

## Benefit-Cost Analysis of Apiculture Enterprise in District Pulwama and Srinagar

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### ABSTRACT

*The main focus of the study was to calculate benefit-cost analysis of beekeeping in district Pulwama and Srinagar. The data was collected from 140 beekeepers of two districts because this enterprise is working more in areas like Pulwama. Tral, Harwan. Beekeepers were selected the costs and return of beekeeping and assess the scope of beekeeping. The benefit cost ratio of beekeeping for district Pulwama was 1.54 and for district Srinagar was 1.47. which showed that this business was profitable. It will be a great source of employment creation for the rural poor people to reduce the poverty. There is a great prospect of beekeeping in Kashmir on the basis of the socioeconomic context of the state and some special features of the enterprise.*

**Key words:** Apiculture; Benefit-cost Analysis; Pulwama and Srinagar.

### INTRODUCTION

The State of Jammu and Kashmir represents one of the potential areas of bee keeping in our Country which comprises of all the agro-climatic zones ranging from low to high altitude zone. Besides providing direct economic benefits in the form of honey, beewax, propolis and royal jelly etc, the indirect benefits is in the form of cross pollination by bees leading to improvement in qualitative and quantitative parameters of the fruit crops. It is pertinent to mention here that the horticulture sector in Jammu and Kashmir contributes largely to sustain the economy having an annual turnover of Rs 1500 crore. Besides supporting over 6 lakh families and providing employment to nearly 25 lakh people directly or indirectly<sup>4</sup>.

Bee keeping not only provides employment opportunities but also helps in the processes of pollination in various crops thus enhances the crop production by 15-20 per cent. Honey is also a good source of pollen, wax, venom and royal jelly. A unit of 20 colonies of bees multiples to 35-40 colonies in a year which is also a good source of income<sup>6</sup>. Bee keeping for honey production has been found as a profitable agricultural enterprise in all parts of world. It has a great importance for exchange earners with export of honey and bee wax. However, bee keeping as a commercial venture is still largely unexplored for large scale production to meet the domestic and national demands<sup>1</sup>.

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In Kashmir valley the two types of honey bee species are found i.e, *Apis mellifera* and *Apis cerana*. *Apis mellifera* is an exotic bee and has been imported from Italy to India during nineteenth century by the scientists of PAU, Ludiana. *Apis cerana* is an indigenous bee and is found in the mountainous region of the valley or even in plains during the bloom period. The peculiarity of *Apis mellifera* is that it produces a large amount of honey (35-40kg/year/colony) compared to *Apis cerana* (20kg/year/colony)<sup>3</sup> but disadvantage is that it is very sensitive to the changing environmental conditions of the valley. Hence during the severe cold conditions these bees are to be migrated to warmer regions like Jammu and other States of India. Apiculture is being promoted by the government to support income generation for the rural communities. It is currently not widely practiced in the country but it has the potential to provide increased income. Beekeeping requires very little capital for start-up; little land; less labour; and can easily be practiced by men, women, youth and people with disabilities alike. This means that beekeeping provides an opportunity for many different members of the community to use available natural resources to support their livelihoods.

## MATERIAL AND METHODS

The present study was conducted in District Pulwama and Srinagar which is famous for honey production . The purposive random sampling method was used. A purposive sample, also commonly called a judgmental sample, is one that is selected, based on the knowledge of a population and the purpose of the study. A well structured questionnaire supplemented with an interview schedule was used to elicit information from the beekeepers. Benefit cost analysis was applied as an appropriate tool to evaluate the apiculture enterprises by Devkota<sup>2</sup>. The cost and benefit sides were separately computed and the cost side divided the benefit side to compute the B-C ratio. The cost items were grouped into two categories, i.e., i) fixed costs and ii) variable costs. To find out the total cost (TC), total fixed cost (TFC) was added to total variable cost (TVC). Likewise, average cost (AC) was obtained by adding average fixed cost (AFC) and average variable cost (AVC) as  $TC = TVC + TFC$ , and  $AC = ATC + AVC$ . Where,  $AC = TC/\text{No. colonies}$ .

On the benefit side, all the benefit items were studied and evaluation of apiculture industry was made. The benefit-cost ratio was computed by using the formula  $B/C = TR/TC$

## RESULT AND DISCUSSION

### Benefit cost analysis

S.no.	Benefit cost Analysis	Srinagar	Pulwama
(A)	Costs involved in beekeeping (Fixed costs)	100 hives	130 hives
1	Cost of hives (10 frames each) with bees @ Rs 3500 per hive	350,000	455,000
2	Wax sheet 1 kg @ Rs 450 per kg	45,000	58,500
3	Honey extractor local	4000	4000
4	Smoker local	300	300
5	Hive tool (hammer, knives, hand saw etc)	350	350
6	Bee frames Rs 30 per frame	30000	39,000
7	06 kg Steel wire (20-30 gauge) Rs 150 per kg	900	900
8	Bee veil 3No.s @ 100 Rs per veil	300	300
9	Honey canes 50 No. Rs 250/Cane	12,500	12,500
10	Miscellaneous expenses approximately Rs 50 per hive	5,000	6,500
	Total	448,450	577450
	Variable cost		
1	Full time labor @6000 per month	72000	72000
2	Suger per single colony ( 8 kg/months)Rs 60 per kg	48,000	62,400
3	Medicine /chemical treatment with formic acid and Apistan strips for mite control for single colony	2000	2000
4	Transportation charges	35000	35000
5	Rent charges per season	3500	3500
6	Miscellaneous and unforeseen expenditure	2500	3500
	Total	163,000	178,400

**Comparison of B.C Ratio of District Srinagar and Pulwama**

<b>District Srinagar</b>	<b>District Pulwama</b>
Total cost involved for whole operation	Total cost involved for whole operation
TC= TFC+ TVC	TC= TFC+ TVC
Rs448,450+Rs163000	=Rs 577450+Rs 178,400
Rs=611,450	=Rs 755,850
Total Revenue generated from 100 hives @Rs 300 = TR= Rs 900,000	Total Revenue generated from 130 @300 TR =Rs 1,170,000
B.C.R = TR/TC	B.C.R= TR/TC
Rs 900,000/ Rs 611450	= Rs 1,170,000/ Rs755850
B.C.R = 1.47	B.C.R = 1.54

The cost of production of beekeeping was calculated in detail to get the deep insight of the enterprise. Then benefit cost analysis was performed to ascertain the profitability of the bee keeping enterprise. The cost of production was calculated for keeping 100 bee hives in District Srinagar and for keeping 130 bee hives in District Pulwama. Total cost calculated for District Srinagar was Rs. 611,450 in which Rs. 448,450 was fixed cost that was invested in the start of the enterprise. While, the variable cost was Rs. 163,000. The honey production from per hive per year was about 25-30- kg which brings about income of Rs. 900,000. It is therefore, concluded that the benefits were more than the cost and hence benefit cost ratio was 1.47. Similarly total cost calculated for District Pulwama was Rs.755,850 in which Rs. 577450 was fixed cost that was invested in the start of the enterprise. While, the variable cost was Rs. 178400. The honey production from per hive per year was about 25-30 kg which brings about income of Rs 1,170,000. It is therefore, concluded that the benefits were more than the cost and hence benefit cost ratio was 1.54 from the present study.

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