



# INEQUALITIES IN DISTRIBUTION OF OPERATIONAL HOLDINGS IN HIMACHAL PRADESH

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## ABSTRACT

Himachal Pradesh being a Himalayan state with hilly terrains and tough geographic conditions suffers from multiplicity of problems. Unlike rest part of the country the agriculture sector in Himachal Pradesh plays more important role in the lives of its people. The objectives of this research are to investigate the trends of land holdings distribution in Himachal Pradesh and to examine the inter-district differentials in land holdings in Himachal Pradesh. The data was collected from various secondary sources like: NSSO and agricultural census reports. Compound Annual Growth Rate was used to explain the growth rate and Gini coefficient used to explain the inequalities in operational holdings. The number of marginal and small farmers increased faster than the area under these farmers, shows the large amount of tiny operational holdings in Himachal Pradesh. In some districts noticed a reduction in inequalities in distribution of operational holdings, whereas other remaining districts have been of change in the reduction in the inequalities. Whereas, in Kinnaur district inequalities in distribution of operational holdings have been increased. the major institution changes are the breaking-up of the joint family system while major legislation are the two phases of land ceiling to support small farms. The other complementary factors are heavily dependence on agricultural for livelihood, and legislation development in cropping system and productivity. To make agricultural sector more sufficient and to decline these tiny operational holdings it is necessary to reduce this over dependence on agricultural by developing the both secondary and tertiary sectors to provide the greater amount of employment opportunities in the both sectors.

**KEYWORDS:** Operational Holdings, Inequalities, Farmers

Agriculture plays a significant role in the development of Indian economy. According to Central Statistical Organization, Ministry of Statistics & Programme Implementation's Annual National Income provisional estimates for 2022-23, the agriculture and allied sectors accounted for 18.3% percent of Gross Value Added (GVA) of the country. In India the sector accounts for 54.6 per cent of total human resources (Census, 2011). Of the total 139.4 million hectare of net sown area approximately 68.6 million hectares is net irrigated area. The small and marginal holdings that consist of operational holdings less than 2 hectares of land constituted 86.06 per cent of total land holdings in 2015-16 with average size of 1.08 hectare (Agricultural Census, 2015-16). Given this significance, the role played by agriculture sector in overall economic development of the country is of utmost importance. However, looking into the issues faced by the sector, it is evidenced that the agriculture sector in India suffers from various problems and bottlenecks. These issues and challenges have plagued the growth of agriculture sector.

Himachal Pradesh being a Himalayan state with hilly terrains and tough geographic conditions suffers from multiplicity of problems. Unlike rest part of the country the agriculture sector in Himachal Pradesh plays more important role in the lives of its people. Being only state in India, 89.96 per cent population in Himachal Pradesh lives in rural areas and where the sector provides employment directly to approximately 70 per cent of total workers of the state (Census, 2011). Approximately, 80 per cent of total cultivated area of the state is rain fed. On land distribution aspect, as per the agricultural census 2015-16, 88.86 per cent of total land holdings are of small and marginal farmers. Agriculture and allied sector's share in gross value added (GVA) of the state at current prices stood at 14.74 per cent in 2023-24 (Economic Survey, 2020-21).

Given the conditions under which agriculture sector in Himachal Pradesh is operating and the importance the sector holds in the livelihood of its people, the study on the issues and challenges faced by the sector became important. Various researchers from time to time have conducted research studied on these issues and challenges.



Singh (1996)<sup>01</sup> in his study on “The trends in operational holding in Himachal Pradesh” for the period 1970-71 to 1990-91 found that during the study period there exists disparities between the number of holdings and area under operation. The area and number of marginal and small holdings have increased significantly than medium and large holdings. Aslam M. and Anuradha (2019)<sup>02</sup> in their research work on establishing the size of farm and productivity relation in Himachal Pradesh finds that in Himachal Pradesh 9 districts reveals negative relationship between farm size and productivity. The study makes use of the National Sample Survey Organization unit level data on situation assessment survey of farmers in India. The study highlighted the use of high yield variety seeds, fertilizers, pesticides and irrigation by the small farmers as the prime reason for this inverse relationship. One another study Kaushik (1993)<sup>3</sup> on operational holdings distribution inequalities in Himachal Pradesh which was totally based on secondary data, concluded that the value of Gini coefficient has declined from 0.6081 to 0.5483 during the study period. Theil's index computed that the concentration has increased in the former and decline in the case of area operated. Atkinson's index which has declined from 0.5455 to 0.4110 between the study period, implies that same level of social welfare can be obtained with 45 percent of the total operated land during 1970-71 and 58.9 percent of the operated land in 1985-86 which has favorable effect on both Production and social welfare, it all concluded that the trends in inequality have been declined consistently

These studies along with various other studies highlighted the existence of skewed land holding distribution and its impact on the economy in the form of low per capita income, stagnant growth and other socio-economic evils. The research studies also reveal that the distribution inequality of landholdings affects productivity and density of land, resulting marginal holdings that are uneconomical for cultivation.

### **Structure of Operational Holdings**

The NSSO has defined operational holding as: “an operational holding was a techno-economic unit used wholly or partly for agricultural production and operated by one person alone with the assistance of others, without regard to little, size or location”. Operational land holdings determined the socioeconomic level of a family in an agricultural based economy. To determine the choice of agriculture technology, for increasing the agriculture production and to generate the employment favorable circumstances, the size of operated holdings is playing a very crucial role. Therefore, the declined in the average size of operational holdings census suspicion for policymakers.

## **MATERIALS AND METHODS**

### **Objectives**

This study has been made to achieve the following objectives;

- i) to examine the trends of land holdings distribution in Himachal Pradesh;
- ii) to examine the inter-district differentials in land holdings in Himachal Pradesh; and
- iii) to make suggestions for reduction of disparities on the basis of present study.

### **Methodology**

To fulfill the above stated objectives, the data has been collected from secondary sources. Namely National Sample Survey Organization (NSSO) reports and the Agricultural Census Reports on land holdings are the two major sources of the data. Information on various aspects of operational holdings has been obtained through sample surveys carried out at the district level. The Agricultural census emerged after 1970 as part of the world Agricultural Census Programme (1970). Also, with endorsement of the National Commission on Agriculture (1976) Indian Govt. conducted Agricultural census. Since then, the data has been available for the years 1970-1971, 1985-86, 2000-01, and 2015-16. The data sets analyzed as follows;

1. Number and area of operational holding.
2. Five classes of farmers viz. marginal, small, semi-medium, medium, and large. \

### **Analytical Procedure**

In order to simplify the study and to make it more comprehensive, tabular analysis has been used. For example, compound growth rates have been analyzed to see the variation in operational holdings distribution in each of the census. Gini coefficient of concentration has been applied in order to quantify the concentration of operational holding over the time.

**a) Compound Growth rate (C. G. R.):** To find compound growth rates, the exponential function is fitted using the least squares method, has been used as under:

$$y=ab^t$$

$$C.G.R. = (b-1)100$$

b= of log b's antilog



Where  $\log b = \frac{N\sum(t \log y) - \sum t \sum \log y}{N\sum t^2 - [\sum t]^2}$

y = considered variables include the quantity and location of operational holdings.  
 t= Variable of time, a= Constant variable, n=number of observations.

**b) Gini Concentration Ratio (G.C.R.):** It has been used to measure the extent of disparities in ownership of productive resources. The following technique has been used to obtain the Gini concentration Ratio:

$G.C.R. = 1 - \sum_{j=1}^N p_j(Q_j + Q_{j-1})$

Where  $p_j$  is proportion of holdings in  $j^{th}$  category of farms:

$Q_j$  is cumulative proportion of holdings in farm categories.

$Q_{j-1}$  is cumulative proportion of holdings in  $(j - 1)^{th}$  farm category and n is the total number of farm size categories.

**RESULTS AND DISCUSSION**

**Number of operational holding in Himachal Pradesh**

Table 1 shows the distribution of number of operational holdings from 1970-71 to 2015-16. Where it clearly indicates that number of marginal holdings increases very sharply, where it has been 58.2 per cent in 1970-71 increases to 71.45 per cent in 2015-16. Other than marginal operational holding all the remaining four categories (i.e. Small, Semi-medium, medium, large). Small operational holdings decreases 20.2 per cent in 1970-71 to 17.4 per cent in 2015-16, semi-medium operational holding was 14.2 per cent in 1970-71 and it decreases to 8.26 per cent in 2015-16. In the case of medium operational holding it was 6.3 per cent in 1970-71 and it decreases to 2.6 per cent in 2015-16 and in large operational holding it was 1.1 per cent in 1970-71 decreases to 0.3 per cent in 2015-16. It means the number of marginal holders increasing constantly which leads to shrink the size operational holdings.

**Table 1**  
**Distribution of Number of Operational Holdings in H.P.**

S. NO.	Class Size	Number of Operational holdings in Himachal Pradesh			
		1970-71	1985-86	2000-01	2015-16
1.	Marginal (Below 1 ha.)	354625 (58.2)	447031 (60.7)	614942 (67.3)	712204 (71.45)
2.	Small (1-2 ha.)	123682 (20.2)	155311 (21.1)	174230 (19.1)	173456 (17.4)
3.	Semi-medium (2-4 ha.)	86274 (14.2)	92173 (12.5)	89873 (9.8)	82265 (8.26)
4.	Medium (4-10 ha.)	38146 (6.3)	36352 (4.9)	30899 (3.4)	25920 (2.6)
5.	Large (10 ha. & above)	6732 (1.1)	5643 (0.8)	3970 (0.4)	2964 (0.3)
6.	Total	609145 (100.0)	736510 (100.0)	913914 (100.0)	996809 (100.0)

**Source:** Report of Agriculture census, Directorate of Land Records, Shimla 1970-71 to 2015-16 (various issues) Government of Himachal Pradesh,

**Note:** Figures in parenthesis are denote percentage to the total.

**Operational holding’s Area Distribution in Himachal Pradesh**

After analyzing operational holding’s number the area under these holdings has been represented in the Table 2. Table 2 shows the Area under the five grouping of operational holdings (i.e. marginal, small, semi-medium, medium and large) in Himachal Pradesh. It shows that the area under marginal and small operational holdings increases and area under semi-medium, medium and large holdings decreases during study period. In the case of marginal holding it increases to 14.5 per cent in 1970-71 to 30.23 per cent in 2015-16 and 19 % in 1970-71 increases to 25.66 per cent in 2015-16. But in the case of semi-medium it decreases to 25.7 per cent in 1970-71 to 23.65 per cent in 2015-16, it also decreases for medium and large holdings.

**Table 2**  
**Operational Holding’s Area Distribution in Himachal Pradesh**  
**(In Hectares)**

S. NO.	Class size	Operational Holding’s Area in Himachal Pradesh			
		1970-71	1985-86	2000-01	2015-16
1.	Marginal (Below 1 ha.)	135462 (14.5)	200356 (20.4)	251772 (25.7)	285428 (30.23)
2.	Small (1-2 ha.)	176537 (19.0)	222589 (22.7)	244629 (25.0)	242313 (25.66)
3.	Semi-medium (2-4 ha.)	238872 (25.7)	254561 (26.0)	243316 (24.8)	223343 (23.65)
4.	Medium (4-10 ha.)	220664 (23.7)	207656 (21.2)	175879 (18.0)	146156 (15.48)
5.	Large (10 ha. & above)	159326 (17.1)	94850 (9.7)	63160 (6.5)	46986 (4.98)
6.	Total	930861 (100.0)	980012 (100.0)	978756 (100.0)	944227 (100.0)

**Source:** Government of Himachal Pradesh, Report of Agriculture census, Directorate of Land Records, Shimla 1970-71 to 2015-16 (various issues).

**Note:** Figures in parenthesis are denote percentage to the total.

**Annual Compound Growth Rate of Operational Holdings in Himachal Pradesh**

Area and number patterns of five groups of holdings in Himachal Pradesh from 1970-71 to 2015-16 have been calculated by using logarithmic functions of time (i.e. difference in the number of years in between census). The results have been shown in the Table 3. Table 3 clearly shows that the annual compound growth rate of marginal and small farmers have been positive and for semi-medium, medium and large categories of farmers it has come negative during the period of 1970-71 to 2015-16. Where annual compound growth on the marginal farmers has been workout 1.60 per cent in number and area of operational holdings. It is higher on the marginal farmers category and lesser on the large farmers category. Thus, It can be concluded form the table that the annual compound growth rate in number of operational holdings came to 0.80 per cent on the small famers category, -0.1 per cent on the semi-medium category, -0.9 % on the medium farmers and -2.0 on the large farmers category and area of operational holdings was 0.70 % on the small farmers category -0.2 per cent on the semi-medium farmers category, -0.9 % on the medium farmers category and -2.8 % on the large farmers category. Further it is crystal clear that the compound annual growth rates i.e. number and area wise across categories revealed that the small and marginal land holders had gained both in number and area operated where the medium and large land holders loss the share in number and area wise.

**Table 3**  
**Annual compound Growth Rates of the Number and Area of Operational Holdings**  
**In Himachal Pradesh**

S. NO.	Type of Holdings	Number	Area
1.	Marginal	1.6	1.6
2.	Small	0.8	0.7
3.	Semi-Medium	-0.1	-0.2
4.	Medium	-0.9	-0.9
5.	Large	-2.0	-2.8
6.	Total	1.1	0.01

**Source:** As in Table 1 and 2

**Inter District Differentials in Operational Holdings in Himachal Pradesh**

Gini-coefficient is the measure of amount of concentration and is commonly used to represent inequities. Its value lies always between zero and one, where zero means no inequality and one means all inequalities.

Gini coefficient’s values for area and number of operational holdings has been represented in table 4. Gini-coefficient calculated for all the districts from 1970-71 to 2015-16. The table 4 shows the operational holdings concentration, decreased significantly among all districts during 1970-71 to 2015-16 except Kinnaur district where it has 0.51 in 1970-71 and increased to 0.52 in 2015-16. As regards 1985-86, showed a decreasing trend in ten districts, while in Lahaul & Spiti district (0.46) it was increased and in Sirmaur district (0.56) the value of Gini-



coefficient remained unchanged. The value of Gini-coefficient shows an increasing trend in district Bilaspur (i.e. 0.42), Solan (i.e. 0.47) and Kinnaur (i.e. 0.51) whereas, it shows a decreasing trend in district Una (i.e. 0.55), Kangra (i.e. 0.51), Hamirpur (i.e. 0.45), Shimla (i.e. 0.46), Kullu (i.e. 0.37), Mandi (i.e. 0.40), Lahaul & Spiti (i.e. 0.41), Sirmaur (i.e. 0.55), and Chamba (i.e. 0.37) according to 2000-01 census. Whereas, inequalities in distribution of operational holdings have been increased in district Hamirpur (i.e. 0.49) and Kinnaur (i.e. 0.52), and it shows a decreasing trend in district Solan (i.e. 0.37), Lahaul & Spiti (i.e. 0.40), Bilaspur (i.e. 0.37), Mandi (i.e. 0.36), Chamba (i.e. 0.35), Kullu (i.e. 0.33), Una (i.e. 0.52), Sirmaur (i.e. 0.54), Kangra (i.e. 0.49) and Shimla (i.e. 0.45) according to 2015-16 census.

The Gini-coefficient clearly indicate that reduction in inequalities (except Kinnaur) has been observed in operational holdings distribution in the study period. The marginal and small farms has increased rapidly due to laws favoring small farms. The number and area w.r.t. large farms also shows a reduction that is similar in percentage terms. This could explain why the Gini coefficient dropped from 1970–1971 to 2015–2016. The figure has revealed significant differences between large and marginal or small farms in the area where operations are taking place.

**Table 4**  
**Gini Coefficient in Area and Number of Operational Holding in Himachal Pradesh**

Districts	1970-71	1985-86	2000-01	2015-16
Bilaspur	0.47	0.41	0.42	0.37
Chamba	0.45	0.38	0.37	0.35
Hamirpur	0.53	0.49	0.45	0.49
Kangra	0.64	0.53	0.52	0.49
Kinnaur	0.51	0.49	0.51	0.52
Kullu	0.46	0.41	0.37	0.33
Lahaul & Spiti	0.45	0.46	0.41	0.40
Mandi	0.49	0.43	0.40	0.36
Shimla	0.54	0.49	0.46	0.45
Sirmaur	0.56	0.56	0.55	0.54
Solan	0.56	0.46	0.47	0.37
Una	0.66	0.59	0.55	0.52
Total	0.58	0.50	0.49	0.47

Source: As in Table 1 and 2

## CONCLUSION, AND POLICY IMPLICATIONS

Thus, it can be drawn from the present chapter that the total area and number of operational holdings has increased in Himachal Pradesh during the period under consideration. The number of marginal holders and area owned by them has increased during 1970-71 to 2015-16, number of small farmers has been increased from 1970-71 to 2000-01 but it has decreased between the period of 2000-01 to 2015-16, the area owned by them has follows the same pattern where it has increased from 1970-71 to 2000-01 and decreased between 2000-01 to 2015-16. The remaining groups (i.e. semi-medium, medium and large farmers) show a gradual decline in both the terms (number and area) during the study period.

For the number of operational holdings, the C.A.G.R. indicates that marginal and small farmers have upward trends while remaining categories has downward trend for period under consideration. For area of operational holdings on the all five size groups same trends are obtained, but the main difference between both growth rates that, the growth rate of total number of operational holdings has been increased comparatively faster than the growth rate of the total area under these holdings. Which clearly indicates that the total number of holdings increases very fastally and the total area under these holdings increased gradually.

Thus, it is clear that for all the districts, there are now much more operating properties in the marginal group. The number and size of their operating holdings increased significantly for marginal and small farmers, but in all twelve districts, medium and big farmers saw a decline in both of these metrics. Since the percentage and area in this group for the majority of the districts are practically equal, the average size of the holding declined somewhere among the small farmers. In 2015–16, the Lorenz curve, which is steeper in Kullu district and flatter in Sirmaur, confirmed that the Gini-Coefficient values are higher in Sirmaur district and lower in Kullu

Further analysis reveals that marginal and small farmers have accounted for a portion of operating holdings in terms of both number and size from 1970 to 2015. Although the distribution of operating ownership from 1970 to



2015 showed less inequality, according to Gini coefficient values. Over this time, there hasn't been much of a change in the total operating area.

Gini-Coefficient shows that the inequalities in distribution of operational holdings in three districts i.e. Sirmaur, Lahaul & Spiti and Kinnaur has been almost same or no changes during the study period, it can be due to because in these district there is still exiting of joint family system. Also the average rainfall in Kinnaur and Lahaul Spiti is comparatively less than other districts, due to which the agriculture land is less fertile which results in less produce. The total land under agriculture is very less in these districts as people doesn't find this profession as much profitable. Some counting factor for less agriculture land in these districts is geographical terrain and multi snow covered months that makes it much difficult for the locals to even survive. These all factors are collectively responsible for insignificant change in distribution holdings.

### **Suggestion and Policy Implication**

The analysis of inequalities in operational holdings distribution indicated that marginal and small farmer's number and area has increased, the number and area of operational holdings decreased in the case of top of the land holdings hierarchy (i.e. medium and large categories of farmers). The number of marginal and small farmers increased faster than the area under these farmers, shows the large amount of tiny operational holdings in Himachal Pradesh. Hence, the implementation of radical land ceiling laws need to be accompanied by an action on many institutional fronts such as promoting some kind of co-operation among extremely small and non-viable holdings, the provision of complementary inputs like, seeds, fertilizers, cheap and adequate credit, promotion of agricultural related enterprise like diary, pisciculture etc. to make such holdings economically viable. Nearly 70 per cent of population depends on agricultural for its livelihood needs in Himachal Pradesh, to make agricultural sector more sufficient and to decline these tiny operational holdings it is necessary to reduce this over dependence on agricultural by developing the both secondary and tertiary sectors to provide the greater amount of employment opportunities in the both sectors

There is a variation in the distribution inequalities of operational holdings among all districts in Himachal Pradesh. Some districts noticed a reduction in the distribution inequalities, whereas remaining districts have been no change in the reduction of the inequalities. Whereas, in Kinnaur district inequalities in distribution of operational holdings have been increased. It can be due to the reason that in these district there is still exiting of joint family system. Also the average rainfall in Kinnaur and Lahaul & Spiti is comparatively less than other districts, due to which the agriculture land is less fertile which results in less produce. The total land under agriculture is very less in these districts as people doesn't find this profession as much profitable. Some counting factor for less agriculture land in these districts is geographical terrain and multi snow covered months that make it much difficult for the locals to even survive. These all factors are collectively responsible for insignificant change in distribution inequalities

Thus, in order to reduce the distribution inequalities of operational holdings as well as to raise the living standard of the farmers by way of enhanced availability of productive assets, skill gained and employment opportunities. The placed strategies have to be a mix of beneficiary oriented programs, developing human resources and infrastructure development. Steps should be made to transform minor irrigation, conserve soil and water, enhance rural connectivity and to reform laws.

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