



CASE REPORT

Poverty Reduction through Snail Farming in Nigeria

RE Uwalaka¹ and EO Ahaotu²

¹Department of Forestry Technology, Imo State Polytechnic Umuagwo, Ohaji, Nigeria

²Department of Animal Production Technology, Imo State Polytechnic, Umuagwo, Nigeria

ARTICLE INFO

Received: July 26, 2013
Revised: August 03, 2013
Accepted: August 05, 2013

Key words:

Food security
Nigeria
Snail rearing
Sustainable rural households

ABSTRACT

Snail farming will help in reducing poverty in Nigeria. This paper emphasized that snail farming is a money spinning enterprise both locally and internationally because from establishment through feeding to harvesting, 'snailery' is relatively cheap. The paper also emphasizes that snail farming is a veritable means of improving the protein levels of Nigerian population as well as a means of generating income and achieving self sufficiency as it provides self employment to the people. Besides, the animal is highly nutritious, has a lot of medicinal and cultural/social values.

*Corresponding Author

RE Uwalaka
vieng663@hotmail.com
emmaocy@yahoo.com

Cite This Article as: Uwalaka RE and EO Ahaotu, 2013. Poverty reduction through snail farming in Nigeria. *Inter J Vet Sci*, 2(3): 81-84. www.ijvets.com

INTRODUCTION

Snails are soft bodied animals that belong to the phylum Mollusca, class Gastropoda and order Pulmonata. In West Africa, snails dwell mostly in humid forest areas from where they are gathered by villagers for consumption and other uses ((Uwalaka and Onyeneke, 2009).

The meat has traditionally been a major ingredient in the diet of people living in high forest zone. Ekenyem. (2008) reported that snails are high in protein, iron and low in fat. Ozuzu (2003) noted that snails contain almost all the amino acids required by man. In recent times, the wild snail population has declined considerably, mainly due to the impact of man. Anthropogenic factors including deforestation slash and burn agricultural practices and overexploitation of this animal resource stemming from the world population are captured before they reach maturity (Esak and Takerhash, 1992).

The need to enhance the mass production of snails cannot be overestimated because snails can be reared both on small scale and large-scale production systems (Elinsile, 1982). Snail rearing can be seen as a veritable means of generating income and to achieve self sufficiency during famine periods. as presently experienced in Nigeria today. There is now a renewed interest in snail farming because of its inherent importance to food security and

sustainable livelihood in rural households. It is against this background that a study as this has been embarked upon. The present review is an attempt to examine the role of snail farming for poverty reduction in Nigeria.

Importance and Prospects of Snail farming in Nigeria

The importance of snail farming cannot be underscored because of the great prospects in the business. The amount of capital required for the establishment of a snailery is appreciably small and the practice requires little labour with no strenuous physical exertion (Goodman, 2008). Physically challenged people including the dumb, lame; deaf etc can also carry out the work. Snails generally are noiseless and quite easy to handle (Agbogidi *et al.*, 2008). They can be reared in urban environment without infringing the peace of neighbors. The practice has small space requirement. Besides, snails have been shown to adapt to various environmental conditions hence can be raised in small towns, cities, farms, villages, as backyard farming or on commercial. In addition, the meat appears as a delight on the table to most families (Omole *et al.*, 2002). They can be managed in a small space (Ejidike, 2002). Snails sell generally high compared to other meat hence their establishment can substantially help in solving the unemployment, nutritional and health problems.

Giant African snails have voracious appetite. They are known to eat more than 500 different types of plants including peanuts, beans, peas, cucumbers and melon (Uwalaka and Onyeneke, 2009). If fruits or vegetables are not available, the snails will eat a wide variety of ornamental plants, tree bark, and even paint and stucco on houses (Akinnusi, 1998; Akintomide, 2004). Their food also include grains, waste products, such as maize shaft, plantain peels, vegetables including cabbage, pawpaw, pineapples, nuts, cherry, water leaf, cassava, cocoyams, soft shoots and lettuce (Okafor, 2001). Other foods eaten by snails are flowers, potatoes, yams, and carcasses like dead birds, offal and dead ants, termites and cockroaches. Adeyeye (1996) reported that the snail's ability to utilize a variety of readily available feeding materials to achieve appreciable weight gains under intensive management and the high dietary value of the meat make it a suitable and cheaper alternative to other animal protein source. Although Ajayi and Awesu (1979) reported that snailery is a profitable business in Nigeria that have not been fully exploited. According to Akinbile (1999), snail farming is one of the least recognized aspects of livestock production in Nigeria.

The need for increased animal protein consumption in both, rural and urban Nigeria populace in the face of rising inflation has resulted in the increase in the cost of conventional animal protein sources. There is now a general shift from animal protein to plant sources because even the prices of fish have soared above the reach of an average Nigerian hence the rearing of snails is a source of income to the peasant farmers in rural areas (Agbogidi *et al.*, 2008). Snails have been shown to be rich in protein hence it can compare favourably with crude protein contents in beef, chicken, chevon, mutton and pork (Ademosun and Omidiji, 1999; Omole *et al.*, 1999; Anamayi *et al.*, 2005). Ajayi (1978) reported that snails have low lipid and saturated fatty acids contents, which have an important health implication and may be beneficial to hypertensive patients and others who do not take fatty foods. The fresh snail meat according to Ogbeide (1968) contains the following nutrients as indicated in Table 1.

Snails meat has also been associated with high level of calcium, phosphorus, iron and copper while the shell is particularly rich in calcium thus very useful in the preparation of poultry feeds. The giant African snail

provides many nutrimental benefits (Ademosun and Omidiji, 1999; Omole *et al.*, 1999; Ejidike, 2002; Akintomide, 2004). Its meat is tasty, tender and highly nutritious. Its tenderness and fine texture make it the most suitable meat for all ages. Snail meat popularly referred to as "Congo" meat in Nigeria is consumed in many countries and regarded as a delicacy. The nutritional values of snails compared with other food animals are presented in Table 2.

Table 1: Proximate composition of nutrients in fresh snail meat

Nutrients	Value
Crude protein	18.20%
Carbohydrate	2.88%
Ether extract	1.36%
Fat	1.01%
Crude fibre	0.07%
Ash	1.37%
Nitrogen free extract	4.95%
Iron	12.2mg/100g
Water	74.06%
Other mineral constituents	60.5m/100g

In Nigeria, snails are an important source of income for some farmers who dwell in the rainforest areas and their fringes. These rural dwellers collect them in the wild in the rainy season; sell them at premium price along the roadside and at some rural and urban markets. The money realized from their sale is used for many purposes including training of their children and meeting other household needs. Usually, snails become scarce during the dry season hence expensive at this period (Amusan, 2002). Their domestication could make them more readily available all year round as well as reducing their prices to a reasonable extent. Their farming therefore, will go a long way to reducing the current high rate of poverty problems in Nigeria. Nigerian economic recovery programmes have necessitated a radical shift from total dependence on government for job to self-employment. One of such attractive areas for self-employment is snail farming and many researchers see this as a money spinning business that can complement Nigeria's carbohydrate meals and contribute to both export and international markets.

Although West Africa and Western Europe were the world main areas of snail consumption, other notable countries including United Kingdom, Germany, Belgium,

Table 2: Nutritional values of snail meat compared with other food animal sources

	Carbohydrate	Protein	Fat	Ash	Water
1. Snail meat	2.93	20.70	1.21	1.49	73.67
2 (a) Beef	-	17.5	22.0	0.9	60.0
(b) Pork	-	11.9	45.0	0.6	42.0
(c) Lamb	-	15.7	27.7	0.8	56.0
3 poultry					
(a) Chicken	-	20.2	12.6	1.0	81.8
(b) Duck	-	16.2	30.0	1.0	68.6
(c) Turkey	-	20.2	20.2	1.0	79.3
(d) Dried fish	-	60.0	21.0	15.0	4.0
5 milk					
(a) Cow (whole milk)	5.0	3.5	3.8	0.7	87.3
(b) Goat	4.5	3.8	4.8	0.8	86.4
6 Eggs					
(a) White of egg small amount	10.5	Small amount	1.0	88.0	
(b) Yolk of egg small amount	15.5	33.5	1.0	49.5	

the United States or America, East Asian countries, the Philippines and China have been reported to have joined in the export market of snails (Akinbili, 1999). Snails are huge export materials to earn foreign exchange either as finished or primary goods (Anamayi *et al.*, 2005; Agboola *et al.*, 2008). Omole (1998) reported that snails' shell is a zinc repository and good for prostrate health and weight loss. The slimy secretion is a therapeutic agent for several ailments.

Other uses of snails

Medicinal values

Abere and Lameed (2008) reported that the low cholesterol level of snails makes them useful in the treatment of arteriosclerosis and other heart-related diseases. Other curable ailments by snails in Nigeria include whooping cough, anemia, ulcer, asthma, age problems, hypertension and rheumatism (Abere and Lameed, 2008). Okafor (2001) noted that snails are good sources of iron hence recommended for iron deficiency diseases such as anemia. Composition of snails promotes fertility and assists in the cure of sterility in women (Okofor, 2001). Abere and Lameed (2008) maintained that a special form of calcium phosphate extracted from snails has been implicated in the cure of some kidney diseases, tuberculosis, diabetes, asthma, heart diseases and circulatory disorders. Ayodele *et al.* (1999) noted that snails cure hemorrhoids, prevent influenza, restore virility and enhance beauty in youths. Snails have also been implicated in the reduction of pain and loss of blood during labour as well as in the treatment of small pox (Akinnosi, 1998).

Conclusion

This review attempted to examine the contribution of snail farming to poverty reduction in Nigeria. The paper emphasized that snail farming is a veritable means of complementing the carbohydrate meals of the totality of Nigeria as well as a means of generating income and achieving self-sufficiency as it provides self employment to the people. To be able to achieve this, government should encourage investors in this area financially through extension services. It is, therefore, recommended that government should take more than a cursory interest in snail farming by encouraging investors through progression of an enabling environmental, financial and technical support.

REFERENCES

- Agboola FK, BS Fagbohunka and GA Adenuga, 2008. Activities of *Archachatina marginata* haemolymph enzymes: clues to terrestrial snails' salt intolerance. *Inter J Biol Chem Sci* 2: 6-71.
- Abere SA and GA Lameed, 2008. The medicinal utilization of snails in some selected states in Nigeria. *In: JC Onyekwelu, VAJ Adekunle and DO Oke (eds.)* Proceeding of the first National conference of the Forests and Forest Products Society (FFPs) held in Akure, Ondo State between 11th and 18th of April, 2008. pp: 233-237.
- Adeyeye EI, 1996. Waste yield, Proximate and mineral Composition of three different types of land snail found in Nigeria. *Inter J Food Sci Nutr* 42: 111-116.
- Agbogidi OM, BC Okonta and EL Ezeani 2008. Effects of two edible fruits on the growth performance of African giant land snail. (*Archachatina marginata* Swainson). *J Agri Bio Sci*, 3: 26-29.
- Ajayi SS, 1987. Observation of biological and nutritive value of the African giant snail. (*Archachatina marginata*). *East Afric Wildlife J*, 4: 85-95.
- Akinnosi O, 1997. Snail farming: low investment and high profit business *Livestock Echo*.
- Akinnosi O, 1998. Introduction to snail farming. Omega Publishers, Lagos.
- Akintomide IA, 2004. Tropical snail farming. Oak Ventures Publishers. Lagos.
- Amusan OM, 2002. The techniques of snail farming as a viable and profitable venture. Oak Ventures Publishers, Lagos.
- Anamayi SE, RM Anamayi, EN Okeke, BA Adam and EA Aderounmu, 2005. Marketing of edible land snail (*Archachatina marginata*) in Ibadan. *In: LP Popoola, P Mfon and PI Oni (eds.)*. Proceedings of the 30th Annual Conference of FAN held in Kaduna, Kaduna State between 7th and 11th of November 2005. pp: 598-605.
- Ejidike RN, 2002. Snail rearing practices in southern Nigeria. *In: Proceedings of 27th Annual Conference of the NSAP held in Akure*. pp: 307-310.
- BU Ekenyem, 2008. Snail Farming and Rural Economics Empowerment.
- Lecture delivered in a 2 day workshop on Profitable Livestock Production for Rural Economic Empowerment at Christ the Good Shepherd Centre. 16th - 17th September.
- Elimsile LJ, 1982. Snail and snail farming. *World Anim Rev*, 4: 20-26.
- Esak KO and IS Takerhash, 1992. Snails as pest and food. *Malaysian J Econom Agri*, 59: 359-367.
- Goodman AK, 2008. Giant African land snails. <http://www.geocities.com/heartland/valley/6210/index1.htm>.
- Hodasi JM, 1989. Life history structure of *Achatina achatina*. *J Molluscan Studies*, 45: 54-56.
- Ogbeide OC, 1968. Nutritional hazards of food, taboos and preference in mid-west Nigeria. *Amer J Nutr*, 27: 213-216.
- Okafor FU, 2001. Edible land snails: a manual of biological management and farming of snails. Splendid Publishers, Lagos.
- Omole AJ, 1998. The utilization of different energy supplements on the performance characteristics of grower edible giant land snail (*Archachatina marginata*). Unpublished MSc Thesis submitted to the University of Ibadan. 86p.
- Omole AJ, JA Oluokun, AO Oredein, AK Tiamiyu, AO Afolabi, FO Adetoro and AP Adejuyigbe, 1999. Snail production potential for increasing animal protein intake in West Africa. *In: Proceedings of the 26th Annual Conference of the Nigerian Society of*

- Animal Production held in Ilorin, Nigeria between 21st and 25th of March, 1999. pp: 393-401.
- Ozuzu KJ, 2003. Snail Farming in Nigeria. An asset to Nigeria Economy. Training Workshop paper presented at Villa Maria, Owerri, Imo State.
- Uwalaka RE and EN Onyeneke, 2009. A handbook on Snail Farming. Danstarting Press, Owerri, Nigeria. 37pp.
- Wosu IO, 2003. Commercial snail farming in West Africa: a guide. Ap Express Publishers Ltd, Nsukka.