Farm Size and Land Fragmentation Status in Bassi Tehsil Jaipur Rajasthan

Dr.Shefali Bhagotia

Assistant Professor,

Azimuth An Institute of Geography, Jaipur.

Abstract

This paper investigates the pattern of land holding fragmentation in the rural environment of Bassi tehsil of Jaipur for the agricultural year 2015-16. The major concern associated with land fragmentation seen in the study area was related to the increasing number of field parcels, distance among field parcels, small size and irregular shape of parcels with lack of accessibility. The study is based mainly on primary data collected with the help of structured field schedule and secondary data from the Tehsil headquarters and personal observations. It has been investigated that in the study area the level of land fragmentation can be observed by the fact that more than 2 plots per holdings with less than 1 hectare area. More than 2000 filed plots under 817 operational land holdings are actually operating in 1157 in hectare area. The average size of the field plot comes to only 0.57 hectares. high value 0.21in all holding size classes. Based on the findings, the study concluded with the suggestions that land holder should be encouraged for land consolidation and cooperative farming.

Key words: Land Holding Fragmentation, Operational land holding, Land Consolidation and Cooperative Farming

Introduction

Demographically induced change in landholding structure is, therefore, integral to an understanding of how population pressure can lead to land fragmentation. The law of inheritance ensures equal distribution of land property among all child of the family in the rural society of the study region. The most unavoidable provision of law of inheritance is the sole factor of excessive fragmentation of land holdings in Bassi Tehsil of Jaipur like other parts of state and country as a whole.

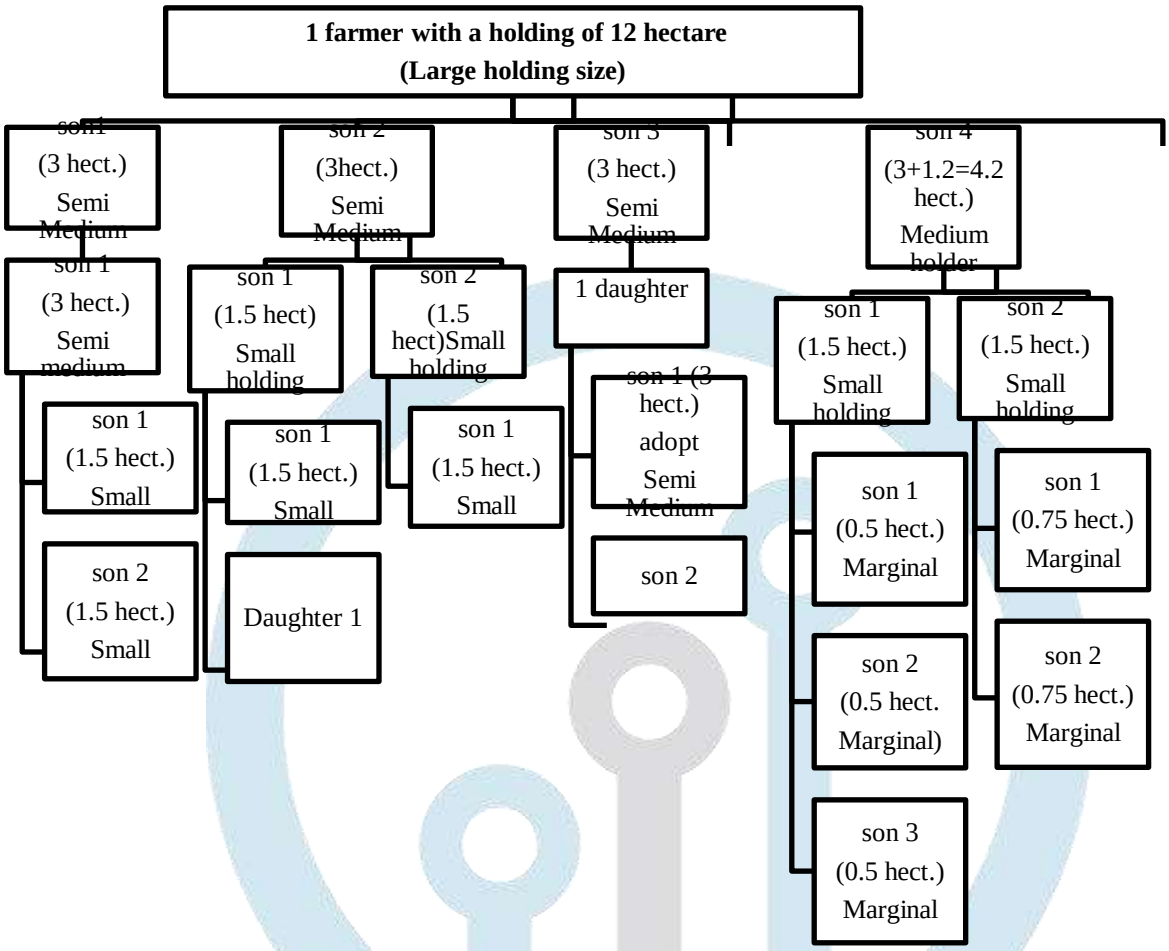
Naylon (1959) pointed out “Fragmentation as a 'Disease”, that produces no social benefits and at the same time precludes any rational and economic use of land. He also concludes that land fragmentation is the principal obstacle to the rationalization of Spanish agriculture. Chisholm (1962) in his study of rural settlements and land use concluded, “fragmentation as one of the major deterrents to economically viable cultivation, as it results in wastage of land, labour and material inputs. He also stressed that fragmentation is also responsible for increased

overhead costs, including cost of production which results in low returns from agriculture. Morgan and Munton (1971) indicated the primary cultural factors which influences the development of agriculture namely land tenancy, size of operational land holding, fragmentation and land tenure problems. He also indicated that the social system has a strong bearing on land holding and field systems and also on the settlement pattern and related problems of accessibility of fields. He further mentioned the influence of law of inheritance in governing the size of the holding which is the root cause of one of the greatest impediments to agricultural development. Jhonston and Kilby (1975) concluded that "farm size distribution constitutes one of the most critical variables in any agrarian structure and the size of distribution of operational units is directly related to rural income, migration, labor markets and other structural characteristics of the economy. Burton and King (1982) pointed out, "land fragmentation as the situation in which a single farm consists of numerous separated parcels, poorly organized at locations across space parcels. They also discussed the problems associated with land fragmentation as when parcels are spatially dispersed, travel time increases and hence costs in moving labor, machinery etc. from one parcel to another also increases. According to Bentley (1987) land fragmentation is also known as "pulverization", "parcellization" and "scattering".

Hung, Auley and Marsh (2007) indicated that though the causes of land fragmentation may vary from country to country and from region to region there are four main factors that triggers this situation is inheritance. Van Dijk (2004) discussed, "reduction of fragmentation occurs when the number of owners or users declines, the number of parcels per farm falls or when the share of owners that use the land themselves raises"(cited in Demetriou 2014).

The growing sub-division and fragmentation of agricultural holding make the adoption of modernized method in agricultural operation quite difficult and uneconomical together. According to the Agriculture Census 2015-2016 the categorized sizes of the landholding are marginal size class (less than 1 hectares), small size class (1-2 hectares), semi-medium size class (2-4 hectares) medium size class (4-10 hectares) and large size class (above 10 hectares).

Figure 1.0 indicates an idealized pattern of decrease of operational land holding size, that shows how law of inheritance (subdivision of land equally among heirs) increases the degree of land fragmentation. For example, if a farmer is having an operational land holding size of 12 hectares and have 4 sons then the land will going to be divided among all heirs with equal share of 3 hectares to each son. Again, after years if each of the individual son have 2 or 3 son or daughters respectively the land holding will again going to be divided among all heirs. This process continues with increase in the number of plots but reducing the area of each plot (from large/medium to small /marginal 12ha =3+3+3+3 and further decreasing). The plot size will increase from semi medium to medium / large when an extra field plot is added by purchasing or by some other process eg (3+1.2=4.2 from semi medium to medium)



Study Area :

Bassi Tehsil has been selected as study area. It is an important agricultural Tehsil of Jaipur district of Rajasthan. Bassi Tehsil is located in the east of Jaipur district between 26°40’ North and 26°59’ North latitudes and longitudes 75°54’ East to 76°20’ East. National Highway No. 11 passes through Bassi. The study area has a total geographical area of 650.69 sq. km. The study area comprises of 215 villages in all. There are 5 ILR circle namely Banskhov, Bassi, Devgaun, Kanota and Toonga with 44 Gram Panchayats and 43 Patwar Mandal. There are 3 Census Towns namely Bassi, Kanota & Baskhov and 1 Municipal Board Bassi in the study region (fig 2.0)

Fig 2.0

Objectives

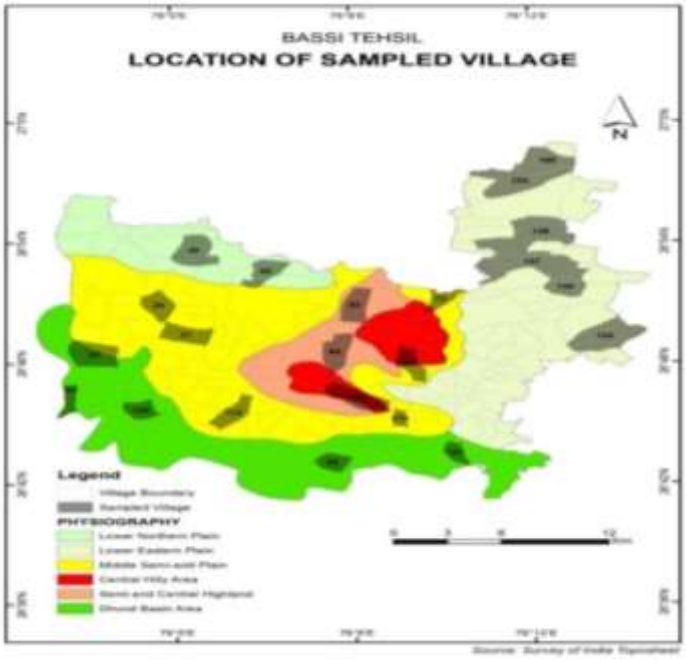
The main objective of the study is to investigate the degree or level of land fragmentation in the study area.

Data Base and Methodology

The study in Bassi Tehsil has been conducted on the basis of both secondary and primary data. Village Boundaries is obtained from the maps from Census 2011. Jamabandi Goswara has been collected for sampled village from Tehsil Headquarter. Rakba has been gathered for the sampled households based on Jamabandi and Girdauwari. For collecting information regarding land fragmentation data of the sampled households, Cadastral maps have been collected from Land Revenue and Settlement Office, Jaipur and Tehsil Headquarters. Field visit and Pilot Survey have been done on the basis of secondary data. Primary data information was collected from respondent household with the help of structured field schedule while conducting the field survey during 2015-16 in rabi period.

The study area comprises of 215 villages in all and has been classified into six physiographic regions on the basis of geological structure, relief, drainage, climate and soil. About 10 per cent villages has been sampled from six physiographic units of the study area by random sampling. Total 22 villages have been selected fig 3.0. Each sample village had been classified into five size classes according to Agriculture Census 2010-2011. The categorized sizes are marginal size class (less than 1 hectares), small size class (1-2 hectares), semi-medium size class (2-4 hectares) medium size class (4-10 hectares) and large size class (above 10 hectares). Further 10 per cent households have been selected based on stratified random sampling from each size class.

Fig 3.0



Distribution Number, Area and Average of Operational Land Holdings

The average size of the operational land holding in the sample households of Bassi Tehsil is 1.42 hectare. The highest average size of operational land holdings belongs to large size class with 12.17 hectare followed by medium size class (6.34 hectares), semi-medium size class (3.20 hectares) and small size class (1.45 hectares). The lowest average size of the operational land holdings belongs to marginal size class with only 0.49 hectares as indicated in the fig 4.0 Table 1.0

Table 1.0 Number and area of operational land holdings

Size class (hectare)	Number of operational holdings	Percentage of total operational holdings	Area (Hectare)	Percentage of total area	Average Size per operational holdings
Marginal(below1)	526	64.38	257.35	22.23	0.49
Small(1-2)	154	18.85	222.52	19.32	1.45
Semi-Medium(2-4)	76	9.30	243.04	20.99	3.20
Medium(4-10)	53	6.49	336.25	29.05	6.34
Large(above 10)	08	0.98	97.40	8.41	12.17
All size class	817	100.00	1157.56	100.00	1.42

Source: Based on field survey by the researcher in the agriculture year 2015-16

Fig 4 .0

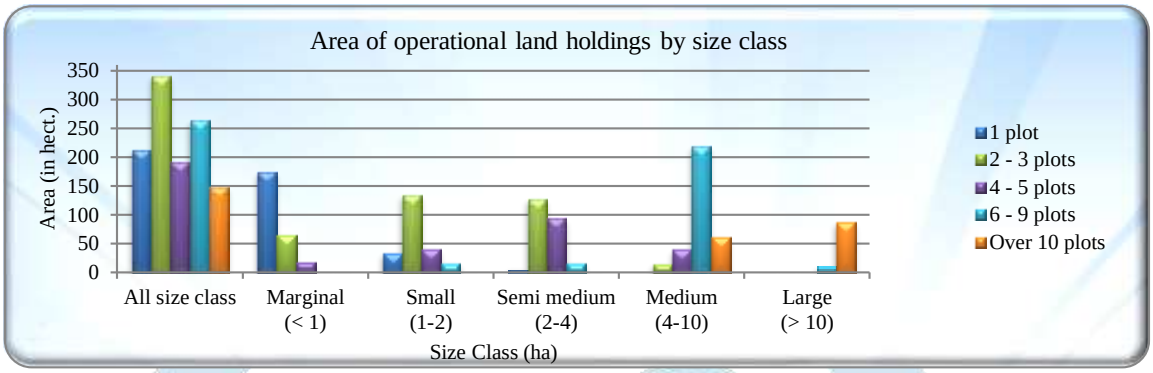
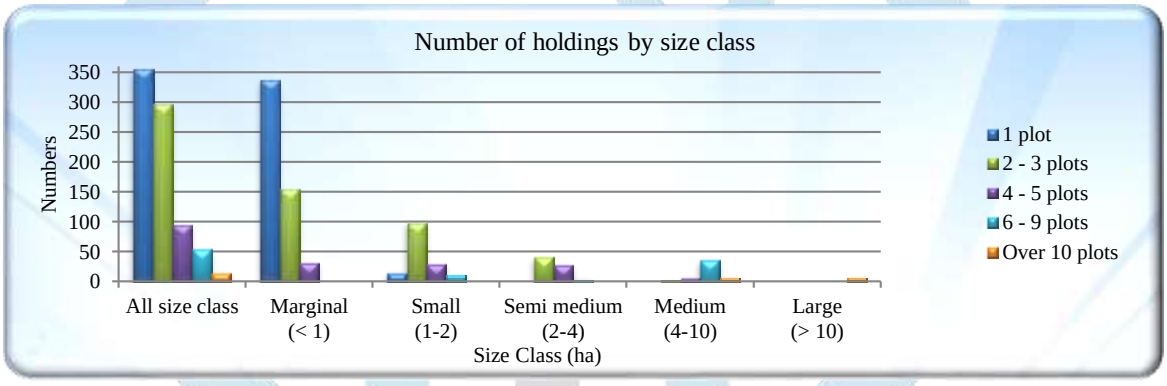


Fig 5.0



Number of Plots and Operational Land Holdings

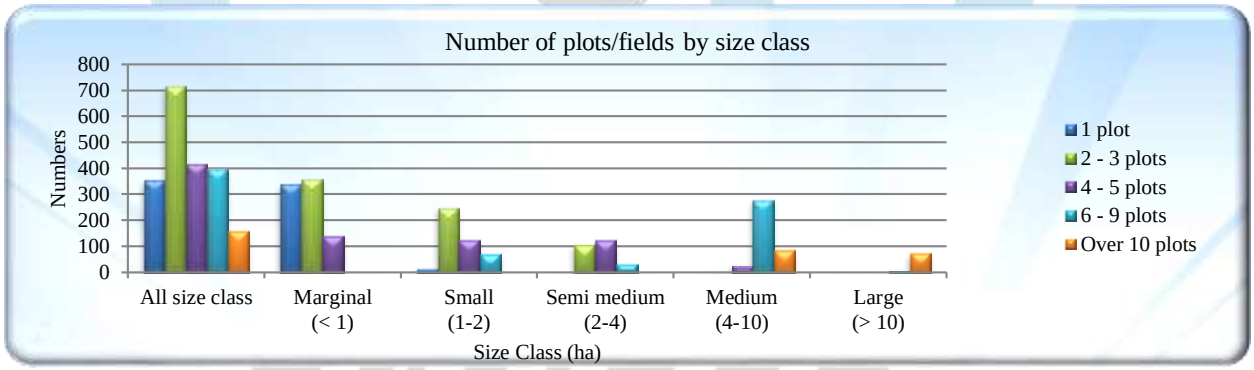
817 operational holding constitute 2047 number of field/plots operating in an area of 1157.56 hectare. The average number of plots is more than 2 with a mean plot size of 0.57 hectare. 355 field plots belong to 355 operational land holdings with a plot size of 0.60 hectare. 718 field plots belong to 299 operational land holdings with an average of 2.40 plots with a mean plot size of 0.47 hectare. 417 plots of 95 operational holding have an average 4.39 plots per holdings with a mean plot size of 0.46 hectare. 398 plots belongs to 53 operational holdings with more than 7 plots having a mean plot size of 0.66 hectare. There are 159 plots accounted with 15 operational holdings with more than 10 plots with a mean plot size of 0.93 hectare fig 5.0 and table 1.3.

Table 1.3 Number of plots and operational holding

Field plot distribution	Number of holdings	Number of plots	Total area (hectare)	Average area of plot	Average area of holding	Average number of plots
1 plot	355	355	212.73	0.60	0.60	1.00
2 – 3 plots	299	718	341.20	0.47	1.14	2.40
4 – 5 plots	95	417	191.33	0.46	2.01	4.39
6 – 9 plots	53	398	263.77	0.66	4.97	7.51
Over 10 plots	15	159	148.53	0.93	9.90	10.60
Total	817	2047	1157.56	0.57	1.42	2.51

Source: Based on field survey by the researcher in the agriculture year 2015-16

Fig 6.0



Number of plots and operational land holding according to Size Class

From a total of 2047 field plots, 840 plots belong to 526 marginal operational land holdings operating in an area of 257.35 hectare followed by 460 field plots of 154 small operational land holdings operating in an area of 243.04 hectare 400 field plots belongs to 53 medium operational land holdings operating in an area of 335.53 hectare followed by 264 field plots of 76 semi-medium operational land holdings operating in an area of 243.04 hectare and only 83 field plots of 8 large size operational land holdings operating in an area of 97.40 hectare as indicated in the Table 1.4

Table 1.4 Distribution Number of field plots and operation holdings by size class

Size class (hectare)	Distribution	Number of plots					Total plots
		1 plot	2 – 3 plots	4 – 5 plots	6 – 9 plots	Over 10 plots	
Marginal (below1)	Number of operational holdings	338	155	32	01	-	526
	Number of plots	338	357	139	06	-	840
	Area (in ha.)	174.01	65.14	17.41	0.79	-	257.35
Small (1-2)	Number of operational holdings	15	99	29	11	-	154
	Number of plots	15	248	126	71	-	460
	Area (in ha.)	33.36	133.71	40.55	16.62	-	243.04
Semi medium (2-4)	Number of operational holdings	02	41	28	05	-	76
	Number Of plots	2	106	123	33	-	264
	Area (in ha.)	5.36	127.23	93.58	16.87	-	243.04
Medium (4-10)	Number of operational holdings	-	03	06	36	08	53
	Number of plots	-	07	29	280	84	400
	Area(in ha.)	-	15.12	39.79	219.14	61.48	335.53
Large (Above 10)total	Number of operational holdings	-	-	-	1	7	08
	Number of plots	-	-	-	8	75	83
	Area(in ha.)	-	-	-	10.35	87.05	97.40

Source: Based on field survey by the researcher in the agriculture year 2015-16

Findings

In the study area the level of land fragmentation can be observed by the fact that more than 2 plots per holdings are there with less than 1 hectare area. More than 2000 field plots under 817 operational land holdings are actually operating in 1157 in hectare area. The average size of the field plot comes to only 0.57 hectares. The average field plots are highest among large size class with more than 10 field plots are holding constitute an average plot size of 1.17 hectare with an average holding size more than 12 hectare whereas the lowest average

field plots belongs to marginal size class with less than 2 field plots constitute an average plot size of 0.31 hectare with an average e holdings size of 0.49 hectare.

Suggestions

Consolidation is of course the other side of the coin to fragmentation. Consolidation of land holdings means bringing together the various small plots of land of a farmer scattered all over the village as one compact block, either through purchase or exchange of land with others. It was therefore recommended that cultural practice of land inheritance be reviewed and family planning should be enhanced so as to have manageable families and households to reduce pressure on land. consolidation and semi consolidation should be encouraged.

Conclusion

Land fragmentation leads to reduction in landholding size, and makes the land uneconomical for optimal farm operations, application of science and technology and mechanization. Besides, fragmentation necessitates too many field boundaries and bunds, and leads to wastage of land. Moreover, in the coming years, as the agricultural labour availability will become scarce and farm mechanization will play a critical enabling role where machines can fully replace the human labour for farming. There is no law and legislation in the state of Rajasthan dealing with land fragmentation issues. With the participation of local people along with the government a positive changing scenario in terms of betterment of conditions can be expected.

References

Boiliari, N., 2013., Land fragmentation in Bulgaria: reconsidering its measurement and extent. Review of European Studies, Vol. 5, no.1, pp. 2-5.

Burton,S. and King, R., 1982., Land Fragmentation: notes on fundamental rural spatial problem. Progress in Human Geography, Vol. 6, no.4, p. 481.

Chisholm, M., 1962., Rural Settlement and Land Use: An Essay in Location. London, Hutchinson pp. 21-35 and 47-75.

Hung, V.,Aulay,G., and Marsh, H., 2007., The economics of land fragmentation in the north Vietnam. The Australian Journal of Agricultural and Resource Economics,Vol. 51, pp. 195-211.

Jhonston and Kilby., 1975., Agriculture and Structural Transformation, Economic Strategies in Late Developing Countries. Oxford University Press, p. 699.

Morgan, W.B. and Munton, R.,1971., Agricultural Geography. Methuen and Company Limited London, pp. 358-361.

Naylon, J 1959., Land consolidation in Spain. Annals of the association of American geographers,Vol. 49, pp. 361-373.

All India Report on Agriculture Census 2010-11 Agriculture Census Division Department of Agriculture, Cooperation and Farmers Welfare Ministry of Agriculture & Farmers Welfare Government of India 2015 (http://agcensus.nic.in/document/agcensus2010/completereport.pdf).

State of Indian Agriculture 2015-16 Directorate of Economics and Statistics. (eands.dacnet.nic.in/pdf/State_of_Indian_Agriculture_2015-16)