an annual rainfall range of 1016mm and 1524mm. Kogi State is largely rural with a good majority of her population (about 90%) residing in rural areas; with over 80% of the total populace engaging in traditional agricultural practices (KAIP, 2012).
The study used a multi- stage random sampling technique for selection of representative farmers. The State is made up of three main cultural groups. These are Okun in the West, Ebira in the Central and Igala in the East. Kogi State was divided into three blocs based on these cultural affiliations for the purpose of the study. The other minor tribes in the State were grouped with the major ones that they have similar culture with. These zones are Western bloc made up of Okuuns (bloc A), Central block made up of Ebiras (bloc B) and Eastern bloc made up of Igalas (bloc C). Cross-sectional primary data for 2011/2012 cropping season was collected from the respondents with the aid of structured questionnaires and oral interviews. Other details of the study area and the data sampling method can be found in Nmadu and Simpa (2014) and Simpa (2014). A5-point Likert scale was used to elicit data on observed socio-cultural practices of yam production.
Descriptive statistic such as percentage, a 5-point Likert Scale, weighted average and critical mean were used. The scores were weighed and the weighted average calculated. The critical mean of 3.0 was used to describe the strength of belief in the socio-cultural practice and how widely it is practiced in yam production in the study area. The decision rule was that: the socio-cultural practice that scored equal to or more than critical means of 3.0 was accepted as strongly believed

and practiced by many farmers in yam production and otherwise, not strongly believed but practiced by few farmers.

Results and Discussion

Socio-economic Characteristics of Yam Farmers in the Study Area

The socio-economic characteristics are presented on Table 1. It revealed that the majority of the farmers (42.2%) are in their active years (31-50) and this is good for yam production, because it involves energy sapping tasks such as clearing and ridging. The data indicated that 16.1% of the farmers are 60 years of age and above. The relatively old farmers could account for the reason why some of the respondents may believe strongly in socio-cultural practices. Akubuilo (1987) confirmed that age and ability to bear risk and adopt agricultural innovations are positively correlated. Majority of the respondents were males (83.3%) and female was 16.7%. The reasons for this wide gap between males and females could be because yam farming is labour intensive and yam is generally regarded as male crop (Chukwu and Ikwelle, 2000). This finding is in agreement with Simonyan and Obiakor (2012); Musa *et al.* (2011); Ekunwe and Orewa (2007) who had 77.5%, 83.3% and 98.6% male yam farmers respectively in their study area. About 70.6% of yam farmers were married. This result is in agreement with Musa *et al*. (2011) and Simonyan and Obiakor (2012) with 84% and 87% for married yam farmers in their study areas respectively. The farmers' wives or husband and their adult offspring could constitute family labour supply by the household and thus reduce cost of hired labour if the household members are available to supply labour. About 61.1% of the respondents had 6-10 members. This report is in agreement with Ohajianya (2011). Large size of household could be an advantage to the household head where the members are source of labour supply to yam farm; otherwise, it affects the farmer's income negatively. Majority (47.8%) of the respondents had no formal education. This result supports Ojo *et al.,* (2009) who reported low level of education, but contrary to Musa *et al.* (2011) whose report was 72% of educated yam farmers. This could account for adamant attitude of the farmers to adopting modern agricultural innovations and still be attached to cultural practices in this 21st century. About 89.4% of the farmers have more than 10 years of farming experience. This result conforms to Olorunsanya *et al.,* (2009) who had 75% for farmers with more than ten years of farming experience. These many years of experience could help the yam farmers in maximizing profit, minimizing costs and achieving greater efficiency as par farm operations. It also has consequence on sticking to socio-cultural practices of yam production by the farmer (Olayide, 1981).

In addition, the religious inclination of the respondents shows that African tradition scored 44.4%. Majority of the respondents practiced African tradition and this could encourage belief in socio-cultural practices of yam production. This confirms assertion by Oyeleke (2010) that religion may be necessary to correct some taboos that are against economies of agricultural resources. About 80% of the respondents were not members of any farmers' association and this is in line with Simonyan (2011). Therefore, the farmers might lack access to good quality inputs, less expensive labour, information, access to credit, learning new innovations and organized marketing. Majority (91.7%) of the respondents had 0-1 extension contacts. This result is justified by Simpa (2011) who confirmed that 80% of their respondents were not aware of extension services. Extension service provides knowledge, orientation and it has strong influence on farmers' productivity (Nwaru *et al.,* 2011). Lack of access to extension contacts could encourage attachment of the farmers to socio-cultural practices as they might not be aware or have access to new technologies. Sixty-five percent (65.0%) of the respondents sourced funds to finance their farm operations

through personal savings. This result is justified by Fasasi (2006) who obtained 97.4% for informal sources of fund. Funds from personal savings, relatives and friends are limited and this could negatively affect farmers' effectiveness and scope of operations and invariably results in low productivity and output. Access to more credit could help in acquisition of more land, inputs and adoption of innovations. About 75% of the respondents had farm sizes of between 0.1 - 1.0 hectares. This finding is in agreement with Holden *et al.,* (2009) who had 70% for farm size of 0.1 to 1 hectare. Some farmers made loss and had negative gross margin (–₦5000). This finding is supported by Kleih *et al.,* (2012) who confirmed that some yam farmers had negative gross margin as a result of very high variable costs. The mean of the gross margin was ₦399, 005.

Table 1: Distribution of the Respondents Socio-economic Characteristics

Variable	Frequency	Percentage	Variable	Frequency	Percentage
Age			**Educational Level**		
21 – 30	21	11.6	No formal education	86	47.8
31 – 40	20	11.1	Primary	40	22.2
41 – 50	56	31.1	Secondary	34	18.9
51 – 60	54	30.1	Tertiary	6	3.3
Above 60	29	16.1	Others	14	7.8
Total	180	100	**Total**	180	100
Mean		49.41	**Mean**		9.69
Extension Contacts			**Religion**		
0 – 1	165	91.7	African tradition	80	44.4
2 – 3	10	5.5	Christianity	50	27.7
3 – 4	4	2.2	Islam	40	22.2
4 – 5	1	0.6	Others	10	5.7
Total	180	100	**Total**	100	100
Household size			**Main Source of Farm Finance**		
1 – 5	32	17.8	Personal savings	117	65.0
6 – 10	110	61.1	Relatives	18	10.1
11 – 15	33	18.3	Friends	13	7.3
16 – 20	5	2.8	Cooperative	22	12.2
Total	180	100	Commercial banks	10	5.6
Mean		8.2	**Total**	180	100
Gender			**Association Membership**		
Male	150	83.3	Member of association	36	20
Female	30	16.7	Not a member	144	80
Total	180	100	**Total**	180	100
Farm Size (hectares)			**Gross Margin (NGN)**		
0.1 – 1.0	135	76	-5000 – 200,000	55	30.6
1.1 – 2.0	38	20.1	200,00– 400,000	71	39.5
2.1 –3.0	6	3.3	400,00– 600,000	29	16.1
3.1 – 3.5	1	0.6	≥600,000	30	13.8
Total	180	100	**Total**	180	100
Mean		0.78	**Mean**		399,005
Farming Experience			**Marital Status**		
1 – 10	19	10.6	Single	20	11.1
11 – 20	36	20	Married	127	70.6
21 – 30	58	32.2	Others	33	18.3
31 – 40	39	21.7	**Total**	180	100
41 – 50	21	11.7			
Above 50	7	3.9			
Total	180	100			
Mean		13.52			

Source: Nmadu and Simpa (2014)

Description of Socio-cultural Practices of Yam Production

Table 2 shows the socio-cultural practices involved in yam production in the study area. Belief in aspiration of becoming master of yam producers, forbidden to purchase seed yam for planting, transfer of yam productivity either from or by neighbour, credit not to be taken for yam production, oracle consultation before planting of yam begins and presentation of some quantity of yam as marriage rite with weighted average of 4.46, 3.21, 3.03, 3.1, 3.41 and 3.49 respectively were strongly believed socio-cultural practices and practiced by many respondents. While other socio-cultural practices such as evil lands that should not be used to produce yam, work on yam plots should be undertaken in certain days of the year, yam festival should be celebrated before harvest commences, acceptance of in-laws working in yam farm as marriage rite, use of some harvested yam to pay for rent on land and sprinkling of domestic waste water on yam seed before planting with weighted means of less than 3.0 were not strong cultural beliefs but practiced by fewer respondents. Evil lands belief which could be due to the locations of individual farmlands is justified by the findings of Justin (2010) and Komolafe (1983) that some lands are tagged evil and believed to belong to gods and therefore, not farmed.

Table 2. Cultural Practices in yam production in the study

Socio-Cultural practices	Total respondent	Weighted score	Weighted means (X)	Remarks
Believe that some lands are evil and should not be use to produce yam	180	263	1.46	*
Aspiration of becoming master of yam producer encourage you to expand yam	180	802	4.46	**
Belief that it is forbidden to purchase seed yam for planting	180	578	3.21	**
Belief in the magical transfer of yam productivity either from or by your neighbor	180	546	3.03	**
Belief that work on yam plots should be taken in certain days of the year	180	448	2.2	*
Belief that credit should not be taken for yam production	180	558	3.1	**
Belief that oracle should be consulted before planting of yam begins	180	613	3.41	**
Belief that yam festival should be celebrated before harvest commences	180	398	2.21	*
Acceptance of in-laws working in yam farm as marriage rite	180	499	2.77	*
Presentation of some quantity of yam as marriage rite item	180	628	3.49	**
Use of some harvested yam to pay for rent on land	180	454	2,52	*
Belief on the sprinkling of domestic waste water on yam seed before planting	180	228	1.27	*
Total (X)			33.13	
Critical mean			3.0	≥3.0 = ** <3.0 = *

Source: Field Survey (2012)

Critical mean =3.0, ** Strong cultural belief and practiced by many respondents

* Not strong cultural belief but practiced by fewer respondents

The finding shows that works should not be undertaken in certain days of the year in yam farm is supported by Stifel (2009). Nweke (1991) confirmed presentation of yam as marriage rite. The use of some harvested yam tubers to pay rent with weighted mean of less than 3.0 could be due to acquisition of farmlands by inheritance which was common in the study area and the respondents did not pay rent. This result is justified by Olayide (1981) who found out that rent on land does not constitute a serious disincentive for land use.

Sprinkling of domestic waste water on seed yam before planting also scored weighted mean of less than 3.0. This result could mean that many farmers were not buying their yam seeds from market, but from neighbouring farmers, because only yam seeds bought from markets are sprinkled with ordinary water or water mixed with cow dung to dispel noise in the market that might have affected the seed yam. In support of these socio-cultural practices, Olayide (1981) stated that illiterate farmers stick to cultural practices and unreceptive to new ideas and frown at those who abuse their culture and customs. Babalola (2002) confirmed that access to agricultural resources is influenced by socio-cultural factors surrounding ownership and utilization.

Distribution of the socio-cultural beliefs based on ethnic groupings

The distribution shown on Fig. 1 indicates the level of belief in a particular socio-cultural practice among the various ethnic groups in the state. The strength and popularity of each of the socio-cultural beliefs among the socio-cultural groups vary. Some cultural beliefs are more practiced among a particular socio-cultural group than the other as shown in the chart.

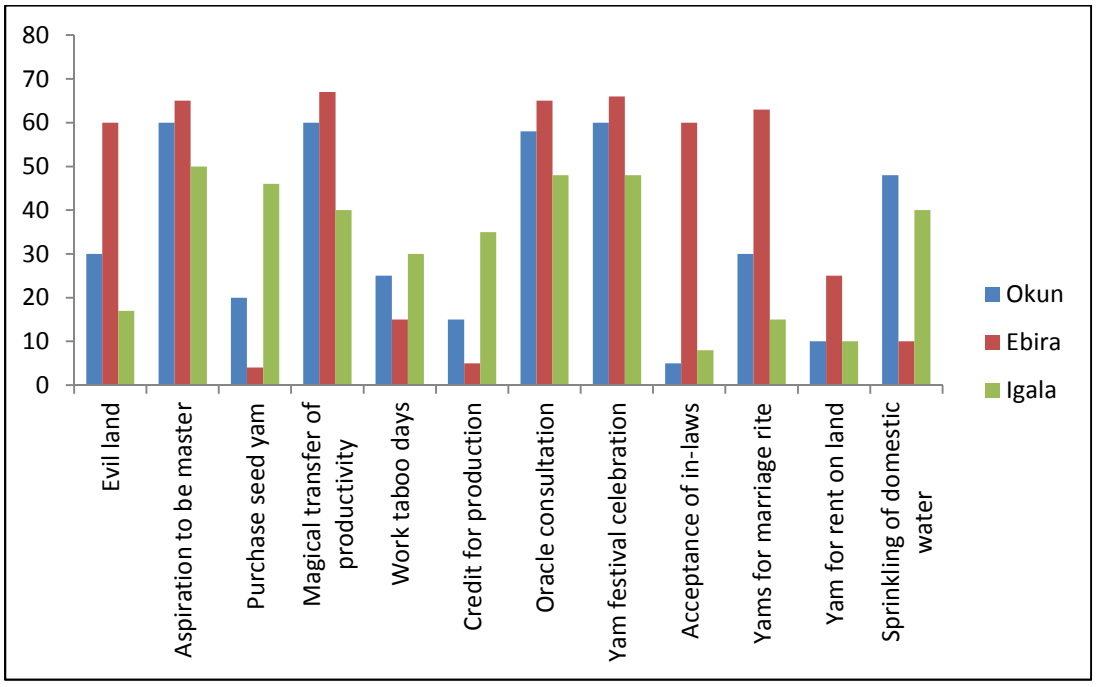

Figure 1: Frequency distribution of Socio-cultural Practices of yam farmers in Kogi State according to cultural affiliations

For example belief that some lands are evil land and they belong to evil spirits and such they should not be farmed even though they are fertile, aspiration to be master of yam farmers in the community and gain respect from community members and become title holder, magical transfer of yam productivity either to or from neighbors' yam farm and thereby becoming rich and making his/her neighbor poor and famish, oracle consultation before planting begins to ward off evils that may attack yam farms, and yam festival celebration before commencement of harvest to honour the deity and goddess of yam and plea for their blessings for the family, are mostly believed and practiced in Ebiraland. Acceptance of in-laws to work on yam farms as a marriage rite and such free labour would help in expansion yam farms sizes and in increase gross margin from yam production which other crops do not enjoy, production of bigger yams for marriage rites as yam is the only crop that are presented at marriage and chieftaincy ceremonies and as such bigger yams are needed for these celebrations and use of yam as rent on land and this calls for production of bigger and more yam in order to get enough yam for rent in addition to consumption and sales; are more practiced among the Ebira ethnic group. Igala ethnic group believed most in the practice of not purchasing seed yam for planting as they believe that purchased seed yam carry along with them the ill-luck of the producers and they do not want to import evil destiny, observance of work days taboos (believe that that some days are evil and work should not be done in such days and not to offend certain spirits) and belief in taking credit for yam production as against the belief of not taking credit for yam in order not offend yam deity that may result in poor harvest. While the okuns lead in the practice of sprinkling of domestic waste water on seed yams bought from markets to dispel the evil forces that might followed them from the markets before planting them.

Conclusion and Recommendations

Yam production is dominated by active married men who practice Africa tradition with small farm sizes, poor education and many years of farming experience. There were many socio-cultural practices observed in yam production among the various cultural affiliations in the study area. Some of the socio-cultural practices are intangible, difficult to manipulate, with great potential to distort timely farm operations and shrouded in some forms of secrecy. These could affect productivity and income negatively of which the farmers might not put into consideration.

Based on these findings the study recommended that:

i. These socio-cultural practices should not be condemned out rightly because they are very important to farmers in yam production; and more so the farmers are very much attached to them as the practices are handed over to them by their fore fathers of whom they would not easily do away with no matter the persuasions.
ii. The policy makers should still encourage the farmers to adopt modern technology of yam production along with these practices.
iii. Extension education has a great role to play in encouraging farmers to adopt modern technology of yam production; therefore; seminars, talks, trainings and demonstrations should be organized for farmers' groups and cooperatives where they would be tactically be made to see the inherent disadvantages in some of these practices and gradually encouraged to do away with some of these unprofitable practices. This would consequently improve the welfare and standard of living of the small-scale yam farmers. Poverty would thus be reduced among the farmers and food security guaranteed for the nation.

References

Adeniyi, S (2012). What you must know about yam, Nigerian Tribune, Lagos, African Newspapers of Nigeria Plc.

Akubuilo, C J.C. (1987). Personnel factors and adoption of innovations among farmers in Anambra State: A basis for education of farmers, *Journal of research in Learning and teaching*, 1 (1): 11-15.

Anyanwu, A .C, Anyanwu, B. and Anyanwu, V.A. (2003). *A text book on Agricultural Science West Africa Schools and Collegs*, (6th ed.), Onitsha, Nigeria, African first publishers Ltd.

Asogwa ,B.C, Umeh, J.C and Ater, P.I (2006). Technical efficiency Analysis of Nigerian cassava farmers.Aguide to food security policy. Poster paper prepared for presentation at the International Associations of Agricultural Economists conference, Gold Coast, Austraila, August 21-24, 2006.

Awoyemi, C (1981). Characters of Nigeria, News from the Central Bank of Nigeria, Lagos, Central Bank, of Nigeria 3 (4).

Babaleye, T (2003). West Africa: improving yam production technology, ANB-BIA supplement issues, (ed. 463).

Babaleye, .T (2005): West Africa, Improving yam production technology, NAB-B/A supplement issue/edition 483.

Babalola, O. (2002). Nigerian Agriculture; Basis for Hope, Hurdles against Hope and Hope for Tomorrow.University Lecture, University of Ibadan, Ibadan University Press.

Encyclopedia Britanica (2010). Y*am, Encyclopedia Britanica students home edition*, Chicago, Encyclopedia Britanica.

Chukwu, G.O. and Ikwelle, M.C (2000). Yam: Threats to its sustainability in Nigeria, palawija news, The CGPRT centre, Newsletter. Retrieved on August 10, 2012 from http://www.cgprt.org.sg.

Colding, J and Carl, F. (2010). Social taboos: Invisible system of local resource management and biological conservation, ecological application, 11 (2), 584-600.

Ehimony, H.B.G. (2011). Historical development of food culture: special emphasis on cassava, *Kogi journal of general studies (A multi-disciplinary journal), Sschool General Studies*, Kogi State polytechnic, Lokoja, 4 (1), 121-126.

Ekunwe, P. A and Orewa, S.I. (2007).Technical efficiency and productivity of yam in Kogi State, *Journal of applied sciences,* 7, 1818-1820. Retrieved on March 15, 2011 from http://social.net/abstract/?doi=jas.2007

Epariam, N, J., Pender, E., Kato, O., Oni, P.D. and Ehui, S. (2010). Enhancing agricultural productivity and profitability in Nigeria, The Nigerian strategy support programme, International food research Institute. Retrieved on July 5, 2011 from http://www.ifpri.org

Fasasi, A.R. (2006). Resource-use efficiency in yam production in Ondo State, Nigeria, *Agricultural journal*, 1 (2): 36-40.

Holden, S.T, Deininger, K. and Ghebre, H. (2009). Impact of low cost of land certification on investment and productivity, *American journal of Agricultural Economics,* 91 (2): 15-20.

Ile, E.I, Craufurd, P.Q. Battery, G.N. and Asiedu, R. (2006). Phases of dormancy in yam tubers (Dioscorearotundata), *Journal of botany*, 97, 497-504.

Jhamtani, H. (2007), Putting Farmers First in Sustainable Agriculture Practices, Penang, Malaysia, Third World Network Environment & Development Series htpp://*www.twnside.org.sg*.

Jochen, K. (1993). Traditional storage of yams and cassava and its improvement, GTZ-post harvest project, Pckhuben 4.

Justin, R. (2010), The most fascinating, you will read about Nigerian yam production. Retrieved on March 6, 2011 from http://minyamville.com.

Kleih, U., Philips, U., Mignouna, D. and Swoku, B. (2012), Scoping Yam Value Chain Analysis, Yam Improvement for Income and Food Security, IITA, NRI, Federal University of Agriculture, Abeokuta, Ogun State, Nigeria Ibadan, International Institute of Tropical Agriculture.

KAIP (Kogi Agricultural Investment Plan) (2012). Agricultural Investment plan.Lokoja.Ministry of Agriculture and Natural Resources.

KO-SEEDS (2004). Kogi State Economic Empowerment and Development Strategy, Lokoja, Ministry of Economic Planning.

Komolafe, M.F, Adegbola, A.A., Are, L.A. and Ashaye, T.C. (1983). *Agricultural science for schools and colleges* (2nd ed.), Ibadan, University press Ltd, 451.

Masalu, D.C.P, Shalli, M.S. and Kitula, R.A. (2010). Customs and taboos: The role of indigenous knowledge in management of fish stocks and coral reefs in Tanzania, Tanzania coral reef, targeted and research capacity building for management program, Tanzania, Resource Management Institute.

Migap, J.P and Audu, F. (2012). Empirical study on yam cultivation and economic development of Taraba State: A case study of Wukari Local Government Area, *Journal of business and organizational development*, Cenresin publications, 4, 55-67.

Musa, Y .H.I, Onu, I .I., Vasanka, J. I. and Anonguku, A.,I. (2011). Production efficiency of yam in Zing Local Government Area of Taraba State, Nigeria, *Journal of horticulture and forestry*, 31, (12): 372-378.Retrieved on May 6, 2012 from http://www.academicjournals.org/jht.

NPC (National Population Commission) (2006). Population and housing census of Federal Republic of Nigeria, Kogi State priority tables, 1.

Nmadu, J.N.and Simpa, J.O. (2014). Rethinking the technical efficiency of small scale yam farmers in Nigeria using conventional and non-conventional inefficiency parameters. 58th Australian Agricultural and Resource Economics Society (AARES) Annual Conference, Port Macquarie, New South Wales, 4-7 February 2014.

Nwaru, J.C, Okoye, B.C. and Ndukwu, P.C. (2011). Measurement and determinant of production efficiency among small holder sweet potatoes (*Ipomoe batatas*) farmers in Imo State, Nigeria, *European journal of scientific research,* 59 (3), 307-317. Retrieved on March 6, 2011 from http://www.eurojpurnals.com/ejrs.htm.

Nweke, F.I, Ugwu, B.O. and Asadu, C.L.A (1991). Cost constraints in the production of roots and tuber crops in yam-based cropping system, southern Nigeria, Resource and crop management programme monograph, No 16, Ibadan, International Institute of Tropical Agriculture.

Ohijianya, D.O, AEchetama, J., Offodile, P.O., Osuagwu, C.O., Henni-Ukoha, A., Okereke-Ejiogun, N. and Anyaoha, N.O. (2010). Allocative Efficiency among maize farmers in Imo State, Nigeria, Report and opinion, 2 (12).

Ojo, M.A, Mohammed, U.S., Ojo, A.O. and Oyeleke, R.S. (2009). Return to Scale and determinants of farm level technical inefficiency among small scale yam-based farmers

in Niger State, Nigeria: Implications for Food Security, *International Journal of Agricultural Economics and Rural Development*, 2 (1).

Olayide, S.O, Ogunfowora, O., Essang, S.M. and Idachaba, F.S. (1981). .*Elements of rural economics*, Ibadan, University publishing house, 396.

Olorunsanya, E.O,. Fakayode, S.B., Babatunde, R.O., Orebiyi, J.S. and Adejumolu, T.T. (2009). Efficiency of resource use in yam-based cropping system in Ekiti State, Southern, Nigeria, *Global approach to extension practices,* Volume 5 (2).

Orkwor, G,Aseidu, R. and Ekanyake, I. (1998). Food yams: Advances in research, Nigeria, IITA and NRCRI.

Oyeleke, R.O. (2010). Property rights and policies of agricultural resource in Nigeria, Unpublished paper on Resource Economics, Minna, Federal University of Technology, 15.

Ruud, J. (1960). *Taboos: A study of Malasgascar customs and beliefs*, Oslo University press.

Salami, S.S. (2011). *The heritage of Ebira Tao*, Okene, Dima printers, 1: 8-12.

Simonyan, J.B and Obiakor, C.T. (2012). Analysis of Household labour use in yam production in Anambra West Local Government Area of Anambra State, Nigeria, publication of Nasarawa State University, Keffi, Nigeria, 8 (1), 1-16. Retrieved on March 6, 2011 from http://www.patnsukjournal.net/current.

Simpa, O..J. (2011). The Negative Impacts of Culture on Agricultural Production and development in Nigeria: A case study of the central district, Kogi State, *Kogi journal of General Studies (*KOJGEST), (A multi-Disciplinary Journal) Volume 4(1): 111-120.

Simpa, O.J. (2014). Technical efficiency of yam producers in Kogi State, Nigeria using conventional and non-conventional parameters, Unpublished M. Tech Thesis, Department of Agricultural Economics and Extension Technology, Federal University of Technology, Minna, Nigeria.

Stifel, D., Fafchams, M. and Barts, M. (2009). Taboos, agriculture and poverty, CSAE wps/.2009-15, Retrieved on March 6, 2011 from http://www.csae.ox.ac.uk

Udoh, E.J. and Etim N.A. (2008). Measurement of farm water production (Talinumtriangulare) production among city farmers in AkwaIbom State, Nigeria; *Journal of sustainable development in Agriculture and Environment*, 3(2), 47–54.

Zannou, A. (2009). Economic assessment of seed-tuber practices of Dioscoreacayenensis and Dioscorearotundata planting materials, *Africa journal of agricultural research*, 4(3): 200-207. Retrieved on March 6, 2011 from http://www.academicjournals.org/AJAR