FUDMA Journal of Agriculture and Agricultural Technology

ISSN: 2504-9496
Vol. 9 No. 1, March 2023: Pp. 218-225

https://doi.org/10.33003/jaat.2023.0901.27

ANALYSIS OF EFFECT OF SOCIO-ECONOMIC CHARACTERISTICS ON THE PERCEPTION OF FARMERS ON GIANT LAND SNAIL (*Achatina achatina*) PRODUCTION IN NORTH CENTRAL STATES, NIGERIA.

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ABSTRACT

The study analysed Sixty-four snail farmers were sampled through multiple-stage sampling technique. Descriptive and inferential statistics were used to achieve the specific objectives of the study. The study found that snail farming was carried out by young active farmers whose average age was 44 years, with an average of 7 years experience in snail farming, small-scale in nature because their average stock size was 787 snails. The average household size and annual farm income was 6 persons and ₦350,000.50 respectively. The farmers' perception was high (83%) for snail farming and this was linked to the several benefits like increased income, enhancement of family welfare, a source of animal protein, source of employment, means of turning kitchen waste and ways of engaging family labour, derived from snail production. Snail production was asserted to be low (55%) due to constraints like slow rate of growth, theft, pest and disease (just to mention but a few), the farming of snail was noted to be economically viable. Socio-economic characteristics such as farmers gender, age, education, marital status, household size and farm income were identified to be significant variables to level of snail production. By recommendation, there is need for research to focus on breeding snails that are early maturing and fast growing to help overcome the problem of slow growth and used by the farmers for production purpose.

***Keywords**: Perception of farmers; giant land snail; snail farming; perceived benefits; level of production*

INTRODUCTION

It is no news that many programmes, policies and strategies like River Basin Development Authority, Operation Feed the Nation, Green Revolution Programme, Fadama III, Yar' Adua's Seven Point Agenda, amongst others, have over the years been advanced by the Federal government Okoh *et al.,* (2016). Even in all of these lofty programmes, the per day capital animal protein in-take was estimated by the Food and Agricultural Organization (FAO) to be less than 10mg and this is far less than the 35mg that is recommended (Usman *et al*., 2003). Clearly, most animal protein sources like fish, meat and egg seemed to be very expensive at the moment and hence the low protein in-take. To bridge this gap would mean exploring other possibly and cheaper means of animal protein that would be within the reach of the common man.

Snail farming has been identified as one sure means of achieving this goal. Though before now hand picking from the wild has been the practice and that many people were yet to known of its importance as it relates to its richness in food value (Cobbinah, 2003). Cobbinah (2003) stated that the lag in awareness has resulted to giving its production low interest and attention by the farmers and other potential producers.

The issue of snail rearing is not new, but just that it has not gained wide patronage. Justifying this assertion, snail rearing had begun since the beginning of 20th Century (Ayodele and Asimalowo, 1991). In addition, the Romans were known to have started raising snails for almost the same time or period. The Romans used to feed the snails with special herbs for the purpose of improving the quality and quantity as well as improving the sustenance of the snail. The trend may not be the same across the globe especially in places like Nigeria, Ghana and Cote D'Ivoire where snail is almost found everywhere especially in moist places. In these countries, snail meat is popular and they are gathered in the farms, forest and other places with vegetation especially during wet season.

In recent times, it was observed that the population of snail has been on the decline due to human activities like deforestation, bush burning, hand picking and general farming of crops Enugu State Agricultural Development programme (ENADP, 2009). It was also observed and pointed out by Owolabi (2006) that the today's conventional practice of snail rearing would not be able to meet up with the demand in the near future. This claim was supported by Amao *et al.,* (2007) when the authors stated that snail farming should be encouraged now than ever before. Amao *et al.,* (2007) argued that, it is only through the conscious farming of snail and on a large scale that the snails could be conserved and be available to as many persons as possible. Baba and Adeleke (2006) further stressed that snail is a good and rich source of animal protein and since snail hunting is no longer sufficient to meet its demand, there is the need for its commercial production. Baba and Adeleke (2006) stated also that the production should be encouraged as a new branch of sustainable animal production. This argument became necessary because, in spite of the economic gains of raising snail and its nutritional benefits, its

farming has not been given adequate attention in Nigeria. Suffice to say that most of the snails taken to the market place for sale are got from the farm land, forest and other places. As at today, very few and insignificant number of farmers are into snail production and this may be attributed to the lack of interest, fluctuating economic gains it attracts, the long maturing period it takes or high level of risk involved. Others may attribute the narrative to the unwelcoming nature of the people's culture and tradition. This study therefore examines the influence of socio-economic characteristics on the perception of farmers on giant land snail (*Achatina achatina*) production in North Central, Nigeria. On a specific note, the study seeks to describe the socio-economic characteristics of the respondents in the area, rank the perception of farmers on snail farming, rank the perception of farmers level of snail production, ascertain the overall perceived benefits of snail production and identify the constraints facing snail farmers in the study area.

METHODOLOGY

Study area

The study was carried in North Central States, Nigeria and out of the States, Nasarawa State and the Federal Capital Territory were purposively (due to the spate of insecurity in the other States) selected for the study.

Nasarawa State and Federal Capital Territory (FCT)

Nasarawa State is one of the of the 6 States including Federal Capital Territory North Central region of Nigeria. Nasarawa State has thirteen Local Government Areas (LGAs) having its capital seat at Lafia (Wikipdia-Nasarawa) with coordinates of Latitude 8.570515 and Longitude 8.308844. The State is the fifteenth in terms of size or area (measures about 27.117Km^2). NPC (2022) estimated the population size to be about 2,886,377. The indigenes are mostly agrarian producing both crops and animals.

Federal Capital Territory (FCT) was carved out of States like old Kwara, Niger, Kaduna and Plateau States established in 1976. It is the capital seat of Nigeria having six Local Government Councils (Abuja Municipal, Bwari, Kuje, Gwagwalada, Kwali and Abuja). FCT lies between Latitude and Longitude 9.07^0 N and 7.339^{0}E respectively and it has a land mass of 8000Km^2 (Wikipedia, 2016). NPC (2022) estimated the population size as at 2022 to be about 3,652,000. Federal Capital Territory has mineral deposits like clay, feldspar, tin, gold, iron, ore, etc., with the city located between the hills of the extensive Gwagwa plain. Ishaya *et al.,* (2010) described FCT soil to be of made of parent materials that are coarse sandy loam in the basement complex to silt clay in nature. FCT distinctively has dry and the wet season (Wikipedia, 2016). The average rainfall is 1632mm while the temperature ranges between 37^{0}C and 15^{0}C and in extreme cases it may be as low as 7^{0}C. The vegetation is guinea in nature and it as well grow shrubs. The native people are mostly farmers.

Sampling techniques of the study

Multi-stage sampling techniques was used to select the respondents. It started with the purposive selection of Nasarawa State and the Federal Capital Territory (FCT) (stage 1) and this was due to the spate of insecurity in many States in this North Central States, Nigeria. Second stage involved the random selection of four local government areas (LGAs) from Nasarawa State and the FCT, this brought the LGAs to 8 in number. Activities of the 3rd was to randomly select 2 towns from each of the LGAs, thus making 16 villages or communities and this led to the purposive selection of four (4) snail farmers from each of the village, this therefore gave a total of sixth-four (64) farmers used for the study (stage 4). The purposive selection was due to the low number of farmers participating in snail farming. Table 1 shows Nasarawa State and the FCT, the corresponding LGAs and towns used for the study.

Table 1: Sample distribution of respondents

State	LGAs	Randomly selected Towns	No. of farmers selected.
Nasarawa	Kara	Agada	4
		Ang Kura	4
	Keffi	Fagidi	4
		Anguwan-Maiganga	4
	Karshi	Karshi	4
		Baggi	4
	Akwanga	Akwanga East	4
		Anwan-Zaria	4
Federal Capital Territory	Bwari area	Dutse Alhaji	4
		Bunko	4
	Kuje	Adugo	4
		Bugako	4
	Abaji	Bago	4
		Ebaji	4
	Gwagwalada	Diko	4
		Bassa	4
Total = 2	8	16	64

Source of Data and Data Collection Instruments

Data were collected from primary source. The data were got from the respondents of the study (through structured questionnaire and interview scheduled).

Validation of instruments of the study

Face content method was used to validate the question instrument. Experts in the field of Agricultural extension were confronted with the instrument for criticisms, modification and correction. Reliability of the instruments employed the test-re-test method to validate the instrument. The method involved the administration of the instrument at two different times. The first test was done, and the second carried out four weeks later within the space of four weeks to same group of respondents. The data generated were analyzed and produced a Correlation Coefficient (r) value of 0.63, indicating that the instrument was reliable.

Data analytical techniques

Descriptive and inferential statistics were used to analyse the data of the study. Descriptive statistics were used to analyze the socio-economic characteristics, examine farmers perception of snail farming and analyse farmers perceived level of snail production.

Four – point likert scale was used to analyze the perceived benefits of snail production. The scale was scored as: Strongly Agree (coded 4), Agree (coded 3), Disagree (coded 2) and Strongly disagree (coded 1). Weighted mean of 2.50 (obtained as: [4 + 3 + 2 + 1] / 4 = 2.50). Mean score of ≥ 2.50 was agreed as perceived benefits of snail production and it is not if mean score < 2.50. Four – point likert scale was used to analyze the constraints facing snail farmers. Mean score of ≥ 2.50 was agreed as constraint to snail farmers and considered otherwise if mean score < 2.50.

Inferential statistics was used to analyze the hypotheses of the study. Logistics Regression was used to analyse hypothesis one. It is expressed as:

$Y = b_o + b_1X_1 + b_2X_2 + b_3X_3, \ldots, + b_nX_n + e$

Y = Farmers perception of snail farming (Favourable perception = 1; unfavourable perception = 0)

a = Constant

b_i [1 – n or 8] = Coefficients

$X_1 – X_7$ = Independent variables

e = Error term

The variables in the equation are defined below as;

Y = Farmers perception of snail farming (Favourable perception = 1; unfavourable perception = 0)

X_1 = Gender (dummy: male = 1; female = 0)

X_2 = Age (years)

X_3 = Education (years)

X_4 = Marital status (single = 1, married = 2, divorced = 3, widow(er) = 4)

X_5 = Farming experience (years)

X_6 = Stock size (Number of snails in stock)

X_7 = Household size (number of people living and feeding together)

X_8 = Religious affiliation (Christian = 1, Muslim = 2, Traditional = 3, others = 4)

X_9 = Farm income (₦)

Binomial test was used to analyse hypothesis two. The test shows a statistical deviation from a theoretically expected observations into two categories. The test was used to determine the significant difference in proportion of farmers with high and those with low level of perception in snail production. Binomial distribution is expressed as:

$b(x;n,p) = nCx*px *(1-p) n-x$

Where b = binomial probability;

x = total number of successes (favourable or unfavourable)

p = probability of success on an individual trial n = number of trials

Hypotheses of the study

Ho_i Socio-economic characteristics of respondents have no significant relationship with their perception of snail farming in the area.

Ho_{ii}: There is no significant difference between the proportion of farmers with high and those with low level of perception for snail production in the area.

RESULTS AND DISCUSSION

Demographic characteristics of respondents

Table 2 shows the demographic characteristics of the respondents. The results revealed that snail farming was dominated by males (80%), most of whom were married (81%) with post-secondary qualification (59%). The dominance of males in the farming of snail may be attributed to the practice of purdah or leverage given to women in the area. This result agrees with that of Aiyeloja and Ogunjimi (2010) which found snail farming been dominated by males. Having married farmers dominating snail farming is an indication that the farmers are responsible and having domestic responsibility to cater for. The result is in line with the findings of Ahmadu *et al.,* (2021) who found dominance of the married in snail production. Result on educational level implies that they are literate, and in such a case, understanding farm innovation regulations and upgrading farming status would not be a problem. This results Ahmadu *et al.,* (2021) confirms the dominance of literates in snail farming.

The average age of the respondents was 44 years with majority (38%) between 40 – 49 years and majority (77%) of them being of Christian religion, while the Muslim and Traditional religion made up the other 23%. The result shows that snail production is skewed towards Christian religion and this may imply some level of bias from those who are of Muslim and Traditions beliefs. The result on average age is a conviction that the farmers are young and active. Findings of Afolabi (2013) corroborated with this result that snail farmers are young people. Most (50%) of the respondents had household size range of 4 – 6 persons with an average of 6 persons. The household size indicates that the respondents have people to cater for and same people that

make up the household may be a source of farm labour to their snail farming. Similar household size was found and described by Ahmadu and Ojogho (2012) as large household size. The farmers average stock size was 787 snails with most (33%) of them having a range of between 800 – 999 snails. The result indicates that the farmers are small-scale farmers. This assertion is in line with the findings of Okwuokenye *et al.* (2022) which described similar farm size as small-scale operation. The findings of Baba and Adeleke (2006) corroborates with this result when they asserted that snail farmers are still operating at small-scale level. The average farming experience of the respondents was 7 years and most (47%) of them had less than 5 years' experience. The farmers could be described as having good experience in farming of snail. Similar result regarding number of years in snail farming was found by Ogunniyi (2009). The income realized from snail production is one of the economic benefits derived from snail farming and it revealed that most (41%) of the respondents belong was ₦300,001 – ₦400,000 while the average income was ₦350,000.50. The result implies that snail farming is economically viable. This is in line with the findings Munonye and Moses (2019).

Table 2: Demographic characteristics of respondents. N = 64

Characteristics	Category	Frequency	%	Mean
Gender	Male	51	79.69	
	Female	9	20.31	
Marital Status	Single	7	10.94	
	Married	52	81.25	
	Divorced	5	7.81	
Age (years)	< 30	9	14.06	
	30 – 39	14	21.88	
	40 – 49	24	37.50	
	50 – 59	11	17.19	
	60 & above	6	9.38	43.59
Educational Status	Primary education	4	6.25	
	Secondary education	22	34.38	
	Post-secondary educ.	38	59.38	
Religious Affiliation	Christian	49	76.56	
	Muslim	8	12.5	
	Traditional	7	10.94	
Household size Range	1 – 3	12	18.75	
	4 – 6	32	50.00	
	7 – 9	17	26.56	
	10 – 12	3	4.69	5.52 = 6 persons
Stock size range (No. of snails in farm)	200 – 399	4	6.25	
	400 – 699	9	14.06	
	600 – 799	18	28.13	
	800 – 999	21	32.81	
	1000 & above	12	18.75	787
Farming experience (years)	< 5	30	46.88	
	5 – 9	16	25.00	
	10 – 14	`10	15.63	
	15 – 19	8	12.50	6.69
Income range (₦)	100,001 - 200,000	5	7.81	
	200,001 - 300,000	15	23.44	
	300,001 - 400,000	26	40.63	
	400,001 - 500,000	11	17.19	
	> 500,000	7	10.94	350,000.5

Source: Field Survey, 2022

Categorization of respondents based on perception towards snail production

Categorization of the farmers on their perception on snail production is shown in Table 3. The result revealed that most (83%) of the respondents indicated a favourable perception to the farming or production of snails in the region. On the other hand, few (17%) of the farmers indicated that they had unfavorable perception to snail farming. Through personal communication, the farmers who showed favourable disposition stressed that, it was due to the numerous benefits, amongst which is the income they earn or derived from the production process. Those not favourably disposed attributed their claim on numerous challenges plaguing the farming business. Going by the result, it could be inferred that a good proportion of the farmers developed a positive perception as a result of the associated potentials as it relates to its high-income capacity potentials that enables them to be meeting their household economic needs. This assertion is supported by the result of Munonye and Moses (2019) which expressed that snail production is not only high in food value but is also a very high-income yielding venture.

Table 3: Categorization of respondents based on perception towards snail production

Categorization of perception	Frequency	Percentage
- Unfavourable perception (score: 18 & below)	11	17.19
- Favourable perception (score: >18)	53	82.81
Total	64	100.00

Source: Field survey, 2022

Perception of the Benefits Derived from Snail Production

Table 4 shows the respondents perception of the benefits derived from snail Production. The ratings of the benefits were presented in their order of importance, using their mean score. From the results, the benefits are: increased income was rated to have the highest score (mean = 3.47), this was followed by its ability to enhance family welfare / improved living standard (mean = 3.38), and then its ability to act as a source of animal protein (mean = 3.44). Other derived benefits according to the respondents were, source of employment to rural people (mean = 3.29), means of turning kitchen waste into wealth (mean = 3.21) and ways of engaging family labour (mean = 2.64). The aforementioned beneficial factors have so much economic implications both to the farmers farm and his home and suffice to make the farmers stay sustained and even expand in his/her snail farming. These results are well supported by the findings of Ahmadu *et al.*, (2021) which revealed that snail farming had made significant contributions to the snail farmers as a source of animal protein, extra income, and employment, enabled them to feed their families with ease, improved standard of living and source of waste conversion.

Table 4: Perceived Benefits Derived from Snail Production

Perceived benefit	Mean	Standard Dev.	Rank
- Increased income	3.47*	0.53	1st
- Enhanced family welfare / Improved living standard	3.38*	0.57	2nd
- Source of animal protein	3.44*	0.53	3rd
- Source of employment to rural people	3.29*	0.46	4th
- Means of turning kitchen waste into wealth	3.21*	0.55	5th
- Ways of engaging family labour	2.64*	0.92	6th
- Facilitated linkage to input providers	2.13	0.93	7th
- Increased knowledge of farming practices	1.98	0.95	8th

Agreed (mean ≥ 2.50)
Source: Field survey, 2022

Factors limiting snail production

The factors limiting snail production had mean value of 2.50 and above (see Table 5). Amongst the serious limiting factors, slow rate of growth of the snail (mean = 2.82) was ranked and agreed as the highest serious limiting factor. This was followed by pilfering/theft (mean = 2.89), pest and diseases (mean = 2.79) and lack of management / technical skill (mean = 2.70). Other limiting factors to snail production were high rate of mortality (mean = 2.67), lack of funds for expansion (mean = 2.60) and the people's custom and tradition (mean = 2.52). The farmers (through personal communication) noted that the aforementioned limiting factors have a way of negatively affecting their production capacity and profitability level. Studies of Chah and Inegbedion (2012) supported this result as they identified lack of capital for expansion and slow rate of growth of the snail to be limiting factors to snail production. Munonye and Moses (2019) agreed and reported religious bias which is related to the people's custom and tradition as major problem confronting snail farmers. The findings of Ahmadu *et al.* (2021) concurred with some of these challenges like insect pests attack, theft/pilfering, high rate of mortality and lack of management / technical skill as factors limiting the farmers in the farming / production of snail.

Table 5: Factors limiting snail production

Limiting factors	Mean	Standard Dev.	Rank
- Slow rate of growth the snail	2.82*	0.73	1st
- Theft	2.89*	0.61	2nd
- Pest and diseases	2.79*	0.50	3rd
- Lack of management / technical skill	2.70*	0.59	4th
- High rate of mortality	2.67*	0.50	5th
- Lack of funds for expansion	2.60*	0.49	6th
- Custom / traditional discrimination	2.52*	0.66	7th
- Price fluctuation	2.46	0.53	8th
- Disturbance from neighbor	2.34	0.51	9th

Agreed (mean ≥ 2.50)
Source: Field survey, 2022

Effect of socio-economic characteristics on the perception of snail farming

The effect of socio-economic characteristics of respondents on their perception of snail farming was analysed with the Logistic regression and this is shown in Table 6. The socio-economic characteristics that were analysed include age, gender, education, marital status, household size, farm income, farming experience, stock size and religious affiliation. These variables accounted for 81% variation of the socio-economic characteristics on the Farmers perception on snail farming. The remaining 19% were taken care of by variables not included in the model. The F-statistic was significant at 5% level of probability indicating a good fit for the model used, hence the alternative hypothesis was accepted against the null. Six out of the nine socio-economic variables were significant at various level of significance to farmers perception on snail farming. The variables are: gender, education, age, marital status, household size and farm income. Further explanation of the variables revealed thus;

Gender of the farmers had a coefficient of 8.307. The relationship was positive and significant at 1% level to the farmers perception on snail production. Since male constituted the majority (79%), the result therefore implies that, the inclusion of more males in the farming of snail may lead to higher perception of the farmers on snail farming. This result is supported by findings of Munonye and Moses (2019) who expressed a positive relationship between gender and snail production. Household size of the farmers was positively signed and significantly related at 5% level to their perception on snail farming. The beta coefficient was 2.104. The result implies that farmers with larger households may likely show favourable perception to snail farming and that large household size may bring about additional hand to the farming activities. The result disagrees with that of Munonye and Moses (2019) who recorded negative relationship between household size and snail farming in their study.

Beta coefficient (-5.714) of the respondents age was negatively significant at the 5% level to farmers perception on snail farming. By implication, farmers that are younger in age are probably going to have more perception than their older counterparts. The dominance of young farmers (73% of the respondents was less than 50 years) in snail farming justifies this claim. This result supports findings of Baba and Adeleke (2006) who found age to negatively correlate with profitability of snail farming. Profitability will very likely leverage on the farmers perception. The educational level of the respondents was positive and significantly related at the 1% level to the farmers perception on snail farming. It has a beta coefficient of 11.815. The result shows that the respondents are literate and by implication, extension agents may not have difficulty in transferring innovation to the farmers with respect to snail farming. This could augur well for extension services, with special reference to snail production since education enhances farmers ability to transfer research results for increased productivity on the snail enterprise. Ahmadu *et al*., (2021) showed positive relationship between level of education and accessing useful information concerning production practices which will increase productivity together with income, and such may likely have a positive inclination to the farmers perception in line with snail farming.

Respondents marital status was positively signed significantly related at the 5% level to farmers perception to snail farming. Its beta coefficient was 9.112. Simply put, since majority (81%) of the farmers are married, having more married farmers in the farming of snail may help to increase their perception in snail farming. Beta coefficient of respondent farm income was 5.521. The relationship was positively signed and significant at the 5% level. The result implies that farmers with more income may show favourable or high perception to snail farming. The positive perception may not be unconnected to the high profitability level of snail farming as pointed out by Munonye and Moses (2019) and this, definitely will influence the farmers perception in the positive direction.

Table 6: Influence of demographic characteristics on level of production of snail (Logistic regression)

Independent variables	Coefficient (b)	Standard Error	t-test.
Constant	89.752	17.646	4.413
Gender	8.307**	3.732	2.914
Age	-5.714*	1.339	2.413
Education	11.815**	2.551	3.110
Marital status	9.112*	2.618	5.263
Household size	2.104*	0.387	2.718
Stock size	4.391	2.867	0.215
Farming experience	-1.718	0.361	1.063
Farm income	5.321*	1.267	2.061
Religious affiliation	1.082	1.233	3.422

F= 1.193 ($p < 0.050$) (Critical F = 2.62); Adjusted $R^2 = 0.814$
**Significant at the 5% level; ** Significant at the 1% level*

Test of difference in proportion of farmers level of perception in snail farming

The proportion of farmers with high and low-level perception in snail farming was analysed using binomial test and shown in Table 7. The results revealed that a larger proportion (82.81%) and few (17.19%) of the respondents respectively had high perception (favourable perception) and low perception (unfavourable perception). Statistically, the result was significant at the 1% level of probability and based on this, the alternative hypothesis was accepted and it thus states that: there is significant difference between the proportion of farmers with high and those with low level of perception for snail production in the area. The result therefore suggested that snail farmers in the study area had high level of perception to snail farming or production. The implication of the result is that snail farming has helped the farmer to a large extent in meeting up with increased income, improved his/her standard of living and source of animal protein to the family, source of employment, among other associated benefits. This result is in agreement with findings of Munonye and Moses (2019) which expressed that snail production is high in food value and also a very profitable venture that can help migrate the people from mal-nutrition and the vicious cycle of poverty.

Table 7: Relationship of farmers and their level of perception in snail farming

Level of perception	Frequency	Proportions	Probability level
High perception (favourable perception)	53	82.81 (0.8281%)	0.001
Low perception (unfavourable perception)	11	17.19 (0.1719%)	
Total	64	100 (1.000%)	

Source: Field survey, 2022

CONCLUSION AND RECOMMENDATIONS

The study analysed the influence of socio-economic characteristics on the perception of farmers on giant land snail (*Achatina achatina*) production in North Central States, Nigeria. The farmers generally have high perception (favourable perception) (83%) for snail farming and this may be attributed to the several benefits like increased income, enhancement of family welfare and a source of animal protein, amongst others derived from snail production. Snail farmers favourable perception will help to boost their willingness and interest in snail farming.

The following recommendations were however advanced based on findings:

There is need for research to focus on breeding snails that are early maturing and fast growing to help overcome the problem of slow growth and used by the farmers for production purpose.

There is also a need for the farmers to organize for security guards or security dogs to be securing their farms. Doing this will go a long way in reducing the issue of theft.

Farmers need to be trained by extension agents who are grounded in snail farming on how to improve on their snail management capability which should as well inculcate the control of pest and diseases that seemed to be plaguing snail production. and;

Farmers by themselves or extension agents, need to be organised into groups, orientated and sensitized on how best to source for finance from themselves through the pulling of their resources together and from corporate bodies requiring little or no collateral and ensuring zero diversion while ploughing such funds into their snail farming. This will go a far extent in increasing snail farming level of production.

REFERENCES

Afolabi, J. A. (2013). Snail Farming as an Environment Friendly and Viable Enterprise in Ondo State, Nigeria. *Journal of Human Ecology*, 42(3): 289-293.

Ahmadu J., Ida-Ogbomo E.O. and Oyoboh D.E. (2021). Contribution of snail production to income status of snail farmers in Edo South, Edo State, Nigeria. *Agro-Science*, 20(3): 49 – 52

Ahmadu, J and Ojogho, O (2012), Economics of Snails Production in Edo State, Nigeria. *International Journal of Agricultural Sciences*, 4(5): 26 – 40

Aiyeloja, A. A. and Ogunjinmi, A. A. (2010), Poverty Alleviation Potentials of Snails Farming in Ondo State, Southwest Nigeria. International Journal of Agricultural and biological Sciences. 1(1): 56 - 74

Amao, J.O., Adesiyan, O.I. and Salako, B.A. (2007). Economics of snail production in Enugu State East Agricultural Zone of Enugu State, Nigeria. Retrieved at: *https://eduproject.com.ng*. On 14th April, 2022

Ayodele, I.A. and Asimalowo, A.A. (1991). Essentials of Snail Farming, Ibadan: Lovemost Publishers. Pp.33 - 37

Baba, K.M. and Adeleke, M.T. (2006). Profitability of snail production in Osun State, Nigeria. *Journal of Agriculture and Food Science*. 4(2): 147 – 155

Chah, J. M and Inegbedion, G. (2012). Characteristics of snail farming in Edo South Agricultural Zone of Edo State, Nigeria. Tropical Animal Health Production, DOI 10.1007/s11250-012-0269

Cobbinah, J.R. (2003). Snail farming in West Africa. *A Practical Guide*. CTA Publications Pp.7 - 12

Enugu State Agricultural Development programme (ENADP) (2009) Snail Rearing: Seminar Paper-Block Extension agents. Enugu: Enugu State Agricultural Development Programme.

Ishaya, S.; Dawan, P.D. and Ngozi, U.O. (2010). Impact assessment of urbanization on land cover in Abuja Municipal and Bwari Area Councils of the FCT using Geo-Infirmation Techniques. *International Journal of Agricultural and Rural Development.* 1(4): 106 - 114

Munonye, J.O. and Moses, P. (2019). Profitability analysis of snail farming in Owerri Agricultural Zone, Imo State. *93rd Annual Conference of Agricultural Economics Society*, University of Warwick, England. 15th – 17th April, 2019

National Population Commission of Nigeria (web) National Bureau of Statistics, 2018. Retrieved at: *http://www.citypopulation.de>php.ni*..... On 25th April, 2022

Ogunniyi, L. T. (2009): Economic Analysis of Snail production in Ibadan, Oyo State. International Journal of Agricultural Economics and Rural Development. 2 (1): 138 - 146.

Okoh, S.O., Okwuokenye, G.F. and Urhibo, F.A. (2016). Evaluation of agro-inputs dealers' commitment to the Growth Enhancement Support Scheme (GESS) in Delta State, Nigeria. *African Journal of Agriculture Technology and Environment*. 5(2): 74 – 87

Owolabi, M.F. (2006). Snail farming, snail management, snail rearing ebook. Accessed at: *www.efarmspro.com*. On 22nd January, 2020

Usman, U.S.; Kehinde, A.S.; Ojo, M.O. Akinyemi, O. and Adebayo, O. (2003). "Some aspects of marketing grasscutter *(Thryonomy swinderianus*)" in Taiwo, A.A. Raji, A.M. *Proceedings of the 27th Annual Conference of the Nigeria Society of Animal Production.*