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Effectiveness of Agricultural Technologies and Constraints of Cassava Farming on the Production in Ido local Government of Oyo state, Ibadan, Nigeria

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ABSTRACT: The study investigated the effectiveness of agricultural technologies and constraint on cassava farming in Ido Local Government Area of Oyo State, Nigeria. One hundred and forty-eight well-structured questionnaires were used for this study to obtain data for this study from five selected villages. Data obtained were analyzed using percentage and Chi-Square to compare the significance among the variables in this study. The results showed that Cassava production was dominated by males (51.4%) as against females (48.6%), an active age group of 41-50 years (56.7%), more of married people (88.5%) to unmarried (2.7%). The study area was characterized with an average level of secondary education (54.7%), There was no significant relationship between the socioeconomic characteristics of the respondents and agricultural technologies used. This research hereby recommended that the government should make available agricultural technologies to the farmers and they should be aware of the technologies through the extension agent.

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Agricultural technologies used for cassava production are; biotechnology (production of zero-to-low cyanide cassava, production of genetically improved cassava, mass production of disease-free, pest resistant and high yielding cassava plants, through micro propagation), agricultural engineering (machinery, equipment and tool design for land preparation and harvesting e.g. ploughs, ridges, cassava lifters, tuber harvester, screw press etc.), bio-intensive integrated pest management, herbicides, fertilizers, water management (irrigation), post-harvest technology, training, research and extension on cassava production (Bucyana 2006). Cassava is a popular food crop in West African. In recognition of the wide consumption and use of cassava for food security among poor and underdeveloped nations the Food and Agricultural Organization (FAO) has made its production a global focal point of their programs. The effectiveness of technologies by farmers is affected by socio-economic factors, institutional and intervening factors. Socio-economic factors include, age, sex, education level, farming experience, farm size and labour availability. In another thought, some landowners feel that it is unjust and immoral to sell their land to farm users since this may deprive their future generation of the inheritance opportunity. Low level of literacy among cassava farmers is another major problem. Majority of farm populace are those who live in the rural areas and are mostly illiterates. This has adverse effect on the role they play in their different economic activities.

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Developing resistance to pest-resistant crops; introducing allergy-causing compounds or changing the nutritional composition in foods. These are the same types of concerns that should be evaluated with traditional methods of producing our food and fibre. Also the availability of nutrient responsive high yielding varieties of crops led to intensive nutrient application and improved farm management to derive full benefits from such varieties by Anikpo, (2008). Akinnagbe (2010), where he noted that some of the constraints to the use of technology for agricultural production were Lack of finance, scarcity of planting materials, difficulty in obtaining credit facilities, lack of technical knowledge in the use of improved technology, high cost of improved varieties, high interest rate on loan, unavailability of agro-chemicals and other equipment, high cost of agro-chemicals. Farm size is another constraint to the use of agricultural technology. According to Anyaegbunam, (2011), positive polices aimed at land reforms towards redistribution of land to make more land are available to peasant and landless farmers in order to increase productivity and efficiency. The objective of this study was therefore set out to evaluate the effectiveness of agricultural technologies and constraints in cassava farming in Ido Local Government Area, Oyo State Nigria.

MATERIALS AND METHODS

Area of study: The study area was carried out in Ido local government area of Ibadan, Oyo State. It lies between latitude 6.05^{o} N and longitude 3.02^{0} E. it is bounded to the north in Ibadan local government and partially by oyo local government to the east by Ibarapa southwest and Akinyele local government respectively and to the west by oluyole government to the south of ogun state. Ido Local Government Area of Oyo State occupy a total mass of 986km square and the population of 103,261 people (NPC, 2006). The local government headquarters is at Ido town and has ten major prominent areas under its jurisdiction namely Apata, Eleyele, Sonso, Idi-oro, Atere, Ayegun, Omi adio, Ijokodo, Bode-Igbo and Akufo. Rainfall of the area is averagely 1520mm/annum**.** The population of the study consists of cassava farmers in Ido local Government Area of Oyo State.

Sample Collection and Data Gathering: The study adopted purposive sampling technique was employed to select the cassava farmers in ido local government. five wards were selected for the study and one village was randomly selected from each local government. The instrument used to collect data for the study was a questionnaire; the questionnaire was designed by the researcher. The face and content validity of the instrument was determined by three researcher experts who satisfied the used of the instrument. The questionnaire had three sections A, B and C. Section A was used to gather information on socioeconomic characteristics of cassava farmers and section B was measuring the effect of Agricultural technologies used by the cassava farmers while section C used to gather the information on the constraint face the farmers on the uses of Agricultural Technologies. Four Likert scale response options was used in section C which are; Strong Agree (SA), Agree (A).Strong Disagree (SD) and Disagree (D). To determine the reliability of the instrument a plot testing of the instrument was done using thirty (30) cassava farmers that was not included in the study.

Data Analysis: The reliability test of the instrument was determined using Cronbach's Alpha and it yielded an acceptable correlation coefficient 0.78. Data collected were analysed using simple percentage, mean and chi- square.

RESULTS AND DISSCUSSION

The result reveals that 51.4% of the respondents were males while the remaining 48.6% were females. This shows that the domination of the male gender in cassava farming was due to the nature of the job which is mostly strenuous for their female counterpart. The age of the respondents were investigated in order to find out the age group mostly involved in cassava production, shows that 1.4% of the respondents indicate their age between 30years; another 16.2% and 56.8% indicate their ages between 31-40 years and 41-50 years respectively, only 25.7% indicates their ages above 50 years respectively. An average of 47 years approximately was recorded. This is an indication that cassava farming is dominated by young people who are active and within the productive age group. This finding is similar to that of Nweke *et al*, (2002) who reported that this age group constitutes the major productive work force since they are young. The result revealed that 88.5% of were married while 2.7% were single, 2.7% were divorced, while 6.1% were widowed. The implication is that the married farmers may tend to have larger family members to feed than the single ones. The findings is in line with Ojo (2009), who reported that married household farmers achieve greater success in farming business than the single household farmers.

Education is generally believed to affect farmers' ability to view and comprehend ways of doing things to improve their living conditions. Result shows that 4.7% of the respondents had no formal education, 33.8% passed through adult education, another 5.4% and 54.7% had primary and secondary education respectively and 1.4% tertiary education. This trend in

line with an earlier study by kainga and kingdom (2012) and could be attributes to poor access to schools due to proximity and transportation problems coupled with high rate of poverty to meet basic requirement of schooling such as school fees and learning materials.

Table 1: Socioeconomic characteristics of the respondents

Variables	Frequency (148)	Percentage (%)
Gender		
Male	76	51.4
Female	72	48.6
Total	148	100
Age		
30years	2	1.4
31-40yrs	24	16.2
41-50years	84	56.7
Above 50	38	25.7
Total	148	100
Marital Status		
Married	131	88.5
Single	4	2.7
Divorced	4	2.7
Widowed	9	6.1
Total	148	100
Educational Background		
No Formal Education	7	4.7
Adult Education	50	33.8
Primary Education	8	5.4
Secondary Education	81	54.7
Tertiary Education	2	1.4
Total	148	100
Farming Experience		
5 years	11	7.4
5-10 years	32	21.6
10-15 years	71	48
Above 20years	34	23
TOTAL	148	100

Table 2: Level of usage of agricultural technologies on cassava production

Variables	Always	Sometimes	Never
Tillage practices	29 (19.6)	115 (77.7)	4 (2.7)
Irrigation facilities	17 (11.5)	116 (78.4	15 (10.1)
Use of Mechanization	54 (36.5)	83 (56.1)	11 (7.4)
Agro-chemical application	102 (68.9)	42 (28.4)	4 (2.7)
Use of improve Varieties	117 (79.1)	30 (20.3)	1 (0.7)
Appropriate spacing	102 (68.9)	45 (30.4	1 (0.7)
Weed control	72 (48.6)	75(50.7)	1 (0.7)
Hired labour	43 (29.1)	94(63.5)	11 (7.4)
Extension awareness	9 (6.1)	47(31.8)	92 (62.2)
Inorganic fertilizer application	16 (10.8)	116(78.4)	6 (10.8)

As the years in cassava farming increase among the farmers, this years of experience also increase on the variable relating to farming experience, indicates that 7.4% of the respondents had been in cassava farming for 1-5years, those with 5-10years and 10-15yrs were represented by 21.6% and 48.0% respectively while 23.0% above 20 years. The result is in line with Tashikalma (1998) who reported that farmers with more years of experience in terms of farm operations, are better compared to farmers with few years of experience. The result shows that farmers in the study area have acquired enough experience in cassava production; therefore adoption of new agricultural technologies will pose no problem.

It was observed that the level of agricultural technology by the respondents was low. An average of 2 technologies was recorded as been used by the farmers. With a great number of cassava farmers not using agricultural technologies (79.1%), and the lower number of cassava farmers using agricultural technologies (0.7%). Also it could be observed that there is not much extension visit to farmers in the study area, hence the farmers are either not aware of the technologies or they are not readily available to the farmers. Some of the major reasons for the low level of usage were availability, affordability, illiteracy level of the respondents. This was noted by Agwu, and Anyaeche (2007) that non availability of inorganic fertilizers in the area was rated the most important factor limiting the level of usage of impact of agricultural technologies in the area.

Table 3 Constraints Faced on the Use of Agricultural Technology.

Variables	Agree	Strongly Agree	Disagree
High cost of agricultural inputs and Services	52 (35.1)	93 (62.8)	3 (2.0)
High risk of uncertainty in Agriculture	67 (45.3)	80 (54.1)	1(0.7)
Lack of political consensus to commitment of government	76 (51.4)	70 (47.3)	2 (1.4)
Inadequate farmers' cooperative organization	64 (42.2)	82 (55.4)	2 (1.4)
Unavailability of improved varieties	65 (43.9)	80 (54.1)	3 (2.0)
High level of illiteracy among farmers	70 (47.3)	76 (51.4)	2 (1.4)
Poor land tenure system	49 (33.1)	96 (64.9)	3 (2.0)
Unavailability of extension agent	41 (27.7)	103 (69.6)	4 (1.4)
Transportation problem	17 (11.5)	129 (87.2)	2 (1.4)

Table 3 shows the major constraints faced by the cassava farmers to the use of agricultural technologies in the study area were high cost of agricultural inputs and services, high risk of uncertainty in agriculture, lack of political consensus to commitment and policies of government, inadequate farmers cooperative organization, unavailability of improved varieties,

high level of illiteracy among farmers, poor land tenure system. Others were unavailability of extension agent and transportation problem.

Table: 4 Chi-square analyses showing the relationship between socioeconomic characteristics of cassava farmers and effectiveness of agricultural technologies on cassava production

Variables	Chi square value	p-value	Decision
Gender	1.758	0.415	NS
Age	5.856	0.44	NS
Marital status	7.567	0.272	NS
Educational level	12.543	0.127	NS
Farming experience	6.481	0.594	NS

*** No significant P > 0.05, n=148.*

The result above implies that there is no relationship between socioeconomic characteristic: (gender, age, marital status, educational level, farming experience) and effectiveness of agricultural technologies

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