ORIGINAL RESEARCH PAPER

Veterinary Science

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BENEFIT COST ANALYSIS OF RABBIT FARMING – A CASE STUDY

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ABSTRACT

Objective: of this research paper is to assess the economic efficiency of rabbit farming in a rural area. Of Karnataka.
Materials and methods: ACS Rabbit farm, Karehalli village of Tumkur district selected for this case study. In this farm two batches of rabbits reared during January 2016 to June 2016 which was subjected to benefit cost analysis.
Result and discussion: The Internal Rate of Return (IRR) (132.4%) for 2nd batch than 1st batch (9.9%). The Net Present Value (NPV) is recorded highest (46,811) for 2nd batch than 1st batch (7666). The Benefit Cost Ratio (BCR) is recorded highest (2.32:1) for 2nd batch rabbits than in 1st batch (1.09:1). In both batches the BCR is more than 1 which indicates that rabbit rearing yielded significant profit. So, rabbit farming is a profitable cottage industry in rural areas.
Conclusion: the rabbit farming in rural area is economically viable and profitable cottage industry.

INTRODUCTION

In India Per capita consumption of meat is only 14gms per day as against the actual requirement of 125gms. Nonavailability of quality meat and its exorbitant price have restricted meat consumption. In recent years there has been increased awareness of the advantages of rabbit meat production in India as a means to alleviate food shortages. This is largely due to the rabbit's high rate of reproduction; early maturity; small body size; rapid growth rate comparable to that of broiler chicken[1], high genetic selection potential; efficient feed and land space utilization, limited competition with humans for similar food and high quality nutritious meat [2, 3]. Rabbit has the ability of turning forage into high protein and yet remains within the investment ranges of the poorest families[4].

Rabbit is a micro livestock producing about 47 kg of meat per doe per year, which is enough to solely meet the animal protein requirements of a medium sized family under small scale rural farming systems[5,6,7]. Besides, rabbit meat is rich in vitamin B and extremely low in cholesterol and sodium levels[8,9].

As a result of a number of characteristics that are advantageous to smallholder rabbit farmers coupled with a greater recognition that rabbit farming has significant potential to improve food security and nutrition in Nigeria which can reduce, to some extent the country's malnutrition problems, and the diminishing bush meat supply which has been a strong impetus to small-scale rabbit farming, complete economic analysis is needed in order to know the full production potential and how to increase profit[10].

Rabbit farming is a profitable and economically feasible under subsistence management systems of production. It is reported that the rabbits reared in remote area results in high meat yield at 8-12 weeks the frey weighs 1.5-2.5 kg[11]. The benefit cost analysis of rabbit farming was reported that it is a profitable agro based venture[12,13,14].

In Tumkur district the farmers mainly depends on the agriculture but few families are depend on both agriculture as well as livestock farming, which includes goat, sheep, piggery and poultry etc. practiced on a small scale. So this research paper aimed to know the economic feasibility and viability of rabbit farming in rural area of Karnataka state in India.

MATERIALS AND METHODS

The study was carried out in A C S rabbit farm Kaarehalli, Nittur hobli, Gubbi taluk, Tumkur district. This rabbit farm constructed in a land of 4 acre belongs to Mr. Sunil. The study conducted during 2015-16. The farm was visited once in a week and collected data. The collected data is subjected to benefit cost analysis.

Benefit cost analysis (BCA): Benefit Cost Analysis is a technique for evaluating a project or investment by comparing the economic benefits with the economic costs of the activity[15, 16]. Benefit cost analysis comprises Benefit Cost Ratio, Net Present Value and Internal Rate of Return. PV(Bt)=Bt/(1+r) , PV(Ct)=Ct/(1+r), Where, PV (Bt) - present value of the benefit, PV (CT)-Present value of the cost, r- Discount rate

1. **Net Present Value (NPV):-** The Net present value is the current value of the project. Net benefits are simply the sum of benefits minus costs. The sum is discounted at the discount rate. NPV = $\Sigma_{t=1}^{T} \frac{(Bt-Ct)}{(1+r)^t}$
2. **Benefit-cost ratio (BCR):-** the benefit-cost ratio is calculated as the benefits (B_t) divided by the costs (C_t). If the BCR exceeds 1, then the project might be a good for acceptance. BCR = $\frac{B_t}{C_t}$
3. **Internal rate of return (IRR):-** It is the rate or percentage of profit. In general, IRR should be greater than the discount rate for a project to be accepted. IRR = $\frac{(Bt-Ct)}{Ct} \times 100$, Where, Bt-present value of the benefit, Ct-present value of the cost, r-rate of interest

RESULT AND DISCUSSION

According to the results in the table 1, the fixed or nonrecurring cost for the establishment of 1st batch of rabbit farming was Rs.55, 400. Out of this, rupees 10,000 spent on the construction of shed, 33,000 for the purchase of 30 rabbits and their cage, 3,600 for breeding cages and 8,800 for individual cages. Rs. 29,262 spent on recurring or variable cost, comprised Rs.12,500 for 1056 Kgs of feed (rupees 119.56/Kg), 9,169 for 4584 Kgs of green pasture (Rs.2/Kg), Rs. 900 for medicines, Rs. 300 for electricity, Rs. 6000 for labour and Rs. 300 for miscellaneous .So, total investment was Rs. 85,162. The 1st batch batch of rabbit farming initiated with 21 females and 9males. After 30 days of pregnancy period 224 kindling were obtained, out of which 8 dead and 216 bunnies survived. During birth the weight of bunnies was 50- 65 gms and after 3 months attained 1.5-2.5 kgs. 4 bunnies weighed 2580gm and each of others weighed 1800 gm. A total of 474 Kg is obtained from 216 bunnies. The bunnies were sold to farmers at the rate of Rs180 / Kg which yielded Rs. 85,405. Rs. 8,190 obtained from the rabbit manure. So total income was Rs. **93, 595.** The net benefit from the 1st batch of rabbit farming was Rs.8, 433.

According to the results in the table 2**,** the total investment for the 2nd batch of rabbit farming was Rs. 38,881, out of which the nonrecurring cost was Rs. 8, 800 for the purchase of individual cages and Rs. 30,081 for recurring cost, includes Rs.12, 673 for 1064.46 Kgs of feed, Rs. 9,294 for 4647 Kgs of green pasture, Rs. 900 for medicines, Rs. 300 for electricity, Rs. 6000 for labour and Rs. 300 for miscellaneous. The 2nd batch rabbits were reared for 90 days, 230 bunnies were obtained, out of which 10 were dead and 220 survived. At 3 months of age they attained 1.5-2.5 kg. A total of 456. 3 kg is obtained from 220 bunnies. The weight of bunnies ranged between 1800 to 2500 gms. Rs. 82, 134 and Rs 8,190 was the income generated by the sale of bunnies and manure

respectively. So total income was Rs. 90, 374. The net benefit from the 2nd batch of rabbit farming was Rs. 51, 493.

According to the results in table 3, for 1st batch of rabbit farming the BCR, NPV and IRR were 1.09:1, 7666, 9.9 % respectively. For 2nd batch the BCR, NPV and IRR were 2.32:1, 46,811, 132.4% respectively. The profit was more in the 2nd batch of rabbit farming due to the lack of initial investment. In conclusion, the rabbit farming in rural area is economically viable and profitable cottage industry.

Table-1: Non-recurring & recurring cost for the 1st batch of cunniculture

	Cost		Benefit		Net gain
Items	Non-recurring expenditure in Rs	Recurring expenditure in Rs	Items	Income in Rs	
Shed	10,000		Sale of 216 rabbits	474.47Kg X180= 85,405	
Rabbits and cages	33,000		Sale of manure	8,190	
Breeding cages	3,600				
Individual cages	8,800				
Feed		12,500			
Green leaves		9,162			
Medicines		900			
Electricity		300			
Labour		6,000			
Miscellaneous		900			
Total	**55,400**	**29,762**			gain
	85,162			**93,595**	**8,433**

Table-2: Non-recurring & recurring cost for the 2nd batch of cunniculture

	Cost		Benefit		Net gain
Items	Non-recurring expenditure in Rs	Recurring expenditure in Rs	Items	Income in Rs	
Shed			Sale of 220 rabbits	456.3 KgX180 = 82,134	
Rabbits and cages			Sale of manure	8,240	
Breeding cages					
Individual cages	8,800				
Feed		12,687			
Green leaves		9,294			
Medicines		900			
Electricity		300			
Labour		6000			
Miscellaneous		900			
Total	**8 800**	**30,081**		**90,374**	gain
	38,881				**51,493**

Table-3: Comparison of benefit cost analysis between 2 batches of cunniculture

Parameter of economics	Batch 1	Batch 2
BCR	1.09: 1	2.32:1
NPV	7666	46,811
IRR	9.9 %	132.4%

Fig-1: ACS rabbit farm in the Karehalli village of Tumkur district, Karnataka

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