

## AGRICULTURAL DIVERSIFICATION FOR RURAL DEVELOPMENT IN HIMACHAL PRADESH

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### **Abstract**

*Diversification of agriculture is widely advocated as a means for ushering in agricultural and rural development. Himachal Pradesh is the only state in the country where 90 per cent of the population lives in rural areas. Therefore, dependency on agriculture and allied activities is dominant as these provide direct employment to about 62 per cent of total workers in the state. The present study is an attempt to examine the status of agricultural diversification for bringing development in rural areas of the state. The study is based on secondary data collected from various publications of the state government and records from different departments like agriculture and the directorates of economics & statistics and land records. The averages, percentages and growth rates were computed to analyze the emerging cropping pattern of the state. The results of temporal changes in non-foodgrain crops has shown a significant increase in the per cent share of gross cropped area under these crops, which mostly include fruits and vegetable crops, in Kullu, Shimla and Kinnaur followed by Sirmaur and Chamba districts. Total fruit production and yield as a whole registered a significant and positive growth rate of 4.44 and 3.78 per cent per annum during the study period. Area, production and yield of vegetable crops significantly increased at the rate of 5.88, 9.03 and 3.27 per cent per annum, respectively. Horticulture sector contributed more of about 37.74 per cent in primary sector compared to that of agriculture and allied sectors during 2015-16. For these reasons, the state is paying more attention towards agricultural*

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*diversification and productivity enhancement to promote inclusive growth, enhance rural incomes and sustain food security and nutritional security.*

**Keywords:** *Growth, temporal changes, rural development, agriculture diversification, Himachal Pradesh*

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## Introduction

Agriculture in Himachal Pradesh is the source of livelihood for most of the rural population. It is the backbone of state economy and as per the statistics available; this sector alone has provided direct employment to about 62 per cent working population of the state. But still it contributes only 9 per cent of the total state domestic product (Anonymous 2018-19). Agriculture being the backbone of state economy, efforts are required to diversify agricultural activities more in rural areas to increase farm production and livelihood of rural peoples. In order to improve the agricultural development and enhance the farm income in the rural areas, it is important to increase the productivity of the existing cultivated area, through shifting from self-subsistence crop cultivation to diversified agriculture, by adopting cash crops such as fruits and vegetable cultivation suitable in hilly areas. Due to the different agro-climatic condition, Himachal has comparative advantage in the horticulture crops such as off-season vegetables and fruits. Himachal Pradesh is situated in the high altitude of Himalayan region. It is impossible to implement the highly agricultural technology in this region; however it is possible in some region which is adjournment to the plain area. As stated above the state has potential to off-season vegetables and other horticulture crops compatible with the prevailing climatic condition.

Therefore, state is paying more attention towards agricultural diversification and productivity enhancement to promote inclusive growth, enhance rural incomes and sustain food and nutritional security (Devi and Parasher 2018). In fact, the state has emerged as a leading producer of fruits and off season vegetables in the country. That is why present paper aims at exploring the patterns and processes of crop diversification at the state and district level. The policy makers feels that the agriculture diversification not only provides

opportunities for increasing rural farm incomes significantly, but also likely to put less pressure on natural resources by minimizing the risk due to climate change and helps for the better use of resources, recycling of nutrients and regaining the soil fertility which also leads towards sustainable development of agriculture.

## **Methodology**

This study was entirely based upon secondary data on area, production and yield of different crop groups in Himachal Pradesh. The secondary data relating to the study were collected from various publications of the state government and records from different departments like agriculture and the directorates of economics and statistics and land records. The data were analyzed using appropriate statistical tools. The averages, percentages and growth rates were computed to understand the emerging patterns and processes in crop diversification. The extent of crop diversification at the state level was studied by analyzing temporal changes in the cropping pattern, area under fruit and vegetable crops and the contribution of horticulture including vegetable crops to the net state domestic product originating in agriculture.

## **Results and Discussions**

By marking the development that has taken place in the past plan periods, much more remains to be done to improve the quality of life in the rural areas. Himachal Pradesh has the total population of 68.65 lakh peoples out of which only 10 per cent is in the urban areas and 90 per cent of its population in the rural areas, according to the 2011 census (Table 1), has a sizable deprived population consisting of marginal farmers and landless labourers. Therefore dependency on agriculture is dominant as it provides direct employment to about 62 per cent of working population in the state. Thus, agriculture has special significance in growth and development of rural population in the state of Himachal Pradesh.

**Table 1:- Rural urban population in Himachal Pradesh**

Year	Total Population (in Lakh)			Per cent of total population	
	Total	Rural	Urban	Rural	Urban
1971	34.60	32.78	2.42	93.0	7.0
1981	42.81	39.55	3.26	92.4	7.6
1991	51.71	47.55	4.49	91.3	8.7
2001	60.77	54.82	5.95	90.2	9.8
2011	68.65	61.76	6.89	89.96	10.03

Source: Statistical Year Book of Himachal Pradesh (Different issues)

### Sectoral composition of net state domestic product in Himachal Pradesh

In the beginning, we discuss the performance of agriculture in the state during the last five years since 2011-12 to 2015-16. Table 2 shows that persistent with the overall pattern of structural changes associated with the process of economic development, the contribution of agriculture and animal husbandry sector to the net state domestic product declined from 10.82 per cent in 2011-12 to 8.99 per cent in 2015-16. Contribution of forestry, fishing and mining & quarrying sector has also declined during the study period. The contribution of primary sector as a whole during the same period declined from 17.70 per cent to 15.60 per cent. Consequently, the contribution of secondary sector decreased from 41.97 per cent to 39.36 per cent and tertiary sectors increased from around 40.33 per cent in 2011-12 to 45.01 per cent in 2015-16. Per capita state domestic product increased from Rs.87,721 in 2011-12 to Rs. 1,36,972 during 2015-16.

**Table 2:- Sectoral composition of net state domestic product in Himachal Pradesh**

(Per cent)

Sr. no.	Particulars	2011-12	2012-13	2013-14	2014-15	2015-16
1	Primary Sector	17.70	17.37	17.16	15.56	15.63
i	Agriculture and Animal Husbandry	10.82	11.11	10.88	8.57	8.99

ii	Forestry	6.37	5.77	5.86	6.53	6.20
iii	Fishing	0.08	0.08	0.10	0.11	0.11
iv	Mining and quarrying	0.44	0.41	0.33	0.34	0.33
2	Secondary Sector	41.97	41.53	42.32	41.29	39.36
3	Tertiary Sector	40.33	41.09	40.52	43.15	45.01
4	All Sectors	100	100	100	100	100
5	Net State Domestic Product (Rs.)	6053625	6943229	8012876	8819596	9789400
6	Per Capita State Domestic Product (Rs.)	87721	99730	114095	124500	136972

Source: Directorate of Economics and Statistics, Government of Himachal Pradesh, Shimla.

### Temporal changes in cropping pattern in Himachal Pradesh

The temporal changes in the cropping pattern at the state level are presented in the table 3 which shows the process of crop diversification towards fruits and vegetable crops. As it can be seen from the table that the area under crops like rice, wheat, barley, other cereals and pulses has declined marginally, but the area under fruit and vegetable crops increased from 4.60 per cent and 2.39 per cent in 1991-92 to 8.03 per cent and 3.20 per cent during 2010-11.

### Extent of crop diversification

The extent of process of crop diversification varies across districts depending upon the varied agro-climatic conditions in the state. It can be inferred from Table 4 that there has been a significant increase in the per cent share of gross cropped area under non food grain crops, which mostly includes area under fruit and vegetable crops, in Kullu, Shimla and Kinnaur followed by Sirmaur and Chamba. Among remaining districts, Bilaspur, Hamirpur and Lahual & Spiti also experienced some increase in the proportion of area under non-food grain crops; the proportion of gross cropped area under

these crops registered a small decline in the district of Kangra, Mandi and Una.

**Table 3: - Temporal changes in cropping pattern in Himachal Pradesh, 1991-92 to 2010-11**

(Per cent)

Crops	1991-92	2001-02	2010-11
Rice	8.48	8.43	8.21
Wheat	38.93	38.36	38.11
Maize	32.00	31.53	31.63
Barley	2.85	2.62	2.39
Other Cereals	2.11	1.46	0.89
Pulses	4.34	3.09	3.65
Total food grain	88.71	85.49	84.88
Fruits	4.60	6.53	8.03
Vegetables	2.39	3.78	3.20
Oilseeds	2.33	1.90	1.68

Source: Directorate of Land Records, Government of Himachal Pradesh, Shimla.

**Table 4:- Temporal changes in the area under non-food grain crops across districts**

(Per cent)

Year	1991-92	2001-02	2010-11
Bilaspur	0.19	0.16	0.18
Chamba	0.45	0.60	0.70
Hamirpur	0.06	0.06	0.07
Kangra	2.25	2.40	1.80
Kinnaur	0.24	0.32	0.67
Kullu	1.02	1.31	1.43
Lahaul-Spiti	0.12	0.11	0.12
Mandi	1.22	1.51	1.40
Shimla	3.39	4.83	5.32
Sirmaur	0.76	0.90	1.09
Solan	0.71	0.77	0.76
Una	0.54	0.66	0.63

Source: Directorate of Land Records, Government of Himachal Pradesh, Shimla

## Trends in area, production and yield of fruits in Himachal Pradesh

It can be inferred from table 5 that area under fruit crops increased from 163.52 thousand hectares in the triennium ending 1991-92 to 208.03 thousand hectares in the triennium ending 2010-11. The fruit production during the corresponding period increased from 3.96 lakh tonnes to 6.79 lakh tonnes. The yield levels, however increased, but remained low of about 2.42 tonnes/ha to 3.27 tonnes/ha during the same period. Another notable feature is that an apple remained the most important fruit crop as area under

**Table 5:- Trends in area, production and yield of fruits in Himachal Pradesh, 1991-92 to 2010-11**

Year	Area ('000 ha) (TE)			Production (Lakh tonnes) (TE)			Yield (t/ha) (TE)		
	Apple	Others	Total	Apple	Others	Total	Apple	Others	Total
1991-92	63.19	100.33	163.52	3.46	0.50	3.96	5.48	0.50	2.42
2001-02	90.61	127.12	217.74	2.02	0.58	2.60	2.23	0.46	1.20
2010-11	99.50	108.53	208.03	5.61	1.18	6.79	5.64	1.09	3.27

Source: Directorate of Land Records, Government of Himachal Pradesh, Shimla.

apple crop increased from 63.19 thousand hectares during 1991-92 to 99.50 thousand hectare in 2010-11 with production from 3.46 lakh tonnes and productivity 5.48 tonnes/ha in 1991-92 to 5.61 lakh tonnes production and 5.64 tonnes/ha of productivity in 2010-11.

**Table 6:- Compound growth rates in area, production and yield of fruits in Himachal Pradesh 1991-92 to 2010-11**

Year	Area			Production			Yield		
	Apple	Others	Total	Apple	Others	Total	Apple	Others	Total
1991-92 to 2000- 01	3.728*	2.291*	2.865*	-2.199	1.549	-1.677	-5.744*	-0.755	-4.445*
2001-02 to 2010- 11	1.392	-1.139	-0.007	8.721*	5.87*	8.135*	7.134*	6.747*	7.928*
1991-92 to 2010- 11	1.983	-0.232	0.718	3.892*	7.687*	4.441*	1.852	7.950*	3.777*

Source: Directorate of Land Records, Government of Himachal Pradesh, Shimla.

\*Significant at 5 per cent level

In terms of growth rates, area, production and yield under apple registered a positive growth of 1.98, 3.89 and 1.85 per cent per annum during overall period (Table 6). The growth rates for area under total fruits were found to be 0.72 per cent which was positive but non-significant. Production and yield growth rate under total fruits registered a significant and positive growth of 4.44 and 3.78 per cent per annum respectively during overall period.

### Temporal changes in area, production and productivity of vegetable crops

The area under vegetable crops has also witnessed rapid increase in recent years. As it can be seen from table 7 that area under vegetable crops increased from 37.73 thousand hectares in the triennium ending 2001-02 to 91.01 thousand hectares in the triennium ending 2015-16 and registered a significant and positive compound growth rate of around 5.88 per cent per annum. The production during the same period increased from 382 thousand tonnes to around 1740 thousand tonnes and recorded a compound positive growth rate of around 9.03 per cent which was also significant. The yield level, however, increased from around 10.11 tonnes/ha to 19.12 tonnes per hectare and recorded a significant compound growth rate of 3.27 per cent per annum.

**Table 7:- Temporal changes in area, production and productivity of vegetable crops in Himachal Pradesh; 2001-02 to 2015-16**

Years	Area ('000 ha) (TE)	Production ('000 tonnes) (TE)	Yield (t/ha) (TE)
2001-02	37.73	381.56	10.11
2005-06	61.69	996.54	16.15
2010-11	78.31	1376.52	17.58
2015-16	91.01	1740.30	19.12
<b>CGR (2001-2016)</b>	5.88*	9.03*	3.27*

Statistical Year Book of Himachal Pradesh 2016-17

\*Significant at 5 per cent level



### Status of Agriculture and Horticulture in GSDP

It can be inferred from table 8 that GSDP has increased from Rs. 72720 crore in 2011-12 to Rs. 11051 crore in 2015-16. Consequently, GDP from primary, secondary and tertiary sector increased from Rs. 11913, 30405 and 27086

**Table 8:- Status of Agriculture and Horticulture in Gross State Domestic Product**

Items/Year	2011-12	2012-13	2013-14	2014-15	2015-16
GSDP (Rs. in crore)	72720	82294	92589	101108	110511
GDP from Primary sector	11913	13443	15648	15462	16377
GDP from Secondary sector	30405	33650	37560	39919	42113
GDP from Tertiary Sector	27086	31531	35624	41783	47583
GDP from Agriculture & allied activities	7887	9246	1137	10134	10755
% age share of Agriculture & allied activities to GSDP	11.36	11.76	12.76	10.43	10.34
% age contribution of Horticulture in Primary sector	29.30	38.00	42.01	36.83	38.74

Source: Anonymous 2018

crore in 2011-12 to Rs. 16377, 42113 and 47583 crore during 2015-16. GDP from agriculture and allied sector increased from Rs. 7887 crore in 2011-12 to Rs. 10755 crore in 2015-16. The contribution of horticulture sector in primary sector was found more of about 38.74 per cent compared to that of agriculture and allied sector during 2015-16. This clearly shows the diversification of agriculture towards the horticulture crops in the state.

## Conclusion

It can be interpreted from above discussion that diversification has taken place towards high value horticulture crops at the cost of coarse cereals in Himachal Pradesh. The result of temporal changes in non-food grain crop has shown a significant increase in the per cent share of gross cropped area under non food grain crops, which mostly includes area under fruit and vegetable crops, in Kullu, Shimla and Kinnaur followed by Sirmaur and Chamba. Results of compound growth rate for production and yield under total fruits was found significantly positive during the study period. It is also worth mentioning that compound growth rate for area, production and yield under vegetable crops was found significantly positive during the study period. Horticulture sector contributed more of about 37.74 per cent in primary sector compared to that of agriculture and allied sectors during 2015-16. For these reasons, the state is paying more attention towards agricultural diversification and productivity enhancement to promote inclusive growth, enhance rural incomes and sustain food security and nutritional security.

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