



5 DECADES OF AGRICULTURAL TRANSITION IN MANDI DISTRICT OF HIMACHAL PRADESH: KVK'S LEGACY



**ICAR-AGRICULTURAL TECHNOLOGY APPLICATION RESEARCH INSTITUTE
ZONE-I, LUDHIANA-141 004, PUNJAB**



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PREFACE

Agricultural transformation is considered as process that leads to increased farm productivity, making farming commercially viable and strengthens the inter-linkages with other sectors of the economy. Successful agricultural transformations can rapidly reduce poverty because they create powerful engines of rural economic growth. The dynamics of an agricultural transformation start with increasing the income of rural households, higher productivity on farms, and greater demand in local markets. Agriculture is the main source of livelihood for majority of the people in Himachal Pradesh. The farming in the state has witnessed huge transformation since Independence, more so after when the state attained full status of statehood. The state has experienced substantial diversification in its agriculture towards high value cash crops such as fruits and vegetables. The continuously declining holding size, livelihood security concerns, changing consumption patterns and availability of newer technological options have compelled the farmers to shift towards crop diversification. Increased policy support from the government, many new developments and initiatives such as protected cultivation, natural farming, mushroom farming, post harvest & value addition, watershed and micro irrigation have added new dimensions to the agriculture in the state. The state Agriculture University Palampur and University of Horticulture & Forestry, Solan are the two organizations mandated to generate technologies for improving crop and horticultural production as a result the state has ventured into the cultivation of all kinds of crops, fruits and vegetables. All these efforts have transformed the traditional agriculture into business oriented farming. After the institutionalization of KVKs as district level agricultural knowledge and resource centers, this transition in agriculture furthered the pace of development in agriculture and allied sectors and scaled new heights in support with various line departments.

The present document **“5 Decades of Agricultural Transition in Mandi district of Himachal Pradesh: KVK's Legacy”** has been prepared to assess the pattern of transformation that took place in agriculture development in Mandi district of Himachal Pradesh in backdrop of efforts of KVKs and line departments. This document throws light on changes in the demographic profile, land use pattern, operational holdings, cropping pattern, adoption of new technologies, rainfall and climatic conditions, fertilizer consumption pattern, farm mechanization and livestock sector. The document though is a small attempt but definitely will be of immense utility to all stakeholders including researchers, extension workers and policy makers for analyzing the complete picture of transformation for further framing up of sustainable agricultural development policies/programmes for the benefit of farming community.

(Authors)



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1. INTRODUCTION

Agriculture is the predominant sector and backbone of Indian economy. After gaining self-sufficiency in food grain production, India is now on its way to become significant player as an exporter of agricultural produce. Introduction of high yielding varieties and the adoption of improved technologies during the 'green revolution era' brought remarkable change in Indian agriculture. This has improved the farm incomes and accelerated the growth of agricultural sector. However, this agricultural development was not evenly spread, and some regions particularly hilly areas could not benefit out of it because of location specific constraints. The developed regions moved ahead with modern scientific and vibrant agriculture, whereas, the underdeveloped regions continued with traditional rainfed agriculture.

The Western Himalayan region of the country is relatively economically underdeveloped and ecologically fragile. Further, only a small proportion of the reported area is available for agriculture activities. More than 85 percent of the landholdings are marginal and small and cereal based cropping patterns are not so remunerative to secure the livelihoods of small holders of these region. Recognizing the importance of agriculture and the constraints of hilly areas, the state government with its sound budgetary provisions established State agricultural and horticultural Universities, specialized research institutions, field departments, improved irrigation and other infrastructural facilities and started many developmental programmes for the benefit of farming community. Establishment of Krishi Vigyan Kendras (KVKs) with financial support of central government further accelerated the transformation of agriculture by propagating/ disseminating district specific latest technologies and capacity building of farmers/ farm women apart from supplementing line departments. As a result, the farmers of the state have moved forward in spite of different odds to exploit the agricultural potential through crop diversification, especially intensification/ commercialization of fruit and vegetable crops.

The diversification through high value crops is considered the only option for hilly areas like Himachal Pradesh for getting the remunerative returns from farming sector. In this regards the experience of the state of Himachal Pradesh in general and Mandi district in particular could be worth sharing as this district has emerged as a model of diversification for other areas of the country. Maize, paddy, wheat, barley, millets, oilseeds and pulses are the major crops grown in the district. Recently, protected cultivation, seasonal, off season & exotic vegetable cultivation are gaining popularity amongst the farmers because of high returns. Likewise, animal husbandry, fruit production specially high density plantation and other ancillary enterprises like mushroom cultivation, bee keeping value addition *etc.* are other important areas providing livelihood to the farm families in the district. The district has progressed well in farm sector due to the favourable government policies, technological backstoppings by SAUs, KVKs and other line departments. To ascertain the structural changes especially in agriculture sector that took place in Mandi district of Himachal Pradesh, the present document entitled **“5 Decades of Agricultural Transition in Mandi district of Himachal Pradesh: KVK's Legacy”** is an attempt to document the extent of progressiveness in agriculture and allied enterprises.

The present study attempted to analyze the changing agricultural scenarios over time, in Mandi district of Himachal Pradesh. The agricultural growth has been analyzed using secondary data on different components of agriculture over time. The purpose of the study was to examine change in land use, cropping pattern, growth rate w.r.t. area, production and productivity of different crops apart from livestock and other parameters like rainfall pattern, fertilizer consumption pattern, farm machinery, district economy *etc.* The secondary data related to demographic profile, land utilization, operational holdings, cropping pattern, area, production and productivity of various crops and other parameters was collected from different sources and compared for the period 1972-73 to 2019-20/2020-21 or as per available data. The data pertaining to KVK activities has been summarized for last 20 years from the annual progress report of KVK Mandi. Further, the data was analyzed for interpretation of the results.

2. GENERAL FEATURES

3.1 Location

Mandi, district of Himachal Pradesh is situated in Western Himalayas between 31°13'20" to 32°04'30" North latitude and 76°37'20" to 77°23'15" East longitude. The present district Mandi of Himachal Pradesh was formed with the merger of two princely states Mandi and Suket on 15th April 1948, when the state came into existence. It is bounded by six districts and is almost in the center of the state. In North-West side Kangra and in the West Hamirpur and Bilaspur districts are located. Solan and Shimla districts are on the Southern and Kullu district on the Eastern side. Administratively, district is divided into thirteen blocks viz., Mandi Sadar, Sundernagar, Karsog, Seraj, Gohar, Drang, Chauntra, Gopalpur, Dharampur, Balh, Balichowki, Nihri and Dhanotu. The district is well connected by three National highways, state highways and numerous link roads.

3.2 Geography

The district has total geographical area of 3950 square kilometers and constitutes 7.095 per cent of the total geographical area of the state. The district is entirely hilly except Chauntra Balh area which are fertile valleys. In general, there is increase in elevation from South to North. Topographically, the district can be divided into two main categories.

a) Shivalik (Outer Himalaya) region: The Balh valley, Baldwara and Joginder nagar area of Mandi district ranging from 651 to 1500m amsl fall in this region. Deep to shallow stone embedded and loam to clay soils are found in this zone. The paddy, maize, ginger, wheat, potato and citrus fruits are cultivated in this area.

b) Mid mountain (Inner Himalaya) region: Areas of Chachyot, Karsog, Seraj and parts of Drang block (1500-4500m amsl) fall in this region. The series of parallel ranges are divided by longitudinal valleys. There is continuous increase in the height from valley to hills. There are many hill ranges in the district occupying distinctive place in the geographical features of Mandi.

Following are the main hill ranges in the district.

1) Dahauladhar: This high elevation range covers considerable part of the Suket area. It runs with Eastern boundary of the district from North to South. In this range 'Nagru' is the highest peak, with an elevation of about 4,000 meters. The range joins the Kullu district in the North-East.

2) Ghogar Dhar: Ghogar dhar has the rock salt mines in Gumma and Drang and is fully covered with forests. It enters the district at Harabagh in Drang block.

3) Sikandra Dhar: This range runs from North-West boundary of Suket and Bilaspur and divided into sub-ranges i.e., Kamlah and Lindi dhar.

4) Dhar Bairkot: This range starts from Rewalsar and extends towards Suket. Some of its branches join Hamirpur with Sikandra dhar. Other hill ranges in the district are Shikari, Kamrunag, Parashar, Bandali, *etc.*

3.3 Rivers

There are two main rivers, Beas and Sutlej flowing through the district. Sutlej enters in the district near 'Firnu' village in Chawarsigarh and forms the boundary of the district in the East and South. The main tributaries of this river are Khaled, Bhagwati, Bantehr, Siwan Behna, Kattu, Bagra, Bahlu and Siun. The Beas enters Mandi from the eastern side at village near Larji where its tributaries Sainj and Tirthan join the river. At Pandoh, the water of Beas has been diverted through a tunnel and a channel to join the Sutlej and electricity is being generated at Dehar. Larji Project has also been constructed on this river for electricity production. The important rivulets (*Khads*) of the Beas on the North bank are Uhl, Luni and Rina and from South bank are Suketi, Jiuni, Bakhli, Sone, Ramoli, and Bakkar khad. The water of Uhl is also being used to generate electricity at Joginder Nagar (Shanan and Bassi projects).

3.4 Climate

Mandi district falls in the mid-hills-sub-humid zone and high hills temperate wet agro climatic zone of Himachal Pradesh (Table 1). The climate of the district is mostly sub-tropical in lower reaches and moist temperate in upper reaches. Precipitation is received both in rainy and winter season. Minimum temperature goes down below 1° C in higher reaches during winter and maximum temperature exceeds even 40° C in low reaches during summer season. Average annual rainfall is about 1200 mm. Maximum rainfall

occurs in the month of June to September followed by January to March whereas least rainfall occurs in the month of November followed by December, October and April. About 63 per cent rainfall occurs in monsoon season i.e. from July to September and rest of the precipitation occurs due to Western disturbances. The elevation of the district ranges from 700 meters to 4000 meters above mean sea level (Fig. 1). Lower areas of the district experience hot summer (up to 40° C temp.) and cold winter with frost and fog. Hilly area experiences mild summer and cold winter with low to high snowfall and mist in rainy season. The area of Badar, Chohar, Seraj and Sonar usually has sufficient snowfall every year from January to March.

Table 1. Agro-climatic zones

1.	Low hill sub mountain sub tropical zone
2.	Mid hill sub humid zone
3.	High hill wet temperate zone



AES-I



AES-II



AES-III



AES-IV



AES-V

Table 2. Agro ecological situations

S. No.	AES	Altitude (m amsl)	Rainfall (mm)	Topography	% area	Major Crops
1	Valley areas	651-1300	1000	More or less leveled	25	Wheat, paddy, maize, onion, garlic, vegetables, plum, mango, litchi
2	Moderate rainfall mid-hill areas	651-1300	1540	Hilly terrain, soils shallow to deep, frost prone particularly on northern aspects	39	Wheat, maize, paddy, ginger, onion, garlic tomato, plum, Mango
3	High rainfall -mid hill areas	1100-1800	2376	Hilly to moderate slope	12	Wheat, Maize, paddy, pea potato, sarson, linseed, vegetables
4	Mid hill - sub-temperate areas	1300-1800	1080, light snowfall	Hilly terrain, slop moderate to steep, during winter northern aspects have frost for longer period	15	Potato, wheat, maize, paddy, off-season vegetables (pea, cabbage, cauliflower, tomato, capsicum), apple, pear, plum
5	High hill temperate wet areas	>1800	1000 Moderate to high snowfall	Hilly terrain	9	Wheat, barley, maize, buckwheat, potato, pea, apple, nuts, off-season vegetables

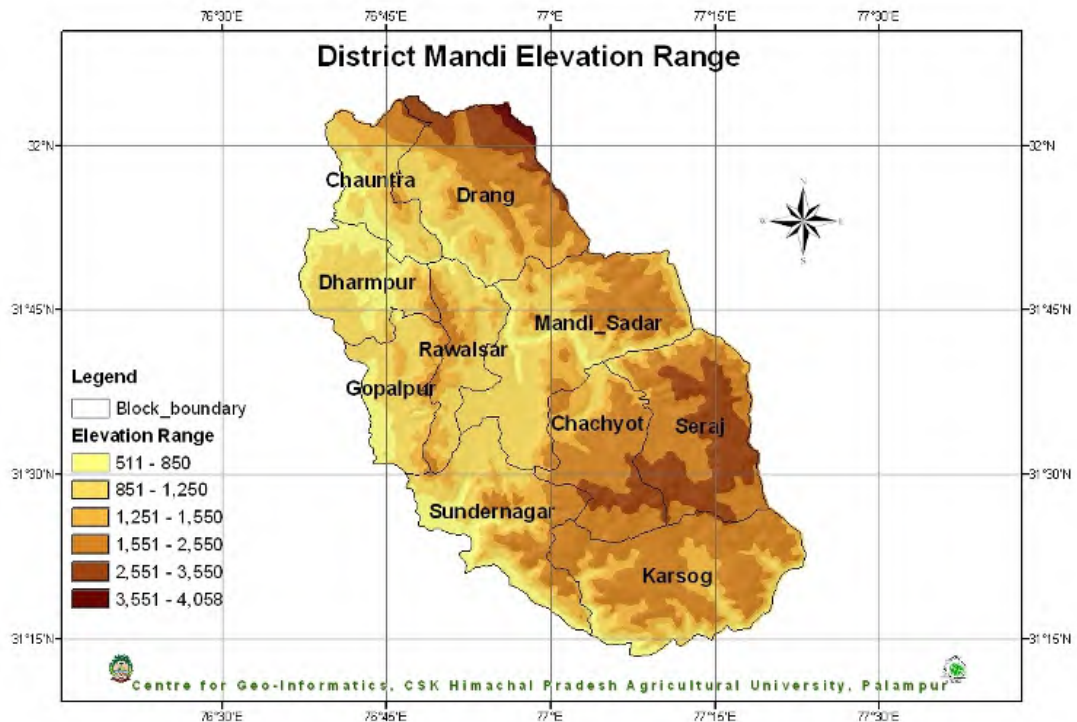


Fig 1. Elevation map of Mandi district

3.5 Soil types: The block wise soil fertility map of is represented in Fig. 2.

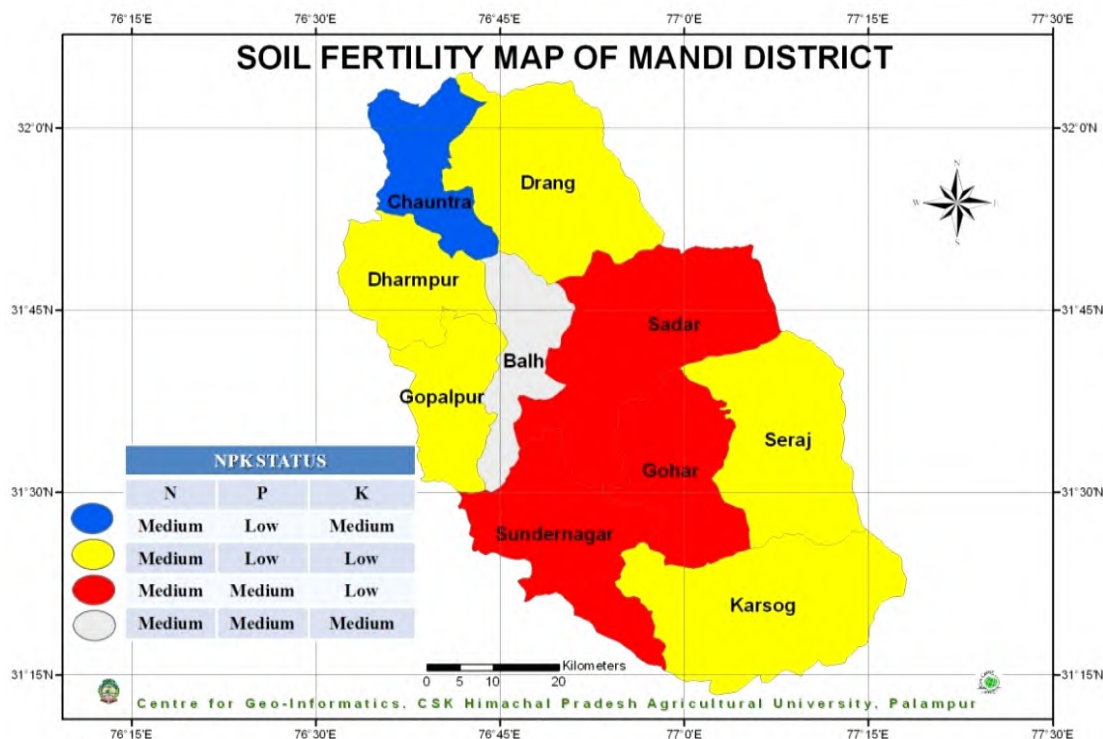


Fig 2. Soil fertility map of Mandi district

Table 3. Soil types

S. No	Soil type	Characteristics
1.	Sandy	This type of soil are dominantly prevalent in Balh, Dharmpur blocks varying from 0.5 % in Seraj block to 8 % in Balh block, which are deep and fertile, rich in humus. This type of soil occupies about 3.43 % of the total area of the district.
2.	Sandy loam	This type of soil are dominantly prevalent in all the developmental blocks varying from 35 % in Chauntra block to 72 % in Drang block, which are deep and highly fertile, rich in humus and organic matter. The water holding capacity is high. This type of soil occupies about 59.38 % of the total area of the district.
3.	Clay	This type of soil are moderately found in almost all the developmental blocks varying from 20 % in Seraj block to 62 % in Chauntra block. This type of soil occupies about 37.19 % of the total area of the district.

Table 4. Major farming systems

1.	Agriculture + Animal husbandry
2.	Agriculture + Horticulture + Animal husbandry
3.	Agriculture + Animal husbandry + Horticulture
4.	Animal husbandry + Agriculture

3. DEMOGRAPHIC PROFILE

Table 5. Demographic profile			
Particulars	1971 census	2011 census	% change over base year
Total Population	515180	999777	94.06
Male	262348	498065	89.85
Female	252832	501712	98.44
Sex ratio	964	1007	4.46
Rural Population	466975	937140	100.68
Male	233469	466050	99.62
Female	233506	471090	101.75
Urban Population	48205	62637	29.94
Male	28879	32015	10.86
Female	19326	30622	58.45
Population density	128	253	97.66
SC population	134531	293739	118.34
ST Population	5743	12787	122.65
Total villages	3347	3338	-0.27
Inhabited villages	2789	2850	2.19
Uninhabited villages	558	488	-12.54
Literacy rate (%)	30.70	81.53	165.57
Male literacy (%)	43.73	89.56	104.80
Female literacy (%)	17.17	73.66	329.00
No. of cultivators	182938*	387944	112.06

Source: 1. Census of India, Series 7, Himachal Pradesh, Paper I of 1972, Director of Census operations, Himachal Pradesh.

2. Statistical outline of Himachal Pradesh 1981. Directorate of Economics and Statistics, Himachal Pradesh, Shimla

3. Statistical abstract 2018-19, Directorate of Economics and Statistics, Himachal Pradesh, Shimla

4. Census of India, Himachal Pradesh Series-03, Part XII-B District census handbook, Mandi. Village and town wise primary census abstract (PCA), Directorate of census operations, Himachal Pradesh.

5. * 1981 census

4. LAND USE PATTERN

The changes in land use pattern in Mandi district of Himachal Pradesh was compared between the period of 1974-75 and 2020-21 and presented in Table 6. The area under forests increased from 148169 ha during 1974-75 to 178167 ha during 2020-21 showing an increase of about 20%. Likewise, there has been an increase in the area put to non agricultural uses, culturable waste, land under misc. tree crops, other fallow land *etc.*, however, a decrease in area under barren & unculturable land, permanent pastures & other grazing lands, current fallows *etc.*, over the base year has been witnessed (Table 6). During 1974-75, net sown area was 85930 ha which increased to 89742 ha during 2020-21.

Table 6. Land use pattern (ha)			
Particulars	Year		% change over base year
	1974-75	2020-21	
Reporting area	397576	398213	-
Forest	148169	178167	20.25
Barren & unculturable land	14942	3107	-79.21
Land put to non agricultural uses	7623.33	22036	189.06
Culturable waste	4230.67	6563	55.13
Permanent pastures & other grazing lands	134357.67	93567	-30.36
Land under misc. tree crops	63	134	112.70
Current fallows	3638.67	3600	-1.06
Other fallow land	142.33	1297	811.26
Net area sown	85930	89742	4.44
Net sown more than once	57527	69752	21.25
Total cropped area	143457	159494	11.18

Source: 1. *Structural Transformation of Agriculture in Himachal Pradesh* by Chander Mohan Negi, Assistant Professor in Economics, Department of Finance and Business Economics, University of Delhi South Campus. New Delhi -21
 2. *Statistical abstract 2022-23*, Directorate of Economics and Statistics, Himachal Pradesh, Shimla
Statistical abstract 2018-19, Directorate of Economics and Statistics, Himachal Pradesh, Shimla
 3. <https://aps.dac.gov.in>

5. NUMBER AND AREA OF OPERATIONAL HOLDINGS

Technical and economic efficiency of farming is dependent on the size and type of land resource. However, the decreasing farm size is becoming a hindrance in using the improved technology and these farms are becoming economically non-viable. It is in this regard that the analysis of size of holding becomes important. The number and area of operational holdings and percent change was compared between the period of 1970-71 and 2016-17 (Table 7 & 8). In the year 1970-71, the percentage of marginal farmers to number of farm holdings stood at 58.67 %. However, their number has significantly increased from 56323 in 1970-71 to 119976 in 2016-17, showing an increase of nearly 113.01 percent. The area possessed by the marginal farmers increased by about 140% and average size of holdings of this category also increased by about 13 % over the base year.

Table 7. Number and area of operational holdings						
Size class	1970-71			2016-17		
	No. of holdings	Area (ha)	Av. Size of holdings (ha)	No. of holdings	Area (ha)	Av. Size of holdings (ha)
Marginal (up to 1 ha)	56323 (58.67)	22078 (18.79)	0.39	119976 (74.81)	53177 (42.35)	0.44
Small (1-2 ha)	21331 (22.22)	30468 (25.93)	1.43	29141 (18.17)	40279 (32.08)	1.38
Semi medium (2-4 ha)	13766 (14.34)	37729 (32.11)	2.74	9926 (6.19)	24910 (19.84)	2.51
Medium (4-10 ha)	4378 (4.56)	24346 (20.72)	5.56	1315 (0.82)	6766 (5.39)	5.15
Large (>10 ha)	202 (0.21)	2879 (2.45)	14.25	26 (0.02)	431 (0.34)	16.58
Total/average	96000 (100.00)	117500 (100.00)	1.22	160384 (100.00)	125563 (100.00)	0.78

Note:- Figure in parenthesis indicates percentage

Source:- Structural Transformation of Agriculture in Himachal Pradesh by Chander Mohan Negi, Assistant Professor in Economics, Department of Finance and Business Economics, University of Delhi South Campus. New Delhi -21, and www.inputsurvey.dacnet.nic.in

The next largest category was that of small farmers (22.22%) cultivating about 25.93 percent of the cultivable land and their number also increased during the study period by about 36.61 percent however, their average size of land holdings decreased by 3.50% over the figures in 1970-71. During 1970-71, the marginal and small farmers together constitute about 81 percent of the total holdings and own just nearly 45 percent of the land, while their number increased to about 93% with share in area of about 75% during 2016-17. Overall, average size of land holdings for all classes decreased from 1.22 during 1970-71 to 0.78 ha during 2016-17.

Table 8. Percent change in number of holdings, area and average size of holdings

Size class	% change over base year		
	No. of holdings	Area	Average size of holdings
Marginal (up to 1 ha)	113.01	140.86	12.82
Small (1-2 ha)	36.61	32.20	-3.50
Semi medium (2-4 ha)	-27.89	-33.98	-8.39
Medium (4-10 ha)	-69.96	-72.21	-7.37
Large (>10 ha)	-87.13	-85.03	16.35
Total/average	67.07	6.86	-36.07



6. RAINFALL PATTERN AND TEMPERATURE

The average monthly & seasonal rainfall pattern in Mandi district of Himachal Pradesh has been analyzed from 1901-2023 and data is presented in Fig. 3. The data revealed that maximum rainfall occurred during monsoon season from June to September months. Further, erratic changes in the annual rainfall pattern were observed over the years (Table 9). A comparative analysis of annual average rainfall between the periods 1950-2000 and 2002-2023 revealed a notable decline of approximately 9% (Table 10). Likewise, an increase of 0.24°C in annual maximum temperature and 0.43°C in annual minimum temperature was also observed during the last 63 years in district Mandi (Table 12).

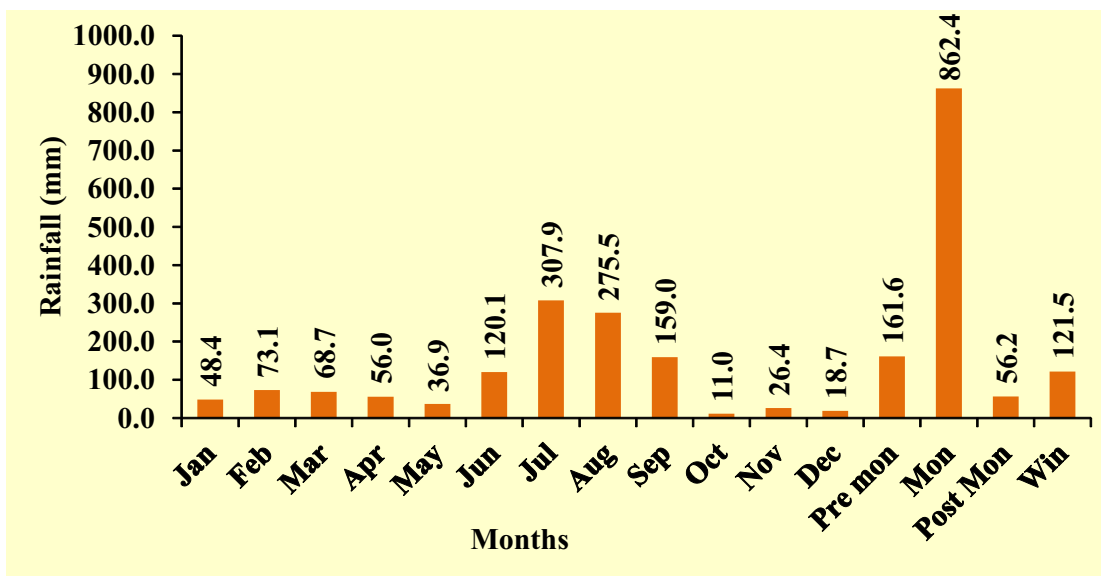


Fig 3. Rainfall pattern in Mandi district

Source 1. Sharma et al./International Journal of Architecture, Engineering and Construction 8 (2019) 41-53.
2. Monthly rainfall, Meteorological Centre, Shimla.

Table 9. Average annual rainfall trend (2002-2023)

Year	Rainfall (mm)	% change over previous preceding years
2002	1083.5	36.30
2003	1476.8	-24.74
2004	1111.5	17.77
2005	1309	0.33
2006	1313.3	-10.93
2007	1169.7	0.35
2008	1173.8	-17.77
2009	965.2	54.93
2010	1495.4	-1.67
2011	1470.5	-0.52
2012	1462.9	10.47
2013	1616	0.56
2014	1625.1	-6.20
2015	1524.4	-8.60
2016	1393.3	17.03
2017	1630.52	-1.50
2018	1606.08	-10.47
2019	1438	-14.28
2020	1232.6	22.97
2021	1515.8	5.69
2022	1602.2	17.40
2023	1881	-

(Source: Statistical outline of Himachal Pradesh various issues)

Table 10. Comparison of annual average rainfall pattern

Time period	Annual average rainfall (mm)
1950-2000	1506.90
2002-2023	1373.56
% change over base period	-8.85

Source: 1. District Rainfall Normal (in mm) Monthly, Seasonal and Annual: Data Period 1951-2000. data.gov.in/resources/district-rainfall-normal-mm-monthly-seasonal-and-annual-data-period-1951-2000

2. Statistical outline of Himachal Pradesh various issues

Table 11. Average annual and seasonal temperature (1951-2013)

Periods	Maximum Temperature		Minimum Temperature	
	Average (°C)	Range (°C)	Average (°C)	Range (°C)
Annual average	25.7	24.3-26.9	13.2	12.4-14.3
Winter (Jan-Feb)	16.7	14.6-19.4	4.7	2.8-7.5
Pre Monsoon (Mar -May)	28.0	24.4-31.6	13.9	12.2-16
Monsoon (June-Aug)	30.5	29.4-32.5	20.3	19.4-21.3
Post Monsoon (Oct-Dec)	22.8	19.6-24	8.7	7.6-10

Source: <http://dest.hp.gov.in/sites/default/files/PDF/GIZ01Climate%20Change%20Impacts%20and%20Vulnerability%20Assessment.pdf>

Table 12. Temperature trend (1951-2013)

Particulars	Annual Maximum Temperature trend (°C/63 years)	Annual Minimum Temperature (°C/63 years)	Remarks
Mandi	0.24	0.43	Positive non significant trend
Himachal Pradesh	0.20	0.45	

Source: <http://dest.hp.gov.in/sites/default/files/PDF/GIZ01Climate%20Change%20Impacts%20and%20Vulnerability%20Assessment.pdf>



7. AREA PRODUCTION AND PRODUCTIVITY OF MAJOR CROPS

Maize, paddy, wheat, barley, millets, oilseeds and pulses are the major crops grown in the district. Area, production and productivity of these crops have been compared between 1974-75 and 2020-21 (Table 13 & 14). The area of wheat crop increased from 44186 ha to 62100 ha with production of 56542 MT to 115200 MT. The productivity of wheat crop increased from 12.80 q/ha to 18.55 q/ha. Similar trend in case of maize crop was also observed. In case of other crops like paddy, barley, millets, pulses and oilseeds, decline in area was found. The total food grain production increased from 159600 MT to 283975 MT with increased productivity from 12.13 q/ha to 21.04 q/ha. The data further revealed that total food grain production increased by 78% and productivity by 73% over the base year of 1974-75. In case of wheat and maize, significant percent increase in area, production and productivity was observed. In paddy, area was declined by about 22% over base year however, production and productivity significantly increased by 46.24 and 86.62 % respectively. In case of pulses, area declined by about 36% however, its production and productivity increased by about 45 and 125% respectively.

KVK since its inception has assessed and refined more than 50 location specific technologies on various aspects of important cereal crops like high yielding disease resistant improved varieties, varietal/ hybrid assessment, INM, fertilizer scheduling water management, nano fertilizers *etc.*, to further disseminate the identified technologies through large scale front line demonstrations (> 600 hectares). Capacity building of farmers/ farm women, rural youth and extension functionaries on latest technologies for faster adoption and regular backstopping through diagnostic visits and ITC means further accelerated the adoption of these technologies. During last 20 years KVK has conducted more than 1200 capacity building programmes benefitting about 10000 stakeholders. The regular linkage with farmers supported by extension network of the line department helped in adoption of new technologies.

Overall, the productivity of all the major crops significantly increased over base year

under study. Sound research and extension network is the main reason for enhanced productivity of major crops.

Table 13. Area under principle crops

Crops	Area (ha)	Production (MT)	Productivity (q/ha)	Area (ha)	Production (MT)	Productivity (q/ha)
	1974-75			2020-21		
1. Cereals						
Wheat	44186.33	56542.67	12.80	62100	115200	18.55
Maize	36255.67	61413.67	16.94	46252	122150	26.41
Paddy	24522.33	23646.00	9.64	19220	34580	17.99
Barley	5486.67	6136.67	11.18	2900	4890	16.86
Millets	15272.33	7421.33	4.86	800	765	9.56
2. Pulses*	5851.67	4440.00	7.59	3725	6390	17.15
Total food grains	131575	159600.34	12.13	134997	283975	21.04
3. Oilseeds	1004.33	484.00	4.82	400	225	5.63

*including peas

Source : 1. Statistical outline of Himachal Pradesh 1981, Directorate of Economics and Statistics, Himachal Pradesh, Shimla and Department of agriculture, Mandi (HP).

2. Department of Agriculture, Mandi Himachal Pradesh

Table 14. Percent change in area, production & productivity of principle crops

Crops	% change over base year		
	Area	Production	Productivity
1. Cereals			
Wheat	40.54	103.74	44.92
Maize	27.57	98.90	55.90
Paddy	-21.62	46.24	86.62
Barley	-47.14	-20.32	50.81
Millets	-94.76	-89.69	96.71
2. Pulses	-36.34	43.92	125.96
Total food grains	2.60	77.93	73.45
3. Oilseeds	-60.17	-53.51	16.80



Principal crops in Mandi district

8. AREA PRODUCTION AND PRODUCTIVITY OF VEGETABLE CROPS

Diversification of agriculture relates to both increasing and improving the number of items in agricultural portfolio. Agriculture diversification can also be regarded as the re-allocation of farm's productive resources of land, labour and capital to different farm activities. The strategy is also used to maximize the use of land, water, and other resources for overall agricultural development in a region. The shift from the traditional less remunerative farming patterns to the ones incorporating more remunerative crops is also viewed as crop diversification. In the process of agricultural development, the farmers of the district with technical backstopping of KVK/ line departments experimented with different crops, crop combinations, production technologies, crop varieties and marketing of crops. A critical look at the data given in Table 15 revealed that very few vegetables like peas, tomato, beans, cabbage, cauliflower, capsicum *etc.*, were only grown during 1985-86 but later on many new vegetables have been introduced in the farming system by the farmers in Mandi district. The area, production and productivity under vegetable crop was merely 2769 ha, 37409 MT and 135.10 q/ha respectively during 1985-86 which increased significantly to 11216 ha with production of 233153 MT and productivity of 207.87 q/ha during 2020-21.

In case of peas and tomato, there was an increase in area, production and productivity by 286%, 645%, 93 % and 1450%, 1695%, 15.84%, respectively over the base year (Table 16). The area under bean, cabbage, cauliflower and capsicum increased by 144.44, 795, 1584 and 113.60 % respectively while their production increased to the tune of 352.67 to 2314.65%. The productivity levels of these vegetables also increased by 85.19, 14.54, 43.39 and 100.00 %. Exotic vegetables are a new intervention of research & extension system that has been introduced in the district for getting the remunerative returns. Owing to low returns of traditional cereal based cropping system, KVK emphasized on diversification of specific regions with off season and exotic vegetables through location specific identification of suitable technologies and large scale demonstrations. During

Table 15. Area, production and productivity under vegetable crops

S. No.	Crop	Area (ha)	Production (MT)	Productivity (q/ha)	Area (ha)	Production (MT)	Productivity (q/ha)
		1985-86*			2020-21**		
1.	Peas	950	8360	88.00	3667	62339	170.00
2.	Tomato	65	1397.5	215.00	1007	25079	249.05
3.	Beans	270	2430	90.00	660	11000	166.67
4.	Cabbage	120	2760	230.00	1074	28294	263.45
5.	Cauliflower	50	860	172.00	842	20766	246.63
6.	Capsicum	125	1125	90.00	267	4806	180.00
7.	Onion	-	-	-	498	10458	210.00
8.	Garlic	-	-	-	492	12054	245.00
9.	Radish	-	-	-	440	9925	225.57
10.	Turnip	-	-	-	90	2002	222.44
11.	Carrot	-	-	-	63	1386	220.00
12.	Bhindi	-	-	-	420	7140	170.00
13.	Cucurbits	-	-	-	332	8300	250.00
14.	Chillies	-	-	-	80	960	120.00
15.	Brinjal	-	-	-	273	5511	201.87
16.	Turmeric	-	-	-	70	1960	280.00
17.	Other vegetables	1189	20476.5	172.22	823.5	18498	224.63
18.	Exotic vegetables	-	-	-	118	2675	226.69
	Total vegetables	2769	37409	135.10	11216.5	233153	207.87
19.	Potato***	1523.33	4685.67	30.75	2207	18425	83.48

Source:- * District Human Development Report Mandi, Planning Department Himachal Pradesh

** Department of Agriculture, Mandi Himachal Pradesh

*** Structural Transformation of Agriculture in Himachal Pradesh by Chander Mohan Negi, Assistant Professor in Economics, Department of Finance and Business Economics, University of Delhi South Campus. New Delhi -21 and <https://aps.dac.gov.in>. (data for potato compared between 1974-75 and 2019-20).

last two decades KVK assessed and refined more than 30 location specific technologies on various aspects of important off season and exotic vegetable crops and further disseminated the technologies through front line demonstrations (> 200 hectares). KVK conducted more than 250 capacity building programmes benefitting about 3000 stakeholders for faster adoption of these programmes. Strong linkage with line department further helped in adoption of this venture and uplifted the socio economic status of farmers in the district.

Overall, total vegetables area significantly increased by 305.07%, production 523.25% and productivity 53.86% over the benchmark year of 1985-86. Further, the area, production and productivity of potato were compared between 1974-75 and 2019-20 (Table 15 and 16). It is evident from the data that 44.88, 293.22 and 171.48 % increase in area, production and productivity of potato was observed over the base year of 1974-75. This seems to be the result of improvements in irrigation facilities, use of HYVs, chemical inputs and other components of improved farm technology apart from the technological backstopping by research and extension network.



Vegetable cultivation in the district

Table 16. Percent change in area, production and productivity of vegetable crops

Crops	% change over base year		
	Area	Production	Productivity
Peas	286.00	645.68	93.18
Tomato	1449.23	1694.56	15.84
Beans	144.44	352.67	85.19
Cabbage	795.00	925.14	14.54
Cauliflower	1584.00	2314.65	43.39
Capsicum	113.60	327.20	100.00
Other vegetables	-30.74	-9.66	30.43
Total vegetables	305.07	523.25	53.86
Potato	44.88	293.22	171.48



Vegetable cultivation in the district

9. PROTECTED CULTIVATION

Protected cultivation is another important area which has been up-scaled among the farming community in district Mandi. In protected farming, crops are grown and managed under controlled conditions and more per unit productivity and profitability can be achieved than the open farming conditions. Himachal Pradesh is a hilly state where majority of farmers belong to marginal and small holding categories and traditional farming is no more remunerative. Realizing these problems, State government with technical expertise of research and extension network has conceptualized protected farming in the state and made special budgetary provision and subsidized schemes for the promotion of this venture. Consequently, large numbers of poly houses have been constructed in the state in general and Mandi district in particular



Protected cultivation

and many more are under progress. The main aim of this technology is to raise socio-economic condition of small and marginal farmers by cultivation of high value cash crops. To fulfill this objective, departments of Agriculture & Horticulture as well as KVK through its mandated activities (like on farm testing, FLDs, capacity building *etc.*) have worked together to make this enterprise a great success in the district. KVK also adopted two polyhouses in each block of the district and developed them as model polyhouses for niche specific experiential learning and farmer to farmer horizontal extension. ICT means and social media platforms are being used for technical backstopping for faster exchange of information. At present, more than 50 ha of area has been covered under protected cultivation in the district which signifies the KVKs initiatives.

Table 17. Area under protected cultivation

Particulars	No. of polyhouses	Area covered (ha)
Under PDDKBSY (2008-09 to 2018-19)	2228	20.19
Under YSPKSY (2014-15 to 2018-19)	952	12.78
Under HTM up to 2011	204	9.88
Total	3384	42.85



Protected cultivation

10. AREA PRODUCTION AND PRODUCTIVITY OF FRUIT CROPS

The area, production and productivity of fruit crops was compared between the periods of 1972-73, 2001-02 and 2019-20 and then data has been presented in Table 18. Apple is one of the major fruit crop of Mandi district and during 1972-73 it was merely grown in an area of 4352 ha with production of 2600 MT and productivity of 5.97 q/ha. During 2019-20, the area under this crop increased to 16849 ha with production of 57158 MT and productivity of 33.92 q/ha. An increase of 287.16, 2098.38 and 468.17 % were observed w.r.t. area, production and productivity over the base year (Table 19). Other temperate fruits, nuts and dry fruits, citrus fruits and other subtropical fruits also registered a significant increase in area, production and productivity over the base year. Overall, total area under fruit crops significantly increased from 8854 ha to 37595 ha during 2019-20. The overall productivity of fruit crops has also significantly increased from 7.45 to 17.40 q/ha. An increase of 324.61, 891.158 and 133.56 % in area, production and productivity was observed in total fruit crops in Mandi district of Himachal Pradesh over the base year of 1972-73. Strong research and extension network along with availability of quality planting material of improved cultivars at doorstep of the farmers are the main reason of this significant change. KVK since its inception has



Fruit cultivation in the district

Table 18. Area, production and productivity of fruit crops

S. No.	Crop	Area (ha)	Prod'n (MT)	Productivity (q/ha)	Area (ha)	Prod'n (MT)	Productivity (q/ha)
		1972-73			2019-20		
1.	Apple	4352	2600	5.97	16849	57158	33.92
2.	Other temperate fruits	1124	700	6.23	6502	3126	4.81
3.	Nuts and dry fruits	218	200	9.17	2952	447	1.51
4.	Citrus fruits	1933	1900	9.83	4492	845	1.88
5.	Other subtropical fruits	1227	1200	9.78	6800	3842	5.65
6.	Total	8854	6600	7.45	37595	65418	17.40

Source:- Data for 2001-02 (District Human Development Report Mandi, Planning Department Himachal Pradesh); Data for 1972-73 (Horticulture development in Himachal Pradesh: In retrospect and prospect by R. Swarup, B.K. Sikka and C.S. Vaidya, Indian journal of Agriculture Economics, 42 (3): 430-437). Data 2019-20 (Directorate of Horticulture, Himachal Pradesh, Shimla)

focused on diversification of horticulture sector owing to higher returns and agro ecological advantage. New vistas like high density plantation, clonal root stocks in apple, introduction of new horticultural species like persimmon, plum *etc.* and effective management of pest and diseases advocated by KVK and department experts laid the foundation for horticulture transformation in the district.

Table 19. Percent change in area, production and productivity of fruit crops

Crops	% change over base year		
	Area	Production	Productivity
Apple	287.16	2098.38	468.17
Other temperate fruits	478.47	346.57	-22.79
Nuts and dry fruits	1254.13	123.50	-83.53
Citrus fruits	132.38	-55.53	-80.87
Other subtropical fruits	454.20	220.17	-42.23
Total	324.61	891.18	133.56

11. INTRODUCTION OF NEW VENTURES

Declining and fragmentation of land holdings is one of the major constraining factors as majority of the farmers are small holders and their livelihood could not be secured until and unless they go for some ancillary enterprises. Mushroom cultivation is one of a venture that provides supplementary income to the farm families along with their prevalent farming.

More than 100 off campus training programmes in mushroom cultivation covering almost all the blocks of the district have been conducted benefitting more than 2000 farmers, apart from >50 skill/ vocational trainings of 5-25 days duration covering more than 2500 farmers/ farm women organized during last ten years triggering the adoption of this venture across the district. Most of the trainees (60-70 %) of on campus training programmes have already taken up mushroom cultivation either button or oyster

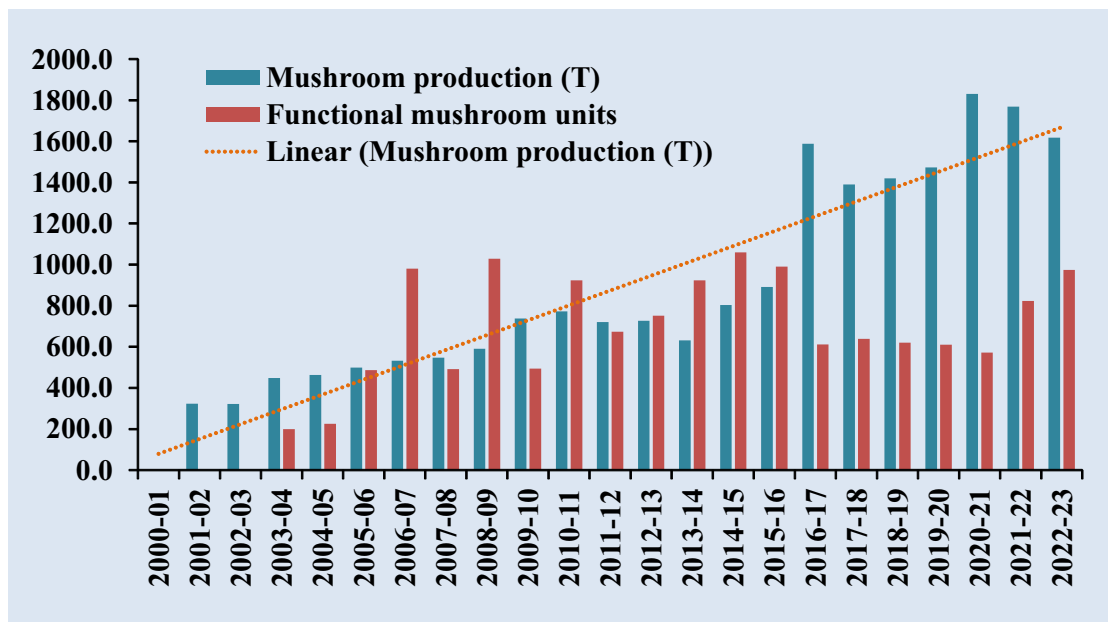


Fig. 4: Status of mushroom production in Himachal Pradesh

mushroom cultivation and earning handsome returns. These farmers are further being converged with State horticulture department for establishment of mushroom units. Apart some trainees are serving as master trainers and motivating and training other farmers in their regions for taking up mushroom cultivation as an ancillary enterprise for enhancing their income. About 50 self help groups are now actively engaged in mushroom cultivation/ exotic vegetable cultivation. The farmers are now cultivating mushroom round the year and on an average each farmer is earning about ₹ 5000 to 8000 per month additional income by sparing one to two hours per day for this activity. Mushroom production in the state has increased from almost negligible in 2001 to about 1800 T in 2021 (Fig. 4). In Mandi district also, mushroom production has grown exponentially to more than 35 T with about 1500 functional growing units.

Likewise, apiculture has made an exponential growth during last twenty years owing to capacity building and technical backstopping by the KVK and policy support of the government schemes. In Himachal Pradesh as a whole, the number of bee colonies has increased from 247 in 2001 to 118880 in 2023 and honey production from 654 MT to



Mushroom cultivation in the district

2124 MT (Fig 5). In district Mandi also the number of colonies has increased to about 60000 with total honey production of 2475 MT with regular awareness of training community.

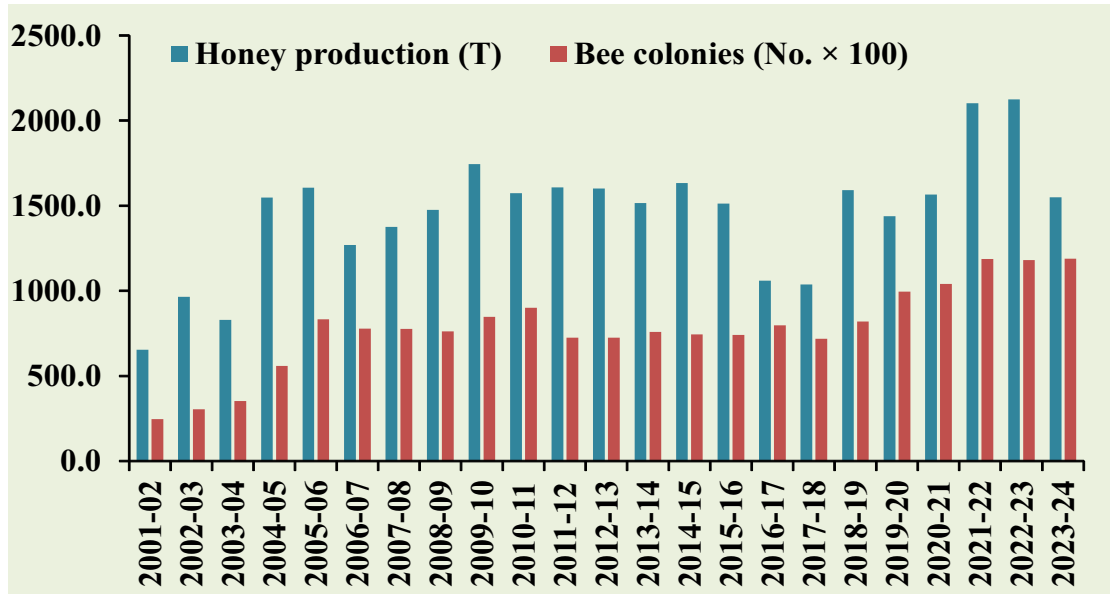


Fig. 5: Status of beekeeping in Himachal Pradesh

Value addition of fruits and vegetables is another profitable venture that not only empowered the rural women but also strengthened their family income. At present more than 4000 self help groups are involved in the post harvest and value addition activities in the district and KVK Mandi has played a significant role in capacity building and handholding these small scale ventures and uplifting socio economic status of farm women.



Value addition in the district



Value addition through SHGs in the district

12.1 Introduction of Natural Farming

In order to provide the safe food and keep the ecosystem healthy, emphasis on promotion of natural farming is being given in the district. This noble technology has been up-scaled by the joint efforts of KVK and ATMA. At present, about 43000 farmers have taken up this venture in an area of about 8000 ha.



Natural Farming in the district



Demonstrations on Natural Farming in the district

12. FERTILIZER CONSUMPTION

The data w.r.t. fertilizer consumption in Mandi district of Himachal Pradesh (Table 20) reveals that during 1975-76 total NPK consumption was merely 2298 MT which has increased to 7767 MT by 2020-21. Significant increase to the tune of about 237% has been observed in the total fertilizer consumption over the base year. The per hectare fertilizer consumption has also increased from 16.02 kg (during 1975-76) to 39.62 kg (during 2020-21). Integrated nutrient management and soil test based fertilizer recommendations has been the major focus of the KVK to ensure balanced fertilizer application for optimizing the yield in various crops and KVK is regularly engaged in this endeavor.

Table 20. Trend of fertilizer consumption (MT)

Year	Kharif (N+P+K)	Rabi (N+P+K)	Total (N+P+K)	Fertilizer consumption (Kg/ha)
1975-76	1149	1149	2298	16.02
2019-20	3220	3847	7067	39.62
2020-21	3838	3929	7767	-
% increase in 2019-20 over base year	180.24	234.81	207.53	147.32
% increase in 2020-21 over base year	234.02	241.94	237.98	-

Source:- 1. Statistical outline of Himachal Pradesh 1981, Directorate of Economics and Statistics, Himachal Pradesh, Shimla.

2. Economic survey 2020-21, Economic & Statistics Department, Government of Himachal Pradesh.

3. Economic survey 2022-23, Economic & Statistics Department, Government of Himachal Pradesh

13. FARM MACHINERY

A critical look at the data given in Table 21 revealed that number of hand and animal operated farm tools and equipments have been declined however, use of power operated farm machinery significantly increased in the district indicating the importance and significance of farm mechanization among the farming community. Favorable policies of the government with provision of financial assistance for farm mechanization and technological backstopping/ demonstrations on latest farm machinery by KVK are the reasons for up-scaling of farm mechanization in the district.

Table 21. Status of farm machinery

Particulars	Number			% increase over	
	1982	2001-02	2011-12	1982	2001-02
Hand operated	185993	1196754	486008	161.30	-59.39
Animal Operated	159855	465520	409334	156.07	-12.07
Power operated	1568	1798	27224	1636.22	1414.13
Miscellaneous	0	23	1985	-	8530.43

Source: 1. Statistical abstract of Mandi district of Himachal Pradesh, 2019-20. 2. Input survey, GOI



Agri-drone demonstrations in the district

14. LIVESTOCK PRODUCTION

Livestock is an integral component of farm families in Mandi district of Himachal Pradesh and plays a significant role in the agriculture development. The data presented in Table 22 revealed that cattle population declined by 5.14% compared to the base year. Likewise, buffaloes, sheep and goat population also declined to the tune of 5.50 to 49.36%. Overall, there was about 17% decline in the total livestock population in the district when compared with the base year of 1970-71. Rapid farm mechanization in the farming sector might be the reason for the reduction in the cattle population in the district. In spite of decline in cattle population, the productivity of animals has increased



Livestock diversification in the district

owing to balanced nutrition and management of animals due to awareness and extension support by the KVK and animal husbandry department. However, despite reduction in the cattle population in the district, poultry farming is gaining momentum and about 70% increase in the poultry population has been observed.

Table 22. Status of livestock and poultry

Particulars	Number			Percent change over base year
	1970-71	2012 census	2019 census	
Cattle	378752	439767	359296	-5.14
Buffaloes	87103	69320	63856	-26.69
Sheep	180954	113953	91631	-49.36
Goat	200312	195465	189289	-5.50
Others	3002	8143	146	-95.14
Total livestock	850123	826648	704218	-17.16
Total poultry	39378	67355	67355*	71.05

Source : 1. Statistical outline of Himachal Pradesh 1981, Directorate of Economics and Statistics, Himachal Pradesh, Shimla.

2. Statistical abstract of Mandi district of Himachal Pradesh, 2019-20.

3. 20th Livestock census, Animal Husbandry Statistics, Department of Animal Husbandry and Dairying, GOI. * Census 2012 data.



Poultry farming in the district

15. KVK'S CONTRIBUTION IN AGRICULTURAL TRANSITION

Krishi Vigyan Kendra (KVK), Mandi, Himachal Pradesh was established in 1995 as a part of the National Agricultural Extension Initiative by the Indian Council of Agricultural Research (ICAR) to provide farmers with the latest technology, training, and hands-on experience to improve productivity and sustainability. Since its inception, it catered to the needs of the farmers in the district, with a focus on addressing the region's specific agricultural challenges. The Mandi region, known for its diverse agro-climatic zones, primarily relies on horticulture, and traditional farming practices. KVK Mandi has played a pivotal role in enhancing the agricultural practices in the area by introducing modern techniques in crop production, horticulture, animal husbandry, organic/ natural farming *etc.*, thus improving the overall productivity and farm income through various scientific and extension interventions. A brief detail of major activities during last 20 years which propelled the agriculture transition in the district is as under

- **On-Farm Trials (OFTs) and Frontline Demonstrations (FLDs):** KVK has conducted 274 On-Farm Trials (OFT) covering 1287 farmers and frontline demonstrations in 913.59 ha area covering 6874 farmers (Table 24) to test and

Table 23: Activities undertaken by KVK (2004-2023)

Particulars	Value
No. of OFTs conducted	274
No. of farmers covered under OFTs	1287
Area under FLDs	913.59
No. of farmers covered under FLDs	6874
Total No. of trainings conducted	1598
Total No. of farmers covered in trainings	45724
Seed production at KVK Farm (q)	993.94

demonstrate improved agricultural practices, crop varieties, and technologies suited to local agro-climatic conditions which has helped farmers to increase productivity and reduce input costs, directly boosting farm income. Year wise details of OFT and FLDs conducted and beneficiaries covered have been presented in Fig. 6 & 7.

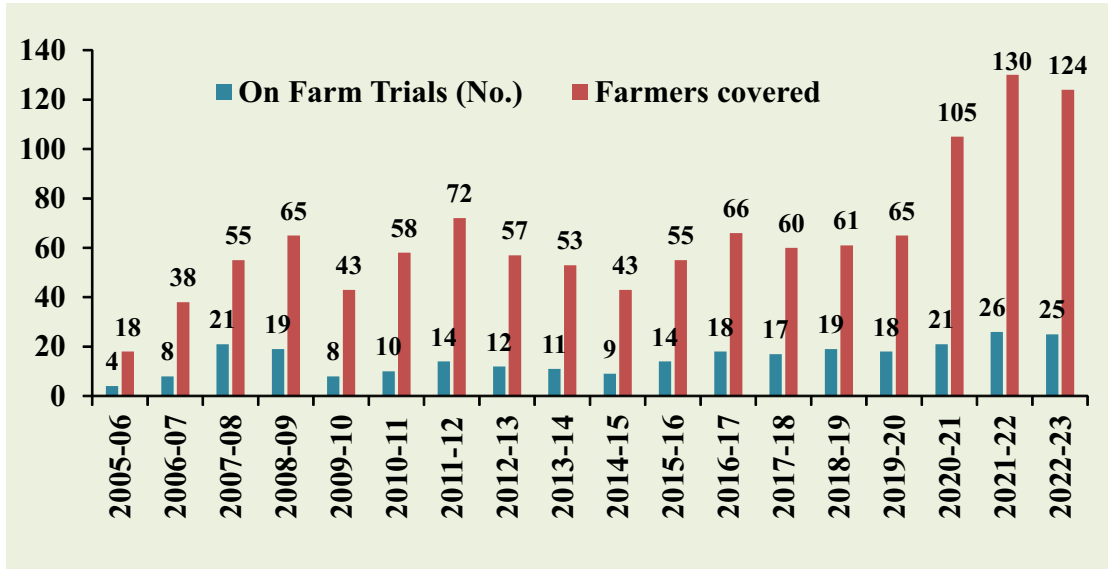


Fig 6. Year wise details of On Farm Trials and farmers covered

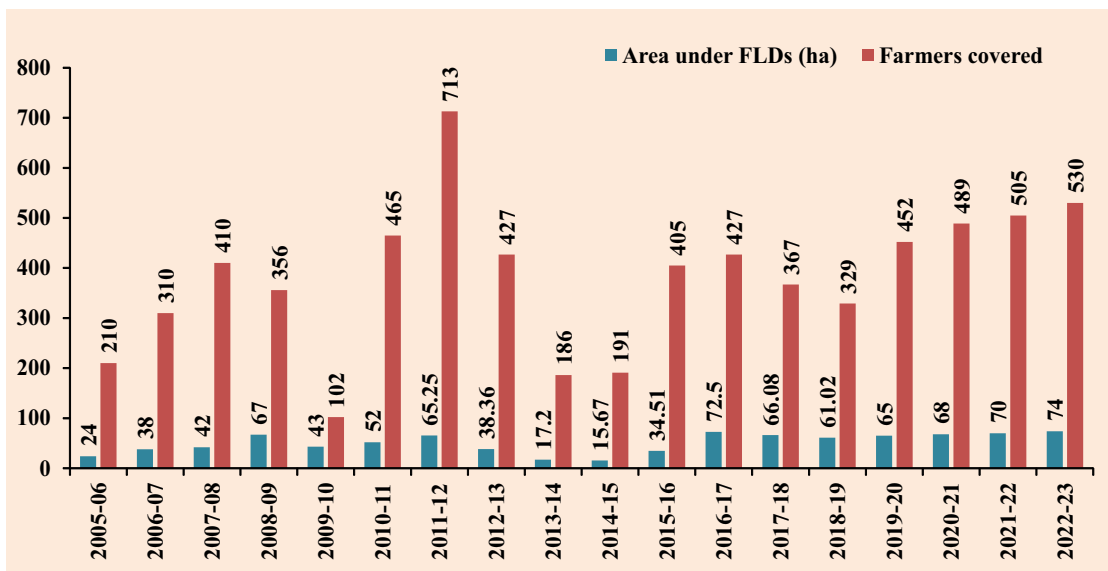


Fig 7. Year wise details of Front Line Demonstrations and farmers covered

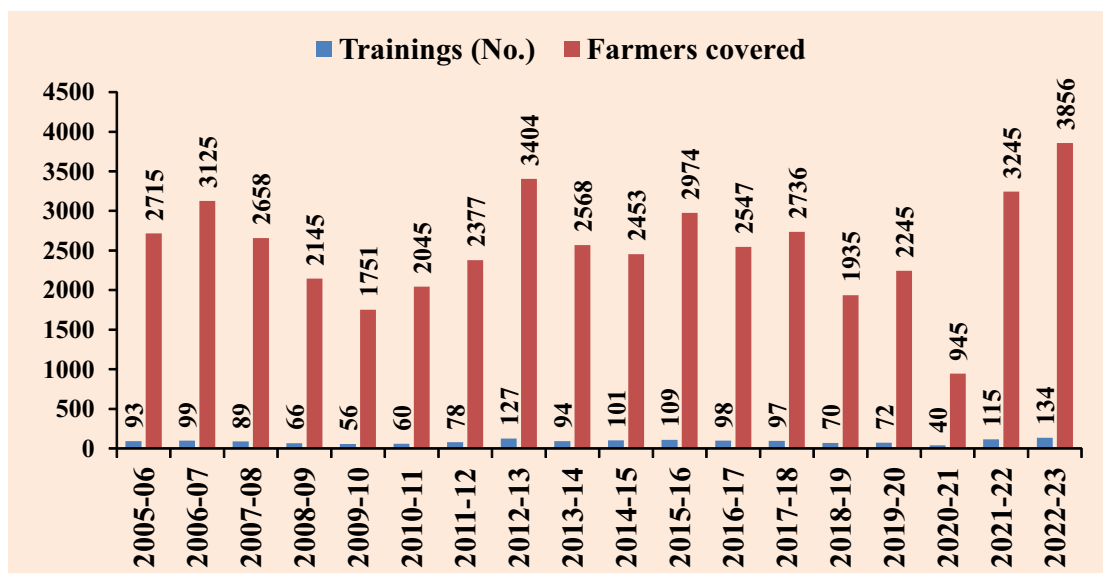


Fig 8. Year wise details of trainings and farmers covered

- Training and Capacity Building:** By organizing targeted training programs on crop production & protection, water management, exotic & off season vegetable cultivation, horticulture, post-harvest handling *etc.*, KVK has empowered farmers, rural youth, and women to adopt best practices and diversified their income sources. A total of 1,598 capacity-building programs (Table 24) have been conducted on diverse topics including crop production, crop protection, vegetable cultivation, orchard management, INM, IPM, IDM, mushroom production, value addition, and livestock management *etc.*, benefiting farmers, farm women, rural youth, and extension personnel. Year wise details of capacity building programmes conducted and beneficiaries covered have been presented in Fig. 8.
- Promotion of Improved Seed Varieties:** KVK has facilitated the production and dissemination of high-quality breeder and foundation seeds, encouraging the adoption of improved, high-yielding, and disease-resistant crop varieties, leading to enhanced crop productivity and higher profits. Approximately 780 q high-quality breeder and foundation seed of HYVs has been produced during last 20 years at its farm, which has been subsequently provided to the Department of Agriculture for seed multiplication (Table 24). The KVK collaborates closely with local farmers to enhance their income through scientific interventions and sustainable farming practices.

KVK Awards and Recognitions

The KVK Mandi has been bestowed with numerous prestigious awards over the years, highlighting the exceptional contributions to agricultural development and innovation in the district. Some awards are as under

- ❖ **ICAR Pt. Deen Dayal Upadhyay Krishi Vigyan Protsahan Puraskar (Zonal), 2017** – Presented by the Hon'ble Prime Minister of India, recognizing outstanding performance in agricultural innovation.
- ❖ **ICAR Best KVK Award (Zonal), 2012** – Conferred by the Hon'ble Union Minister of Agriculture, Government of India.
- ❖ **HP State Innovation Award, 2014** – Awarded by the Himachal Pradesh State Innovation Council to Dr. Pankaj Sood for pioneering work in agricultural research.
- ❖ **Nomination to the Board of Governors, IISER Tirupati** – Dr. Pankaj Sood was nominated to this prestigious position by the Ministry of Human Resource Development, Government of India.
- ❖ **Best Presentation Award (Zonal), 2020** – Recognized at the Zonal Workshop of KVKs organized by ICAR ATARI, Zone 1, Ludhiana.
- ❖ **Performance Excellence Awards, 2024:**
 - *Best Programme Coordinator (HP)* – Awarded on ICAR ATARI Foundation Day.
 - *Best NICRA Centre (Zonal)* – Recognized at the Zonal Workshop of NICRA KVKs, ICAR VPKAS Almora.
- ❖ **Vice Chancellor's Appreciation Certificate, 2015** – Acknowledging outstanding service and contributions to agricultural research and development.
- ❖ **Best Presentation and Poster Awards** at various international and national conferences and symposia

Farmers associated with KVK Mandi have also been recognized nationally for their innovative agricultural practices and outstanding achievements. A few notable one are as under:

- ❖ **Sh. Nek Ram Sharma** – Honoured with the **Padma Shri Award 2023**, one of India's highest civilian awards, for his contributions in promoting cultivation of millets.

- ❖ **Sh. Parma Ram Choudhary** – Awarded the **ICAR Jagjivan Ram Abhinav Kisan Puraskar, 2013** by the Union Agriculture Minister, Government of India.
- ❖ **Sh. Tej Ram** – Received the **Outlook Innovation Award, 2017** (for less than 2 hectares) from the Union Agriculture Minister, Government of India.
- ❖ **Sh. Sanjay Kumar** – Honored with the **ICAR Pt. Deen Dayal Upadhyay Antyodaya Krishi Puruskar, 2019-20** for his exemplary agricultural contributions.
- ❖ **Sh. Kundan Lal** – Awarded the **ICAR Pt. Deen Dayal Upadhyay Antyodaya Krishi Puruskar, 2020-21**, recognizing his dedication to farming excellence.
- ❖ **Smt. Sneha Sharma** – Her success story was published by TAAS, New Delhi, along with a cash award of ₹ 1.0 lakh.
- ❖ **Smt. Kalpana Sharma** – Nominated for the **DD National Woman Farmer Award, 2018** in New Delhi.



ICAR Pt. Deen Dayal Upadhyay Krishi Vigyan Protsahan Puraskar (Zonal), 2017
by Hon'ble Prime Minister of India



HP State Innovation Award, 2014 to Dr. Pankaj Sood by Former Chief Minister of Himachal Pradesh



Sh. Nek Ram Sharma receiving Padma Shri Award from Hon'ble President of India



ICAR Pt. Deen Dayal Upadhyay Antyodaya Krishi Puraskar, 2020 & 2021 to Sh. Sanjay Kumar & Sh. Kundan Lal

16. CONCLUSIONS

The establishment of KVKs by the ICAR was an important institutional innovation, marking a significant milestone in the last five decades. The continuous growth of KVK system across the country signifies the importance of these district level institutions in transforming agriculture and allied sectors owing to their crucial role in assessment and dissemination of latest agricultural technologies, earning widespread appreciation for their impactful contributions. It is a robust system due to frontline initiatives and is a dynamic hub for research, extension, and capacity building, facilitating the seamless transfer of cutting-edge agricultural technologies at grass root level directing impacting the farming communities.

Mandi district of Himachal Pradesh has emerged as one of the leading agricultural district especially in the area of crop diversification in the state. This diversification



might be attributed to the favorable agro-climatic conditions to grow various temperate fruits and off-season vegetables apart from favorable government policies for the benefit of farming communities. Further, strong research and extension support has provided the new options to the farmers by introduction and up-scaling of the improved farm technologies. Along with other agencies, CSKHPKV, KVK Mandi has played a significant role in transformation of agriculture development in the district for which KVK Mandi and five farmers of the district have been honored with the national awards. The growth of agriculture sector has been found quite satisfactory when compared with last fifty years data, however in order to keep the pace of development more static focused and concrete efforts are required for the progress and prosperity of the farming community.



His Excellency Governor of HP Acharya Devvrat's and Union Health Minister Sh. J.P. Nadda's Visit to KVK



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