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Economic of Apple Industry:A Primary Survey in District Shopian Kashmir (India)

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Abstract
As a dominant crop of the valley "Apple" proudly represents the fruit industry of Kashmir, representing 98% of the total fruit production. Apple industry is the backbone of the economy of Kashmir valley particular in Shopian district. Due to its good backward and forward linkages it provides employment to about 60% of the population and is the main source of livelihood of many households. But there was no significant increase in the production of this industry during the last few years due to various reasons such as lack of cold storage, large chain of commission agents from the grower to consumers in the Kashmir valley as whole.

Introduction
Apples grow readily throughout temperate climate zones. However, commercial apple production is increasingly concentrated in countries and in growing districts that have a strong comparative advantage in apple production and marketing. Apples are grown primarily in the north-western hill country where the climate is ideal for fruit growing. Apple is of particular interest for a number of reasons in Kashmir valley in terms of both area and production. Apple is an extremely important source of nutritive diet. This provides a major source of income and employment in Kashmir valley particularly in Shopian. The production of apple in Kashmir valley and its marketing all over the country as well as abroad has been promoted directly or indirectly by several and govt. initiated programmers and policies, for example price policy, credit policy, supply of packing boxes, quality control, outright purchase etc.

The factors that contribute to production of apple in Shopian are large area under seedling origin, site of planting in respect of attitude, climate, slope and soil, quality of planting material, orchard management moisture stress, occurrence of climatic hazards, past harvest management.

Objectives of the Study: The present study is an attempt to analyses, the production and productivity of Apple in District Shopian. The major objectives of the study are as under;

(1) To know the impact of Apple production on the development of rural economy
(2) To examine the marketing system prevailing in the Apple trade

Material and Methods: The sample design was made in accordance with the requirements of the subject , while both the source of information primary and secondary were trapped effectively, emphasis was placed on gathering first hand assessment of the situation. For primary data collection, purposive interview and questionnaire was considered to be the best alternative.

Sample Selection: The present study is designed by stratified random sampling, where population is divided into sub-groups or strata, so that the population becomes in homogenous in groups, and then a random sample have drawn from each group. The population (farmers) is divided into three groups, on the basis of holding.

(1) Large farmers with greater than 3 hectare of land.
(2) Small farmers with 1-3 hectare of land.
(3) Marginal farmers with less than one hectare of land.

While preparing sampling frame the proportion of the respondents was taken according to their percentage. On the basis of this number of respondents from small growers was kept 30, marginal and large farmers 12 and 8 respectively.

Questionnaire preparation: The preparation of questionnaire stress was given to open ended questions. All the reverent information's which could be helpful in this work like apple productivity per hectare, age group of farmers, use of fertilizer , pesticides , income earned from apple cultivation, problems in apple cultivation and facilities offered by the government etc. was gathered through questionnaire.

Age of Formers

The age of formers plays an important role in determining agricultural production, which change in response to the adoption of new ideas and practices. In order to explain this survey, 50 farmers classified into four groups as shown in Table 4.1.

Table 4.1 Age group of Farmers

Age group (in years)	No. of farmers	Percentage of formers
0-20	4	8
20-40	19	38
40-60	19	38
above 60	8	16
Total	**50**	**100.00**

The above table clearly indicates that younger population, which is more educated and innovative, constitutes more than 70% of total sample of the population. The role of older farmers still should not ignore, because the farther or older brother by virtue of being older in agricultural practice, is not only the head of the family, but also the final decision maker.

Level of Education

Education plays an important role in the development of agricultural. Education is the aggregate of all the processes by means of which a person develops abilities, attitudes, and other forms of behaviour. There is a close relationship between education level and the adopting of agricultural innovations or new techniques of production, which interns agricultural production and productivity. Table 4.2 shows the level of education of farmers in district Shopian.

Table 4.2 Level of Education

Level of Education	No. of farmers	Percentage
Elementary	6	12
Secondary	10	20
Higher Education	17	34
Illiterate	17	34
Total	**50**	**100.00**

The above table reveals that 12 percent of the farmers have got elementary education, 20% of the farmers had passed secondary education. The Higher education constitutes 34% and the remaining 34% of the farmers are illiterate.

Size of Family

A family includes all members of a household, which lives and eats together, either all members are able to doing work or not. On the basis of number of members in a family, we classified them into five groups as shown in Table 4.3.

Table 4.3 Size of Family

Size of family (members)	No. of farmers	Percentage
Below 5	5	10
5-8	31	62
8-11	10	20
11-14	3	6
above 14	1	2
Total	**50**	**100.00**

The above table shows that 90% of the respondents live in a joint family system having more than 5 members. It has been justified that joint family system adversely affects the agricultural productivity; very often the problem of disguised unemployment is taking place in a joint family system.

Size of Holding

The actual size of holdings according to government records, include all the land entered in the name of an individual, irrespective of whether he cultivates it or not, even the area under groves, pastures, and waste lands included in this category, if it is registered in the name of an individual. But here we have considered only agricultural land cultivated by individuals show in table 4.4.

Table 4.4 Size of Holding

Size of holding	No. of farmers	Percentage
Below -0.5 hectare	14	28
0.5-1.5 hectare	19	38
1.5-2.5 hectare	14	28
2.5-3.5 hectare	3	6
Total	**50**	**100.00**

The table reveals that 38% respondents have more than 0.5 hectare to less than 1.5 hectares of land and 28% of farmers have 1.5 to 2.5 hectare of land und cultivation. 28% of farmers have less than 0.5 hectares of land and remaining 6% have more than 2.5 hectares of land.

Source of Irrigation

Although the potential for irrigation in district Shopian is adequate due to nature of hilly areas, but unfortunately irrigation system in the district is not fully developed. The irrigation system in Shopian district in context with apple cultivation can be understood with the help of table 4.5.

Table 4.5 Source of Irrigation

Source of irrigation	No. of farmers	Percentage
Tube wells	4	8
Canals	38	76
Ponds	6	12
Sprinkle pumps	2	4
Total	**50**	**100.00**

The above table reveals that most of the farmer irrigated their land by canal, which constitutes 76% of total respondents under this survey. Irrigation is of vital importance according to the scientists and farmers to accept that irrigation has much importance in the apple production and productivity during this survey and interviews.

Use of Fertilizers

There is a direct relationship between the soil fertility and productivity, and fertilizer has a direct impact on fertility of soil. According to our survey 50 farmers have been interviewed and the result is shown in Table 4.6.

Table 4.6 Use of Fertilizer

Name of fertilizer	No. of farmers	Percentage
Biochemical	8	16
Chemical	4	8
Both	38	76
Total	**50**	**100.00**

It has been reveals from the above table that 76% of the total respondents in this survey are using both the biochemical and chemical fertilizer in the cultivation of apple, and little over 24% of the former using either of the two fertilizers.

Quantity of Fertilizer used per hectare

According to agricultural scientists different types of fertilizer i.e. nitrogen, phosphate and potash etc should be used in a proper balance in order to maintain the fertility of soil. It is also argued that fertility of soil is fruitful for the production and productivity of apple in district Shopian. The quantity of fertilizer used by different farmers in district Shopian in their apple trees are shown in table 4.7.

Table 4.7 Quantity of fertilizer used per hectare

Quantity of fertilizer (Ha)	No. of farmers	Percentage
Below 200 kg	8	16
200-300 kg	8	16
300-400 kg	9	18
above 400 kg	25	50
Total	**50**	**100.00**

It is revealed from the above table that 50% of respondent used more than 400 kg of fertilizer in the cultivation of apple. So it shows that fertilizer has a direct relationship with the output. 18% of farmer in this survey used fertilizer less than 400kg and remaining 32% of respondents used less than 300 kg in the cultivation of apple in district Shopian.

Productivity of Apple

Apple is a sweet fruit of high commercial value around the world, and more so in district Shopian. The average productivity in Shopian is 11.2 metric tons per hectare, which is higher them state and the national average. The production and productivity of apple in district Shopian is increasing over the years due to new techniques of production. The apple production per hectare in district Shopian is shown in Table 4.8.

Table 4.8 Productivity of Apple

Productivity/ hectare	No. of farmers	Percentage
Below 400 boxes	10	20
400-500 boxes	7	14
500-600 boxes	8	16
600-700 boxes	11	22
above 700 boxes	14	28
Total	**50**	**100.00**

Loan Facility

Agricultural plays an important role in the inhabitants of district Shopian. The economy of the district mainly depends upon agricultural. In the cultivation of apple, farmers need some money in order to purchase the agricultural inputs, specifically for apple, i.e., labour, pesticides, and fertilizer, spray motors etc. All farmers are not able to purchase these inputs, it becomes necessary for poor farmers to take loan. There are various agencies from which these poor farmers are receiving money at a higher rate of interest. Let's take a look on the various sources of loan providing agencies in Shopian district.

Table 4.9 Source of Loan

Source of loan	No. of farmers	Percentage
Banks	13	26
Money lenders	4	8
Commission agents	33	66
Total	**50**	**100.00**

The above table shows that commission agents playing important role, 66% of farmers taking loan from commission agents, 26% of the respondent's barrows from banks, and remaining 8% borrows from money lenders.

Marketing of Apple

After cultivation of produce, the need of market get arise, the role of market is important, because a decrease in price of any crop may result in decrease in production of that crop in next coming years. Market gives incentive to the formers for motivating them to go for production oriented investment and technology. After good cultivation of apple, there must have proper channels of marketisation, without good marketing systems, farmers may face many types of problems, like exploitation by middle man, low price for their yield. The marketing systems of apple production in district Shopian can be understood with the help of table 4.10.

Table 4.10Marketing of Apple

Apple buyers	No. of farmers	Percentage
Middle man	6	12
Direct to consumer	6	12
Commission agents	38	76
Total	**50**	**100.00**

The above table reveals that 76% of farmers sell their produce to commission agents, while 12% and 12% of farmers sell to middlemen and consumers.

Annual Income from apple cultivation

To identify the economic status of farmers within the sample, we had directly accounted their income from apple cultivation. More the income from apple cultivation more will be the incentive for adoption of new technology in agriculture. Latest pesticides and fungicides, high yielding fertilizer would directly depend upon the annual income of farmers. Rich formers can effort to purchasing all new inputs for high production and productivity. Therefore income of the farmer and size of holding has a direct relationship in adopting the latest and innovative methods of production. Table 4.11 shows the annual income of farmers in district Shopian.

Table 4.11 Annual incomes of Farmers

Income of former	No. of families	Percentage
Below- 2 laky	8	16
2-3 lakh	8	16
3-4 lakh	5	10
4-5 lakh	6	12
above 5 lakh	23	46
Total	**50**	**100.00**

The above table reveals that about 46% of farmers earn annual income from apple cultivation in district Shopian more than 5 lakh Rupees. 32% of formers earn in between 1 lakh to 3 lakh Rupees annually in the cultivation of apple in district Shopian on the basis of survey.

Use of labour per hectare

Labour is the important factor of production, it is defined as the exercise of human and physical effort in the production of goods and services. Labour is the key element in the production of any commodity. The use of labour by formers in the cultivation of apple in district Shopian is shown in table 4.12.

Table 4.12 Use of labour per hectare

Use of labour	No. of farmers	Percentage
Below 200 men days	15	30
200-300 men days	11	22
300-400 men days	11	22
above 400 men days	13	26
Total	**50**	**100.00**

The table 4.12 shows that 30% of the respondents use below 200 men days per hectare in the cultivation of apple. The 26% of farmers use more than 400 men days in their farms for the cultivation of apple in district Shopian. The remaining 44% of farmer use labour in between 200-400 men days per hectare in the cultivation of apple.

Average price of per box

Price plays a pioneer role in the cultivation of apple in district Shopian. It is an important instrument for providing incentives to farmers for motivating them to go in for production oriented investment and technology. There is a direct relationship between price and production of any commodity. Let's have a look on table 4.13, which shows the average price of apple per box.

Table 4.13 Average price of per box

Average price	No. of farmers	Percentage
300-400 Rs.	14	28
400-500 Rs.	11	22
500-600 Rs.	22	44
500-600 Rs.	3	6
Total	**50**	**100.00**

According to our survey, 44% of respondents say that average price of apple per box lies in between 500-600 Rs. While 28% of farmer thinks average price per box of apple remains either above Rs. 300 or below Rs 400. 22% of respondents says average price of apple per box remaining in between 400 Rs. to 500 Rs. in district Shopian as shown in table 4.13.

Conclusions

The economy of district Shopian is overwhelmingly based on agriculture. Among all horticultural products, apple is the most easy to cultivate due to the hilly nature of the land and is highly profitable than other crops. It is the backbone of the district economy and state too as well. Over the last few years in district Shopian apple production and productivity both have increased. According to our survey it is quite possible to expand its production and its yield, if certain things will be taken into consideration such as marketing of fruits, irrigation, use of improved pesticides and fertilizer etc. there are the major hindrance in the way of apple cultivation in district Shopian. Horticultural department are not keenly watching the apple fields neither informing people about latest technology nor trained the cultivators, so that productivity could be enhanced. The economic status of growers had badly affected by the poor prices of apple fruit due to increasing supply of apple fruit in peak season, this is because, storage facilities for the apple fruit is not available in the valley, people sell their produce as early as possible this problem can be eliminated either to establish storage facilities in the state or establishing local mandies and cooperative societies, so that exploitation by middle man can be controlled.

In nutshell government has to come forward and take immediate action against exploitation by middlemen, commission agents and supply of spurious pesticides and fertilizer, if they controlled, apple fruit will survive in district Shopian.

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