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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background Information

Snail meat has been consumed by humans throughout the world since prehistoric times (Cobbinah, 2001). The interest in snail farming around the world stems from snails' high quality protein and medicinal value. For instance, protein from snail meat is said to be very rich in all essential amino acids such as lysine, leucine, arginine and tryptophan (Emevbore and Ademosun, 1988). Snail meat has been found to be higher in protein content (37– 51%) compared to that of guinea pig (20.3%), poultry (18.3%), fish (18%), cattle (17.5%), sheep (16.4%) and swine (14.5%). Iron content (45 – 59mg/kg), low in fat (0.05 – 0.08%), sodium and cholesterol level (Bayode, 2009).

The bluish liquid obtained from snail has high iron content and is used for treatment of anemia, hypertension and poor sight (Emevbore and Ademosun, 1988). The formulations from this liquid can be used to treat burns, abscesses and other wounds, measles, small pox and some skin diseases (Bayode, 2009). In Ghana, the bluish liquid is believed to be good for infants' development (Ashaye, Omele, Adetoro and Kehinde, 2001). According to Amao, Adesiyon and Salako (2007), snail meat is recommended in the past for treatment of ulcer, asthma and even at the imperial court, in Rome it was thought to contain aphrodisiac properties (arousing or increasing sexual desire) and was often served to visiting dignitaries in the late evenings.

Snail meat being rich in calcium, potassium, magnesium and iron is recommended for a hypertensive and pregnant women. It is an important source of protein to human diet, additional source of income to farmers. This study will therefore serve as reference material for snail farmers and create awareness to prospective snail farmers.

Over 80% of Nigerian populace are poor to whom protein products such as: Meat are a rare luxury. To avert danger of malnutrition, especially among children, the giant African land snail is a good substitute source of protein (Bayode, 2009). Asheye, et al

(2001) reported that snail could be used to reduce the problem of malnutrition. Amao, Adesiyon and Salako (2007) reported that snail breeding can start at any time of the year under domestication, but the time to start breeding snail is at the beginning of the rainy season when feeds of snail are available. The foundation stock may be from the following sources: Snail farmers, research institutes that produce snails or direct collection from the forest or bush. Edible land snails, though hermaphrodite, reproduce by fertilization of two ova when two snails mate and exchange their sperms reciprocally. The eggs, about two weeks after fertilization are laid at night in holes dug 5 – 15cm deep in the soil.

The hatchlings remain in the soil for 3 – 5 days after in situ hatching method. Snails feed on a wide variety of food mostly in the night at dusk, i.e. snails are nocturnal and crepuscular. They may feed during the day when it rains or there is very dark cloud (Akintomide, 1997). The advantages of snail farming (heliculture) over most other livestock includes low capital requirements, for its establishment and operation, less demand for professional knowledge, very high fecundity and low mortality, less labour requirement, and availability of ready domestic and international markets among others (Akinbile, 2000). Some constraints that militate against good performance of snail includes genetic constituent, hormonal influence, environmental factors, rearing pattern and inefficient use of resources available to the farmers as was observed by Akinbile,

(2000).

There is a flourishing international trade of snails in Europe and North America. In France, the annual requirement is about 5 million kg, over 60% of which is imported; the estimated annual consumption in Italy is 306 million snails. In west Africa, snail meat has traditionally been a major ingredient in the diet of people living in the forest belt. In

Cote D'Ivoire for example; an estimated 7.9 million kg is consumed annually. In Nigeria, Enugu state in particular, snail's farmers are very few. Taboos over snail production, consumption and marketing are broken in many places. The few farmers farm in small scale (Owolabi, 2002).

In spite of the potentials and advantages of snail farming (heliculture), widespread participation in its production by farmers has not been achieved in Nigeria (Baba and Adeleke, 2006). Much of the Snail Marketed in Nigeria are collected from the wild. As was noted by Baba and Adeleke, (2006) few farms exist for commercial breeding and production of snails. This is probably attributed to lack of awareness of the economic potentials of this micro-livestock (Azeez 2010).

## 1.2 Problem Statement

Many agricultural strategies have been adopted in Nigeria, yet daily per capital animal protein intake (estimated at less than 10g) remains a far cry from the Food and Agricultural Organization (FAO) recommended minimum requirement of 35g (Usman et al, 2003). In order to bridge this gap, it has been suggested that there is the need to explore other sources of animal protein in addition to the conventional sources such as ruminants and poultry (Olayide and Heady, 1982).

One of the important alternative sources of animal protein which has received relatively scanty attention in Nigeria is the snail. For instance, snail breeding started as far back as the beginning of the 20th century (Ayodele and Asimalowo, 1991). The Romans raised snails on farms and fed them with special herbs to improve their tastes and increase overall snail availability. Even today, commercial snail production continues to be an important activity in several countries (Odiabo, 1997).

In Nigeria, Ghana and Cote d'Ivoire, where snail meat is popular, snails are gathered from the forest during the wet season. The Enugu State Agricultural Development Programme (ENADEP, 2009) observed that in recent years, wild snail population has declined considerably primarily because of the impact of such human activities as deforestation, pesticide use, slash and burn agriculture, spontaneous bush fires and collection of snails before they attain maturity. This necessitates encouragement of heliculture (snail farming) as a means of conserving this important resource. More specially, Owolabi, (2006) pointed out that the existing conventional agricultural practices known today would not be able to keep pace with the expected rise in the population from 42.2 million in 1960 to 170 million in 2013 (ENADEP, 2009). The need to look for new resources therefore has never been greater than now. As was observed by Amao, Adesiyun and Salako, (2007), it is important that snail farming (heliculture) should be encouraged, because it is only through conscious effort made by man to farm snails that conservation of these species of animals will be possible. Snail hunting is no longer sufficient source of snail (Olukayode, 2005). Baba and Adeleke (2006) noted that one of the important alternative sources of animal protein which has received relatively scanty attention in Nigeria is the snail. Snail farming should be encouraged as a new branch of sustainable animal production. In spite of the potentials and advantages of snail farming, widespread participation in its production by farmers is yet to be achieved in Nigeria (Baba and Adeleke, 2006). Much of the snails marketed in Nigeria, and Enugu State in particular, are collected from the wild. Few farms exist for commercial breeding and

production of snails. This is probably attributed to lack of awareness of the economic potentials of this micro livestock (ENADEP2009, Baba and Adeleke 2006). This study therefore, estimated economics of snail production Enugu East Agricultural zone of Enugu State.

### 1.3 Objective of the Study

The broad objective of the study is to examine the economics of snail production in Enugu State, Nigeria.

The specific objectives are to:

describe the socio-economic characteristics of snail farmers in Enugu State.

describe snail production system in the study area. determine the cost and returns from snail farming in the study area. iv. estimate factors influencing profitability of snail production in the area

describe the snail marketing channel in the study area. vi. identify constraints facing snail farmers in the study area.

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