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EFFECT OF FARMLAND MANAGEMENT PRACTICES BY ARABLE CROP FARMERS IN YENAGOA LOCAL GOVERNMENT AREA, BAYELSA STATE, NIGERIA

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ABSTRACT
This study examined effect of farmland management practices among arable crop farmers in Yenagoa local government area, Bayelsa state. Purposive sampling technique was used in selection due to predominance in crop farming in the study area. A sample of 80 arable crop farmers was randomly selected from four communities. Data were collected using structured questionnaire, and were analyzed with descriptive statistics such as mean, frequency and percentage. The result showed that the moderate proportion (40.0%) of the arable crop farmers were within the age bracket of (40-49years).This result implies that arable crop farmers falls within bracket of 40s in the Study Area. Furthermore the result Showed that majority (61.3%) of rural farmers were Female, while (38.8%) were male rural farmers. The study identify land management practices as Land clearing ($\bar{X}$=2.7); Ridging ($\bar{X}$=2.2), Weeding ($\bar{X}$=1.3), Fertilizer application ($\bar{X}$=2.0), Shifting cultivation ($\bar{X}$=2.0), Bush fallowing ($\bar{X}$=2.1), Irrigation ($\bar{X}$=1.9), Ploughing ($\bar{X}$=2.0), Crop rotation ($\bar{X}$=1.8), Harrowing ($\bar{X}$=1.8), were adopted by arable crop farmers with grand mean (1.9) which was lower than the decision cut-off point of 2.0 on a 3-point rating scale which implies that the level of farm management practices adoption was low. The results shows the Constraints toward Farmland Management Practices among arable crop farmers means: Cost of farm operation ($\bar{X}$=2.6); Technical know-how ($\bar{X}$=2.7), Extension visits ($\bar{X}$=1.9), Land size ($\bar{X}$=2.9), Farm Labour ($\bar{X}$=2.6), Illiteracy level ($\bar{X}$=1.5), Type of cropping ($\bar{X}$=2.9) Technology adoption ($\bar{X}$=2.7) Conflicts ($\bar{X}$=2.0) limited capital ($\bar{X}$=3.2). The result Constraints toward Farmland Management Practices among rural farmers was the same as the decision cut-off point of 2.5 on a 4-point rating scale. However, the government and relevant agencies should be proactive in creating public enlightenment on how to improve the quality of farmland management practices currently adopted. More farmer associations should be formed for collection, distribution and utilization of agricultural inputs that will further enhance soil fertility.

Keywords: Effect, Farmland, Management practices and Arable crop farmers

INTRODUCTION: Agriculture is the bedrock of the nation, food is a necessity of life with the teeming and growing population, and the demand for food far exceeds its supply (Adesope, 2021). The importance of agriculture to humans and the society have been continually lauded to include sources of revenue for governments at various levels and as a means of livelihood by providing employment for farmers, marketers, and processors of agricultural products. In Nigeria, agriculture engages over 70% of the labour force and contributes about 40% to Gross Domestic Product (GDP) (Federal Ministry of Agriculture and Rural Development, FMARD, 2012).

According to Ganiyu, Badmus, Olurin and Ojekunle (2018), farm management practices are acts of reducing the effects of nutrient leaching and run-off, and reducing sediment loss from land and are the techniques adopted by farmers to enhance the quality of soil structure and fertility of agricultural land in order to boost crop yield and it is practices used by arable crop farmers in Nigeria includes

weeding, land rotation, tillage, crop rotation, planting cover crop, manure application, mulching, fertilizer application, irrigation, and planting trees to interdict wind and land degradation.

It will be necessary to boost food production despite the fact that farmland degradation is geometrically increasing, covering approximately 23% of the global terrestrial area, increasing at an annual rate of 5-10 million hectares, and affecting about 1.5 billion people globally (World Bank, 2009 and FAO, 2013). Farmland is the most significant asset to sustaining life on an ever-growing planet, which the world population is growing at an exponential rate and taking care of conserving agricultural land essential to feeding the growing population. Furthermore, according to Okojie and Omoaregba (2019), the adoption of sustainable farmland management practices among arable crop farmers in Nigeria has led to exponential increase in crop productivity and income but a good farmland management practice is one of the key factors of success in all types of production, including agriculture and to succeed farmers as producers must dedicate much of their time and pay attention when making management decisions. However, farmers should encourage on the process of development of good management skills, because poor land management systems have accentuated and reduced agricultural productivity, (Abera, Mohammed and Budds, 2020).

However, small family farms are the drivers of the expansion of agriculture both in developed and developing countries and they display particular socioeconomic, environmental and technological dynamics. Also, they have developed life strategies to face various ways of applying a set of practices and functions that contribute to the improvement of agricultural systems, not only at the local level but in urban environments (Bonfiglio, Camaioni, Coderoni, Esposti, Pagliacci, Sotte, 2017; Santacoloma-Varón, 2015, Quimbayo, Kotilainen and Salo 2020). According to Loevinsohn, Sumberg and Diagne (2012) stated that the most common areas of technology development and promotion for farmers is to improve in crops production including new varieties and management regimes, soil as well as soil fertility management, weed and pest management, irrigation and water management, by virtue of improved input/output relationships, new technology tends to raise output.

Foguesatto and Machado (2020), the adoption of various agricultural practices can be an alternative that generates changes not only at the local level but also at the regional level. Many underprivileged farming and logging households in Africa relocate to new pasture and cropland as a result of the decreased productivity of their current pasture and cropland. Additionally, inappropriate farmland management practices coupled with land degradation contributes to the loss of soil nutrient, as crucial organic matter is removed, making the soil more exposed to erosion and nutrient depletion (Ekong, 2018). Furthermore this study provide evidence for the effect and causes of soil nutrient depletion in Nigeria, emphasizing the importance of adopting sustainable farmland management practices.

It was against this backdrop this paper seek to assess effect of farmland management practices by arable crop farmers in Yenagoa Local Government Area, Bayelsa state. Nigeria. The specific objectives are describe the socioeconomic characteristics of farmers, describe farm management practices used; effect of socio-economic determinant of farmland management practices and ascertain the constraints of farmland management practices in the study area.

MATERIALS AND METHODS: The study was carried out in Yenagoa Local Government Area of Bayelsa State. Its headquarters are in the town of Yenagoa (Seat of Power) in the south of the area at latitude 4°55′29”N 6°15’51”E 4.92472°N 6.26417°E. The Local Government Areas has an area of 706 km^2 and a population of 352,285 at the 2006 census. The Ijaw form the majority of the State. The state share boundaries with Delta State and Rivers State from the North, Ogbia Local Government Area on the East, Brass, Nembe and Southern Ijaw Local Government Areas on the South and on the West Sagbama Local Government Area (NPC, 2006).

Yenagoa Government Area consists of seven clans namely: Okordia, Gbaran/Ekpetiama, Epie, Biseni, Atisa and Zarama clan. English is the official language, but Izon and Epie-Atisa language is one of the local languages spoken

in Yenagoa. The predominant occupations in the area are fishing, farming and trading, lumbering, palm wine tapping, weaving and civil servants. The annual rainfall in the area is about 2400mm and lines in the heavy rainforest region of African where crops such as yam, cassava and plantain grow abundantly. The study purposively selected Yenagoa local government area in Bayelsa State for the study. Eight (8) communities from the selected Local Government Area and (10) smallholder crop farmers in each community was randomly selected making a total of eighty (80) arable crop farmers. Descriptive statistics such as mean and percentage was used to analyze the objectives. The questionnaire was on a 4-point rating scale of strongly agree, agree, disagree and strongly disagree to which numerical values 4, 3, 2 and 1 were assigned respectively. The score up to 10, and gives a mean of 2.5 when divided by 4.

RESULTS AND DISCUSSION: Table 1: Distribution according to Socioeconomics characteristic of arable crop farmers

Results in Table 1 showed that moderate proportion of arable crop farmers were within the age range of (40.0%). This result implies that arable farmers are young and energetic in the application of land management practices to improve their farming practices. This finding is not intendent with Ekong (2010) who noted that the age distribution in Nigeria rural areas from 1991 till date have it that 55% of rural dwellers were within the age bracket of 20-40 Years. Furthermore, the results showed that majority (61.3%) of arable crop farmers were Female, while (38.8%) were male farmers. This implies that female rural farmers were more involved in arable crop farming. This finding is in line with Onyebinama (2010), who noted that male farmers tend to have more income and unrestricted access to productive asset occasioned by socio-cultural factor than the female farmers. The result further showed that majority (45.0%) of arable crop farmers in the area had 1-5hacters of land which they farm on, while (42.5%) had less than 1hacters of land, and (12.5%) had above 5hecters of farm land. This result implies that many of the rural farmers who are ready to farm do not have enough farm land for crop cultivation. More so, this findings is in line with Adebayo and Okuneye (2011), whom observed that small-scale farmers dominated the agricultural production landscape and produce about 85% of the total production in Nigeria. Furthermore, the results shows that majority (40.0%) of the arable farmers earns 50,000-150,000 annually from their farm products. While, (35.0%) earn <50,000 annually from the same source and (25.0%) of the rural farmers earns between 250,000-350,000. The result implies that a good number of rural farmers earn huge amount of money from their farm produce annually.

Table. 2 The result revealed farmland management practices used among arable crop farmers had the following means; Land clearing ($\bar{X}$=2.7); Ridging ($\bar{X}$=2.2), Weeding ($\bar{X}$=1.3), Fertilizer application ($\bar{X}$=2.0), Shifting cultivation ($\bar{X}$=2.0), Bush fallowing ($\bar{X}$=2.1), Irrigation ($\bar{X}$=1.9), Ploughing ($\bar{X}$=2.0), Crop rotation ($\bar{X}$=1.8), Harrowing ($\bar{X}$=1.8), were adopted by arable crop farmers because grand mean (1.9) was lower than the decision cut-off point of 2.0 on a 3-point rating scale which implies that the level of farm management practices used was low. This is in line with Okringbo, Oduehie and Ibeneme (2017) noted that agricultural technologies are developed by research institutions to alleviate poverty among smallholder farmers.

Age	Frequency	Percent
<21-29	10	12.5
30-39	21	26.3
40-49	32	40.0
50-59	12	15.0
60-69	5	6.3
Sex		
Male	31	38.8
Female	49	61.3
Marital status		
Single	25	31.3
Married	47	58.8
Separation	20	7.5
Divorce	8	2.5
Educational level		
No Education	11	13.8
Primary Education	13	16.3
Secondary Education	21	26.3
Tertiary Education	35	43.8
Household Size		
1-6	59	73.8
7-12	16	20.0
13-15	5	6.2
Farm size		
< 1ha	34	42.5
1-5ha	36	45.0
Above 5ha	10	12.5
Annual farm income		
<50,000	28	35.0
50,000-150,000	32	40.0
250,000-350,000	20	25.0
Farm experience		
1-5	29	36.3
6-10	35	43.8
11-15	16	20.0

Source: (Field Survey, 2023)

Table 2 Perceived farm management practice used.

Farm Management Practice used	Scores (N=80)				
	AP	SP	NP	Mean ($\bar{X}$)	Remark
Land clearing	59(177	18(36	3(3)	2.7	Adopted

Ridging	27(81)	41(82)	12(12)	2.2	Adopted
Weeding	59(177)	19(38)	2(2)	1.3	Not adopted
Fertilizer application	21(63)	35(70)	24(24)	2.0	Adopted
Shifting cultivation	22(66)	37(74)	21(21)	2.0	Adopted
Bush fallowing	11(33)	44(88)	25(25)	1.8	Not adopted
Irrigation	25(75)	24(48)	31(32)	1.9	Not adopted
Ploughing	20(60)	41(82)	19(19)	2.0	Adopted
Crop rotation	17(51)	32(64)	30(30)	1.8	Not adopted
Harrowing	16(48)	33(66)	31(31)	1.8	Not adopted
Grand Mean				1.9	
Grand Mean				**2.1**	
Bench Mark Mean Score (Decision cut-off point)				**2.5**	

Source: Field survey, 2023.

Note: AP = Always Practiced, **SP** = Sometimes Practiced, **NP** = Never Practiced

Table 3 shows the result shows socio-economic determinant of arable crop farmers. The Table shows farmland management practices among rural farmer's means: Age ($\bar{X}$=2.9); House hold size ($\bar{X}$=2.5), income ($\bar{X}$=2.9), access to credit ($\bar{X}$=3.0), Sex ($\bar{X}$=2.4), Health ($\bar{X}$=2.4), Level of Education ($\bar{X}$=2.8) Land scape ($\bar{X}$=2.7 Land size ($\bar{X}$=2.7) Farming experience. The result further revealed that the various socio-economic determinants of farmland management practices among arable crop farmers were higher than the decision cut-off points of 2.5 on a 4-point rating scale. This findings further suggest that credit constraint account for major impediment to adoption of improved land management practices and that access to credit may promote more intensive land management practices by facilitating more remuneration from non-farm activities. This findings goes in contrary to observation of Raufu and Adetunji (2012) that Access to credit has insignificant impacts on most farmland management practices, except a negative impact on crop rotation.

Table 4.4 Shows the result of perceived constraints toward Farmland Management Practices among arable crop farmers. The Table shows the Constraints toward Farmland Management Practices among arable crop farmers means: Cost of farm operation ($\bar{X}$=2.6); Technical know-how ($\bar{X}$=2.7), Extension visit ($\bar{X}$=1.9), Land size ($\bar{X}$=2.9), Farm Labour ($\bar{X}$=2.6), Illiteracy level ($\bar{X}$=1.5), Type of cropping ($\bar{X}$=2.9) Technology adoption ($\bar{X}$=2.7) Conflicts ($\bar{X}$=2.0) limited capital ($\bar{X}$=3.2). The result of perceived constraints of Farmland Management Practices among arable crop farmers suggest that land size, type of cropping and limited capital were accepted as major constraints to the improvement of land management practices. This indicates that farmers with smaller farm size cannot plant substantial number of crops due to fragmentation of land and the lack of capital will deny farmers to acquire modern farming equipment's thereby limiting them to subsistence farming. This findings is in agreement with Adams (2019) who noted that arable crop farmers in Nigeria various degrees of constraints in land management practices that inhibits their performance in agricultural productivity.

Table 3 Percentage Distribution According to the socio-economic determinant of Farmland Management Practices.

Examine the socio-economic determinant of Farmland Management Practices.	Score (N=80)					
	VH	H	L	VL	Mean ($\bar{X}$)	Remark
Age	19(76)	40(120)	16(32)	5(5)	2.9	Adopted
Household size	14(56)	24(72)	35(70)	5(5)	2.5	Adopted
Income	21(84)	37(111)	19(38)	3(3)	2.9	Not adopted
Access to credit	26(104)	27(81)	26(52)	1(1)	3.0	Adopted
Sex	7(28)	33(99)	28(56)	12(12)	2.4	Not adopted
Health	20(80)	24(72)	20(40)	6(6)	2.4	Not adopted
Level of Education	20(80)	32(96)	20(40)	8(8)	2.8	Adopted
Land scape	19(76)	25(75)	30(60)	6(6)	2.7	Adopted
Land size	17(68)	31(93)	23(46)	9(9)	2.7	Adopted
Farming experience	28(112)	31(62)	15(30)	6(6)	2.6	Not adopted
Grand Mean					**2.7**	
Bench mark mean score (Decision cut point)					**2.5**	

Source: Field survey, 2023

Note: **VH** = Very High, **H**= High, **L** = Low and **VL** = Very Low

Table 4. Mean distribution according to Constraints towards Farmland Management Practices.

Constraints toward Farmland Management Practices.	Score (N=80)					
	SA	A	D	SD	Mean ($\bar{X}$)	Remarks
Cost of farm operation	23(92)	30(90)	10(20)	12(12)	2.6	Accepted
Technical know-how	19(76)	26(78)	27(54)	8(8)	2.7	Accepted
Extension visit	6(24)	14(42)	23(46)	37(37)	1.9	Not accepted
Land size	25(100)	26(78)	26(52)	3(3)	2.9	Accepted
Farm Labour	15(60)	30(90)	25(50)	10(10)	2.6	Accepted
Illiteracy level	14(56)	24(72)	24(48)	18(18)	1.5	Not accepted
Type of cropping	16(64)	37(74)	18(36)	9(9)	2.9	Accepted
Technology adoption	20(80)	28(84)	21(42)	11(11)	2.7	Accepted
Conflicts	11(44)	15(45)	27(54)	27(27)	2.0	Not accepted
Limited capital	34(136)	31(93)	14(28)	1(1)	3.2	Accepted
Grand Mean					**2.5**	
Bench mark mean score (Decision cut point)					**2.5**	

Source: Field survey, 2023

Conclusion and Recommendations: The study concluded that land management practices can be exhaustive and expensive and implementation of smart farmland management strategies should optimize productivity and drive maximum profits for agri-businesses. However, the government and relevant agencies should be proactive in creating public enlightenment on how to improve the quality of farm management practices currently adopted. More farmer associations should be formed for collection, distribution and utilization of agricultural inputs. There is need for the government to include credit support schemes of providing subsidized inorganic fertilizers, planting material and agro-chemicals as well as soft loans at a fairly reasonable prices.

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