

The Dynamics of the Agrarian Structure and the Growth of Landlessness

INTRODUCTION

The level of labour demand and the conditions of employment are intimately linked with the form of organization of agricultural production, i.e. the level and type of labour demand would be crucially affected by the degree of mechanization, cropping patterns, cropping intensities, crop yields per acre and the intensity of input use in so far as these factors vary with farm size, a change in the size distribution of farm is likely to bring about changes in the level and conditions of employment of the rural labour force. For example, small farms have a low propensity for mechanization. On the other hand, large farms tend to use predominantly hired labour and under certain conditions have a high propensity to progressively increase the degree of mechanization of their farming operations. Similarly cropping patterns vary with farm size. In so far as the labour input per acre varies with the type of crop, variations in cropping patterns across farm sizes would be associated with different levels of labour demand per acre for different size classes of farms. Thus one can suggest that changes in the size distribution of farms might be symptomatic of important changes in the level and conditions of employment. This would be especially

so in a situation where changes in the size distribution of farms are the result of, a tendency to reduce the area under smaller tenant farms, and to operate large owner cultivated farms with mechanized techniques.

In this chapter we will first attempt to analyze the changes in the size distribution of farms during the period of rapid technical change. In this context, we will examine the mechanism of agrarian change and investigate its effects on the growth of landlessness. In the subsequent chapter we make a preliminary exploration into the implications of such changes for growth in the demand for labour.

SECTION: I

CHANGES IN THE SIZE DISTRIBUTION OF OPERATED AREA BY SIZE CLASS OF FARM.

In this section we will analyze the changes in the size distribution of the number of farms and farm area in Pakistan. To the extent that this change at the all-Pakistan level was induced by the adoption of the HYV technology alongwith tractors, the mechanism of agrarian change would be manifested more sharply in the Punjab province, which was the heartland of the so-called "Green Revolution". Accordingly in analyzing changes in agrarian structure at the all-Pakistan level, we have focused particularly on the Punjab province. The basis of our analysis in this section is data from the Agriculture Censuses of 1960 and 1972 respectively. An attempt is made to first adjust for certain biases that creep into a comparison of the unadjusted 1960 Agriculture Census with the 1972 Agriculture Census. Having presented an adjusted picture of the two size distributions, we then go beyond the comparative static picture to analyze a possible dynamic process that might underlie it.

**SUB-SECTION 1(A): THE PROBLEM OF
COMPARABILITY OF THE 1960 AND 1972
AGRICULTURE CENSUSES.**

In order to make the two censuses comparable for purpose of analyzing size distribution of operated area, it is necessary to perform certain adjustments in the size distribution figures of the 1960 Census. The reason for such an operation is that the methodology of data collection in the two Censuses is quite different. The 1960 Agriculture Census is based on extraction, from the Revenue records, while the 1972 Agriculture Census is based entirely, on direct interviews of heads of households operating the farms. Now the 1960 Agriculture Census method would tend to overstate the number of small-sized farms, and understate the number of medium-sized farms because of the following reasons:

(i) Small owners who 'rent out their land often get themselves registered as, operators in the Revenue Records, because of fear of confusion over their ownership title. Now 'a number of such small pieces of' land may be rented- in by a single tenant to make an economically viable operated holding. The Revenue record, by showing each of the small individual owners in such cases as operators would therefore inflate the number of small farms.

(ii) Members of the same medium-sized tenant house hold jointly operating a single farm but renting- in the farm area from a number of different small owners on an individual basis, would be considered as operating separate small farms in the Revenue records. This would tend to overstate the number of small farms. At the same time, since what is a medium-sized farm gets shown as a number of different small farms the number of medium sized farms would get under- stated in such cases.

(iii) Another factor that would tend to understate the

number of medium size farms in the 1960 Agriculture census occurs in cases where a landowner with married Sons has divided up his land Informally amongst them so that they operate their portions in independent households, but the ownership title remains with the father until his death. In such cases what are actually a number of different medium-sized farms get shown as single large farina In the Revenue Records, thereby understating the number of medium-sized farms. Such a bias would not however tend to occur in either small-sized farms, or large sized farms, because in cases where the division of land amongst the Sons of a landowner would make the farm size too small for economic operation, the father would tend to get his Sons to operate the farm jointly even If they are living in separate households. In cases where the father is a very large landowner, he would fear expropriation through a land reform and therefore tend to actually transfer the title deeds to his various sons and divide his owned holding into a number of owner operated farms, operated by his sons, independently, during his own lifetime.

It was awareness of the possibility of such biases, which led the Agriculture Census Organization to conduct the 1972 Census on the basis of direct interviews of farmers rather than extraction from Revenue records. In a Census pre-test the Agriculture Census organization discovered that the method of extraction from Revenue records did in fact tend to give:

- (a) An inflated number of farms
- (b) An incorrect size distribution of the number of farms.²

In an attempt to give some idea about the magnitude of the differences resulting from a change of methodology the Census Organization in 1972 selected a sample of villages on an all-Pakistan basis. They then collected data on the number and area of holdings, (1) On the basis of the 1960

methodology, i.e. Extraction from Revenue records, (2) On the basis of the methodology adopted in the 1972 Census i.e. direct interviews with farmers. It was found that the 1960 Census method suffered from the following biases:

- (a) It considerably overstated the number of farms in the size class less than 5 acres.
- (b) Understated the number of farms in size classes 5 to less than 25 acres.
- (c) Only slightly understated the number of farms in the size class 25 acres and above.

We have accordingly decided to adjust the 1960 Agriculture Census figures on ' the number of farms and farm area in each size class, to correct as far as possible for overstatement of the number of farms in the less than 5 acre size classes, and understatement in the size classes above 5 acres. This is done on the basis of ratios derived from the above mentioned exercise which gives figures of the same sample villages in terms of Revenue records and Direct Interview methods respectively. These ratios do not of course capture the regional variations in the degree of bias in the various size classes in the 1960 Census. Nevertheless an adjustment of the 1960 size distribution with these ratios provides a better basis of comparison with the 1972 size distribution than the unadjusted 1960 size distribution.³

SUB-SECTION 1(B): POLARIZATION IN THE SIZE DISTRIBUTION OF THE TOTAL NUMBER OF FARM AND FARM AREA.

The following table 1(a) presents the size distributions of the number of farms and farm area in 1960 and 1972 for Pakistan. Table 1(b) shows the same size distributions for the Punjab province.

Changes in the size distribution of the number of farms at the all-Pakistan level suggest a weak polarization during the inter-Censal period: The percentage share of the size class below 7.5 acres in the number of farms and farm area increased, while that of the size class 7.5 to less than 25 acres declined. At the same time the percentage share of large farms in the total number of farms and farm area, remained virtually unchanged. (See table 1a).

The polarization in the size distribution of the number of farms comes out more sharply in the case of the Punjab province which was the heartland on the "Green Revolution". Here there was not only an increase in the percentage share of farms below 7.5 acres but also an increase in the percentage share of farms in the size class 25 acres and over, while the percentage share of 7.5 to less than 25 acres farms in the total number of farms declined. (See table 1b). This polarization; Is also reflected in the changes in the size distribution of farm area in the Punjab. Thus the percentage share of farms below 7.5 acres in the total farm area increased, as did that of farms in the size class 25 acres and over, while the percentage share of farms between 7.5 to less than 25 acres in total farm area declined.

The question that now arises is as to what is the nature of the PROCESS through which this polarization in the size distribution of farms has occurred. In the following sub section we have specified our hypotheses regarding this process, and subsequently use Census data as well as our own field Survey data to test these hypotheses.

SUB-SECTION 1(C): HYPOTHESES REGARDING THE NATURE OF THE POLARIZATION PROCESS

(1) The polarization in the size distribution of the number of farms and farm area is primarily the consequence of an increase in self cultivated land by large landowners

TABLE 1 (a)**PAKISTAN**

**PERCENTAGE NUMBER OF FARMS AND FARM AREA
BY SIZE OF FARM 1960 AND 1972
(ADJUSTED* AND UNADJUSTED
AGRICULTURE CENSUS DATA)**

PERCENTAGES

Size of Farm	NUMBER OF FARMS		1972	FARM AREA		1972
	1960			1960		
	Unadjusted	Adjusted		Unadjusted	Adjusted	
Less than 7.5	61.5	34.0	43.6	16.5	8.6	12.2
7.5 to < 25	30.6	52.7	45.6	40.6	44.9	44.8
25 to < 50	5.9	9.3	7.7	19.3	19.0	18.8
50 to < 150	1.8	3.4	2.7	13.4	16.0	15.1
150 and above	0.3	0.5	0.4	10.0	11.5	9.1

Sources: 1960 Pakistan Census of Agriculture
1972 Pakistan Agriculture Census

Note: (1) For adjustment of 1960 figures see Appendix 1.
(2) The columns may not add up exactly to 100 due to rounding errors.
(3) In this and all subsequent tables in this chapter, the farm size groupings refer to the following categories

Farm Size Groups	Categories
Less than 7.5	Small Farms
7.5 to less than 25	Lower Medium Farms
25 to less than 50	Medium Farms
50 to less than 150	Upper Medium Farms
150 and above	Large Farms

Note: Estimate for above table from S.A. Hussain, D.Phil. Thesis op. cit.

TABLE 1 (b)
PUNJAB
PERCENTAGE NUMBER OF FARMS AND FARM AREA
SIZE OF FARM 1960 AND 1972
(ADJUSTED* AND UNADJUSTED
AGRICULTURE CENSUS DATA)

PERCENTAGES

Size of Farm	NUMBER OF FARMS		FARM AREA			
	1960	1972	1960	1972	1960	1972
	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
Less than 7.5	63.35	35.53	41.28	19.07	9.93	11.80
7.5 to < 25	29.81	52.82	46.88	45.27	51.15	46.42
25 to < 50	5.42	8.88	8.81	20.21	20.23	21.30
50 to < 150	1.27	2.49	2.72	10.57	12.94	14.94
150 and above	0.14	0.27	0.30	4.88	5.76	5.77
Total	100	100	100	100	100	100

Summary of the above table

Size of Farm (acres)	NUMBER OF FARMS		FARM AREA	
	Col. (a)	Col. (b)	Col. (c)	Col. (d)
	1960 (Adjusted)	1972	1960 (Adjusted)	1972
Less than 7.5	35.5	41.3	9.9	11.8
7.5 to < 25	52.8	46.9	51.2	46.4
25 and above	11.6	11.8	38.9	41.8
Total	100	100	100	100

Sources: 1960 Pakistan Census of Agriculture
1972 Pakistan Agriculture Census

Note: (1) For adjustment of 1960 figures see Appendix 1.
(2) The columns may not add up exactly to 100 due to rounding errors.

Note: Estimate for above table from S.A. Hussain, D.Phil. Thesis op. cit.

who were formerly renting out land mainly to medium-sized farmers and to a lesser extent small-sized farmers.

(2) We suggest further that many of the lower medium-sized farmers (7.5 to less than 25 acres) lost some but not all of their land through resumption and hence may have joined the ranks of small-sized farmers over the inter- Censal period.

(3) Finally the farm area gained by the small-sized farm category (less than 7.5 acres) through the above process (i.e. conversion of some lower- medium sized farms into small farms following resumption) was likely to be greater than the area lost by small- sized farmers themselves, through resumption of land formerly rented out to them by large landowners.

SECTION II

THE NATURE OF THE PROCESS UNDERLYING THE POLARIZATION PHENOMENON

In this section we will present two kinds of evidence, in support of the hypotheses specified in the previous section: (1) Evidence on the changes in tenure classification of farms and the pattern of land renting estimated from Agriculture Census data. (2) Evidence from our own field survey conducted as part of our doctoral research. Finally we shall examine the extent of landlessness induced by the polarization phenomenon.

Agriculture Census data by its very nature can only provide 'indirect confirmation of our hypotheses regarding the polarization process. The reason is that Agriculture Census data show the size distribution of farms at two points in time, and hence cannot provide direct evidence for our hypotheses which refer to a process. What would be required for direct evidence is information from farmers in various M*e classes about:

(a) The area operated by each farmer in 1960 compared to the area operated currently.

(b) The relative weight of the specific factors that caused a change in the farm area of each farmer sin 1960. We have collected such data by means of a field survey as part of our doctoral research. We shall present some of this data in sub-section 11(C).

SUBSECTION 11(A): THE CHANGES IN TENURE CLASSIFICATION OF FARMS

The changes in tenure classification implied by our hypotheses about the process of polarization are in fact confirmed by the Agriculture Census data.

(1) If, as hypothesis (1) in Section 1(C) suggests, the polarization in the size distribution of farms has been induced by large landlords resuming for self-cultivation land which they had previously rented-out to tenants, then there should be a decline in the percentage share of tenant farms in each size class. This is clearly indicated in the following table 2.

(2) Hypothesis (2) in Section I suggests that as large landowners resume their rented- out land for self- cultivation, many medium-sized owner-cum-tenant farmers having lost their rented-in portion would shift into the category of small farms as pure owner farms. This implies that there should be an increase in the percentage share of owner farms in the small size class and the larger size classes. Table 2 shows that the percentage share of pure owner farms in the number of small farms rises from 48% to 56%; the percentage share of the number of pure owner farms in the size class 25 to less than 150 acres rises from 35.8% to 38.4%. We find however that in the largest size class (150 acres and over) there has been an increase in the, percentage share of owner cum-tenant farms at the expense of the percentage share of the number of pure

owner farms. The percentage share of owner-cum farms has also increased in the case of the size class 25 to less than 150.

The reason for the increase in the percentage share of owner-cum tenant farms in size classes above 25 acres lies in the fact that tractor ownership is concentrated amongst landowners in Size classes above 25 acres (88% of total tractors owned in Pakistan in 1970 belonged to land-owners in these size classes). Now tractor owning farmers whose owned land is less than that which can be operated by a tractor, will tend to rent In additional land. The operating capacity of the 36 to 45 horse power tractor which is typically in use in Pakistan has been estimated by the Planning Com mission at over 100 acres. In practice many farmers would be able to operate much more than 100 acres with their tractors since as many as 37% of total tractors in Pakistan in 1970 had more than 45 horse power. Accordingly owner farmers with an owned area of less than 100 acres would tend to rent-in additional land if they own a tractor. Even those farmers with an owned holding of over 150 acres would tend to rent-in additional land. The reason for this is that with the virtual absence of a regular market for sale and purchase of land, the large profits which large farmers have made since the mid-sixties cannot always be reinvested in purchasing new land. Therefore large farmers in many cases reinvest some of their profits in extending their operated holding through purchase of additional tractors and increase in rented-in land. It is these factors (purchase of tractors, and large profits from capitalist farming in a situation of limited opportunities for reinvestment in the purchase of new land) that underlie the increase in the percentage share of owner cum-tenant farms (and farm area) in size classes above 25 acres.

(3) The tenure composition of farms and farm area in the lower medium size class (7.5 to less than 25 acres) in

table 2 shows an Increase in the percentage share in the number and area of owner-cum-tenant farms, at the expense of primarily pure tenant farms. Thus the percentage share of owner-cum-tenant farms in the number of lower medium farms Increased from 26.4% to 35.3%, while that in the number of pure tenant farms In this size class declined substantially from 40.75% to 88.39%. The reasons for this are as follows:

(i) Loss of rented-in area by lower medium. sized pure tenant farms following resumption by large landowners. The consequent reduction In the number of pure tenant farms in the lower medium size category would increase the percentage share In this size class of owner-cum-tenant farms and pure owner farms.

(ii) To the extent that a reduction occurs also in the absolute number of pure owner farms in the lower medium size class (due to sub. division amongst family members and hence a shift into the small owner category) the increase in the percentage of owner-cum-tenant farms would be even greater.

(iii) Renting of land by lower medium-sized owner farmers from small owners whose holding is too small for economic cultivation.

The Census data on changes in tenure classification presented in this Sub-Section 11(A) support our hypotheses regarding the nature of the polarization process. In the next sub. section 11(B), we will analyze the pattern of land renting by size class of farm to provide a further insight into the mechanism of polarization.

TABIE2
PUNJAB
TENURE CLASSIFICATION OF FARMS AND FARM
AREA
BY SIZE CLASS 1960 AND 1972
PERCENTAGE
FARM
TENURE OF FARMS
FARM AREA
SIZE
OWNER CUM
OWNER C1.JM
(ACRE)
OWNER
TENANT
TENANT
OWNER
TENANT
TENANT
1960 1972 1960 1972 1
960 1972
1960 1972
1960 1972
1960 1972

<7.5	48.07	56.02	14.39	18.92	37.54	25.06	42.12
	48.99	20.38	24.80	37.51	26.61		
7.5 to <25		32.85	31.30	26.40	35.30	40.75	33.39
	33.15	30.82	26.86	36.74	39.99	32.44	
25 to <150		35.84	38.43	25.55	37.36	38.61	24.21
	38.36	40.50	25.78	38.91	35.85	20.59	
150 andover		70.51	65.55	20.61	28.43	8.89	6.02
	75.60	66.65	16.61	28.06	7.79	5.29	

SOURCE: Pakistan Census of Agriculture 1960. Pakistan
Census of Agriculture 1972.

Qted in: S.A. Hussain, D. PhiL Thesis. op. cit.

SUB-SECTION 11(B): THE PROCESS OF POLARIZATION AND CHANGES IN THE DISTRIB OF RENTED-IN AREA BY SIZE CLASS OF FARM

In this section we will explore further the implications for the nature of the polarization process of two findings in the preceding section on changes in tenure composition:

(a) The substantial increase over the inter-Censal period in the percentage share of owner-cum-tenant farms in the lower medium size class.

(b) The decline in the percentage share of pure tenants not only in the lower medium size class but also in the small size class. This points to the possibility of increased landlessness alongwith polarization.

(a) The Pattern of Land Renting Within the Lower Medium Size Class, and Its link with polarization.

The substantial increase in the percentage share of owner-cum-tenant farms at the expense primarily of pure tenant farms In the lower medium-size class suggests that some lower medium-sized owner cultivators may have rented in land to become lower medium-sized owner-cum tenants. Now if this phenomenon of renting-in by lower medium owners over the period is to be consistent with our proposition that the percentage of lower medium farm area in total farm area has declined, then it must be shown that: The increase in area rented-in by lower medium-sized owner-cum tenant farmers was less than the loss of rented-in area suffered by pure tenants in this size class. Let us consider the evidence.

Table 3 shows the distribution of rented-in area by size class of farm for pure tenant farmers and owner-cum-tenant farmers respectively for the years 1960 and 1972. The distribution of total rented-In area by size class In 1960 is

adjusted by the same procedure as that Used for adjusting the 1960 figures for the distribution of total farm area. This procedure however does not affect the distribution of rented-in area within each size class between pure tenants and owner-cum tenants.

As columns (e) and (f) in table 3 show, the area rented In by the lower medium-sized owner-cum-tenants (7.5 to less than 25 acres) as a percentage of total rented-in area increased by about 9 percentage points (i.e. from 12.7% in 1960 to 21.7% in 1972). On the other hand the percentage share of pure lower pure lower medium tenants in total rented-In area declined by about 11 percentage points (i.e. from 44% to 33%). Hence the Census data shows that in spite of the increase in the area rented-In by lower medium owner-cum tenants there is still an overall decline in the area rented-in by this size class of farms, thereby lending support to our earlier proposition on the polarization of the size distribution of farm area.

(b) The Decline of Tenant Farming and the Process of Landlessness.

The evidence in sub- section 11(B) shows that resumption of land has hit both small as well as lower medium tenants, as our hypothesis (1) had suggested.

However if this evidence is to be consistent with our proposition that polarization has occurred, then it must be shown that pure tenants in the lower medium size class have suffered a greater loss of rented-in land than pure tenants in the small-size class. This Is in fact the case, as shown in table 3, columns (c) and (d): We find that the area rented-in by small-sized tenants as a percentage of total rented-in area declined from about 8% to 7% over the period. On the other hand during the same period the decline in the area rented-in

by pure tenants in the lower medium size c was eleven times as great: The area rented-in by pure tenants In the lower medium size class, as a percentage of total rented-in area fell from about 44% to about 33%.

**SUB-SECTION 11(C): THE MECHANISM OF THE
POLARIZATION PROCESS: DIRECT EVIDENCE FROM
FIELD SURVEY DATA**

In the earlier sections we had argued on the basis of Census data that a polarization in the size, distribution of farms had occurred in the Punjab during the inter-censal period. We also discussed the implications of this polarization for the process of landlessness. We had suggested that the polarization had been induced by large landowners resuming their rented-out land for self cultivation. This resumption had initiated a more complex process than that appeared from a point to point comparison of size distributions of farms in 1960 and 1972 respectively., Our proposition regarding the mechanism of the polarization process was as follows:

Both small,- sized and lower medium-sized farms were losing land to large farms, but that lower medium farms were:

- (i) Losing a larger amount of land than small farms.
- (ii) Some lower medium farms were being converted into small-sized farms over the period.

The Agriculture Census data since it gives size distributions at two points in time, cannot provide direct evidence for the above proposition. Accordingly in the earlier sections we examined the proposition indirectly in terms of an the Census evidence on changes in tenure classification and the pattern of land renting.

TABLE 3**PUNJAB**

**PERCENTAGE DISTRIBUTION OF GROSS RENTED IN AREA BY
SIZE
CLASS OF FARM AND TYPE OF TENURE: 1960 (ADJUSTED)
AND 1972**

Size of Farm (Acres)	Percentage							
	Area Rented in by Size Class As A Percentage to Total Rented-in Area		Area Rented in by Pure Tenant Form As A Percentage to Total Rented-in Area		Area Rented in by Owner-Cum- Tenant Farm As A Percentage to Total Rented-in Area		Area Rented in As A Percentage of Farm Area in each size	
	Col. (a)	Col. (b)	Col. (c)	Col. (d)	Col. (e)	Col. (f)	Col. (g)	Col. (h)
	1960	1972	1960	1972	1960	1972	1960	1972
Less than 7.5	10.07	10.42	7.79	6.81	2.11	3.61	48.46	40.08
7.5 to < 25	56.74	54.91	43.99	33.21	12.74	21.70	53.00	53.65
25 to < 50	21.88	22.05	17.11	11.99	4.77	10.06	51.66	46.96
50 to < 150	9.87	10.62	7.36	4.37	2.51	6.25	36.46	32.70
150 and above	1.44	2.00	0.94	0.67	0.50	1.33	11.92	15.71
	100	100	77.37	57.05	22.63	42.95	47.73	45.35

Sources: Pakistan Census of Agriculture 1960
Pakistan Census of Agriculture 1972

Note: 1960 figures are adjusted. For adjustment Procedure see Appendix 2
Adjustments made by S.A. Hussain: D.Phil. Thesis, op. cit.

What is required for direct examination of our proposition about the nature of the polarization process is: Evidence on the amount of change in farm area of particular farms over the 1 and the magnitude of the share of various factors In this change. Such data was provided by my field survey. Each of the respondents gave information on, apart from other item the current size of his farm (in 1978); this farm size in 1960; and the causes of change in his farm size. It is Interesting to note that when this information is seen in terms of Agriculture Census format, i.e. two size distributions of farm area (in 1960 and 1978 respectively), my field survey data show a clear polarization.⁶ (See table 4b).

When we shift from a point to point comparison of size distributions, to an analysis of change in farm area experienced by particular over the period, our proposition regarding the dynamic underlying process is revealed i.e. the differential Impact of the loss of rented-in area on lower medium and small- sized farm respectively. In this respect, the following features emerge from my field survey data, regarding the direction and agr11tude of change in farm area by size class:

(1) The farm area of large - sized farms (i.e. farms in the 150 acre 9 above category) has increased substantially: Whether we compare the farm area of what are in 1978 large-sized farms with their farm area in 1969, or we compare the farms which were in the large size class in 1960 with their area in 1978 (See column (a) in table 5 and column (a) in table 6).

(2) When we compare the farm area of farms that in 1960 were in the 8 to < 25 acre size class, with their farm area in 1978, we find that their farm area has declined substantially by 13.6% (See table 6). Similarly when we compare the farm area of farms that are In 1978 in the 8 to <25 acres size class with their farm area in 1960, there is a substantial decline in farm area. (See column (a) in table 5).

TABLE 4^b

**FARM AREA BY SIZE CLASS, 1960 AND 1978
(ADJUSTED FIELD SURVEY DATA)**

Size Class	Size of Farm (Acres)	Farm Area Cultivated in 1960 (Acres) (Adjusted)	Perc Area Cultivated in 1960	Farm Area Cultivated in 1978 (adjusted)	Perc Area Cultivated in 1960	Amount of increase in Cultivated Area 1960 1978 (Acres)	Perc Incr in Cult. Area 1960-1978
		(a)	(b)	(c)	(d)	(e) = (c) - (a)	(f)
Small	Less than 8	651	7.90	941	12.00	+ 290	+ 44.4
Lower Medium	8 to < 25	4437	53.83	3608	46.00	- 830	- 18.7
Medium	25 to < 50	1942	23.56	1647	21.00	- 295	- 15.2
Upper Medium	50 to < 150	1014	12.30	1176	14.99	+ 162	+ 16.0
Large	150 and over	199	2.41	472	6.01	+ 272	+ 137.0
Total		8243	100	7843	100	- 401	- 4.8

Sources: Field Survey 1978 (Adjusted Figures). For adjustment procedure see text. S.A. Hussain, D.Phil. Thesis. op. cit.

NOTE FOR TABLES 1 A AND 1 B

The size distribution of the adjusted 1978 figures is quite different from that of the unadjusted figures for 1978, (compare column (c) in 4^b with column (c) in 4^a). This is the consequences of applying the 1972 Census distribution ratios to our sample data. Such a normalization of our 1978 data was necessary because for the purposes of our study certain size classes were deliberately over-sampled during our field survey.

Now the unadjusted 1960 size distribution of farm area in our sample data had emerged from asking each respondent in each size class in 1978, what his farm area was in 1960. Clearly, having adjusted the sample size distribution of 1978 to accord with the 1972 Census size distribution, the adjusted 1978 sample figures could no longer be compared with the unadjusted 1960 sample data. An adjustment in the latter was therefore needed.

The adjustment procedure adopted for the 1960 figures was such that while it changed the farm area within each size class in 1960, the percentage change of farm area over the period was exactly the same after adjustment of size distributions, as it was before this adjustment. Thus when we compare the column (f) showing the percentage change in farm area over the period, in Table 4^b, with column (f) in Table 4^a, we find that the figures for each size class are identical. Hence the essential feature of the sample data that is relevant for our argument is left unchanged by the adjustment procedure.

In this case a comparison of farm area of what are small sized-farms in 1978 with their area in 1960 also shows a decline in farm area over the period 1960 to 1978. However, the decline in the farm area of lower medium farms was about four times the amount of decline in farm area suffered by small-sized farms (See column (a) in table 5).

(3) Out of the total number of farms that were in the lower medium-sized class in 1960, as many as 18% had shifted into the small-sized class by 1978; of the number of lower medium-sized farms whose area decreased over the period half had shifted into the small-sized class. As a result of this shift of lower medium farms into small farms over the period, 34% of the decline in farm area of lower medium farms became a gain in farm area of small-sized farms.

The findings described in points (1) to (8), constitute direct evidence for our proposition regarding the nature of the polarization process, i.e. the increase in the percentage area under small sized farms and the decrease in the percentage area under lower medium farms that one observes from a comparison of the adjusted 1960 Agriculture Census and the 1972 Agriculture Census, is the NECESSARY surface appearance of 'an underlying process; This is that lower medium farms are losing land by a larger amount than small-sized farms, while some farms in the former 'category are joining the latter category,' over time.

SUB-SECTION III (A): THE DECLINE OF TENANT FARMING AND THE PROCESS OF LANDLESSNESS.

As our discussion in the preceding sub-section has shown, the loss of rented-in area occurred in both lower medium as well as small sized tenant farms This not only affects the size distribution of the number of farms and farm area, but also has implications for landlessness. As table 4 shows, the number of lower medium sized farms declined at a

much faster pace than the small sized tenant farms. This phenomenon comes into focus more sharply when we consider the decline in tenant farms (all sizes). We find that the reduction in the lower medium sized pure tenant farms constitutes 56.86% of the reduction in the total number of pure tenant farms (all sizes), while the reduction in small pure tenant farms constitutes 26.83% the total decline in pure tenant farms. It is this fact the reduction of lower medium size distribution farms at a faster pace than the reduction in small tenant farms - that suggests the possibility of an increase in landlessness alongwith polarization in the size distribution of farms i.e. If the pace at which lower medium sized farms are becoming small farms, is greater than the pace at which small sized farms are becoming landless, then we would simultaneously observe an increase in the percentage share of small farms (in total number of farms and farm area), and an increase in landlessness. We have shown in section. III how the reduction in lower medium sized tenant farms occurring at a faster pace than small tenant farms, underlies the observed phenomenon of polarization in the size distribution of the number and area of farms. In the next sub-section, we consider evidence from the Population Censuses to determine whether or not there has been an increase in landlessness over the inter-censal period.

SUBSECTION III (B) AN ESTIMATE OF PROLETARIANIZATION DURING THE PERIOD 1961-1973.

In order to investigate whether landlessness has accompanied the polarization in the size distribution of farms, over the inter-censal period, we should be comparing the number of landless agricultural labourers in 1961 and 1973 respectively. The problem however is that whereas the 1961 Population Census provides figures for both landless agricultural labourers as well as agricultural labourers at the all-

TABLE 5

INCREASE IN FARM AREA SINCE 1960 BY SOURCE OF INCREASE AND SIZE CLASS IN 1978

Size Class	Size of Farm (Acres)	Farm Area Cultivated in 1960 (Acres) (Adjusted)	Perc Area Cultivated in 1960	Farm Area Cultivated in 1978 (adjusted)	Perc Area Cultivated in 1960	Amount of increase in Cultivated Area 1960 1978 (Acres)	Perc Incr in Cult. Area 1960-1978
		(a)	(b)	(c)	(d)	(e) = (c) - (a)	(f)
	Acres	Acres	Acres	Acres	Acres	Acres	Acres
Small	Less than 8	- 20	52	4	- 5	0	- 19
Lower Medium	8 to < 25	- 18	209	0	- 50	2	- 33
Medium	25 to < 50	+ 48	407	45	+ 8	4	- 9
Upper Medium	50 to < 150	+ 446	711	340	+ 24	40	+ 42
Large	150 and over	+ 3338	6464	2172	+ 38	1493	- 365

*Note: Other sources of increase or decrease in farm area are

- (1) Land brought by wife as dowry
- (2) Land appropriated by government, following land reforms.
- (3) Farm area reduced through fragmentation following decision by family members to cultivate individually in independently operated plots.

Source: Field Survey 1978. S.A. Hussain, D.Phil. Thesis op. cit.

Pakistan level, the 1973 Population Census contains neither of these classifications. What can at best be gleaned from the 1973 Population Census is an estimate of agricultural labourers on the basis of data provided on various types of employed and unemployed persons in the rural sector. Such an estimate would include both landless agricultural labourers as well as those who are operating farms but spend some of their time on wage labour. Although given the nature of the available data we are obliged to consider changes in the number of agricultural labourers rather than landless agricultural labourers, yet all is not lost. An increase in the number of agricultural labourers in itself would be relevant for our analysis, for it would indicate that pauperization is occurring i.e. it would show that many of the peasants (and artisans) who formerly did not sell their labour power at all, now do so, either because they have become entirely landless, or because the area operated by them has become so small that they are forced to supplement their income through wage labour.

We have estimated⁸ on the basis of the 1973 Population Census data, that the total number of agricultural labourers in Pakistan in 1973 was 1,876,329. On the basis of the 1961 Population Census, we have estimated the number of agricultural labourers in Pakistan in 1961, to be 697,710 out of a total rural population aged 10 years and above of 19,842,240. Agricultural labourers here includes landless agricultural labourers as well as operators of farms (owned and/or rented in) who spend part of their time during the year as wage labourers in agriculture). In order to get a rough estimate of I) number of persons who have joined the ranks of agricultural labourers during the inter-censal period, let us now assume: That the natural growth rate of agricultural labourers (are a sub-set of the rural population aged 10 years and above) is the same as the growth rate of the rural population aged 10 years and above. In this case the proportion of agricultural labourers in the total rural population in 1973

would be the same as in 1961, provided that:

(1) The increase in the number of agricultural labourers was occurring purely on the basis of a natural increase in population, and no new agricultural labourers were being created from the ranks of other sections of the rural population.

(2) The pattern of rural-urban migration is such that the percentage of agricultural labour in the rural migrants, is the same as in the 1961 rural population (aged 10 years and above).

We can estimate the expected number of agricultural labourers in 1973 as the result of a natural increase in their

$$\text{number as: } 697,710 \times \frac{30,523,312}{19,842,240} = 1,073,287. \text{ Now}$$

the actual number of agriculture labourers in 1973 according to our estimate was 1,867,329. Thus, the difference between the actual number of agricultural labourers in 1973 and the number that would have existed, had the increase in the number of agricultural labourers over the period been entirely due to a natural growth in their number in 1961 is: $1,867,329 - 1,073,287 = 794,042$. We suggest that 794,042 is a rough estimate of the number of peasants and other rural self-employed persons example artisans, who have over the intercensal period begun to work partly or wholly as wage labourers in agriculture.

The above estimate of the number of peasants who have become agricultural labourers during the period 1961 to 1973 constitutes 42.52% of total agricultural labourers in 1973. Thus slightly less than half the number of agricultural labourers in 1973 had entered this category as the result of pressures towards proletarianization of the poor peasantry.

These pressures would be partly the result of normal demographic changes which by increasing the adult population per acre of small farm households push son farm into the ranks of the proletariat; and partly the result of changes in agrarian structure discussed in the earlier sections. The large reduction in the percentage share of pure tenant - operated farms in the total number of farms that is evident from Agriculture Census data, suggests that at least some of the estimated 794,042 persons becoming agricultural labourers during the inter-censal period, were those who had suffered evictions in the process of change in the agrarian structure.

NOTES

1. Pakistan Census of Agriculture 1972. All Pakistan Report. Agriculture Census Organization, Ministry of Food and Agriculture. Introduction, page 26.
2. Ibid. Page 14.
- 3.
4. Report of the Farm Mechanization Committee, op. cit Page 60. Table 12.
5. Report of the Tractor survey in West Pakistan. Planning Commission, Karachi, 1967. Quoted in H. Alavi: "Rural Elite and Agricultural Development", in R.D. Stevens, et. al. (eds.): Rural Development in Bangladesh and Pakistan. Hawaii 1976. Page 341.
6. In fact the polarization in my field survey data, which refer to the period 1960 to 1978, is more acute than in the Agriculture Census data which refer to the period 1960 to 1972. This, it could be suggested, is due to the fact that polarization is a continuing phenomenon: To the extent that large farmers had not entirely resumed their rented-out area, by 1972, resumption could be expected to continue. Hence, the effect of resumption on the size distribution of farm area would be more acute, the longer the time span considered.
7. See: S. A. Hussain D. Phil. Thesis, op. cit. Chapter 4, Appendix 3, Table 1.
8. For details of the method of estimation see S,A. Hussain D. Phil. Thesis, op. cit. pages 176 to 185.