

Diversification and Cost-Benefit Analysis of Horticulture in Shopian Jammu and Kashmir

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Horticulture has a very important position and importance in Shopian as it has engaged a large section of the farmers. It provides employment opportunities to majority of people residing in Shopian. Present study is an attempt to understand the cost-benefit ratio of the horticulture in Shopian and further it also tries to examine the strongest reasons responsible for the conversion of agriculture land towards horticulture. Current study is mostly based on the primary sources of data which has been collected from field by conducting a survey. Study reveals that every Kannal of land has returned INR 53,000 annually while the cost of activities and raw material used as input stood at INR 33,100. The total cost-benefit ratio realized from horticulture was recorded as 1:1.66 points which is a positive indication for future horticulture development. Study also depicted that the main reasons for the conversion and diversification of agriculture land towards horticulture are that horticulture produce has a high cash value realization as it was supported by more than 80 percent views of respondents. It was also observed that more than 70 percent of respondents believe that agriculture has low productivity and production comparison to fruits. Thus, this study reveals that horticulture is an important activity in Shopian district and proper and well mechanism should be framed to give it further boost.

Keywords: Horticulture, Diversification, Employment, Cost-Benefit Ratio, Respondents.

Introduction

Jammu and Kashmir are primarily an agrarian society where majority of the population resides in the village side of rural areas and among them more than 80 per cent are engaged with agricultural activities for their livelihood and economic wellbeing (Ashraf 2019). Horticulture attained a pioneering position in the agriculture sector of Jammu and Kashmir. Bestowed with the immense geo-climatic conditions suitable for the horticulture it has established itself in a very best place (Kanth and Maqbool 2019). The valley of Kashmir has intensified its temperate fruit production, on the other hand. Diversification in the field of agriculture towards the development of horticulture in the recent past has led to an overall growth and development of this fruit industry in that Himalayan region. Diversification towards horticulture crops increases the farm returns (Bhat, 2017). Horticulture sector that is one of the emerging industries in the Jammu and Kashmir and has the ability to boost the economy and to produce a brilliant atmosphere of livelihood and economic wellbeing of local farmers engaged with fruit industry. (Wani, S.M, 2017). In terms of production Jammu and Kashmir has witnessed high growth which becomes evident from the fact that in the period between 2008-09 to 2016-17 has increased its production and recorded a growth of 32.25 per cent. Further in a very positive development, the Jammu division has achieved 66.84 per cent growth which is quite encouraging. As per Horticulture Department, production of fruit during 2015-16 was 24.87 lakh metric tons comprising of 22.17 lakh Metric Tons of fresh fruit and 2.70 lakh metric tons of dry fruit (Digest of Statistics, 2016).

Horticulture significantly contributes to the economic development of Shopian District. It is the dominant agricultural activity in that Southern part of valley it also encompasses a vast potential of employment opportunities. Besides involvement of the local farmers in this horticulture industry it has also developed a large chain of intermediators who are in either way deriving their livelihood from the horticulture. Shopian district is famous for its quality of fruits across the Jammu and Kashmir as well in whole County. This region is engaged with horticulture sector from more than 30 years and it has more than 80 per cent area covered under the different varieties of fruits. Some important fruits which are grown in Shopian are Apple Pear, Cherry, Peach, Plum etc in the fresh fruit Category, while dry fruits consist of the world-famous Walnuts and Almonds. From very recent times when the introduction of high-Density plantation of fruit trees in Kashmir started Shopian has not remained left as it has embraced these new high yielding varieties and also are providing a handsome return. Most of the local horticulturists who derive their livelihood from the horticulture in Shopian has more than 50 per cent family member dependent as well as engaged on the horticulture sector. So, keeping in mind the importance of Horticulture in Shopian it becomes important to study the various aspects related to this sector of agriculture. Hence this study intends to assess and analyse the cost benefit of different factors involved in horticulture in Shopian as it well helps to estimate the situation of this vast expanding and economically viable sector of agriculture. Further this study attempts to make an assessment that why this horticulture is expanding its foot prints more often quickly in the southern Himalayas more particularly in Shopian district and besides it will also find what are the strong reasons responsible for the transformation of agricultural land towards horticulture in Shopian.

Methodology and Data Base

The study is mostly based on the primary sources of data while as the different sources which were secondary in nature were selected. The primary data was collected through the stratified random technique. Shopian district has 7 blocks and from each block, 3 villages have been selected for the field study. All the villages of each block have been classified into 3 categories on the basis of land under horticulture, i.e., villages having horticulture land below 1500 Kanals, villages having land between 1500- 3000 Kanals and villages having land above 3000 Kanals; one village from each category has been selected for the study. Thus, a total of 21 villages have been chosen from the whole district and 30 respondents' households engaged in horticulture from each village have been undertaken for field study, thus, a total of 630 households have been surveyed. For the representation of data various statistical tools like, tables and maps have been applied. Microsoft office 2016 was employed to prepare the relevant diagrams and further the base map of the study area was prepared with the help of Arc gis 10.2.

Location of Study Area

District Shopian lies on the southern part of the Kashmir valley on the foot hills of Pir Panjal range. The district Shopian lies between 33.43° North latitude to 74.49° East longitude, respectively. It is bounded by District Pulwama in the its north District Kulgam on its east and District Budgam on its North-West. On its South lies the District Rajouri and is

surrounded by District Poonch in South -West. It is located 20 km from Pulwama and 51 km away from the summer capital of Srinagar. Shopian has a moderate climate and is drained mostly by Nalla Rambiar and by its tributaries. Shopian has well suited agroclimatic conditions suited for the horticulture development.

Figure 1: Map of Study Area



Cost-Benefit Analysis (CBA)

Cost-Benefit analysis is often used to assess adaptation approaches (Baranchuluun 2014). In simple terms, it is a technique for calculating the quantitative effects of a unit change on a cost or benefit of items hence are expressed in numerical and monetary terms (Mishra and Rai 2014). Cost-Benefit Analysis (CBA) can be used as a useful tool for communicating the economic value to researchers, academicians and policymakers. (Buckley and Peterson, 2012). Thus, it can act as the most reliable method to access the monetary evaluation for any agricultural and horticultural studies. In the undergoing research, the cost-benefit analysis was carried out to determine the cost imposed in the form of inputs and in return, the benefit achieved employing monetary value. Since horticulture is so diverse in Shopian District, it became a household agricultural activity. Thus, it becomes necessary to access the cost incurred on the various inputs in the field of agriculture and the monetary benefit realized in the form of INR. Irrespective of the fixed cost, i.e., the cost or price of

landholding over which these horticultural activities are carried out and the agricultural machinery and implements which are used were not included. Rest all other inputs having a profound implication on the cost spent on the horticulture were selected such as Cost of Manures, Fertilizers, Insecticides, Pesticides, etc., Labour cost for Pruning, hoeing, and application of Manures, Fertilizers, Insecticides, Pesticides, etc., Labour for Harvesting and Packing. Labour force, including both own family labour and hired labour were counted in man-days and later was converted to the cash value. Cost of Packing Material, Transportation was also included and later an average cost incurred was converted into the cash value of INR.

The Cost-Benefit Analysis was employed to extract the cost of production and returns from horticulture cultivation from one Kanal of land in a year. This assessment is carried out for only one horticulture season. From the perusal of Table 1 it can be understood that average cost incurred to one Kanal of land by each horticulture grower is highest in the form of labour since horticulture industry is highly labour intensive, so it demands a high labour cost for pruning, hoeing and application of manures, fertilizers, insecticides, pesticides, etc. with the absolute figures INR 4500 accounting 22.61 per cent, The same is followed by the cost of packing material with an average annual cost of INR 4200 as 21.11 per cent. As the absence of well-defined and proper transport and lack of enough marketing facilities growers are forced to send the fruits outside Jammu and Kashmir so that it can fetch a handsome price, thus in this way the transport cost gets increased and an average cost incurred on the transportation shoots up to INR 4000 at 20.10 per cent. Another vital input that costs a very much is the cost of manures, fertilizers, insecticides, pesticides, and it stands at INR 3200 at an annual percentage share of 16.08 per cent. Others include labour for harvesting and packing and miscellaneous (Loading etc.), both with the average cost of 2000 each, at 10.05 per cent. The total average annual cost was calculated to be INR 19,900.

Table 1: Average Cost Incurred and Benefit realized from the Horticulture in Shopian District

Particulars	Magnitude	Total Input Cost (Per cent)
Average Production in Boxes (Per Kanal)	100	-
Average Price Fetched by Per Box (in INR)	530	-
(A) Gross Returns / Kanal (INR)	53,000	-
(I) Cost of Manures, Fertilizers, Insecticides, Pesticides, etc. (INR / Kanal)	3200	16.08
(II) Labour cost for Pruning, hoeing and application of Manures, Fertilizers, Insecticides, Pesticides, etc.	4500	22.61

(Man, days converted to INR/Kanal)		
(III) Labour for Harvesting and Packing. (Man, days converted to INR/Kanal)	2000	10.05
(IV) Cost of Packing Material (INR / Kanal)	4200	21.11
(V) Transportation (INR/Kanal)	4000	20.10
(VI) Miscellaneous (Loading etc.)	2000	10.05
(B) Total Cost(I+II+III+IV+V+VI)	19,900	100
Net Returns (INR) = (Total A-B)	33,100	-
Cost-Benefit Ratio	1: 1.66	

Source: Calculated by Researcher based on a field survey conducted in 2019-20

While discussing the returns realized from the horticulture per year from one Kanal of land, it was observed that total gross returns were INR 53,000. Thus, the average net annual returns were INR 33,100. The primary focus of the section of the study was to work out the annual returns derived out from each Kanal of land. By assessing table 1, it indicated that the cost-benefit ratio is 1:1.66, which is assumed to be a focal point of any economic activity. This analysis thus cements the fact that horticultural activities tremendously contribute to the positive socio-economic development of Shopian District. Although this fruit cultivation is labour intensive, it has a vast potential and provides voluminous opportunities for the growers and persons engaged in strengthening their economic standards.

Driving Causes of Agriculture towards Horticulture

Dynamic shifting of agricultural crops towards the high yielding variety of cash-rich fruits is called diversification. The same diversification has engulfed the whole of the Kashmir Valley from quite an extended period. Still, in the case of District Shopian, it has been voluminous mostly from the last three decades. Upon surveying the district, it came to known that there are multiple reasons for its shifting. Among them, most of the reasons brought forth by the farmers depicted that the high cash value of the fruits has attracted them towards the horticultural activities. It was observed from Table 2 and Figure 3 that about 518 respondents, which account to be 82.22 per cent of the surveyed respondents are of the opinion that horticulture crops return high cash values to them.

On the other hand, agricultural crops lack much production and low output is recorded, this also significantly motivated the farmers to shift towards the fruit cultivation. About 70.15 per cent of the respondents believe this dominating factor for more and more land conversion towards horticulture. Besides this, low market value attained from most agriculture crops was unable to enrich their economic conditions and forced them to find an alternative to overcome this problem, i.e., 409 respondents with the percentage share of 64.92

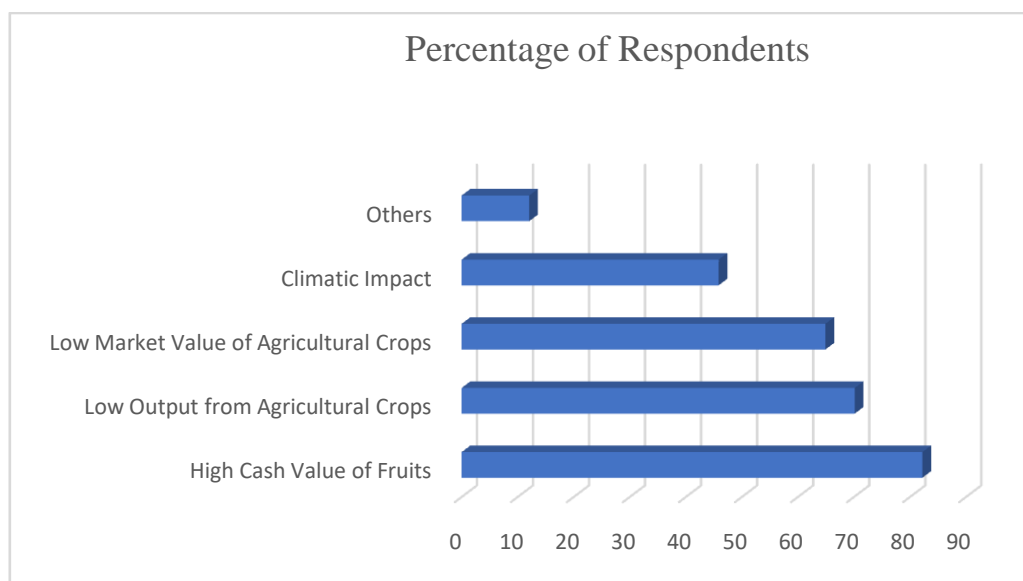
were in favour of this reason. It was challenging to sustain the livelihood of the farmers in the current scenario when economic stability cannot be compromised. The continuous change of the climatic conditions all over the globe has also put its implications over the Kashmir valley. In Shopian district before the horticulture, the prime agriculture practice was the cultivation of rice, which demands a continuous supply of water and other inputs, but now in the current scenario the climatic changes have reduced the water availability, and in those circumstances, the rice cultivation cannot have larger productivity. Thus, horticulture is neither dependent on water, nor does it need a continuous supply of water. By summarizing, 45.87 per cent of the respondents believe that climate changes turned them towards adoption of horticulture.

Table 2: Reasons for the agricultural land being converted into Horticulture

Reasons for Agricultural land being converted into horticulture	Number of Horticulturists	Percentage
High Cash Value of Fruits	518	82.22
Low Output from Agricultural Crops	442	70.15
Low Market Value of Agricultural Crops	409	64.92
Climatic Impact	289	45.87
Others	76	12.06

Source: Based on Data collection through Field Survey,2019-20

Figure 2: Reasons for the agricultural land being converted into horticulture



Prepared by Researcher

Conclusion

As horticulture has become the house hold activity in the Shopian District and it has engaged a majority of the section of society under its domain. It has encompassed a brilliant potential to provide a livelihood and employment to a large chunk of horticulturists. Thus, keeping this scenario into consideration an attempt made to showcase its input involved and out put received a study was conducted and it revealed that every Kannal of Horticulture land has returned a gross amount of INR 53,000, while as annual total cost incurred on horticulture activities stood at 19,900, hence netreturns from same unit of land was INR 33,100. Thus, cost benefit ratio derived was recorded as 1:1.66 which is a very positive indication and hence shows the good indication of horticulture development and its prosperity. Besides an assessment of the major reasons responsible for the conversion of agriculture land towards the horticulture was measured and it showed that majority of the respondents more than 80 per cent revealed that reason for conversion is high cash value received from fruits, besides this about 70 per cent of respondents believed that agriculture crops have a very low production and productivity. Thus, from the present study it can be concluded that horticulture has a good prospectus and it has large capacity to get developed and bring more and more population under its fold from providing food and nutritional security to engage them in employment opportunities.

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