ABSTRACT

Horticulture Development and Socio-Economic Conditions in Rajouri District of Jammu and Kashmir

Indian agriculture has been the mainstay of Indian economy. Blessed with varying climate and soil conditions, India has ample opportunity to grow horticultural crops. These crops have a vital role in providing food, nutrition, shelter, besides addressing the employment and environment concerns. India with diverse soil and climate comprising several agro-ecological regions provide ample opportunity to grow a variety of horticulture crops. These crops form a significant part of total agricultural produce in the country comprising of fruits, vegetables, root and tuber crops, flowers, ornamental plants, medicinal and aromatic plants, spices, condiments, plantation crops and mushrooms.

Horticulture is the science and art of growing fruits, vegetables, ornamental trees, bushes and flowers. Horticulture is distinguished from agronomy, which is concerned with the large scale cultivation of field crops such as wheat, cotton, hay and the like. The distinction has become somewhat blurred in recent decades, because many horticultural plants particularly vegetables are often grown as field crops and are considered horticulture commodities rather than garden products.

Horticultural crops play a unique role in India's economy by improving the income of the rural people. Cultivation of these crops is labour intensive and as such they generate lot of employment opportunities for the rural population. Fruits are also rich source of vitamins, minerals, proteins, and carbohydrates which are essential in human nutrition. Hence, these are referred to as protective foods and assumed great importance as nutritional security of the people. Thus, cultivation of horticultural crops plays a vital role in the prosperity of a nation and is directly linked with the health and happiness of the people. Fruits are not only used for domestic
consumption and processing into various products but also substantial quantities are exported in fresh and processed form, bringing much-needed foreign exchange for the country. These groups of crops also provide ample scope for achieving bio-diversity and diversification to maintain ecological balance and to create sustainable agriculture and can make an impact on the national economy in the years to come.

The analysis for horticulture development in India can be divided into four phases. The first phase involves the period prior to the independence of the country. The pre-independence horticulture was growing of flowers or fruits around the house, characterized by selection of plants based on performance and conservation of few cultivars by vegetative method of propagation. The second phase of the development of horticulture covered the year which was influenced by indigenous thinking of sectoral growth of commodity in the regions of importance. This phase also saw the importance of development of fruits in tropical and subtropical regions through the establishment of centres. During this phase only few crops were favoured and growth was limited to the expansion of the area. Third phase is considered as the period of consolidation both for research and development. At Central and States level, highest position in development and research were created and efforts for development were triggered. In the fourth phase due to marked technological changes there recorded quantum jump in plan allocation, formation and association by farmers, unprecedented increase in production, enhance availability of produce, which is now marked as golden revolution.

The present study is concerned with the cultivation of fruit crops in Rajouri district of Jammu and Kashmir State. The district Rajouri covers an area of about 2,630 Sq km out of the total area of the Jammu and Kashmir State (2, 22,236 Sq km) including the illegally occupied area by Pakistan and China. It consists of seven tehsils and eight blocks. However department of horticulture has divided the district into eleven horticultural blocks for bringing improvements in horticulture by providing better
infrastructural facilities. The district Rajouri has a great potential to become a major hub of fruit growers because of its favourable climate, soil, drainage and relief features. The district apart from is charming landscape, beautified by snow capped mountains, bubbling streams, meandering and deep cutted rivers, and is well renowned for its colourful flowering meadows, and orchards along with other parts of the State since ancient times. It possesses a rich history of fruits cultivation. The Apple of the area has lived upto its distinguished reputation, being one of the choicest fruit. It used to be regularly served at the table of Mughal emperors and their courtiers. The other important varieties of the fruits include Apricot, Cherry, Peach, Pear, Plum, Walnut, Almond and Ber; besides these fruits the production of subtropical fruits is also recorded.

It was during the latter part of the 19th century that the cultivation of fruits in the State of Jammu and Kashmir received a fillip. With the introduction of European grafts and since then the Jammu and Kashmir has become an orchard of India. Consequent upon the reorganization of agricultural programme and diversification of agriculture, large tracts of non-irrigated lands, have been brought under orchards. However the potential of fruits farming as a viable vocation, remain un-exploited till the down of independence. This is perhaps due to the lack of technical know-how as well as of inadequate transport facilities, cold storage and marketing facilities.

Horticulture forms the major chunk of the economy of the State. At present about 8.1 lakh hectares of area is under horticulture in the State. The State has the largest potentiality of horticulture production and a variety of fruits are grown, which ideally suit for the cultivation of almost all kind of temperate and some varieties of subtropical and tropical fruits. It generates about as 120,000 million rupees annually and provides employments to about 0.25 million people both directly and indirectly. The total earning includes a foreign exchange component of Rupees 140 crore (US $ 31.1 million). Horticulture sector has a pivotal role in the socio-economic
development and transformation of the area by providing employment opportunities increasing income, developing infrastructure facilities by generating educational facilities, better housing conditions, health and hygiene. There is a phenomenally increase noted in fruits production from just over 1.56 lakh metric tons in 1971-72 to a record figure of more then 11 lakh metric tones during 2006-07, like wise area under orchards was 0.50 lakh hectares in 1971-72 which now increase to 20 lakh hectares in 2006-07. The Department of horticulture planning and marketing has now proposed plan to provide opportunities to maximize land under horticulture and its production as well as opportunities to the perspective buyers for buying the fruits at various places in the State by establishing the markets and helping to improve the socio-economic conditions of the people in the State.

The present work entitled 'Horticulture Development and Socio-Economic Conditions in Rajouri District of Jammu and Kashmir' is an attempt to study the geographical factors, which have not only given to the district a unifying homogeneity and a socio-economic viability at low level of technology but have also set limits to fruits cultivation within the region. It has been observed that physical landscape, coupled with climatic conditions has largely been responsible for the present spatial distribution of fruits culture.

The study is based on block wise data. Prior to the year 2000, relevant data about fruits culture was not available for the entire district, and hence the study is based on post 2000 data. Data related to area and production under different fruits crops in different blocks have been rated from the department of horticulture Rajouri. Some of these data has been presented in tabular form, wherever possible, diagrams and graphs have been drawn based on the original data to illustrate the problem. The main objective of the study is to examine the structure of fruits cultivation in district Rajouri of Jammu and Kashmir State and to find out
its role in the regional development. To make it more concrete, the objectives of the study would be:

To understand the geographical distribution of fruits crops.
To study various fruits plants grown, their uses and importance.
To assess the potentiality of area to enhance further cultivation of fruits.
To find out the weak links responsible for dwarfing the fruit crops.
To examine the intra village variations in socio-economic development created by the variation in fruits culture.
To trace out the problems related to fruits culture and their management and finally, trace out the main findings and suggestions as guidance for planners, policy makers and agriculturists.

The hypothesis have been tested and proved is that the area under fruits cultivation and the regional development are to a large extent proportionate to each other i.e., more the area under fruit in any village or household, higher the level of socio-economic development achieved and vice-versa.

Fruit culture has proved itself to be the remunerative crop of the area.

The limited extension of fruit cultivation in Rajouri is mainly regulated and dominated by unawareness, illiteracy, climatic factors and unfolded prejudicial views.

A research programme is always based on certain technical procedures. In the beginning of the research primary as well as secondary data are collected, which are analyzed to get the meaningful results. As such research methodology forms a vital link between the crude data and the final analysis.

The present study is based on both primary and secondary data and has been conducted at meso and micro levels. In the meso level blockwise district Rajouri has been taken as the unit of analysis, this study is based on secondary source of data. In micro level study household chosen from the selected villages are taken as a unit of analysis and observation. This study is based on primary source of data.

In order to bring out the clear-cut picture of the villages, primary
data has been collected with the help of well structured questionnaire/schedules. The Secondary source of data have been used for detailed analysis of geographical background, socio-economic development, land utilization, cropping pattern, cropping intensity, agricultural productivity, fruits productivity. The data have been collected from various published and unpublished records of the government or semi-government publications, earlier research, reports, books, journals, magazines, websites, newspapers, tehsil, blocks and revenue records.

In the present study Random sampling techniques has been adopted to obtain data and information. Among the 22 districts of Jammu and Kashmir State, the district Rajouri has been selected for the purpose of this study. The district is comprises of eleven horticultural. All blocks have been selected purposively for the purpose of study. After getting a list of all villages from all selected blocks, eleven villages (one village from each block) namely village Choudhary Nar from Rajouri, Manyalan from Doongi, Kotli Kalaban from Manjakote, Behrot from block Thannamandi, Darhal from Darhal Malkan, Panjnara from Kandi, Badhal from Budhal, Barmandal from Kalakote, Keri from Tryath, Siot from Sunderbani and Hanjana Thakra from Nowshera have been selected randomly for the purpose of study. To get the village information a well prepared schedule has been used. Respondents belongs to different fruits productivity regions have been selected randomly from each selected village on the basis of 5 per cent of the total household which amounts to 154. The respondents have been exhaustively interviewed personally with the help of structured collective questionnaire.

The questionnaire is divided into economic and social sectors: Economic structure of the respondents include small, medium and large size of holdings, agriculture cultivation, land under fruits cultivation, types of cultivation, plough used, irrigation, livestock, electricity, telephone, mobile, cycle, motor cycle, ration card, television, dish/VCD, income, bank account and insurance. Social structure of the respondents includes questions on age
structure and composition of the respondent's family members, headship, category or caste, place of origin, facilities of drinking water, toilet, bathroom, kitchen, fuel used. It also includes educational status, housing type which deals with housing condition of the respondents like kaccha, pacca and mixed type houses, household ownership.

The data after collection have been processed and analyzed in accordance with the outline laid down for the purpose. Therefore, first of all, the collected data has been edited in order to detect errors and omissions and to correct these. Editing is done to assure that the data are accurate, consistent with other facts gathered and as complete as possible. To analyze the data standard statistical techniques have been applied like simple percentage, Z-score, composite Z-score techniques and various diagrams have been prepared to display the data and the results. The maps are prepared by GIS Arc view 3.2 versions and the results are exposed in sharp focus through a set of maps and graphs.

In view of the mentioned broad objectives and the analysis thereto, the entire body of the thesis is divided into seven chapters, which throw light on various aspects of the present study.

First chapter deals with introductory concepts of the role of agriculture especially of fruits crops in regional development, objective of the study, hypotheses, research methodology and data base, sources of data, sampling technique, questionnaire design, analysis of data, design of the study and review of literature has also been given in this chapter.

The second chapter discuss about the Geographical personality of the study area: it includes relief, drainage, climate, soil, natural vegetation and cultural settings of the study area. The relief, it is observed has affected the growth of plants in two ways. Firstly it brings out local variations in the climatic conditions and secondly, it modifies the edaphic factors of the habitat. Drainage is also very important because well drained areas are suitable for almost all type of fruit plants. However, fruits plants cannot their well water standing around their roots. In the area under study the
rivers of Manawar Tawi originating form Pir Panjal snow caped mountains drains most of the area besides its tributaries the other areas are also drained by river Ans, and many other small rivers that drains the mountains slopes constitute the drainage network of the district Rajouri.

The climatic factors like temperature, rainfall, humidity effects the fruits growth in several ways. For example, the amount of temperature during the growing seasons not only sets the time limit of ripening but also determines the quality of fruits. Similarly the low and high rainfall adversely effects the development, growth and size of fruits. Relative humidity is also an important factor because of its role in controlling the rate at which transpiration from the leaves takes place formation of soils is the result of the climatic factors and geomorphic processes. Soils besides climatic conditions are the basis of fruits culture in Rajouri and whole of the State, as in the more suitable soils less managing is required.

Third chapter deals with the growth of different fruits crops, their importance and uses. The fruits of Rajouri district can be divided into two broad categories on the basis of climatic conditions under which they grow and produce. In the first category they may be grouped the Apple, Pear, the European Plum and the walnuts which do under severe winter conditions and also at higher attitude while the peach, the Japanese Plum, the Apricot, Almond, Grapes, Ber and Mango thrive in comparatively warmer climatic conditions and at lower elevations.

The chapter fourth covers the areas and productions of different fruits crops in different blocks of Rajouri. It has been observed that the area and production recorded slight increase with variations, due to many reasons of drought and dry spell, lack of general awareness, lack of infrastructure facilities and amenities, lack of government interest and so on.

Chapter fifth discusses about problems related to fruits, insects, pests and diseases, their management and necessary measures, it also covers fruit marketing and related problems.
Chapter sixth deals with the socio-economic conditions of the selected village from eleven blocks of district Rajouri. In this chapter different socio-economic indicators have been studied and their development has been undertaken.

Finally in Chapter seventh the study is concluded on the basis of some main findings and suggestions, which are given for future planning with the hope that the study will be useful for policy makers, administrators and academicians interested in the type of study related to socio-economic development in an agricultural economy.