Chapter - I

Growth and Development of Horticulture in Jammu and Kashmir
The State of Jammu and Kashmir, situated in the lap of the Himalayas, is agro climatically suited for the cultivation of almost all kinds of temperate fruits and also some kinds of tropical fruits. It receives an annual rainfall and snowfall between 30" to 35" and 75 cms to 205 cms respectively. The temperature varies between 7 °C to 38 °C. Among other factors affecting the growth of fruit, temperature and humidity are the chief ones. Agro climatically the State can be divided into four zones viz:

a) Temperate zone comprising Kashmir Division as a whole and parts of Doda, Kathua, Udhampur, Rajouri and Poonch district;

b) Semi-tropical zone comprising of Jammu district;

c) Intermediate zone located between temperate and semi-tropical zones of Jammu Division comprising parts of Kathua, Udhampur, Poonch, Rajouri and Doda Districts; and

d) Arid zone covering major part of Ladakh District.

Kashmir has remained the symbol of fruits from the very early days. It is renowned throughout

the world for its rich and delicious fruit. The Kashmiri Amiri and Kakzi Walnut has served over the ages as its unacknowledged ambassador of goodwill and fame outside the State. Apple, pear, Cherry, Peaches, Plums, Walnuts and Almonds are some of the varieties of fruit that thrive in temperate conditions of the valley. In sub-tropical area of Jammu the fruit grown include Malta, Orange, Guava, Citrus, Papaya, and Luquat.

HISTORICAL PERSPECTIVE

A peep into the history of human civilisation leaves one in no doubt that fruit cultivation is as old as the human civilisation itself\(^2\). At a time when man lived the life of a noble savage, his easily accessible food on whose consumption he could survive was natural gifted fruit. From all available accounts it follows that fruit cultivation is older than the cultivation of other agricultural products like food grain and cereals. In fact, modern research has traced origin of many fruits like Walnuts, Ambiri

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apple, Treil and some currants to this tract.

Jammu and Kashmir State has a very rich history of fruit culture at its back. Although very little is known about the origin and growth yet as back as 1,000 B.C. during the reign of King Nura fruit cultivation was practised in Kashmir as mentioned in Kalhana's Rajtargni. This is further elaborated by him when he said that grapes which were scarce even in heaven were common in Kashmir.

Mentioning about the trade links of Kashmir with rest of the world particularly Central Asia, Buddhist sources point out that fruits like pears, plums, peaches, apricots, and grapes were the chief articles of export to foreign lands. In fact in the first century AD juices from grapes and fruits were distilled into liquor and taken on special occasions.

Testifying Kalhan's findings even Hiuen Tsang a famous Chinese's traveller who visited Kashmir

3. Ibid. p. 1
4. "Horticultural Heritage of Kashmir", p. 4
in the 7th century A.D., declared that the land was good agriculturally and produced abundant fruits and flowers. The pear (li), the wild plum (nai), the peach (tau), the apricot (hang or mui) and the grapes (po-tau) were the principal fruits noticed by the pilgrim.

The subsequent historical events bear an eloquent testimony to the fact that fruit cultivation was greatly encouraged and promoted as also patronised right from Lalitaditya rule 900 A.D. to the Mughal period. It is significant to note that great ruler of Kashmir Budshah and the Mughal emperors introduced new varieties of fruits in Kashmir by importing the same from Kabal and Persia. Many gardens and orchards owe their birth to these rulers. Laying of gardens and orchards and planting fruits and other trees in them was not only the fondness of the rulers of the land but also Saints, Munies, and Rishes, Who contributed

6. Ibid., p. 121.
a lot for the promotion of horticulture.

In the Mughal period Kashmir produced many types of fruits. According to Abdul Fazal, "besides plums and mulberry, the fruits are numerous, melons, apples, peaches, apricots are excellent. Although grapes are in plenty the finer qualities are rare and the vine bear on mulberry trees".3

In the Waqyat-i-Jahangiry, it is said that Kashmir produced 400 monds of Saffron in an ordinary year. During the time of Akbar price of saffron ranged from Rs. 8 to Rs. 10 per seer and in Jahangir's time also about the same.9 During Mughal period water melons, cultivated on the floating gardens of Dal lake, were so famous for the juice and taste that emperors of this period had taken them to Agra.

However, the fruit cultivation during the aforesaid periods and even thereafter was carried on in an haphazard manner with out knowing exactly the


proper art of cultivating and nourishing the fruit trees. This fact is clearly borne out by Girdlestone's statement. "It is rare to get any fruit of first rate quality in Kashmir simply because they are allowed to run wild, no heed being given to manuring, pruning and grafting."

The art of grafting was unknown until 1590 A.D. when Mohammed Quli Ifrahun the Daroga of the Gardens first of all grafted Kashmiri fruit trees with peaches brought from Kabul. The experiment proved successful and grafting has since then been widely practised. During the same period Zaffar Khan Ahsan, the Governor under Shahi-Jehan also improved the quality of cherries, plums, peaches and grapes by using grafts and planting imported saplings from Persia and Kabul.

Commenting on the fruit cultivation even Mr. Bernier, a French physician, who visited

Kashmir in 1664 during the reign of Aurangzeeb, deplored about the poor quality of fruits grown in the valley and attributed it to the lack of skilled art of cultivation and grafting of trees. While the fruit production techniques improved as a result of better methods of cultivation the industry as a whole received a set back during the reign of Afghans and Sikhs. With the advent of Dogra rule Horticulture sector witnessed a great change with the introduction of new varieties imported from European countries. In fact, the year of 1856 proved a land mark in the history of fruit industry of the State when the French business firms through one of their agents namely MDanvergne observed wild growth of grapes and conceived the idea of processing the same into the wine for his own consumption. Mr. MDanvergne, however, found that wine processing unit could not be improved till such time better varieties of grapes were imported from Europe and technical know-how assured. Thus

in bid to promote the fruit processing in the State Mr. Ermerds formerly Head Gardner of Public Works in Paris was approached through the School of Horticulture at Versailles. Having tested the agro-climatic conditions of the region Mr. Ermerds recommended several measures for the development of grape processing. As a result of these efforts the first nursery having 25,000 fruit trees came into existence in 1886-87. This in fact marked the beginning of the State Horticulture Department which formerly came into existence in 1907 to help promote the fruit industry.

Four year thereafter that is in 1890 the Gazetteer's lists the various varieties of fruit grown and found in Kashmir through various references as follows:


B) Cherry: i) Habshi, and ii) Surkh

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14. Ibid. p. 6
15. Ibid. p. 6.
C) Apricot:
   i) Bot Teesra, ii) Tsok Teesra, iii) Moderi Teesra, iv) Tetha Teesra, v) Gurdol, and vi) Khas Teesra.

D) Apple:

E) Pears:

F) Plum

G) Peach:
   i) Mooder Tsunun, and ii) Tyut Tsunun.

H) Quince:
   i) Tsuk Bam Tsunt, and ii) Mooder.

I) Almonds:
   i) Khagzi, ii) Burzal, and iii) Wont.

J) Pomegranate:
   i) Tsuk Dan, ii) Mooder Dan, and iii) Jigree Dan.

K) Hops

This was further certified even by Walter, H. Lawrence (settlement Commissioner, Jammu and Kashmir State) who in his book, "The Valley of Kashmir", (1895) revealed that, "Kashmir is a country of fruits, and perhaps no country has greater facilities for horticulture, as the indigenous apple, pear, vine, mulberry, walnut, hazel, cherry, peach, apricot,
rasberry, goose berry, currant, and strawberry can
be obtained without difficulty in most parts of the
valley. According to him the following varieties of
fruits are grown in Kashmir.

A) Apple:
   i) Ambri or Ambur;
   ii) Kuddusari, III) Mohi Ambur, iv) Nabad Trel,
   v) Siel trel, vi) Jambasi trel,
   vii) Khatoni trel,
   viii) Duda ambri, ix) Tetshakur,
   x) Samerkand, and
   xi) Molnii.

B) Pear:
   i) Nakh Satarwati,
   ii) Gosh bug,
   iii) Tang and
   iv) Nakh Gulabi

C) Walnut:
   i) Khagzi,
   ii) Burzal, and
   iii) Wont.

D) Almond:
   i) Khagzi, ii) Burzal, and
   iii) Wont.

E) Cherry:
   i) Black murala,
   ii) White heart, and
   iii) Sour cherry.

F) Peach
   Wild

G) Plum:
   Wild


H) Apricot:

I) Mulberry:  
i) Black and white, and 
ii) Shah tul.

In 1910 the exotic French varieties of fruits were introduced into the State with fresh additions made till date.

From the foregoing historical records it becomes quite clear that fruit cultivation in the State followed a steady growth right through the ages. Following the country's independence the industry got a further phillip along with other sectors.

POST INDEPENDENCE ERA

Following the independence the State Government had to shoulder the greater responsibilities for achieving social and economic breakthrough. In this connection horticulture sector was considered a vehicle for bringing socio-economic transformation. Accordingly a number of developmental schemes were introduced for the growth of horticulture with the inception of Five Year Plans.

J&K Horticulture Department, Srinagar.
At the beginning of First Five Year Plan there existed 17 nurseries in the State to cater the need of plant material and some work was also done in protecting the orchards against the damages of the pest. However, this sector did not receive much emphasis in this plan as it was thought expedient to lay more stress on the production of food-grains so as to make good the glaring deficiencies in the calorie (energy) requirements of the people.

In the Second Plan, the need was felt to enrich the dietary and make it more healthful by providing the essential protective elements such as vitamins and minerals. The increased production of fruits which are major natural sources of supply of these substances was included, therefore, as an item in agricultural planning. The programme for land use was thus reoriented so as to diversify farm enterprise and extend fruit orchards thereby and also to improve the productivity of existing orchards which become defunct or decrepit due to

20. Ibid. p. 7.
one reason or the other. During this plan, each State was to concentrate on the production of such kind of fruits in which it excelled, leaving the rest to be grown elsewhere under more congenial conditions. Against this background the State Government realised the importance of apple industry in the State for economic upliftment of the poor growers and the potential for the growth of orchards. To achieve these objectives the State Agriculture Department was reorganised and a small wing in the Department was created. This eventually led to the establishment of State Horticulture Department in the year 1962-63. With the birth of a new department a series of measures were taken for the development of horticulture sector. However, the increasing tempo of horticultural expansion in the State demanded that the available resources of men, material and money were put to the best use. These steps were not meant only to strive at


22. Ibid., p. 132.

a mass uplift of gross production figures, but was considered essential to aim simultaneously at meeting the following objectives:

a. the specialised demands of the product industry;

b. the yielding of the maximum monetary returns to the primary growers; and

c. the critical quality requirements of export markets.

The State agencies concerned with horticulture development in the State had to play a special role in achieving these objectives. Fruit growing had to be more rigidly planned along the lines that scientific research and experience had made possible. Ill-planned orchards, planting wrong varieties on wrong sites or regions had to be resolutely avoided.

Thus, for Fourth Plan, an outlay of Rs. 226.68 lakhs was earmarked for horticulture development against which the expenditure has been Rs. 133.64 lakhs which amounts to 58.95 percent of

the total outlay. During this plan maximum stress was given to solve the problem of efficient marketing of apples, as it was considered as a serious drawback facing apple industry. With a view of overcoming the problem studies were made in some depth which resulted in the creation of a separate organisation viz., Department of Horticulture Planning and Marketing in the year 1972. The organisation aimed at ensuring the better marketing of apples and reducing the influence of commission agents and middlemen on this trade. In addition to these the Department of Horticulture Planning and Marketing has been charged with the responsibility of accomplishing the following objectives.

a. To organise the orchardists in the Cooperative Marketing and Processing Societies;

b. To introduce standardisation in the fruit trade;

c. To assist the growers in getting problems relating to packing and transport solved; and

d. To collect, compile, analyse and disseminate market intelligence.

The inception of the Department led to an improved apple marketing. It was decided to send apple produce direct to such important markets as Bombay, Madras, and Bangalore, besides Delhi where shops and a cold storage plant were built. The developmental schemes were reoriented during 1972-73 so as to develop orcharding on

Five broad lines indicated below:

26. Production and distribution of quality plant material;

b. Extending the area under fruit cultivation;

c. Increasing the productivity of existing orchard areas;

d. Protecting of plants against ravages of pests and diseases; and

e. Research and education.

With the launching of Fifth Five Year Plan (1975-79) a new orientation was given to horticulture sector especially apples. An outlay of


Rs. 329.00 * lakhs was approved for the horticulture sector for this period. It formed 45.14 percent more than the outlay of Fourth Five Year Plan. The main features of this plan were:

a. To extend the area of apple cultivation and improve the conditions of existing orchards by giving special incentives to growers.

b. To modify the horticulture staffing pattern so that more technical staff will be available to render technical advice to the growers.

c. To build required organisation with adequate facilities to extend the plant protection over the entire area under apple orchards. Spraying pumps were proposed to be supplied to the growers @ 33 1/3% subsidised cost through the Agro Industries Development Corporation Ltd.

d. To handle 23.57 percent of apple production by the cooperatives which will have to project as a cohesive force in marketing.

e. To conduct proper market surveys in order to exploit the new markets in Punjab, Haryana, Bombay, Gujrat, Hyderabad, Banglore and Tamil Nadu.

* Figure collected from Fifth Five Year Plan, p. 60. Planning Development Deptt. J&K Govt.

f. To increase the number of cooperative societies from 13 to 50 by the end of the Fifth Plan;

g. To use cardboard carton in place of wooden box for packing of fruit in order to meet the requirements of the plan; and

h. To introduce mechanical grading and set up 70 grading centres.

Among other things the fifth plan envisaged improvement of old departmental orchards and nurseries for production of quality material, registration of private apple plant nurseries, establishment of horticulture information service/centre, intensification of research on varietal trials in apples, survey of agro-climatic regions for cultivation of different kinds of varieties of apples, and trainings.\(^2\)

The following achievements were made in horticulture during Fifth Five Year Plan:

i. Special incentives had been offered to growers in drought prone, hilly and kandi areas to take to apple farming. Plant material in such areas was made available to the growers at 50 percent of the scheduled costs.

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\(^2\) Fifth Five Year Plan, p. 56, Planning and Development Department, Jammu and Kashmir Government, Srinagar.
ii. Demonstration plants were maintained in fruit growing areas to educate even the most backward and illiterate growers about the benefits of harnessing scientific knowhow for better returns. Such plots were set up on the growers' fields and were under direct supervision and control of Department of Horticulture for a period of five years. All material inputs were provided free of cost during this period as an incentive. The number of such demonstration plots were 1,400.

iii. As a result of plant protection measures, the fungicides were made available at 75 percent at subsidised in apple growing areas. Further 4,400 spraying pumps were purchased out of which 4,100 were distributed amongst the growers at the subsidised cost of Rs. 150/ per sprayer. An amount of Rs. 1.59 crores were spent on account of subsidy upto 1978, in respect of scab fungicides, distributed to the orchardists.

iv. The training schools were established in the State where basic horticulture training was given to young growers. A total of 2,000 personnel were imparted training in these schools.

v. For the education of growers, number of medias viz., press, radio, T.V. etc. were used by the information and publication wing of Horticulture Department of the State.


31. Ibid. p. 3.
vi. The phenomenal increase in the export of fruit was the result of the efforts made by the State in exploring new markets and providing the growers with various facilities viz., financial assistance and technical guidance.

vii. 94 fruit growers cooperative marketing and processing societies were organised with 80,000 members in the State.

Horticulture sector continued to receive special attention during Sixth Five Year Plan as an outlay of Rs. 919.50 lakhs was allotted for this period, out of which Rs. 128.50 lakhs amounting to 3.97 percent of the total are to be spent on horticulture research and Rs. 791 lakhs, amounting to 86.03 percent of the total, on crop husbandry 32.

The menace of apple scab, which has come in the form of a big challenge to the apple industry a few years ago has persisted from the years and still continues in a patent form. For this, scale of subsidy on fungicides has been brought down from 50 percent to 25 percent to be borne by State and

25 percent by Centre. For plant protection programme a provision of Rs. 276.87 lakhs was made for 1980 - 85. The horticulture research, other plant protection measures, horticulture development in hilly, kandi and backward areas, community canning and fruit preservation, and revival of Ambri variety of apple etc form the essential components of the 6th Plan Period.

It is also gratifying to note that an outlay of Rs. 370.00 lakhs has been proposed for different marketing activities during 6th Plan. An institute for fruit preservation and canning is also proposed to be set up in the State during 6th Plan. This institute will conduct post graduate diploma course on the subject, standardise new receipts for products and also conduct short term craft course for housewives for change of food habits. For this purpose an amount of Rs. 7.97 lakhs has been proposed during 1981 - 82. The 6th Five Year Plan emphasises

33. Ibid. p. 16
34. Ibid. p. 36.
the following points in this behalf:

i. To increase the area under orchards from 1.05 lakh hectares in 1979-80 to 1.20 lakhs hectares by the end of 6th Plan.

ii. To increase the fruit production from 4 lakh tonnes in 1979-80 to 6 lakh tonnes by the end of Sixth Plan.

iii. To increase the export of fruit from 3.44 lakh tonnes in 1979-80 to 9.12 lakh tonnes by the end of plan period.

iv. To increase the number of grading centres to 200 as against 94 in 1979-80 by the end of Sixth Plan.

v. To increase the number of fruit growers Cooperative Marketing Societies from 80 to 200 by the end of Sixth Plan.

vi. To solve the problems of apple growers like high cost of packing material, non-availability of transport and extension of marketing facilities.

Under the impact of planned development and as a result of scientific measures adopted in the cultivation of fruits there has been a significant

35. Ibid., pp 16 - 17 and 36 - 37.
increase in horticulture area, production, income and employment as is revealed from the analysis that follows:

HORTICULTURE AREA

It is sad to note that despite the fact that horticulture is one of the oldest industry of the State yet it has not been possible for it to grow and develop to an appreciable extent till the dawn of independence as stated earlier. The position prevailing at that time was that a small area of 0.31 lakh acres was under fruit cultivation. The industry had become a handmaiden of a few landlords/zamindars who considered it nothing more than a good pass time. After independence and with the introduction of Five Year Plans the area under horticulture started to increase. The area under fruit cultivation increased from 0.55 lakh acres to 0.57 lakh acres from 1st Five Year Plan to the end of Second Five Year Plan, which means an increase of 162.35 percent. However, such a increase was not longer and appreciable growth in a period of ten years. As a innate interest of Government towards horticulture development in Fourth Plan, the area under its cultivation increased much and touched a figure of 1.50 lakh acres meaning
thereby an increase of 163.16 percent over the horticulture area at the end of Third Plan. Thereafter the area under fruit cultivation increased year after year as is evident from Table 1.1 given below:

Table: 1.1  

<table>
<thead>
<tr>
<th>Year</th>
<th>Net area sown (in lakh acres)</th>
<th>Horticulture area (%)</th>
<th>Percentage increase(+) of (HA) to (NAS)</th>
<th>Percentage decrease(-) in horticulture area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976-77</td>
<td>17.57</td>
<td>2.22</td>
<td></td>
<td>12.63</td>
</tr>
<tr>
<td>1977-78</td>
<td>17.64</td>
<td>2.35</td>
<td>5.85</td>
<td>13.32</td>
</tr>
<tr>
<td>1978-79</td>
<td>17.89</td>
<td>2.40</td>
<td>2.13</td>
<td>13.41</td>
</tr>
<tr>
<td>1979-80</td>
<td>17.69</td>
<td>2.57</td>
<td>7.08</td>
<td>14.53</td>
</tr>
<tr>
<td>1980-81</td>
<td>17.67</td>
<td>3.27</td>
<td>27.23</td>
<td>18.50</td>
</tr>
<tr>
<td>1981-82</td>
<td>17.67</td>
<td>3.36</td>
<td>2.75</td>
<td>19.01</td>
</tr>
<tr>
<td>1982-83</td>
<td>-</td>
<td>3.45</td>
<td>2.68</td>
<td>-</td>
</tr>
</tbody>
</table>

Read: NAS = Net area sown
HA = Horticulture area

Source: Constructed by the Scholar on the information collected from:

i. Directorate of Horticulture Planning and Marketing, Govt. of Jammu & Kashmir.

The table reveals that the horticulture area increased by 8.11 percent from 1976-77 to 1978-79 meaning thereby an annual increase of 4.06 percent. However, it is worthy to note that in 1980-81 the horticulture area increased by 27.23 percent as against the area of 1979-80. The percentage increase in horticulture area in 1981-82 and 1982-83 has been marked at 2.75 and 2.68 respectively.

The other part of the analysis reveals that the area under horticulture in 1976-77 was 12.63 percent of the net area sown in the State. The same was 19.01 percent in 1981-82 which means an increase of 42.72 percent against the percentage of 1977-78 which was 13.32. Thus the increasing tendency has been growing on without any thaw. This may not be out of place to mention here that increasing tendency of bringing more area under fruit trees is the result of following:

a. Execution of land ceiling Act, and

b. The planned measures of the State Government.
HORTICULTURE PRODUCTION

Before independence and even upto the end of 3rd Five Year Plan the rulers of the State did not exhibited an innate interest in boosting up the horticulture production. With the result the fruit production which was 0.15 lakh tonnes at pre-independence could increase only to 0.24 lakh tonnes upto the end of 3rd Plan (1965-66) which means an average yearly increase of 0.006 percent. It is only after 1970 that the Government has been giving their undivided attention to accelerate the horticultural production in the State. As already stated a package of incentives and other plan measures were and are being initiated for this purpose. As a consequence thereof there has been a spectacular increase in the fruit production in the State of Jammu and Kashmir as is clear from the table 1.2.

* Figure collected from the official records of Directorate of Horticulture, Government of Jammu and Kashmir, Srinagar.
### Table: Horticulture Production in Jammu and Kashmir

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Percentage increase(+) or decrease(-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976-77</td>
<td>3.44</td>
<td>-</td>
</tr>
<tr>
<td>1977-78</td>
<td>3.74</td>
<td>+3.72</td>
</tr>
<tr>
<td>1978-79</td>
<td>4.77</td>
<td>+27.54</td>
</tr>
<tr>
<td>1979-80</td>
<td>4.99</td>
<td>+4.61</td>
</tr>
<tr>
<td>1980-81</td>
<td>5.63</td>
<td>+12.82</td>
</tr>
<tr>
<td>1981-82</td>
<td>5.24</td>
<td>-6.93</td>
</tr>
<tr>
<td>1982-83</td>
<td>4.71</td>
<td>-10.11</td>
</tr>
</tbody>
</table>

Source: Progress Report (March), p. 4

The table reveals that fruit production which was 3.44 lakh tonnes in 1976-77 has increased to 4.77 lakh tonnes in 1978-79 which means an increase of 38.66 percent. The same touched a figure of 5.63 lakh tonnes in 1980-81 which resulted in an increase of 18.02 percent. It may also be noted that horticulture production decreased by 6.93 percent and 10.11 percent in 1981-82 and 1982-83 respectively. However, such
decrease was the result of some natural climaties faced by the State like hail storms etc.

HORTICULTURE SECTOR AND STATE INCOME:

Ordinarily income refers to the value of the national output or volume of production in an economy. The term income of an economy refers to the aggregate net product of and the sole source of payment for all the agents of production. Thus the income is defined as the money value of all goods and services produced by a nation's economy during a particular period. It is in this context, the share of income of horticulture in Jammu and Kashmir economy has been used in this study.

In a socio-economic set up, the ultimate objective of the State is to seek the well being of its people by raising standard of living and maximising per capita income. The economic growth of a State depends upon the size of its economy's income. Primarily the greater the volume of production, the greater the quantity of goods and services available for distribution. Therefore, an increase in the national income or national output is the only tool to raise the standard of living of the people.

The horticulture is the biggest source of income to the state's economy only next to the agricultural sector. Hence it is a crucial sector in shaping the structure and pace of economic activity of Jammu and Kashmir. However, it is distressing to note that the income of horticulture sector to the State's economy has been erratic. Although it has been increasing with fluctuations but a remarkable progress is not visible as is evident from the table 1.3.

Table 1.3 Percentage contribution of Horticulture Sector to the State income both at current price *(Rs. in crores)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Income of J&amp;K State</th>
<th>Income of horticulture sector</th>
<th>Percentage of horticulture income to the state income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976-77</td>
<td>479.95</td>
<td>66.35</td>
<td>13.82</td>
</tr>
<tr>
<td>1977-78</td>
<td>482.11</td>
<td>68.97</td>
<td>14.30</td>
</tr>
<tr>
<td>1978-79</td>
<td>605.56(P)</td>
<td>93.53</td>
<td>15.44</td>
</tr>
<tr>
<td>1979-80</td>
<td>681.42(P)</td>
<td>103.88</td>
<td>15.24</td>
</tr>
<tr>
<td>1980-81</td>
<td>744.19(P)</td>
<td>125.27</td>
<td>16.33</td>
</tr>
<tr>
<td>1981-82</td>
<td>877.55(P)</td>
<td>122.89</td>
<td>14.01</td>
</tr>
<tr>
<td>1982-83</td>
<td>979.98(Q)</td>
<td>121.73</td>
<td>12.42</td>
</tr>
</tbody>
</table>

Source: Constructed by the Scholar on the basis of the information collected from:


2. Feature Article, pp. 4 - 9, Directorate of Horticulture Planning and Marketing, Jammu and Kashmir Govt.

P = Preliminary
Q = Quick.
Table 1.3 reveals that the percentage of horticulture income to the State income varies from 12.42 to 16.83 during years of study. Although an overall view from 1976-77 to 1982-83 shows that both State income as well as income of horticulture sector has increased by more than 2.04 times and 1.33 times respectively. When the income of this sector is compared with other sectors of economy, it depicts that horticulture sector contributes almost equally with other sectors like mining, power, and construction except agriculture which contributes more than 50 percent of the State income.

The other part of the analysis reveals that the horticulture income registered an increase of 40.96 percent from 1976-77 to 1978-79. The year-wise percentage change in income of horticulture sector and State is shown in table 1.4.

The table reveals that State income has been increasing considerably. Comparatively the income of horticulture sector increased by 20.59 percent during 1980-81. However, the income of horticulture sector decreased by 2.00% and 0.95% during the years 1981-82 and 1982-83 respectively. The
Table: 1.4  Yearwise percentage change and index number of the incomes at current prices of Jammu and Kashmir State and J&K Horticulture Sector

( Rs. in crores )

<table>
<thead>
<tr>
<th>Year</th>
<th>Income</th>
<th>Percentage</th>
<th>Index Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976-77</td>
<td>479.45</td>
<td>66.35</td>
<td>-</td>
</tr>
<tr>
<td>1977-78</td>
<td>482.11</td>
<td>68.97</td>
<td>+ 0.45</td>
</tr>
<tr>
<td>1978-79</td>
<td>605.56(P)</td>
<td>93.53</td>
<td>+ 25.60</td>
</tr>
<tr>
<td>1979-80</td>
<td>661.42(P)</td>
<td>103.88</td>
<td>+ 12.53</td>
</tr>
<tr>
<td>1980-81</td>
<td>744.19(P)</td>
<td>125.27</td>
<td>+ 9.21</td>
</tr>
<tr>
<td>1981-82</td>
<td>877.35(P)</td>
<td>122.89</td>
<td>+ 17.89</td>
</tr>
<tr>
<td>1982-83</td>
<td>979.98(P)</td>
<td>121.73</td>
<td>+ 11.69</td>
</tr>
</tbody>
</table>

Sources: Constructed by the Scholar on the basis of the information collected from:


P = Provisional  Q = Quick
+ Increase  - Decrease
decrease in horticulture income has been due to the decrease in the fruit production in these years.

EMPLOYMENT

At present about 42 percent of the population in the State of Jammu and Kashmir is directly and indirectly linked with horticulture sector. In fact this sector directly provides full time, part time and seasonal employment about 23.40 lakh persons. If its dependent sectors like transport, forest, insurance, banking etc are also considered then this sector provides livelihood to more than 25.00 lakh of people in and outside the State.

FOREIGN EXCHANGE EARNINGS

In addition to home market, the horticulture sector of the State does a great deal of business over-seas. The State is exporting walnut and kernals to more than 22 countries in which Canada, Australia, 

* Calculated by the Scholar on the information collected from:


United Arab Emirates, New Zealand, Syria, United Kingdom, France, Japan and Italy is worthy to note. The demand for dry fruits has increased year after year in past few years in these countries. As a consequence, State manages to earn a good amount of foreign exchange as depicted by Table 1.5.

Table 1.5 Export of Walnut to Foreign Countries from Jammu & Kashmir

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity Exported</th>
<th>Value in Crores</th>
<th>Yearwise percentage increase(+) or decrease(-)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In sheels (UOO, tonnes)</td>
<td>In kernels (UOO, tonnes)</td>
<td>(Rs.)</td>
</tr>
<tr>
<td>1976-77</td>
<td>19 18</td>
<td>2085</td>
<td>5.60</td>
</tr>
<tr>
<td>1977-78</td>
<td>2387</td>
<td>2513</td>
<td>6.59</td>
</tr>
<tr>
<td>1978-79</td>
<td>3299</td>
<td>3217</td>
<td>9.39</td>
</tr>
<tr>
<td>1979-80</td>
<td>3616</td>
<td>4726</td>
<td>12.71</td>
</tr>
<tr>
<td>1980-81</td>
<td>1415</td>
<td>2591</td>
<td>6.37</td>
</tr>
<tr>
<td>1981-82</td>
<td>1403</td>
<td>2536</td>
<td>6.13</td>
</tr>
</tbody>
</table>

Sources: Compiled from the information collected from:

a. Progress Report, p. 9

b. Export Bulletin, p. 12, No. 7
Table 1.5 shows that foreign exchange earnings of the State horticulture sector increased by 50.07 percent and 23.51 percent during the years 1976-79 and 1979-80 respectively. However, the same decreased by 49.39 percent and 3.77 percent in the years 1980-81 and 1981-82 respectively. The reason for such decline has been result of improved strict / inconvenient legal procedures for export of fruit.

In addition to these, the State succeeded in capturing the international market for apple. This is borne out by the fact that the State earned foreign exchange worth Rs. 60.60 lakhs by exporting 1.01 lakh boxes of apple to Bangladesh during 1982-83.

State's horticulture is diversified in nature and content. It produces among other things a good number of fruits ranging from apple to saffron. However, apple cultivation has remained and will continue to be so a major product of this

sector. In the chapter that follows an attempt has been made to analyse the contribution of apple industry in the entire operation of horticulture sector.