

# Dynamics and Problems of Agriculture in Himachal Pradesh

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**Abstract:** The agricultural sector of the Himachal Pradesh has more than 45% contribution in its economy in terms of the state's domestic product. The entire population of the state more or less depends directly upon the agriculture of Himachal Pradesh. The major portion of the revenue earning in the state's economy is carried out by the cash crops in the Himachal Pradesh agriculture. The chief food crops cultivated in Himachal Pradesh agriculture include wheat, maize, rice, barley, seed-potato, ginger, vegetables, vegetable seeds, mushrooms, chicory seeds, hops, olives, and fig. Himachal Pradesh is also known as the 'Apple State of India' for its large-scale production of fruits. Farmers have engaged themselves highly in the fruit cultivation and it is also a great blessing to the economy of the state. Himachal Pradesh agriculture provides employment to around 71% of the working population in the state. The agricultural sector and the allied sector generate a revenue of nearly 22.5% of the gross State Domestic Product. The farming community of the state holds an area of 9.99 lakh hectares which is run by 8.63 lakh farmers out of the total geographical area of 55.673 lakh hectares. Around 84.5% of the total land held by the farming community of Himachal Pradesh are owned by the small and marginal farmers. Only 10.4% of the total geographical area of the state is cultivated and about 8% of the area experiences rainfall.

## Introduction

The agricultural sector of Himachal Pradesh has adopted a diversification approach that demands for a focus on the production of off-season vegetables that include potato, ginger, soyabean, oilseeds, and pulses. At present, about 41,500 hectare area constitutes vegetable production and the production level of those vegetables is 7.85 lakh tonne. The farmers focus more upon generating the cash crops for more revenue earning as it suits the agro-climatic conditions. The main cereals cultivated in Himachal Pradesh agriculture are wheat, maize, rice, and barley. The Kangra, Mandi districts and to some extent Paonta valley of Sirmur district are the major producers of wheat, maize, and rice. Barley is cultivated largely in Shimla district of Himachal Pradesh. The main sources of irrigation in Himachal Pradesh are small water channels that are filled from the perennial and seasonal springs, well irrigation in few areas, and lift irrigation. All these developments witnessed by the agricultural sectors of Himachal Pradesh have stepped-up the productivity of the crops to a large extent. In Himachal Pradesh, farmers mostly rely on rainfed agriculture for their livelihood making them more vulnerable to biotic and abiotic stresses. The State is looking at the hidden potential of rainfed areas to support future food and nutritional security to the growing population. The State Government may, by notification, for coordinating the activities of markets and for development, promotion and regulation of agricultural marketing, establish the Himachal Pradesh State Agricultural Marketing Board. The State Government on its own or on the representation made by the growers or on the recommendation of the Board may, by notification, declare its intention of

exercising control over the purchase, storage, processing and sale of such agricultural produce, in such area as may be specified in the notification, by inviting objections or suggestions from the general public within a period of thirty days from the date of publication of notification which shall be considered by it.

## Problems Of Increasing Production In Himachal Pradesh

### 1. Production Problems

To increase the production, it is very important to maintain the productivity at a level. Following are the production problem faced by the farmers:

**A. Land:** For cultivation, land is the primary requirement. The size of cultivable land is small (58.12%), marginal (32.51%) and large (9.37%). The quality of soil is also poor in some areas. In maximum cases the land holding is small and lack of water management which results in low production and income to the farmers in Himachal Pradesh.

**B. Skilled Labour:** Skilled labour is also a serious problem in the state. Maximum farmers have failed to get the skilled labour on time. When the farmers get skilled labour then the problem of wages arises because the labourers used to charge high wage rate from them. In most of cases the wage rate charged by the labour is high that results in increase of cost of production.

**C. Availability of Seeds (High Yielding Variety Seeds):** The good quality and High Yielding Varieties (HYVs) of seeds is one of the key inputs to enhance the crop yield. For the use of these types of seeds, price, availability of HYV's seed on time also plays an important role. If the price of seed is higher, then many farmers would be tempted to use any other available seed. Many farmers failed to get the HYV's seed on time which decreases the production.

**D. Irrigation:** In Himachal Pradesh, Irrigation is one of the major problems. About 81% of the total cultivated area in the state is rainfed. In Himachal Pradesh, rainfed farming is mostly followed i.e. farmers depend on rain water for irrigation. This is because approximately 85% of farmers do not have any permanent source of irrigation. Remaining 15% of farmers have permanent source of irrigation (like wells, ponds, hand pumps etc.). The dependence of farmers on rain water lowers the crop yield.

**E. Fertilizers:** The availability and price of fertilizers on time is also a major factor. Approximately 75% of farmers get fertilizers on time. About 70% of farmers reported that price of fertilizers is not reasonable. In most of the cases, farmers get fertilizers on time, yet the prices of these fertilizers were comparatively high. In this regard it can be suggested that the state department should ensure timely and adequate supply of fertilizers with reasonable prices to the farmers.

**F. Plant Protection Chemicals:** Farmers need to use various chemical to control the diseases, and insect pests etc. that results in the increase the crop production. For the use of these chemicals, farmers must have the knowledge about their use, doses, timing of use etc. Many farmers are failed to identify the symptoms of disease and insect pests due to lack of knowledge. After that availability of chemicals at reasonable prices is the major factor. About 85% of farmers reported that the prices of these chemicals are very high. Due to the high prices of these chemicals and lack of knowledge the farmers hesitated to use them which lower the production and income.

## 2. Marketing Problems

Efficient marketing is very important for the farmers to fetch the remunerative prices for their produce. Lack of markets and improper marketing practices leads to a complicated nature of marketing of the agriculture produce in the hills and affects the income of the farmers. The problems regarding marketing faced by the farmers of Himachal Pradesh are as follows:

**A. Grading:** Grading is the basic and one of the most important marketing activities in post-harvest management to be done by the farmers to fetch the remunerative prices for their produce. Many farmers face the problem of non-availability of grading centre. About 85% of farmers reported that grading is done manually and grading centres are not near to their place. Grading is done by hands and they also feel that grading done by hand is costly and time consuming.

**B. Packing:** Packing is one of the most important marketing activities in post-harvest management to be done by the farmers to fetch the remunerative prices for their produce. Proper packaging is required especially in case of Horticultural crops like fruits and vegetables with respect to protect the produce for breakage during the transportation. Cost, quality and availability of packaging material on time is very important factor. 1/3rd of farmers reported that the packing material is costly.

**C. Transportation:** Transportation facility is utmost important factor for marketing and to fetch the desired amount of money from selling the agricultural produce. Most of the fruit production in temperate region and off-seasonal vegetable production are in hills with broken topography and difficult means of communication, located far away from the markets. Development of better road system including link roads, cableways, efficient and full proof communication system and creation of modern markets are some of the important requirements for advancement of the agricultural exports outside the state. Approx. 30% of farmers reported that they do not get transportation facilities due to the lack of road connectivity in some of the areas. Another problem regarding transportation is higher transportation charges approximately 80% of farmers are suffering from this problem. Government should make provision for the transportation, so that the farmers could easily reach the market well in time.

**D. Marketing Intelligence:** Efficient information about market network can greatly help the farmers in reading the pulse of the market. The lack of timely market information and market education is the main reason for improper working of the markets in the state. Some farmers also felt that the market information they got was not so reliable. To overcome this problem, efficiency of market information network can be improved by increasing the frequency of market news bulletin, magazines, newspaper and television programmes etc.

**E. Weighing:** Weighing of produce is an important factor to get the desired prices equal with respect to quantity of the produce. About 2/3rd of the farmers reported that the weighing of their products is not done accurately which decrease their income. Traders used improper scale in weighing the produce which is also a problem faced by the farmers of the state.

**F. Market Prices:** Minimum Support Price provides the security against the discriminatory prices of the market which is fixed by the government, so that the farmer could be benefitted. About 80% of sample respondents reported that government did not fix Minimum Support Price for their crop and they do not get reasonable price for their crop during the peak season. Strict adherence of the market regulations may

help the growers in getting the better prices, it is also suggested that the farmers should try to farm co-operatives for marketing of their produce in order to receive desirable income from the markets.

### 3. Financial Problems

Agriculture is labour as well as capital intensive and availability of capital is an important factor in cultivation. Huge amount of capital is required to purchase the farm inputs and machineries etc. to adopt the modern farming system. Financial problems pertaining to the availability of credit from financial institutions like banks, co-operative societies, RRB's etc. About 40% of farmers reported that financial institutions were not nearer to the farmer villages. About 60% of farmers reported that they did not get loans from the financial institutions easily. They have to face so many problems to get their loan pass. These include high rate of interest, too much of formalities, cumbersome procedure and demand for security, etc. About 75% of farmers reported that even the behaviour of the staff was not cooperative. So, it is clear that the farmers face a lot of financial problems in Himachal Pradesh. To overcome the financial problems special concession should be given for the farmers to purchase the required inputs and implements, more and more branches of cooperative society should be setup in the identified areas in the state. Poor farmers need financial help from banks and other financial institution, but because of complicated procedures and rules, they left the idea of loans, which adversely affecting production and yield per hectare. Lack of short-term loans for orchard management, marketing and poor government investment on horticulture is other problem faced by growers.

### 4. Institutional Problems

The role of institutions like State Agricultural Universities, Krishi Vigyan Kendras (KVKs) and Department of Agriculture is very important in the dissemination of technology among the farmers. Knowledge of improved technology and farming practices not only improves the productivity and efficiency of the farms but also the quality of produce. About 75% of farmers did not get any institutional help regarding the use of agriculture inputs. About 30% of farmers out of those who get institution help reported that they did not get any knowledge about latest techniques. Training is one of the most important factors to impart the knowledge about new implements, HYVs, plant protection chemicals and fertilizers etc. In 50% of cases government did not provide any kind of training to the farmers in the state.

### 5. Technology

Technology plays an important role to increase the income of the farmers and maintains the time. Problems regarding technology faced by the farmers of the state. (a) Mismatch between technology developed at research station and technology needed at farmer's field. (b) Agricultural machinery utilization is very low. (c) Late adoption of new farm technology (market uncertainty, fear of crop failure, threat to food security etc.). (d) Lack of new varieties. (e) Increasing susceptibility to insects, pests and diseases. (f) Erratic weather conditions. (g) Harmful effects on soil h. Mountain perspective and specifics not well integrated into R&D policies.

### 6. Knowledge Gaps

Indigenous knowledge pertaining to managing scarce resources to improve soil fertility, soil moisture, irrigation, crop seeds, varieties and about mixed farming has not been incorporated in the mainstream agricultural system and practices.

### Policy Measures and Suggestions for Overcoming These Problems

Appropriate Government Policy: A clear-cut public policy of the central and state government is a necessary pre-requisite for a purposeful planning and worthwhile action plan. It should lay down priorities, parameters of growth and investment, goals to be achieved, strategies and broad operational plans, etc. An integrated approach to research, production, post-harvest handling, marketing and processing is to be an essential part of the policy framework. Production Support Measures: One of the important factors responsible for poor status of the industry and low productivity is the gross inadequacy. In this plan production support, knowledge should be given to farmers. Among the important services, the determination of exact nutrient requirements of the fruit crops keeping in view their productivity, plant protection including post surveillance and post-harvest technology for post-harvest quality control. The technology advice is incomplete without the support of these services. Leaf and fruit analysis has been accepted as more precise scientific method of determining nutrient status of perennial crops as all environmental factors including soil fertility are integrated with the system. There are already such laboratories in the State Universities and Directorates of Horticulture and Agriculture. But these are not enough to meet the requirement of the agricultural industry. There is need of a competent, efficient and well-equipped plant protection laboratory, which should identify and diagnosis of the pathogen related problems, pest surveillance, pest forecast and warning service. All these should be integrated part of the horticulture production system.

### **Marketing and Fruit Utilization**

Marketing is a necessary adjunct to the fruit production programme. For taking care of marketable as well as unmarketable surplus and all post-harvest handling problems, the Horticulture Produce Marketing and Processing Corporation (HPMC) was established in the state in the year 1974. This corporation implemented an IDA project with an outlay of Rs. 16.31 crores. Implementation of this project was initiated in the 55 year plan and the creation of infrastructural facilities was completed in the year 1982. In fact, this state has been pioneer in implementing such a project for the first time in the country under which modern marketing infrastructure like ten mechanical grading and packing centres in producing areas, one processing plant and a transit warehouse has been created. The total facilities for marketing of fruits so far created under the World Bank project in the state are capable of handling about 65000 tonnes of fresh fruits. In the utilization of the processing trade fruit, the state has already built-up a capacity to process about 30000 tonnes of fruit annually. However, this capacity requires proportionate strengthening corresponding to the ever-increasing fruit production in the state.

### **Water Harvesting Technology and Hill Slope Technology**

Agriculture on hilly terrain of lower Himalayas greatly suffers due to lack of irrigation facilities. The run-off from heavy storms not only causes loss of water but top layer of fertile soil gets washed off causing denudation and degradation of fertile agricultural lands. The suitable answer to water scarcity problem in the hills can be the use of collection of run-off water in ponds, depending on the source of water and their location with respect to the land surface. This technique is highly beneficial to increase per hectare productivity and quality of produce.

### **Diversification of Agriculture**

Besides exploitation of the regional potential for growing special tree crops for bringing diversification, farmers diversified towards off-seasonal vegetables and horticultural produce, efforts are also made to develop ancillary horticultural activities like floriculture, sericulture, apiculture and mushroom production, etc. Himachal Pradesh has been the first state to introduce the modern technology of bulk

pasteurization for production of compost, which is the media for growing mushrooms. At present Himachal Pradesh is growing about 28000 tonnes of mushroom annually. Efforts are also underway for the introduction of most advanced technology in mushroom activities from Netherlands. Olive has been identified as another promising fruit crop which is being developed in the state for providing a sound base for the oil industry. A project for the development of olive cultivation with the assistance of Italian Government is under implementation in the state since 1985. Olive has got a wide range of adaptability to climatic conditions prevailing in some areas of Chamba, Kullu, Mandi, Sirmour and Solan districts. Kiwi is yet another newly introduced fruit crop from New Zealand which is finding favour for plantations especially with the mid-hill region farmers of the state, but because lack of marketing facilities farmers are not adopting its cultivation on large scale. Similarly, the diverse agro-climatic conditions of Himachal Pradesh are most congenial for growing off-season vegetables, seed of temperate vegetables and exotic vegetables. At present, the area under vegetables in the state is 36000 hectares and 4.80 lac tonnes of vegetables are annually produced. Himachal Pradesh also offers vast potentials for the development of floriculture. Himalayas are rich source of flora but unfortunately, no concerted efforts for the identification and commercial exploitation of this resource have been made so far. The vast floral wealth in the state provides sound base for apiculture industry. Besides developing apiculture as cottage industry for providing an additional income to farm families' bee keeping has vital importance in the orchards for effective pollination essential for obtaining good fruit yields. The state Department of Horticulture runs bee-keeping stations at various places, serving as nucleus for beekeeping development in the surrounding areas. However, there are about 370 private beekeepers in the state.

### Conclusion

The critical issues that plague Indian agriculture at present are the knowledge deficit and infrastructure deficit, especially in the rural areas. Problems related to irrigation infrastructure, market infrastructure and transport infrastructure add significant cost to farmers' operations. Another issue is lack of delivery mechanisms. There are a number of schemes aimed to bring development in agriculture. We do not have effective delivery mechanisms that can translate into effective facilitation in terms of increasing productivity or decreasing cost or increasing price realization at the ground level. Moreover, inadequate government support exacerbates these issues. Thus, corporate farming could be a solution to Indian agrarian sector, but it needs a deep thinking and innovating better policies so that neither the corporates nor the farmers be at loss. Also the role of central government and state governments needs to be defined clearly as because of being a joint subject, it creates lot of confusion. Eminent experts should do research in this aspect and governments must take a proactive action. Indian agrarian sector in fact requires very innovative ideas for uplifting of this sector. Also, without mechanization, farming is hard and back-breaking work. This has resulted in most farmers' children quitting farming and going for other vocations. Farmers get more money in selling their land to builders, malls and factories. This has put more pressure on farmland, thereby requiring technologies to increase the productivity so that shrinking farmland can feed billion plus people of India in the future.

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