

Mechanisms for Enhancing Snail Farming Among Farmers for Employment Generation and Poverty Reduction in Ebonyi State

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Abstract: *Unemployment and poverty are very common twin socio-economic problem in Ebonyi State, inspite of the employment opportunities in snail rearing. Thus, this study was carried out to identify mechanisms for enhancing snail farming for employment generation and poverty reduction in the state. The study adopted survey research design through questionnaire to elicit information from 144 respondents. Data gathered through questionnaire were analyzed using mean to answer the research questions. Data were gathered, analyzed and presented in order of the four research questions developed by researchers to guide the study. Results of the analysis indicated that farmers required skills to identify conducive pen environment, select reliable and viable snail stocks, properly feed the snail, prevent disease and pests and sell the snail farm produce. The results also, showed that farmers need pens and houses, feeds, weighing scale, access to low credit, subsidized inputs and favourable market channels. It was then recommended that Ebonyi State government should make policies that favour snail farming, provide subsidized inputs and train farmers on snail rearing skills. Also, farmers should utilize mechanisms identified by this study to enhance snail farming in the state.*

Keywords: snail farming, mechanism, farmers, employment, poverty

INTRODUCTION

Unemployment has been observed as a widespread condition plaguing the people of Ebonyi State. the attendant problems of unemployment are poverty, hunger and disease (Ekezie, 2019). The National Bureau of Statistics (2022) ranked Ebonyi State as the fourth poorest state in Nigeria and with 40.2% unemployed rate. This implies that Ebonyi state economy lacks the capacity to employ thousands of people looking for jobs, and thus, people should not rely completely on the state labour market for jobs. However, Ebonyians have alternative means of getting employed and alleviate poverty, which according to Egbe (2022) is to go back to farming.

One of the lucrative farming activities in which people can be self-employed and create wealth for themselves is snail farming (Adedayo, 2018; Munonye and Moses, 2019). Snails are invertebrate micro livestock that have recently attracted attention of Nigerian farmers because of their great economic potential employment opportunities and nutritional values (Adewale and Belewa, 2022). Snails have white, tasty, tender and nutritious meat, which is highly rich in protein (37 -51%) and all essential amino acids (Agbogidi and Okonta, (2017). Snail meat is socially well accepted in many parts of Nigeria and the demand for the meat is now high in both local and foreign markets. The high acceptance of snail meat is due to its medicinal values (Oguntoye, Olalekan and Olusegu, 2020). The authors went further to state that snail meat cures heart and kidney disease, stroke, high blood pressure, poor eye sight, constipation, asthma and ulcer. In spite of these numerous benefits of snails and its high demand, the supply is still low because very few snail farms exist in the study area.

Today, the supply of snail is majorly through the traditional means by which rural folks scout freely in the bushes, forest and farmlands to collect snails during raining seasons for domestic uses and sales. That is, the supply is seasonal and does not keep pace with its demand, especially now that open forests are being converted to urban settlements. Thus, there is need to extend the supply of snail to all seasons of the year; and to make snail production and supply a business that generates employment, regular income and food. This calls for an organized form of snail production, which is through farming.

Snail farming, known as Heliculture is an act of rearing snails for flesh, slime, eggs or other economic uses (Ogunniyi (2019). The author explained further that snail farming involves keeping snails in a confined environment under human control and management. It is a good means of earning a living, a lucrative business venture, money spinner and has high rate of turnover (Okeke, 2015). Snail farming is a farm business that creates employment opportunities, create wealth within a short period of time and then can be used to alleviate poverty among people. Snail farming is explained in the context of this study as the breeding and rearing of snails in enclosures such as boxes, pens, trenches, tanks and any other structure using certain inputs.

Snail farming inputs such as labour, facilities, equipment and financial requirements are relatively low compared to those in poultry, pig and fish farming (Okwuokenye, Onyenekihian and Damisa, 2022). The farm level notes on improved snail farming by Food and Agricultural Organization of United Nations (FAO, 2013)) contained weighing scales, measuring tapes, water containers, buckets, plates with lids and hand sprayers as equipment for snail farms. Other facilities and equipment such as, harvest warehouse, hatchery, cooling chamber, cages, fabric for low temperature, temperature and humidity sensors and other agricultural tools were recommended by Asuquo, Eka and Ekpo, 2019). These authors remarked that equipment, tools and facilities for snail rearing are few and not very expensive, but still few farmers are making fortune from snail farming in Nigeria. In keeping with the above statement, Munuwoki (2022) said that most snail farmers face management challenges which can only be overcome through effective mechanisms.

Mechanism is explained in the context of this study as an active measure or action to be taken to enhance snail farming among people. In the report of Adedayo (2018), skill training, provision of incentives and favourable market environment are measures that can enhance small rearing. Incentives in agriculture are tangible and non-tangible packages provided to farmers to encourage them to invest in agricultural business ventures (FAO, 2021). Incentives for agricultural investment are classified into financial supports, technical supports and regulatory policies (FAO, 2021). In the opinions of Otene (2022) financial incentives to farmers are low interest loans, grants, input subsidies, market price supports and

concessional insurance; while technical and business support incentives are the technological packages and extension services. Farmers can also be motivated through skill training and adequate farm business information.

Skill is explained in this study as a well-established habit of doing things in acceptable manner in snail farm business. It is the ability of a snail farmer to establish snail farm, manage it, harvest it and sell the produce. Skill training is defined as teaching both technical and entrepreneurial skills needed for snail farming (Ziderman, 2016). Technical skills are the vocational skills such as skills in selecting good environment, and reliable snail stock and skills in feeding the snails (Ogba and Ndem, 2016). Entrepreneurial skills are business management skills such as strategic planning skills, creative and innovative skills, time management skills and marketing skills (Ekezie, 2019). The author stated further that communication skills, leadership skills and record keep and accounting skills are entrepreneurial skills. Farmers need both technical and entrepreneurial skills for success in snail production and marketing. In the opinions of Egbe (2022) marketing in agriculture involves change of place (transportation), change of form (processing), change of time (storage) and change of ownership (buying and selling). Marketing of snail is that process of creating awareness to get customers, exchange and delivery of snail and its products that have values (Aderounmu, Oyewo and Oke, 2019). Ugwumba, Obikwe and Ozori (2016) said that snail could be sold directly to individual customers in pieces or in baskets, to local market, restaurants, hotels and foreign markets. These authors stressed further that farmer could also sell at farm gate or through co-operative society to retailers and wholesale marketers. The perishable nature of snail farm produce is a major challenge to farmers in snail marketing.

It has been observed that farmers and intending snail farmers in Ebonyi State have low managerial skills, inadequate facilities, low knowledge on marketing channels and poor incentives for snail farm business. These challenges according to Otene (2022) scare people away from snail farming and make its economic potentials and employment opportunities elude the people. It is therefore necessary to scheme out mechanisms for enhancing people's participation in snail farming to provide employment and reduce poverty in the state.

The main purpose of study is to determine mechanisms for enhancing snail farming among farmers in Ebonyi state to provide employment and reduce poverty. Especially, the study sought to

1. Identify managerial skills required by farmers to enhance snail farming in Ebonyi state.
2. Find out material resources required to enhance snail farming in the state
3. Identify agricultural incentives required to enhance snail farming in the study area
4. Ascertain snail marketing channels required to enhance snail farming among farmers

The research questions guiding the study are:

1. What are the managerial skill required to enhance snail farming?
2. What are the material resources required to enhance snail farming?
3. What are the agricultural incentives required by farmers to enhance snail farming?
4. What are the marketing channels required to enhance snail farming in Ebonyi state?

MATERIAL AND METHOD

This study was carried out in Ebonyi state, Nigeria. Ebonyi state was chosen for this study because the demand for snail is greater than the supply and many people have the desire for snail farming business for them to be employed and reduce poverty. The study adopted survey research design, using questionnaire to elicit information from a sample of 144 respondents made up of 108 livestock farmers

and 36 extension agents. Multi-stage sampling techniques was utilized to select respondents for the study. In the first stage, three local government areas were randomly selected from each of the three agricultural zones of the state. the second stage involved purposive selection of four communities from each local government area (totally 36 communities). In the third stage, three (3) livestock farmers and one (1) extension agent were randomly selected for the study. This gave a total of 144 respondents. Questionnaire was developed by the researchers in four-point scale and validated by three experts. The instrument was used to elicit information from the respondent and the data gathered for study were analyzed using mean to answer the research questions.

RESULTS AND DISCUSSION

Research Question 1: What are the skills required by farmers to enhance snail farming?

Table 1: Mean rating of respondents` opinions on skills required by farmers to enhance snail farming in Ebonyi State

S/N	Item Statement	$\bar{x}$	SD	Remarks
1	Ability to identify pen environment conducive to snail rearing	2.83	0.57	Required
2	Skills in preventing diseases and pests	2.91	0.55	Required
3	Skills in selecting reliable and viable stocks	2.91	0.51	Required
4	Skills in feeding snails	3.01	0.49	Required
5	Skills in strategic planning	2.67	0.63	Required
6	Skill in daily records keeping of farm activities	2.79	0.61	Required
7	Skills for sales and marketing snails	2.94	0.54	Required
8	Skills for being creative and innovative in snail farming	2.59	0.72	Required

Data presented in table 1 revealed that all the eight (8) items had mean above the cut, off point of 2.50, signifying that each item is required as a skill for enhancing snail farming. The standard deviation of the items ranged from 0.49 to 0.72, having a close range which indicates that the respondents are close in their opinions to each other.

Research Question 2.

What are the material resources required for enhanced snail farming in Ebonyi State?

Table 2: Mean rating of the respondents` opinions on material resources to enhance snail farming.

S/N	Item Statement	$\bar{x}$	SD	Remarks
1.	Pens and Warehouses	2.71	0.59	Required
2.	Climate control equipment like humidifiers and fabric	2.87	0.51	Required
3.	Feeding troughs	2.41	0.69	Not Req
4.	Feeds	2.94	0.46	Required
5.	Water tanks	2.77	0.56	Required
6.	Plastic buckets	2.83	0.52	Required
7.	Hand towel	2.79	0.54	Required
8.	Weighing scales	2.99	0.44	Required
9.	Rakes	2.11	0.71	Not Req
10.	Water sprinklers	2.89	0.48	Required

Data in table 2 showed that eight out of ten items had their means above 2.50, the cutoff point. This implies that each of the eight items is a material resource required to enhance snail farming. The remaining two items had their means below the cutoff point of 2.50, implying that each of the two items

is not a material resource to enhance snail farming. The standard deviation of the items had close range from 0.44 to 0.71, implying that respondents' opinion are close to each other and each not far from the mean.

Research Question 3

What are the agricultural incentives required to enhance snail farming in the study area?

Table 3: Mean rating of the respondents' opinions on agricultural incentives required to enhance snail farming.

S/N	Item statement	$\bar{x}$	SD	Remarks
1.	Access to low interest credits from financial institutions	3.32	0.47	Required
2.	Access to government grant	2.72	0.57	Required
3.	Tax reduction and waiver for snail farmers	2.68	0.61	Required
4.	Subsidies in snail farm inputs	2.98	0.51	Required
5.	Training of farmers	2.99	0.50	Required
6.	Creation of markets for snails	2.74	0.55	Required

Data presented in table 3 revealed that all the six items had their means above the cut off point of 2.50. This implies that each of the items is an incentive required to enhance snail farming among farmers. The standard deviations of the items have close range, from 0.47 to 0.61. It signifies that the opinions of the respondents' are close to each other and that each is not far from the mean.

Research Question 4:

What are the marketing channels required to enhance snail farming in Ebonyi state?

Table 4: Mean rating of respondents' opinions on marketing channels required to enhance snail farming.

S/N	Item statement	$\bar{x}$	SD	Remarks
1.	Direct sell to individuals	3.06	0.47	Required
2.	Farm gate middle man	3.11	0.44	Required
3.	Retail markets	2.73	0.57	Required
4.	Whole sale markets	2.97	0.50	Required
5.	Super markets	1.77	0.69	Not required
6.	Group marketing co-operative society	3.15	41	Required
7.	Internet marketing	1.60	0.70	Not required

Data in table 4 showed that five out of the seven items had their means above the cut off point 2.50. This signifies that each of the five items is a marketing channel required to enhance snail farming in the study area. The remaining two items had means of 1.60 and 1.77 respectively. It implies that each is not accepted as a marketing channel required to enhance snail farming.

The standard deviations ranged from 0.41 to 0.70. This is a close range, indicating the closeness of the respondents' opinions to each other and that each response is close to the mean. The discussion of findings was done on the basis of research questions; under these subheadings: management skills, facilities, incentives and marketing channels for snail farming.

Management skills identified by the study are both technical and entrepreneurial skills. These skills include ability to identify conducive pen environment, ability to select reliable and viable stock, skills in preparation and provision of quality feed, and skills for preventing pest and diseases. These findings

agree with the report of Adedayo (2018) that snail farmers require skills in construction of snail pen, skills in selection of good stock and skills in supplying quality feeds. The findings also, agree with the opinions of Amadi and Raji (2021) who postulated that vocational and technical education builds technical skills for individuals to be efficient and productive farmers.

The study further identified skills in being creative in snail rearing, skills in strategic planning, skills in record keeping and sales and marketing as entrepreneurial skills needed for snail farming. These findings corroborate with the study of Ekezie (2019), which identified accounting skills, innovative skills sales and marketing skills as business management (entrepreneurial) skills in snail farming.

This study identified pens, climate control devices, feeds, water tanks, water sprinkles and weighing scales as facilities/material resources required for snail farming. The findings are in line with the report of Umeh, Onuh, Onuka and Ucha (2016) that the water regulator, weighing scales, harvesting warehouse, water containers/cooling chambers are needed for snail farming. The findings of this study and the supporting literature indicated that relatively feed material resources are needed for snail farming. Thus, people can easily invest in snail rearing.

The study identified access to low credits and grants, tax reduction subsidies on inputs and favourable markets as incentives for enhancing snail farmers. These findings are in keeping with the F.A.O (2021) guide on incentives that snail farmers require both direct and indirect incentives in form of credit facilities, grants, tax concession and favourable policies. The findings also agree with Pineiro (2020) who stated that farmers' incentives such as subsidies on inputs, technical supports, extension services, education and regulatory measures encourage them to invest on food production.

It was identified by the study that training of farmers is an incentive needed to enhance snail farming. This finding is in consonant with the views of Barnes (2019) who noted that skill acquisition is a mechanism for motivating people to engage in farming. It also agrees with Adedayo (2018) who asserted that training of farmers brings development in snail farming and in turn reduces poverty among farmers.

The marketing channels identified by this study for enhancing snail farming include direct sales to individuals, farm gate sales, retail and wholesales and selling through cooperative societies. The findings are in agreement with Nnodim and Ekpo (2019) that retail sales, wholesales, farm gate sales and cooperative marketing are the main marketing channels for distributing agricultural produce in Nigeria.

The finding further revealed that internet markets and supermarkets were not needed to enhance snail farming in Ebonyi State. The rejection of these channels for marketing snails stemmed from the low level of ICT skills among farmers and the perishable nature of snails, which does not favour storing them for sales in supermarkets.

CONCLUSION

The study identified mechanisms for enhancing snail farming among farmers in Ebonyi State for generating employment, food security and poverty reduction. The identified measures were grouped under management skills, snail rearing facilities, farmers' incentives and marketing channels required to enhance snail farming. The need to enhance employment opportunities are very high especially now that Nigerians are facing socio-economic problems of poverty, hunger and diseases. It is therefore, very

important to encourage farmers to engage in agricultural production, more so, in lucrative farming venture like snail farming. The result of this study revealed mechanisms with which farmers can be motivated to engage in snail farming.

Based on the results of this study, the following recommendations were made:

1. Ebonyi state government should provide enabling environment for farmers to train on snail management skills and use the skills.
2. Extension agents should provide skill training and extension services to farmers for snail rearing.
3. Government of Ebonyi State should make policies that will subsidize snail inputs and create favourable markets for snails.
4. Farmers should utilize measures identified by this study to enhance snail farming.

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