

# Agriculture Development in Himachal Pradesh: An Empirical Study

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## Abstract:

*Himachal Pradesh occupies an important place in the national economy whose 89.96 percent of population lives in rural areas (Census 2011). Agriculture is the main occupation of the people of Himachal Pradesh. Himachal Pradesh is almost wholly mountainous with altitudes ranging from 350 meters to 6,975 meters above the mean sea level. The main aim of the paper is to study the productivity under different crops (i.e. food and nonfood grains crops) and to analyze the various programme and policies launched by the government. The study based on secondary data. The per hectare productivity of wheat increase in the different year, slightly it was 1.52 per hectare but it increased to 1.95 per hectare in 2014-2015. The productivity of pluses also increased it was 1.21 per hectare in 2010-2011 but it increased to 1.74 per hectare in 2014-2015. The productivity of total food grains increased from 1.78 per hectare productivity to 2.09 per hectare productivity in 2014-2015. Reasons high varieties of seeds, Irrigation facilities play important role. The per hectare productivity of different fruits highest in Shimla district but lowest in L&Spiti district reason the most of the apples grow in Shimla district because of the favorable climate condition. The main aim of this study is to find out the productivity of different crops in Himachal Pradesh over period 2011-2015.*

## 1. Introduction

Himachal Pradesh has deeply dissected topography complex, geological structure and a rich temperate flora in the sub-tropical latitudes. Physiographical, the State can be

divided in to five zones viz. (i) Wet Sub-temperate zone (ii) Humid sub-temperate zone (iii) Dry temperate-alpine high lands (iv) Humid sub-tropical zone and (v) Sub-humid sub-tropical zone. Wet sub-temperate zone comprises Palampur and Dharamshala of Kangra district, Joginder nagar area of Mandi district and Dalhousie area of Chamba district. Humid sub-temperate zone comprises the Kullu, Shimla, and parts of Mandi, Solan, Chamba, Kangra and Sirmaur district. Dry temperate- Alpine High lands include major parts of L&Spiti, Pangi and Kinnaur. Humid sub-tropical zone consists of Bilaspur, Bhattiyat valley of district Chamba, Nalagarh area of district Solan, Dehragopipur and Nurpur areas of district Kangra. Sub-humid tropical zone comprises of district Una, Paonta-Sahib area of district Sirmaur and Indora area of district Kangra. Himachal Pradesh lies in the lap of Himalayas. Its climate is largely conditioned by single factor. The rainfall of the State is 1225.4 mm and the maximum rainfall is recorded in Kangra District (2015).

In Himachal Pradesh, agriculture diversification has occurred across and within crop, horticulture and vegetable production. In Himachal there are four major objectives of agricultural diversification: first to increase the income of the small households, second to attain the fuller employment in the farm household, third to stabilize the farm income over the seasons, fourth to conserve and enhancement of natural resources. It is also affected by irrigated and un- irrigated land. Diversification is an integral part of structural transformation of an economy.

The agricultural diversification is not possible without appropriate infrastructural and institutional reforms. It requires high investment of capital and labour inputs. It needs appropriate credit facilities for purchasing of inputs, high yielding varieties of seeds and chemicals, insecticides etc.

## 2. Review of Literature

There are lots of studies conducted on productivity and production in different states but none of the studies have been conducted in Himachal Pradesh. To fill this gap this study has been taken.

- Singh et al. (1985) studied the impact of agricultural diversification on income and employment level of rural population in district Kanpur (Uttar Pradesh). The study shows that savings of both diversified and non-diversified families decreases due to over expenditure.
- Hazra (2001) examined the trend of diversification in Indian agriculture. The study shows that due to different climatic conditions in the country different types of agricultural products are produced which can be categorized as food grains crops and commercial crops. The study concluded that due to wide divergence in agriculture condition, government policies and availability of basic infrastructure has induced the technique of crop diversification in Indian agriculture.
- Kumar et al. (2002) conducted a study to investigate the extent of profitability, risk and diversification in mountain agriculture of Himachal Pradesh. The agro-climatic conditions in the state are congenial for the production of cash crops like off season vegetables seeds,

potatoes and ginger. The study on profitability, risk and impact of diversification suggested that vegetables plus dairy was the most appropriate choice for the farmers of the study area whereby they could increase their farm income more than the existing farm income. The study clearly indicated that risk could be notably decreased if the farmers diversify their cropping pattern.

- Mazumdar (2006) studied the centrality of agriculture in India's economic development. The study examined that agricultural growth is the means of achieving the broader objectives of food security, employment led growth and poverty reduction. The study reveals that diversification of agriculture is viewed as a part of the wider objectives of rural diversification. The livestock sub sector is particularly important because its development will facilitate many marginal farmers – they form 60 per cent of operational holding – crossing the threshold of economic viability.

## 3. Objectives of the Study

- To study the productivity under different crops (i.e. food and non-food grains crops).
- To analyze the various programme and policies launched by the government.

## 4. Methodology

The data for the purpose of study is collected through secondary sources i.e. annual reports of Government of India, Himachal Pradesh, newspapers, internet and magazines. In this research paper we simple find out the per hectare productivity method over the period 2011-2015

## 5. Data Analysis and Interpretation

**Table: 1 Per Hectare Productivity of Different Crops in Himachal Pradesh (Area in hec.)**

Year	2010-11	2011-12	2012-13	2013-14	2014-15
<b>Crops</b>					
Wheat	1.52	1.76	1.89	1.95	1.95
Maize	2.26	2.40	2.23	2.31	2.31
Rice	1.67	1.69	1.62	1.72	1.72
Barely	1.24	1.52	1.71	1.73	1.73
Ragi	0.90	0.92	0.90	0.98	0.98
Pulses	1.21	1.39	1.44	1.76	1.74
Common millets	0.59	0.69	0.64	0.66	0.66
Total Food grains	1.78	1.96	1.95	2.04	2.09
Chillies	0.37	0.28	0.32	0.34	0.35
Ginger	7.5	1.77	7.01	6.85	6.70
Oilseeds	0.50	0.48	0.46	0.52	0.55

**Source: Annual Report of Economics and Statistics Department, H.P**

Table 1 shows that the per hectare productivity of wheat increase in the different years slightly, it was 1.52 per hectare but it increased to 1.95 per hectare in 2014-2015. The productivity of pulses also increased it was 1.21 per hectare in 2010-2011 but it increased to 1.74 per hectare in

2014-2015. The productivity of total food grains increased from 1.78 per hectare productivity to 2.09 per hectare productivity in 2014-2015. Reasons high varieties of seeds, Irrigation facilities play important role.

**Table: 2 Districts Wise per Hectare Productivity of Vegetable**

Districts	2013-14	2014-2015
Bilaspur	27.06	27.30
Chamba	17.83	19.56
Hamirpur	15.36	15.55
Kangra	21.04	21.55
Kinnaur	12.15	12.14
Kullu	19.37	21.24
L&Spiti	10.30	12.76
Mandi	19.56	19.83
Shimla	18.28	18.27
Sirmour	22.32	28.35
Solan	31.58	34.66
Una	18.65	18.70

**Source: Annual Report of Economics and Statistics Department, H.P**

Table 2 shows that productivity of Vegetables highest in district Solan in Himachal Pradesh and lowest productivity in district Kinnaur the main reasons the

climatic conditions of district Solan is favorable for vegetables Whereas, the productivity per hectare productivity of vegetable is low in Kinnaur district.

**Table: 3 per hectare Productivity of different Fruits**

Districts	2012-13	2014-2015
Bilaspur	0.36	0.28
Chamba	0.58	1.64
Hamirpur	0.46	0.39
Kangra	0.88	1.32
Kinnaur	4.57	5.94
Kullu	6.34	2.5
L&Spiti	0.15	0.18
Mandi	0.86	1.53
Shimla	11.57	10.77
Sirmour	0.99	1.34
Solan	1.04	1.28
Una	2.10	2.21

**Source: Annual Report of Economics and Statistics Department, H.P**

Table 3 shows that per hectare productivity of different fruits highest in Shimla district but lowest in L&Spiti district reason the most of the apples grow in Shimla district because of the favorable climatic condition.

### **5. Programme and Policies launched by the government**

Various policies and Programmes set by the government of India and Himachal Pradesh to increase the productivity of crops and vegetables. The main schemes are explained the following:

#### **5.1 State Government Scheme**

**1. Quality Seed Multiplication and Distribution:** Under this scheme, expenditure is incurred on seed multiplication farms, seed testing and certification, subsidy on cost of seeds and cost on demonstrations.

**2. Manure and Fertilizers:** In order to ensure adequate supply of fertilizers, the Govt. has entrusted this responsibility to HIMFED/Cooperative Societies. The farmers are educated about balanced use of fertilizers and as per soil testing nutrient basis.

**3. Soil Testing Centre's:** Various soils testing centre has been started for raising agriculture production. There are 11 Soil Testing Laboratories and about 1, 25,000 samples are analyzed annually about one lakh farmers are being covered every year.

**4. Plant Protection:** Government is providing plant protection material including equipment to the SCs / STs /IRDP families at 50% cost. The outlay proposed is to meet expenditure on subsidies.

**5. Commercial Crops:** Under diversification approach, major emphasis is being laid on the production of Off-season vegetables, quality vegetable seeds, Potato and Ginger besides Soybean, Oilseeds and Pulses.

**6. Quality Control:** Government has started three fertilizer testing labs (Hamirpur, Sundernagar, Shimla), one state pesticides testing lab at Shimla, Bio fertilizer and Bio pesticide lab at Palampur and three seed testing labs (Solan, Palampur and Mandi). Under the scheme 2000 fertilizer samples, 300 pesticide and 1200 seed samples are being analyzed annually.

**7. Agricultural Marketing:** Under Agricultural and Horticultural Marketing (Development and Regulation) Act, 2005, at

present 10 market committees are functioning for marketing of product. Market information is being disseminated through different media i.e. AIR Doordarshan print media and through internet to farmers.

**8. H.P. Crop Diversification Project (JICA ODA Loan Project):** Himachal Pradesh Crop Diversification Project being supported by JICA through ODA loan. The study on diversified agriculture for enhanced farm income in Himachal Pradesh was got conducted from Japan International Cooperative agency (JICA) w.e.f. February, 2007 to December, 2008. Draft report of the study was submitted by JICA in December, 2008 and final render bilateral cooperation. The report contains Crop Diversification Action Plan for 10 years and Master Plan for 15 years. Based upon the crop diversification potential, the state has been divided into four categories.

JICA Contact Mission visited the state from 23-25th June, 2009 and had detailed discussion with State Government. The Mission showed their willingness to consider JICA ODA Loan for crop diversification project. The State was willing to cover entire state under the project and to provide JICA ODA Loan of Rs.949.00 crores as per the Master Plan projections but the JICA Mission expressed that rather than covering entire state from the outset (which requires extensive resources for implementation and longer time for project outcome), it would be more sensible to start the project by focusing in certain regions, crops, so as to get faster and tangible results. The result of the project can be replicated to other regions. It was also suggested to take maximum 4-5 districts with project cost of Rs. 250-300 crores. Based upon the JICA study and JICA Contact Mission report, Five districts comprising of Kangra, Mandi,

Hamirpur Bilaspur and Una which fall in category II & III i.e. most potential for crop diversification were included in the project and based upon the outcome of this project, matter can be taken with JICA to sanction second phase of the project for left over districts. The project proposal was submitted in May, 2009 to the Govt. of India for approval and financing. After series of discussions, the projects Minutes of Discussion (MoD) were signed between Govt. of India, JICA and Govt. of Himachal Pradesh on 01.10.2010 at New Delhi. The loan agreement was signed on 17th. February, 2011 between Ministry of Finance, Govt. of India and JICA and loan effectuation was done from 16th June, 2011. Global Tender Notice for Expression of Interest (EOI) for procurement of Project consultants has also been floated on 1/3/2011. The flow of funds from ODA shall be on the basis of reimbursement; therefore, earmarked token provision for this Project in the Annual Plan Budget for the year 2014-2015 of Rs. 55 crores was made.

## **5.2 Centre Government Scheme**

The main aim of these policies to increase the production and productivity of different crops because, when the productivity increase farmers sell their crops in the market at higher cost, which increase their income and standard of living of farmers because their per capita income will increase.

### **1. Mass Media Support to Agriculture Extension (100% CSS):**

The primary objective of the scheme is to use television and radio with their massive penetration, as a vehicle for agricultural extension. Basically, the scheme is focusing on two initiative i.e. Doordarshan which is providing agricultural related information. Presently, Doordarshan Shimla is telecasting

Krishi Darshan programme between 6.00 PM to 6.30 PM five days in a week and another is All India Radio which broadcast Kisanvani program me six days a week from FM Dharamshala and Hamirpur

## **2. Kisan Call Centre:**

Under this, farmers can get any information on agriculture by dialing toll free number 1800-180-1551 or 1551. The service is available from 6.00 AM to 10.00 PM on all days. This is 100% Centrally Sponsored Scheme.

## **3. National Crop Insurance Schemes:**

**(A) Rashtriya Krishi Bima Yojna (RKBY):** Main Objective of this scheme is to provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests & diseases.

**(B) Rashtriya Krishi Vikas Yojna (RKVY):** The scheme is being implemented in the State of Himachal Pradesh from the year 2007-08 to achieve envisaged annual growth rate. This scheme has been continued by the Govt. of India during 12th Plan.

**4. National Food Security Mission (NFSM):** The National Food Security Mission is a centrally sponsored scheme has been launched in 2007. Government of India has allocated funds to the tune of Rs 17.23 crores during 2015-16 for rice, maize, pulses and wheat crop. Himachal Pradesh has been included under this Mission to increase the production and productivity of Wheat, Maize, pulses and Rice.

**6. Rainfed Area Development:** Under this scheme government is providing fund for development and conservation of natural resources along with farming systems.

## **Conclusion:**

The per hectare productivity of wheat increase in the different years slightly it was

1.52 per hectare but it increased to 1.95 per hectare in 2014-2015. The productivity of pluses also increased it was 1.21 per hectare in 2010-2011 but it increased to 1.74 per hectare in 2014-2015. The productivity of total food grains increased from 1.78 per hectare productivity to 2.09 per hectare productivity in 2014-2015. High varieties of seeds, Irrigation facilities play important role. The per hectare productivity of different fruits highest in Shimla district but lowest in L&Spiti district reason the most of the apples grow in Shimla district because of the favorable climate condition. There are so many policies and programmers launched by the government of India and Himachal Pradesh to increase the productivity of different crops and vegetables that are Quality Seed Multiplication and Distribution, Manure and Fertilizers, Soil Testing Centre's Plant Protection, Commercial Crops, Quality Control, Agricultural Marketing, Mass Media Support to Agriculture Extension (100%CSS), Kisan Call Centre: National Crop Insurance Schemes: Rashtriya Krishi Bima Yojna (RKBY), Rashtriya Krishi Vikas Yojna (RKVY), National Food Security Mission (NFSM) Rainfed Area Development. These policies start to increase the production of different crops.

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