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Constraints and challenges faced by beekeepers of Jammu and Kashmir

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Abstract

In the present study a total number of 120 beekeepers were selected from Jammu, Kathua and Ramban districts of Jammu and Kashmir. Data was collected using a personal interview method based on a questionnaire. The constraints faced by beekeepers were categorized into five groups *viz.* socio-economic, technological, administrative, environmental and marketing, and management. The study revealed that major socio-economic constraints faced by beekeepers were lack of capital for establishing beekeeping enterprises (58.35%), followed by a lack of continuous income generation (37.50%) in the beekeeping enterprise. The major technological constraints faced by the respondents were lack of a honey processing unit (90.83%), lack of training in the production of bee value-added products (86.67%), and lack of knowledge about the identification of diseases and enemies (72.50%). However, lack of loan facilities (82.50%) and migration subsidies (80%) were the major administrative constraints faced by beekeepers. The shortage of bee flora was a major environmental constraint, reported by 47.50% of the respondents. Lack of attractive packaging for honey (85.84%), lack of customer reliance on quality of honey (81.67%), and lack of market for other beehive products besides honey (76.67%) were the major marketing and management constraints reported by the beekeepers. In order to overcome these constraints and to support beekeeping enterprises, regular training in scientific beekeeping, provision of institutional finance on reasonable interest, migration subsidy, and improvement in marketing structure of bee products are the major steps necessary to be taken by the Government and other organizations.

Keywords: *Apis mellifera*, beekeeping, constraints, marketing

Introduction

Beekeeping is a low-investment and highly skilled enterprise model in which technology application has emerged as a great enabler for socio-economic growth. It has proven to be a very good rural enterprise and can be adopted as per the wish of beekeepers *viz.* as entrepreneurship, side business and as a subsistence beekeeping. It is the most suitable enterprise for landless people, small and marginal farmers, women, disabled people, unemployed youth, and so on. Beekeeping brings a multitude of benefits, not only for the beekeepers themselves but also for the environment and agriculture as a whole. Apiculture has garnered increased attention because of the vital role that bees play in pollination, and consequently, global food production. In agricultural crops, about ninety per cent of pollination is being carried out by the bees only (Vaidya and Mehta, 1993) [1]. Beekeeping does not exert any pressure on agricultural land and produces honey, beeswax, pollen, and propolis from the flowers, which otherwise dry up in nature and go waste. Furthermore, beekeeping, which requires very little resources, land, and time, could be incorporated into the livelihood strategy of smallholder farming households to provide an additional source of income to the farmers at almost no extra expenses and possesses nutritive and medicinal properties (Lowore *et al.*, 2010) [3]. However, India's beekeeping landscape is not without challenges. Factors, such as climate change, lack of knowledge of recommended practices, pesticide use, and habitat loss, pose threats to bee populations (Kumar *et al.*, 2020) [5]. Balancing the traditional wisdom of local beekeepers with modern sustainable practices is crucial for addressing the challenges and ensuring the continued success of beekeeping in India. The demand for good quality honey has grown over the years as it is considered a naturally nutritious product. Other apiculture products, such as royal jelly, beeswax, and pollen, are also used extensively in different sectors like pharmaceuticals, food, beverage, beauty, and others. Scaling up beekeeping will double farmers' income, generate employment, ensure food security and bee conservation, and increase crop productivity and pollination.

Beekeeping is a widespread household activity across the country, and its potential benefits have not been fully realized. Despite government interventions to address constraints, there's still a gap between the actual honey production and its potential contribution to the economy (Gidey and Mekonen, 2010)^[2].

Material and Methods

Location of study: This study was conducted in the Jammu, Kathua and Ramban districts of Jammu and Kashmir.

Sampling Plan of the Study: Three districts were purposively selected as the maximum number of beekeepers are found in the region. Two blocks were selected from each of the selected districts. Therefore, the total number of blocks were six, and twenty beekeepers were selected using a convenient sampling method from each block. Thus, data was collected from total 120 beekeepers in the study area.

Sampling technique: A multistage sampling technique was employed to select the sample of beekeepers.

Tools of data collection: Data was collected by personal interview method, based on the questionnaire.

Results and Discussion

The respondents expressed variety of constraints which were grouped into five categories *viz.* Socio-economic, technological, administrative, environmental and marketing and management constraints.

Socio-economic constraints

The major socioeconomic constraint faced was the lack of capital for establishing a beekeeping enterprise, which was reported by 55.33% of the respondents. The second major constraint was the lack of continuous income generation, which was reported by 37.50% of the beekeepers. The present findings are in agreement with the results reported by Kumari *et al.* (2015)^[4] and Kumar *et al.* (2018)^[14], who showed somewhat similar results. Other constraints such as high risk in apiculture, fear of sting, and lack of family support were reported by 19.16, 16.67 and 13.33% of beekeepers, respectively. Similar results have been reported by Singh *et al.* (2016)^[11] and Singh *et al.* (2021)^[12]. Only 6.66% of beekeepers reported that beekeeping enterprises have less income than expenditures, which is similar to the findings of Singh *et al.* (2021)^[12].

Technological constraints

The majority of beekeepers (90.83%) reported a lack of honey-processing units as a major constraint, which is in line with the findings of Kumar *et al.* (2020a)^[5], who reported similar results. The second major constraint faced by beekeepers was the lack of training in the production of bee value-added products, reported by 86.67% of beekeepers (Poornima, 2013)^[10]. The absence of skilled labour also impedes the adoption of beekeeping. The Lack of knowledge about identification of diseases and enemies, as technological constraints was reported by 72.50% of beekeepers; similar findings were reported by Sumit *et al.* (2018)^[13] and Kumar *et al.* (2020b)^[6], who reported 70% and 60.47% of the responders were facing same problem. In addition, the non-availability of scientific bee boxes and equipments, beekeeping more technical than other activities, and lack of technical knowledge for efficient management of bee colonies

for higher honey yield was reported by 55.83, 52.50%, and 50.83%, respectively. The present study is consistent with the findings of Kumar *et al.* (2018)^[14], Sumit *et al.* (2018)^[13], Singh *et al.* (2021)^[12]. While devotion towards traditional beekeeping and lack of adequate knowledge about beekeeping were reported by 31.67 and 23.33% of the beekeepers, respectively. Similar results have been reported by Sumit *et al.* (2018)^[13] and Singh *et al.* (2016)^[11].

Administrative constraints

The finding revealed that the lack of loan facilities was a major constraint reported by 82.50% of the beekeepers, which is in contradiction with the findings of Kumar *et al.* (2020a)^[5], who reported that 44.76% of the respondents faced problems with loan facilities. In addition, a lack of migration subsidy and help from the government and research institutes to solve problems of bee pests and diseases was reported by 80 and 76.67% of the beekeepers, respectively. Also, these findings were different from those reported by Poornima *et al.* (2013)^[10] and Kumar *et al.* (2018)^[14].

Environmental constraints

The shortage of bee flora was a major constraint reported by 47.50% of the beekeepers. The present study is in line with the findings of Sumit *et al.* (2018)^[13] and Asrani *et al.* (2007)^[8], who reported that 48.33% and 37% of the respondents, respectively, reported a lack of bee flora. Furthermore, unfavorable weather and climatic conditions and lack of land were reported by 33.33 and 13.33% of beekeepers, respectively. Similar findings have been reported by Sumit *et al.* (2018)^[13] and Arya *et al.* (2021)^[7].

Marketing and management constraints

This study suggests that marketing and management constraints are major problems in beekeeping, lack of attractive packaging, and lack of customer reliance on quality, with score of 85.84 and 81.67%, respectively. The present study is consistent with the findings of Singh *et al.* (2016)^[11]. The lack of a market for other beehive products apart from honey (76.67%) was followed by a lack of marketing channels (74.17%) as a major constraint by the majority of the beekeepers. Similar findings were reported by Singh *et al.* (2016)^[11], and The Low selling price of honey and death, absconding, swarming, and theft problems of bee colonies were reported by 74.16% of beekeepers. Similar findings were reported by Sharma *et al.* (2018)^[9], Arya *et al.* (2021)^[7] and Asrani *et al.* (2007)^[8] The respondents also reported the problem of management of bee colonies in the off season and the problem of marketing unprocessed honey by 63.33 and 42.50%, respectively. Similar findings have been reported by Kumar *et al.* (2018)^[14] and Asrani *et al.* (2007)^[8].

Table 1: Socio-economic constraints faced by beekeepers

S no.	Socio-economic constraints	Percentage (%)
1.	Lack of capital for establishing a beekeeping enterprise	58.33
2.	Fear of high risk in apiculture	19.16
3.	Fear of sting	16.67
4.	Lack of family support	13.33
5.	Lack of continuous income generation	37.5
6.	Less income than expenditure	6.66

Table 2: Technological constraints faced by beekeepers

S no.	Technological constraints	Percentage (%)
1.	Lack of adequate knowledge about beekeeping	23.33
2.	Devotion towards traditional beekeeping	31.67
3.	Non availability of scientific bee box and equipments	55.83
4.	Lack of knowledge about identification of diseases and enemies	72.50
5.	Lack of knowledge of beehive products apart from honey	44.17
6.	Lack of honey processing unit	90.83
7.	Lack of training in production of bee value added products	86.67
8.	Lack of skilled labour	78.33
9.	More technical than other activities	52.50
10.	Lack of technical knowledge for efficient management of bee colonies for higher honey yield	50.83

Table 3: Administrative constraints faced by beekeepers

S no.	Administrative constraints	Percentage (%)
1.	Lack of subsidy to Purchase bee boxes	70.83
2.	Lack of migration subsidy	80.00
3.	Help from government and research institutes to solve problems of bee pests and diseases.	76.67
4.	Lack of regular and skill related effective training	72.50
5.	Lack of loan facilities	82.50

Table 4: Environmental constraints faced by beekeepers

S no.	Environmental constraints	Percentage (%)
1.	Unfavourable weather and climatic conditions	33.33
2.	Shortage of bee flora	47.50
3.	Lack of land	13.33

Table 5: Marketing and management constraints faced by beekeepers

S no.	Marketing and management constraints	Percentage (%)
1.	Low selling price of honey	74.16
2.	Lack of customer reliance on quality	81.67
3.	Lack of attractive packaging	85.84
4.	Lack of market for other beehive products apart from honey	76.67
5.	Lack of marketing channel	74.17
6.	Problem of management of bee colonies in off seasons	63.33
7.	Problem of marketing of unprocessed honey	42.50
8.	Death, Absconding, swarming and theft problem of bee colony	74.16

Conclusion

It can be deduced from this study that the various constraints faced by beekeepers were lack of capital for establishing beekeeping enterprises, lack of honey processing units, lack of loan facilities, lack of attractive packaging and lack of customer reliance on quality. The beekeeping profession is mostly adopted by small and marginal farmers, who are not financially strong. Hence, it is suggested that government agencies should establish honey mandis, where beekeepers can sell their honey at minimum support price (MSP) and form a beekeeper producer organization (BPO) like FPO. These BPO should be supported by financial institutions and Beekeeping Research Institutions.

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