ECONOMICS OF RABBIT PRODUCTION IN ABEOKUTA SOUTH LOCAL GOVERNMENT AREA OF OGUN STATE, NIGERIA

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ABSTRACT

This study was aimed at examining the economic profitability of rabbit production based on the hypothesis that the low level of production may likely be a consequence of low profitability of the enterprise. Abeokuta South Local Government area was used as a case study. It involved the collection of primary data from a sample of 50 rabbit farmers spread over 10 communities in Abeokuta South Local Government Area of Ogun State.

The analysis of survey data was done through a combination of descriptive statistical analysis, cost analysis and profitability analysis. The results showed that most rabbit farmers in Abeokuta were non-professional farmers, who engaged in rabbit production on a part-time basis to supplement their income from other sources such as civil service, trading and craftsmanship. Cost analysis showed that feed cost accounted for as much as 65.7% of total cost (excluding imputed cost of family labour), while fixed inputs amounted to 28% of the cost of production. Other variable inputs accounted for only 4.35% of total cost. The profitability analysis showed that rabbit production in the area could generate a rate of return to capital and family labour of 56%, a rate of return on fixed costs of 300% and a rate of returns on variable cost of 178%. The study concluded that; Even though rabbit production is economically viable in Abeokuta in particular and Ogun State in general, the following problems have imposed a severe limitations on the expansion of the enterprise. These are: the paucity of investment capital among the current investors in rabbit production enterprise, inadequate access to good breeding stock, and the

non-professional, part-time and supplementary nature of rabbit production in the area. It is therefore recommended that efforts should be directed towards providing credit to current and potential rabbit farmers so as to boost production. Moreover, the government should embark on the supply of parent stock of proven reproductive performances to farmers at affordable prices. The establishment of Rabbit Breeding Units in tertiary Institutions for the multiplication and distribution of rabbits for breeding purposes can enhance this. In addition, government can initiate programmes aimed at the popularization of rabbit production in the state.

Key Words: Economics, Rabbit Production, Ogun State, Nigeria

INTRODUCTION

Nigeria as well as many developing countries have for a long time been plagued with the problem of a worsening situation of inadequate consumption of animal protein. (Ogunseye, 1988; Owolabi, 1988; Aromolaran, 1987; Ugbajah, 1987; Judit, 1993; Aromolaran and Ashiru, 1998). In a nutrition profile on Nigeria FAO in 1990, it was reported that the protein supply per caput was 44 grams, out of which animal products constituted less than 2 percent. The report further concluded that malnutrition and under nutrition in Nigeria affect all age groups, are widespread, and presents serious problems in some areas (FAO, 1990). With the continued rise in the cost of production of beef, sheep and chicken, which are the primary sources of animal protein in Nigeria, it has become very necessary for socio-economic researchers to explore other less common but potential sources of animal protein for economic viability.

A panacea for this protein deficiency problem will be to embark on accelerated animal protein production from livestock species with short reproductive cycle and high fecundity rate. The priority criteria should be the potential for quick income generation, high profit, simple management skill requirement and relatively short term capital investment content (Owolabi, 1988). One of the potential sources of animal protein, which is not commonly produced in Nigeria is Rabbit. Rabbit meat has the highest percentage of protein (21%) and the least (1%) fat content when compared with other meat sources. Moreover, rabbit has the highest protein production per hectare (180kg/ha) relative to other meat sources (poultry, 92%; pork, 50%, lamb 23 - 43%). Despite all these attributes, rabbits as farm animals have remained uncommon in Nigeria. It is in line with these facts that this study set out to investigate and analyse the economic potentials of rabbit production in the study area.

Specifically, the study set out to determine the cost structure in rabbit production, assess the profitability of rabbit production, and identify problems and economic constraints facing the farmers.

MATERIALS AND METHODS

Data Collection

Farmers interviewed were randomly selected in ten communities from a sample frame of the list of communities making up Abeokuta South Local Government Area (L.G.A.). Five farmers were then interviewed randomly in each community. The communities considered are Amolaso/Isabo, Temidire, Onikolobo, Quarry road/Adigbe, Idi-Aba/Ijaiye, Ita-Eko, Adatan/Car-Wash, Ibara/Omida/Ijeja, Igbore/Ito-odo, Kenta and Isale Ake. The structured questionnaires administered, sought information on socio-economic characteristics of the farmers, inputs used in production, output, revenue, costs and constraints to rabbit production among others, in the study area. The study was conducted between April 1993 and April 1994.

Method of Data Analysis

Frequency distribution and percentages were used to analyze the cost structure of rabbit production and the problems militating against rabbit production in the state. Profitability analysis was used to assess the profitability of rabbit production. The following profitability measures were calculated:

- (i) Returns to management, capital and family labour or Net income (RMCF) given as: $RMCF = \text{Total Value of Product (TVP)} - \text{Total Fixed Cost (TFC)} - \text{Total Variable Cost (TVC)}$ less Cost of capital borrowed and cost of family labour.
- (ii) Rate of Return to Investment (RRTI) which is given by $RRTI = [RMCF/TC] \times 100$
- (iii) Return on fixed cost of production (RFC) or Gross Margin (GM) given by $RFC = \text{Total Cost (TC)} - \text{Total Variable Cost (TVC)}$
- (iv) Rate of Return on fixed cost (RRFC) given by $RRFC = [RFC/TFC] \times 100$

The fixed costs were depreciated using the straight-line method of depreciation. Moreover, expected replacement cost for the fixed inputs was used so as to take inflation into account. The cost of most working capital items such as breeding stock, equipment and machinery tend to increase both in monetary and real terms with time. It is therefore best from a management and planning point of view to use expected replacement cost (Makeham and Malcolm, 1986).

RESULTS AND DISCUSSION

Description of Rabbit Production System in the Study Area

All the rabbit farmers were males with an average age of 30 years. All of them were literate with a minimum of secondary school education. 96% of the rabbit farmers operated their rabbit enterprise on a part-time basis (backyard farming). Only 4% of the respondents were full time crop farmers.

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None was found to be a full time rabbit farmer. Rabbits are therefore produced mainly as a part-time enterprise in the study area. Commercial rabbit production is still at its rudimentary stages in Abeokuta in particular and Ogun State of Nigeria in general. The average size of Rabbit farms in the study area as represented by the total value of stock in the year (N5020) is still very small. This represents the value of about 35 matured rabbit.

The main purposes for raising the rabbits in the area were found to be firstly as a source of supplementary income and secondly for consumption. The farmers sold 90% of their production for money income while they consumed 10%. The most popular Rabbit breeds kept in the study area are New Zealand

offals (11% of farmers), dried cassava/yam peel (8% of farmers) and soybeans (2% of farmers).

Family labour and Owner-operator labour are the predominant labour sources used in production. Hired labour is rarely used. About 94% of the farmers used only family labour while 2% used only hired labour. 2% used both family and hired labour. Other production inputs include: breeding stock (bucks and does), hutches, feeders, waterers, nest boxes, chemicals, drugs, and cotton wool.

Analysis of Costs

The structure of costs incurred by the average Rabbit farmer for the year under study is as given in Table 1. Fixed inputs used by the rabbit farmers are hutches, floor space, feeders, waterers and kindling boxes. Variable

TABLE 1: COST STRUCTURE OF AVERAGE RABBIT FARM IN ABEOKUTA SOUTH L.G.A.

Cost Items	Cost (N)	Percentage of total cost
Breeding stock	178	5.54
Housing	647.15	20.14
Feeders/waterers	78.45	2.44
Total fixed cost (TFC)	903.60	28.11
Feed	2110.33	65.68
Veterinary care.	143.9	4.48
Hired labour	55.0	1.71
Total Variable Cost (TVC)	2309.23	71.88
Total cost of production (TC) Per year per farmer	3212.83	100.00

white (kept by 59% of farmers) Chinchilla (44% of farmers), California White (38% of farmers) and flemish Giant (20% of farmers). The major housing types that can be identified in the study area are the hutch system, the battery cage system and the deep litter system. The hutch system is the most common. Most rabbit farmers built their hutches with planks/bamboo and wire mesh (56% of the farmers). This was followed by hutches built with plank and bamboo (31% of farmers). The most popular feed types in the area are forages (used by 100% of the farmers), grower's mash concentrates (used by 63% of farmers), and pellets (42% of the farmers). Others are household left-overs; maize/beans

inputs include Pellets, other concentrates (e.g. growers mash), forage, chemicals, drugs and to a limited extent, cotton wool. The average number of hutches is one, with an average area of 10.3m² which is also an indication of low production level.

The cost structure as shown in Table 1 reveals an interesting fact that fixed costs takes only about 28 percent of yearly investment in Rabbit production, while variable cost accounts for about 72%. Furthermore as much as 65.7% of the total cost of production is expended on feeds. This under scores the importance of feed availability and affordability if rabbit production is to be given a boost. Rabbit production cost can be

TABLE 2: NET INCOME ANALYSIS FOR THE AVERAGE RABBIT FARMER IN ABEOKUTA SOUTH L.G.A. OF OGUN STATE.

ITEMS		VALUE (N)
A	INCOME	
1	Rabbits sold per year	
i	52 weaners at N65.00 ¹ per weaner	3,380.00
ii	2 bucks at N140.00 per buck	280.00
iii	3 Does at N150.00 per doe	450.00
		4,110.00
2.	Rabbit stock for the Year	
	14 weaners at N65.00 per weaner	910.00
	Total income	5,020.00
B	COSTS	
1.	Variable Cost Per Year	
i.	Hired labour cost per year	55.0
ii.	Pellet cost	1,288.64
iii.	Cost of other concentrates	760.50
iv.	Cost of forage	61.19
v.	Cost of Chemicals	45.85
vi.	Cost of drugs	87.12
vii.	Cost of cotton wool	10.93
		2,309.23
2.	Fixed Costs	
i.	Hutch	226.86
ii.	Space	379.44
iii.	Feeders	41.43
iv.	Waterers	37.02
v.	Nest Boxes	40.85
vi.	Breeding stock	
	(a) Bucks	48.10
	(b) Does	130.00
	Total fixed Costs	903.00
	Total cost	3,212.80
	Net farm income	1,807.17

1. All costs and return were computed at 1993/94 prices.
Source: Field Survey, 1994

drastically reduced if significant efforts are made to reduce the unit cost of feeding. This can be achieved by:

- (i) raising rabbits which are more efficient converters of feed, and
- (ii) obtaining the required quality and quantity of feed at cheaper unit prices.

Profitability Analysis

Table 2 presents the income statement of the average Rabbit farmer for a year.

At the end of one year of operations, the average Rabbit farmer in the study area had sold 52 weaners at N65.00 each, and was left with a stock of 14 weaners, 2 bucks and 3 does. The figures show that the average farm which owns 3 does and 2 bucks was able to support the production of 66 weaners in the year. Within the year, the average farmer had

invested a total of N3,212.80, out of which N2,309.23 were variable costs and N903.60 were fixed costs. The net income which represents the return to capital management and family labour amounted to N1,807.17 (see table 3). This gives a rate of return to investment of 56.25%. That is, for every N1 spent on rabbit production, the average farmer was able to make 56 kobo as profit. This calculated rate of return to investment is however acceptable only if the opportunity cost of capital and family labour utilized in Rabbit production is zero. In the study area, the production of Rabbit is more or less a supplementary enterprise that makes use of otherwise economically idle family labour. So the opportunity cost of family labour can be assumed not to be different from zero.

Since the going interest rate on savings in

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TABLE 3: PROFITABILITY ANALYSIS

Profitability Measures/Ratios	Computational Procedure	Value
Return to Management, Capital and Family Labour (RMCF) ₦	N3020-N2309.23-N903.6	1807.17
Rate of Return to Investment (%)	$[N1807.17/N3212.80] \times 100$	56
Return on Fixed Cost/Gross Margin (RFC)	N5020 - N2309.23	2710.77
Rate of Return on Fixed Cost (%)	$[N2710.77/N903.6] \times 100$	300
Rate of Return on Variable Costs (%)	$[(5020 - 903.60)/2309.23] \times 100$	178.3

Source: Computed from Table 2

TABLE 4: DISTRIBUTION OF FARMERS ACCORDING TO THEIR MOST PRESSING PROBLEMS

Problems	Frequency	Percentage
High cost of feeds	24	46
High cost of fixed inputs	11	22
Inadequate supply of breeding stock	11	22
Disease outbreak	4	8
High mortality rate	1	2
Inadequate market outlets	0	0
Pilfering and predator attack	0	0
Inadequate supply of material Inputs	0	0

the economy as at the time of the study was about 12 percent. Rabbit production can be said to be a profitable part time enterprise in the study area. The Rate of return on fixed costs was estimated to be 300 percent. That is, on a yearly basis, every ₦1 cost incurred on fixed assets generated about ₦3. If this is compared with the rate of return to variable cost, that was estimated as 178%, it can be deduced that: Improving profitability in rabbit production in the study area will require that more effort be put into increasing the efficiency of use of variable input items. As discovered in this study, the major focus of interest should be the feed input.

Problems Militating against Rabbit Production

In the course of the investigation, it was found out that the rabbit farmers were confronted with 4 major problems. 46% of the farmers considered high cost of feeds as their most pressing problem, while 22% said it is

high cost of fixed inputs. Furthermore 22% saw their most pressing problem as the inadequate supply of good breeding stock, while 8% said outbreak of diseases was their most pressing problem.

Thus, majority of the farmers considered high cost of feeds and fixed inputs the primary limiting factors to rabbit production in the study area (See table 4). These findings are in agreement with the statement of Akinwunmi and Ikpi (1980) that livestock enterprises in Nigeria are beset by some problems, major among which is the high cost of production inputs.

Recommendations

To make rabbit production attractive to potential investors, it is recommended that:

- (i) Soft loans should be provided for rabbit farmers and intensification of enlightenment programmes to promote the awareness of people towards rabbit

meat as a potential meat source that can be profitably exploited should be carried out.

- (ii) The extension service should, in addition, provide information on better ways of sourcing fixed and variable inputs at lesser and affordable prices.
- (iii) There is need to direct more research into the development of feed stuffs that are cheaper and rich in concentrates. Also, Rabbit species that are more efficient food converters should be encouraged. These are in line with the recommendation Osinowo (1994) that a Rabbit Production Research Center be established in Nigeria as a way of boosting rabbit production in the Nation.
- (iv) Improved veterinary services that is directed towards reducing incidence of diseases in rabbit stock should be embarked upon, so as to lower mortality rate and improve performance.
- (v) Small-scale, part-time rabbit production has been found to be a profitable venture in Abeokuta and environs, consequently many more individuals or families should be encouraged to go into it to supplement their incomes as well as provide for their daily protein intake needs.
- (vi) A pioneer Rabbit farmers Cooperative should be set up by the local government to serve as a morale booster and a forum for providing diverse assistance to the rabbit farmers.
- (vii) Investigations should be made into the prospects of large-scale commercial rabbit production in Ogun State.

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