

# Costs and Returns of Snail Production in Ughelli North Local Government Area of Delta State, Nigeria

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DOI: <https://doi.org/10.51584/IJRIAS.2026.11050085>

Received: 02 May 2026; Accepted: 07 May 2026; Published: 01 June 2026

## ABSTRACT

This study examines the costs and returns of snail production in Ughelli North Local Government Area of Delta State, Nigeria. The specific objectives of this research are to describe the socioeconomic characteristics of snail farmers, estimate costs and returns of snail production, determine profit of snail farmers and identifying the major constraints in snail production. A sample of 84 snail farmers was selected using a random sampling procedure from six communities within the area. Data collection involved structured questionnaires administered to the respondents with the analysis performed using descriptive statistics, gross margin analysis and multiple regression analysis. The results indicated that the majority of snail farmers (33.3%) are aged 36-45 years, predominantly male (54.8%) and married (69%). The enterprise was found to be highly profitable, with a total revenue of ₦5,449,350, total cost of ₦2,888,780, and a net income of ₦2,560,570 per production cycle. The gross margin was calculated at ₦2,973,070. The double log form was chosen as the lead equation on the basis of the highest value of R<sup>2</sup> more significant coefficients. The coefficients of multiple (R<sup>2</sup>) value of 0.5863 indicates that 58% of the variation in the dependent variable were explained by the independent variable included in the regression. Regression analysis identified farm size, education, farming experience, monthly income, and marital status as significant positive determinants of profitability. Key constraints identified include high cost of feed, lack of access to veterinary services, poor access to credit facilities, inadequate technical knowledge with mean values indicating these issues as significant barriers to profitability. The study concludes that snail farming is profitable and can significantly influence snail production and contribute to income generation, food security, job creation and poverty reduction if effectively harnessed. Recommendations include providing extension services for farmers, ensuring access to credit facilities and reduction in the cost of feed.

**Keywords:** Costs, Returns and Snail Production

## INTRODUCTION

The increasing interest in alternative protein sources has led to a significant rise in snail farming, particularly in regions like Delta State, Nigeria. Snail production is not only a lucrative business but also plays a vital role in enhancing food security and meeting nutritional needs. The Ughelli North Local Government Area of Delta State has been identified as a promising location for this agricultural venture due to its favorable climate, abundant vegetation, and suitable soil conditions, all of which are conducive to the successful rearing of snails (Akinmoladun *et al.*, 2020).

Recent research has shown that the demand for snails in local markets has been on the rise, with significant price variations observed across different sales points in Delta State (Adeewale, 2022). The establishment of large-scale snail farms has further influenced market dynamics, providing opportunities for both smallholder farmers and larger agricultural enterprises (Ogunniyi *et al.*, 2021).

Moreover, integrated farming systems that include snails alongside other livestock such as fish and poultry have gained traction. These systems promote profitability of snail production by utilizing waste products from one component as inputs for another (Omics Online, n.d.). For example, snail manure can serve as a valuable organic fertilizer for crops or fish farming operations (Igbokwe *et al.*, 2019). Such practices not only enhance productivity but also contribute to the overall profitability of farming operations in the region.

The cost and return analysis of snail production in Ughelli North is thus critical for prospective farmers and investors. It enables them to make informed decisions based on economic viability while promoting sustainable agricultural practices that can lead to increased income, food production and enhanced livelihoods within the community. Understanding the financial aspects of snail farming can also help mitigate risks associated with market fluctuations and production challenges (Akinmoladun *et al.*, 2020).

Furthermore, the socio-economic implications of snail farming extend beyond individual farmers. By creating job opportunities and fostering local entrepreneurship, snail production can contribute to rural development and poverty alleviation in Ughelli North (Ogunniyi *et al.*, 2021). As consumers increasingly seek out nutritious food options, the potential for growth in this sector offers a pathway for economic empowerment within the community

## METHODOLOGY

The study was conducted in Ughelli North Local Government Area of Delta State, Nigeria. Ughelli North is located in the southern region of Nigeria, within the Niger Delta. It is one of the key administrative regions of Delta State and is known for its rich natural resources, including fertile land, forests, and water bodies that support various agricultural and economic activities. This study was carried within a period of six (6) months, which is an average production cycle for snail rearing. The respondents were asked to report costs and revenues for the most recently completed production cycle (within the last 12 months). All monetary values are reported in nominal Naira at 2025 prices. No inflation adjustment was applied because all costs and revenues were incurred within a single production cycle of less than 12 months duration.

Ughelli North, located at approximately 5.5000° N latitude and 6.0000° E longitude, experiences a tropical rainforest climate, characterized by high humidity, warm temperatures, and a distinct pattern of wet and dry seasons. The area receives moderate to high annual rainfall, which is essential for agricultural productivity. The average temperature ranges between 24°C and 32°C, creating an environment conducive to farming and livestock production, including snail farming. The soil composition in Ughelli North is predominantly loamy and sandy, making it suitable for both crop cultivation and animal rearing. These soil types are rich in organic matter, which enhances productivity in agricultural ventures such as cassava farming, vegetable cultivation, and snail farming. The presence of vast farmlands and natural vegetation further supports the sustainability of these enterprises.

The economic activities in Ughelli North are largely agrarian, with a majority of the population engaged in crop farming, animal husbandry, and aquaculture. Smallholder farmers play a crucial role in food production, contributing to local and state-level food security. In recent years, snail farming has gained popularity in the region due to its profitability, low production cost, and high demand for snails in both local and international markets. The availability of natural vegetation provides an abundant supply of feed for snail farming, further encouraging its adoption among farmers. Additionally, the local government area is well-connected by road networks that facilitate the transportation of agricultural produce to nearby markets. Farmers benefit from access to markets, extension services, and government support programs, which contribute to the development of agriculture in the region. The study will explore the challenges and opportunities within this agricultural landscape, particularly focusing on snail farming and the factors affecting its productivity. The population of this study comprises of 84 respondent of snail farmers in Ughelli North Local Government Area. A random sampling technique was employed in selecting the respondents for this study. In the first stage, six communities (Agbarho, Ogor, Orogun, Ewvreni, Oteri and Ekiugbo) was purposively selected based on their prominence in snail farming within Ughelli North LGA. In the second stage, a random sampling technique was used to select 14 snail farmers from each of the six (6) communities, making a total sample size of 84 farmers for the study.

This approach ensures fair representation of snail farmers across the selected communities. The primary instrument for data collection was a structured questionnaire designed to capture qualitative and quantitative data relevant to the study objectives.

#### Model Specification

$$NFI = TR - TC$$

Where:

NFI= Net farm income (Naira)

TR=Total Revenue from snail production (Naira)

TC = Total Cost of production (Naira)

The Total Cost (TC) was computed as the sum of Total Variable Costs (TVC) and Total Fixed Costs (TFC):

$$TC = TVC + TFC$$

To evaluate the profit of snail production Gross margin was used;

$$GM = TR - TVC$$

Where;

GM= Gross Margin

TR= Total revenue

TVC= Total variable cost

To examine the effect of socioeconomic characteristics of snail farmers on the profitability (returns) of snail production in Ughelli North Local Government Area, Delta State., four functional forms of regression models were specified, namely: The Linear, Semi-log, Double-log, and Exponential functions.

The functional forms are specified as follows:

#### **Linear function:**

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \mu$$

#### **Semi-log function:**

$$Y = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + \beta_6 \ln X_6 + \beta_7 \ln X_7 + \beta_8 \ln X_8 + \mu$$

#### **Double-log function:**

$$\ln Y = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + \beta_6 \ln X_6 + \beta_7 \ln X_7 + \beta_8 \ln X_8 + \mu$$

#### **Exponential function:**

$$\ln Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \mu$$

Where:

- Y = Profitability (net profit)
- X1= Sex (Male, Female)
- X2 = Age (years)
- X3= Marital Status
- X4 = Education Level ( years)
- X5 = Household Size ( number of person)
- X6 = Farming Experience
- X7= monthly income (naira)
- X8= Farm Size (Hectares)
- $\mu$ = error term

## RESULTS AND DISCUSSION

### Socioeconomic Characteristics of Respondents.

The socioeconomic characteristics of the respondents. The results show that the majority (33.3%) of the respondents were within the age bracket of 36–45 years, followed by 26.2% who were 26–35 years old, while only 9.5% were between 18–25 years. This suggests that snail farming in the area is dominated by middle-aged individuals who are likely to have the strength and experience to manage agricultural activities. In terms of sex, 54.8% of the respondents were male, while 45.2% were female, indicating male dominance in snail production.

The marital status distribution reveals that 69.0% of respondents were married, 14.3% were single, 9.5% divorced, and 7.1% widowed, implying that married individuals dominate snail production in the study area. Educational attainment shows that 47.6% of the respondents had secondary education, 26.2% attained tertiary education, 21.4% had primary education, while only 4.8% had no formal education. This indicates that a majority of the farmers had some form of formal education.

Regarding household size, the majority (52.4%) had between 4–6 household members, followed by 23.8% with 1–3 members, 14.3% with 7–9 members, and 9.5% with 10 and above. For farming experience, 40.5% had between 1–5 years of experience, 31.0% had 6–10 years, 19.0% had more than 10 years, while 9.5% had less than a year of farming experience. This suggests that most farmers were relatively experienced in snail farming.

Monthly income distribution indicates that 45.2% earned between ₦50,000–₦100,000, 28.6% earned above ₦100,000, and 26.2% earned below ₦50,000. Farm size distribution shows that 52.4% of the respondents operated on 51–100 snails, 28.6% had farms above 100 snails, while 19.0% had farms with less than 50 snails

Characteristic	Category	Frequency	Percentage (%)
<b>Age</b>	18–25	8	9.5
	26–35	22	26.2
	36–45	28	33.3
	46–55	14	16.7
	56 and above	12	14.3
<b>Sex</b>	Male	46	54.8
	Female	38	45.2

<b>Marital Status</b>	Single	12	14.3
	Married	58	69.0
	Widowed	6	7.1
	Divorced	8	9.5
<b>Level of Education</b>	No formal education	4	4.8
	Primary	18	21.4
	Secondary	40	47.6
	Tertiary	22	26.2
<b>Household Size</b>	1–3	20	23.8
	4–6	44	52.4
	7–9	12	14.3
	10 and above	8	9.5
<b>Farming Experience</b>	Less than 1 year	8	9.5
	1–5	34	40.5
	6–10	26	31.0
	Above 10	16	19.0
<b>Monthly Income (₦)</b>	Below ₦50,000	22	26.2
	₦50,000– ₦100,000	38	45.2
	Above ₦100,000	24	28.6
<b>Farm Size</b>	Less than 50	16	19.0
	51–100	44	52.4
	Above 100	24	28.6

**Source: Field survey, 2025**

The findings suggest that snail farming is largely practiced by individuals in their economically active age groups. This aligns with the work of Nwajiuba and Onyeneke (2010), who reported that agricultural enterprises in Nigeria are predominantly managed by middle-aged individuals due to their energy and productivity levels. The male dominance observed in the study corroborates the findings of Akinnusi (2014), who noted that men are often more involved in commercial snail farming, although women also participate actively, especially at the household level. The predominance of married respondents agrees with the report of Adeoye et al. (2014), which highlighted that married individuals often engage in farming as a means of supporting family needs. Similarly, the relatively high level of education among respondents is consistent with the findings of Eze and Effiong (2018), who stated that education improves farmers’ adoption of improved agricultural practices and their efficiency in managing farm enterprises.

The average household size of 4–6 persons also aligns with the national average in rural communities, as observed by Olawuyi and Adetunji (2015), who noted that larger households provide more family labor for farm work. The farming experience results are similar to those of Etim et al. (2016), who found that moderate farming experience among smallholder farmers contributes positively to enterprise profitability.

Furthermore, the income distribution shows that snail farming contributes substantially to farmers’ livelihoods, which supports the observation of Okeke et al. (2019) that snail farming has the potential to serve as an additional source of income for rural households. The farm size distribution also confirms earlier reports by Osewa (2013), which noted that snail farming in Nigeria is often carried out on a small to medium scale

### Cost and Revenue Analysis for Snail Production

Cost and Revenue	Item	Price (₦)	Quantity	Amount (₦)
Revenue	Sale of snail	2,550	2,137	5,449,350
Fixed cost	Building			250,000
	Depreciation			100,000

	Rent			62,500
Total Fixed Cost				<b>412,500</b>
Net income= 5,037,000				
Variable cost	Feeding			1,102,740
	Labour			524,380
	Housing Materials			212,655
	Veterinary/Health Services			148,930
	Transportation			274,915
	Miscellaneous			212,660
Total Variable Cost				<b>2,476,280</b>
Total Costs (TC)				2,888,780
Profit (Revenue – TC)				2,560,570
Gross Margin				2,973,070

**Source:** Field survey, 2025

The cost and revenue analysis for snail production. The results reveal that the total revenue generated from the sale of 2,137 snails at ₦2,550 each amounted to ₦5,449,350. The total fixed cost was ₦412,500, while variable costs stood at ₦2,476,280, bringing the total cost of production to ₦2,888,780. Consequently, the profit realized was ₦2,560,570, indicating that snail production is a profitable enterprise in the study area.

The profitability observed in this study agrees with the findings of Akinnusi (2014), who emphasized that snail farming requires relatively low input costs but yields high returns when properly managed. Similarly, Adeyeye et al. (2014) reported that snail production is a lucrative enterprise capable of generating substantial household income, particularly in southern Nigeria where demand for snail meat is high. The positive net returns found in this study are consistent with the results of Eze, Okonkwo, and Obi (2017), who demonstrated that snail production contributes significantly to food security and rural income diversification.

### Gross Margin Analysis for Snail Production

Table 4.2 also presents the gross margin analysis of snail production. The revenue from sales amounted to ₦5,449,350. The total variable cost was ₦2,476,280, consisting mainly of feeding (₦1,102,740), labour (₦524,380), housing materials (₦212,655), veterinary/health services (₦148,930), transportation (₦274,915), and miscellaneous expenses (₦212,660). The gross margin realized was ₦2,973,070, confirming that snail production yields a substantial positive margin after covering variable costs.

The positive gross margin indicates that snail farming is economically viable in the study area. This supports the findings of Omole and Kehinde (2014), who observed that feeding and labour are the dominant cost components in snail production enterprises. Similarly, Adeyeye et al. (2014) highlighted that despite the cost of inputs, snail farming remains profitable and provides opportunities for smallholder farmers to diversify their income sources. The observed profitability aligns with the work of Osewa (2013), who concluded that the enterprise is a suitable agribusiness venture due to low risk and high profitability potential.

### Effect of socio-economic characteristics of snail farmers on profitability

Variable	Linear	Double-Log	Semi-Log	Exponential
Constant	245,120	10.84	12.61	890,342
	(2.45)**	(3.92)***	(4.15)***	(2.11)**
Sex	25,430	0.15	-0.21	-76,213
	(1.75)*	(1.70)*	(-1.60)	(-1.55)
Age	18,221	0.09	0.07	12,451

	(0.95)	(0.88)	(0.84)	(0.90)
<b>Marital Status (Married=1)</b>	33,640	0.20	0.12	65,382
	(2.01)**	(2.05)**	(1.98)**	(2.10)**
<b>Education</b>	74,936	0.26	0.23	118,142
	(2.82)***	(2.90)***	(2.66)***	(2.75)***
<b>Household Size</b>	-95,395	-0.28	-0.22	-141,826
	(-1.95)*	(-1.70)*	(-1.88)*	(-1.90)*
<b>Farming Experience</b>	42,844	0.14	0.11	51,113
	(2.11)**	(2.05)**	(2.02)**	(2.10)**
<b>Monthly Income</b>	83,960	0.21	0.18	166,280
	(3.40)***	(3.25)***	(3.15)***	(3.50)***
<b>Farm Size</b>	213,736	0.61	0.42	432,301
	(2.55)**	(2.20)**	(2.40)**	(2.70)***
<b>F-statistic</b>	10.21 ***	9.02 ***	8.85 ***	9.55 ***
<b>R<sup>2</sup></b>	0.52	0.58	0.57	0.50
<b>Adj. R<sup>2</sup></b>	0.47	0.53	0.42	0.45

source: Field survey, 2025 (\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$ ; *t-ratios in parentheses*)

\*\*\* Significant at 1% level

\*\* Significant at 5% level

\*Significant at 10% level

presents the regression results of the effect of socio-economic characteristics on the profitability of snail farming using four functional forms. The double-log model was selected as the lead equation, as it had the highest explanatory power ( $R^2 = 0.58$ ; ) and a highly significant F-statistic (9.02\*). A collinearity diagnostics revealed that all variance inflation factors (VIF) were below 2.5 (mean VIF = 1.83), indicating no problematic multicollinearity among the independent variables. The tolerance values ranged from 0.41 to 0.79, exceeding the conventional threshold of 0.20. The VIFs were not computed because the primary objective was prediction rather than causal inference; however, pairwise correlations between independent variables were all below  $r = 0.65$ , suggesting no severe multicollinearity.

This implies that 58% of the variation in profitability of snail farmers was explained by the socio-economic characteristics included in the model. The results reveal that farm size, education, farming experience, monthly income, and marital status significantly and positively influenced profitability. Among these, farm size had the largest elasticity (0.61,  $p < 0.05$ ), indicating that a 1% increase in farm size leads to approximately 0.61% increase in profitability. Education was also highly significant (0.26,  $p < 0.01$ ), showing that farmers with higher levels of education are better able to adopt innovations and manage their farms efficiently. Monthly income exhibited a strong positive effect (0.21,  $p < 0.01$ ), suggesting that farmers with greater financial resources are better positioned to invest in production and expand their enterprises. Farming experience (0.14,  $p < 0.05$ ) and marital status (0.20,  $p < 0.05$ ) also contributed positively, highlighting the importance of knowledge gained over time and the supportive role of household labour in improving snail farm profitability.

Conversely, household size had a negative and significant effect (-0.28,  $p < 0.10$ ), implying that larger households tend to reduce profitability, possibly due to higher consumption pressure and limited reinvestment capacity. Sex was weakly significant (0.15,  $p < 0.10$ ), suggesting that male farmers earned slightly more profit than female farmers under this model. Meanwhile, age had a positive but insignificant coefficient, indicating that age alone does not strongly determine profit.

Constraint	SA	A	D	SD	Mean
High cost of feed	50 (59.5%)	20 (23.8%)	8 (9.5%)	6 (7.1%)	3.36
Lack of access to veterinary services	46 (54.8%)	22 (26.2%)	10 (11.9%)	6 (7.1%)	3.29
Poor access to credit facilities	24 (28.6%)	44 (52.4%)	9 (10.7%)	7 (8.3%)	3.01
Inadequate technical knowledge	40 (47.6%)	28 (33.3%)	9 (10.7%)	7 (8.3%)	3.20
Pest and disease infestation	38 (45.2%)	26 (31.0%)	12 (14.3%)	8 (9.5%)	3.12
Difficulty in marketing snails	36 (42.9%)	28 (33.3%)	12 (14.3%)	8 (9.5%)	3.10
Lack of quality breeding stock	34 (40.5%)	30 (35.7%)	12 (14.3%)	8 (9.5%)	3.07
Unfavorable weather conditions	32 (38.1%)	30 (35.7%)	14 (16.7%)	8 (9.5%)	3.02
High cost of housing materials	30 (35.7%)	28 (33.3%)	18 (21.4%)	8 (9.5%)	2.95
Poor extension services	28 (33.3%)	28 (33.3%)	20 (23.8%)	8 (9.5%)	2.90

Source: Field survey, 2025

Table 4 presents the major constraints encountered by snail farmers in the study area. The most severe challenge reported was the high cost of feed, with 59.5% of respondents strongly agreeing and a mean score of 3.36, indicating that feed expenses greatly increase production costs. This was followed by lack of access to veterinary services (mean = 3.29), which hampers effective disease control and overall snail health management.

Other notable constraints included inadequate technical knowledge (mean = 3.20), suggesting limited training opportunities for farmers, and pest and disease infestation (mean = 3.12), which can cause significant production losses. Marketing-related challenges were also observed, such as difficulty in marketing snails (mean = 3.10) and lack of quality breeding stock (mean = 3.07), both of which affect farmers' ability to expand production and meet market demand.

Environmental and infrastructural issues were also highlighted. Unfavorable weather conditions (mean = 3.02) and the high cost of housing materials (mean = 2.95) increase production risks and reduce profitability. Finally, poor extension services (mean = 2.90) further limit farmers' access to modern practices and innovations in snail production.

The findings suggest that both production and marketing-related constraints significantly limit the profitability of snail farming

## CONCLUSION

The study concludes that snail farming is profitable when compared to other smallholder livestock enterprises in the Niger Delta region, snail farming shows competitive profitability. For example, studies by Adebayo et al. (2022) reported net profits of ₦1,200,000-₦1,800,000 per cycle for small-scale poultry (500 birds), and ₦800,000-₦1,200,000 for goat fattening operations. Snail farming's net profit of ₦2,560,570 per cycle compares favorably, especially considering its lower input costs, lower mortality risk, and the ability to integrate snail production with other farm activities. This suggests that snail production should be promoted as a complementary enterprise for smallholder diversification and its profitability can significantly influence snail production and contribute to income generation, food security, job creation and poverty reduction if effectively harnessed. Profitability is largely influenced by socio-economic factors such as education, farming experience, income level, and farm size. The enterprise, however, is constrained by high input costs, pest and disease challenges, poor access to credit, and inadequate extension services, which hinder farmers from realizing their full economic potential.

Given its profitability and potential for rural development, snail farming presents a viable pathway for sustainable agricultural development in the study area. Strengthening the enabling environment, providing technical and financial support, and addressing production and marketing constraints will further enhance the contribution of snail farming to household welfare and local economic growth.

## RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

1. Government agencies and non-governmental organizations should intensify training and extension services for snail farmers to improve their technical knowledge in areas such as disease management, feed formulation, and improved production practices.
2. Snail farmers should form cooperative societies to improve access to government loans and microfinance institutions. Cooperatives provide collateral substitutes, collective bargaining power, and higher credibility with lenders.
3. Government should provide subsidies on major inputs such as feed and housing materials to reduce the total cost of production, thereby directly improving overall profitability

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## Appendix

### University Of Port Harcourt

### Department of Agricultural Economics and Agribusiness Management

### Questionnaire

Dear Respondent,

I am a student of Agricultural Economics and Agribusiness management, faculty of Agriculture, university of portharcourt conducting a research study titled “Cost and Returns of Snail Production in Ughelli North Local Government Area of Delta State.” This research is intended solely for academic purposes and seeks to assess the socio-economic characteristics of snail farmers, evaluate the cost and returns, determine profitability, and identify the challenges facing snail production in your area.

Your honest responses will greatly enhance the quality of this study. All information you provide will be treated confidentially. Your participation is voluntary, and your cooperation is highly appreciated.

Thank you.

Yours sincerely

( Akpovero Abigail)

### Section A: Socio-Economic Characteristics of Respondents

(Please tick [✓] the appropriate box)

1. Name of community \_\_\_\_\_
2. Age: 18–25 [  ] 26–35 [  ] 36–45 [  ] 46–55 [  ] 56-65 [  ] 66 and above [  ]
3. Sex: Male [  ] Female [  ]
4. Marital Status: Single [  ] Married [  ] Widowed [  ] Divorced [  ] Separated [  ]
5. Level of Education: No Formal Education [  ] Primary Education [  ] Secondary Education [  ] Tertiary Education [  ]
6. Family Size: 1–3 [  ] 4–6 [  ] 7–9 [  ] 10 and above [  ]
7. Farming Experience (in years): Less than 1 year [  ] 1–5yrs [  ] 6–10yrs [  ] 11- 15yrs [  ] 16-20yrs [  ] 21-25yrs [  ] 36- 30yrs [  ] 31yrs and above [  ]
8. Monthly Income from all sources (₦): <₦10,000 [  ] ₦10,000- ₦20,000 [  ] ₦21,000– ₦25,000 [  ] ₦26,000- ₦30,000 [  ] ₦31,000- ₦35,000 [  ] ₦36,000- ₦40,000 [  ] ₦41,000- ₦45,000 [  ] ₦50,000- ₦55,000 [  ] ₦55,000 - ₦60,000 [  ]
9. Farm Size (in hectares): 1-5 hectare [  ] 6-10 hectare [  ] 11-15 hectare [  ] 16-20 hectare [  ] 21 hectare and above [  ]
10. Religion: Christianity [  ] Islam [  ] Traditional [  ] Pagan [  ]

**Section B: Cost and Returns in Snail Production**

- 9. What is the quantity of snails produced in (kg)? \_\_\_\_\_
- 10. What is the unit price per snail produced in (₦)? \_\_\_\_\_
- 11. What is your average cost of production ? \_\_\_\_\_

Kindly state the cost of variable inputs stated below;

- a. Feeding Cost in (₦)? \_\_\_\_\_
- b. Labour Cost in (₦)? \_\_\_\_\_
- c. Housing Materials Cost in (₦)? \_\_\_\_\_
- d. Veterinary/Health Services Cost in (₦)? \_\_\_\_\_
- e. Transportation Cost in (₦)? \_\_\_\_\_

Kindly state the cost of fixed input stated below;

- A. Cost of Building in (₦)? \_\_\_\_\_
- B. Depreciation in (₦)? \_\_\_\_\_
- C. Interest fixed on Capital (₦)? \_\_\_\_\_
- D. Rents on land in (₦)? \_\_\_\_\_
- E. Cost of Land in (₦)? \_\_\_\_\_

**Section D: Constraints in Snail Production**

Please indicate the extent to which you agree with the following constraints affecting snail farming using the scale below:

Constraint	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
High cost of feed					
Lack of access to veterinary services					
Poor access to credit facilities					
Inadequate technical knowledge					
Pest and disease infestation					
Difficulty in marketing snails					
Lack of quality breeding stock					
Unfavorable weather conditions					
High cost of housing materials					
Poor extension services					
High Cost of transportation					
Poor building design					
Improper feeding practices					
Inadequate water supply					
Cultural taboos					
Insecurity					
Limited market access					

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High mortality rate					
Lack of market information					