

## An Economic Appraisal of Structural Changes in Land Holdings in North Western Frontier Province (NWFP) of Pakistan

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### ABSTRACT

In overwhelmingly agricultural economy like Pakistan, agrarian structure with special reference to size distribution and ownership pattern of land, represent crucial indicators and principal forms of wealth and political power. A highly skewed distribution of basic resource of land does not only affect the economic well being of the rural communities but also their social and political status in the society. The present study represents an attempt at reviewing the overtime changes in size distribution, and ownership of agricultural holdings in NWFP in the inter-census periods of 1960, 1972, 1980, and 1990. The results of the study show that there still exists significant skewness in the distribution of the important source of land holdings in the province. Measurements made in terms of Gini-coefficients (0.35) and Lorenz ratios (0.582) are full of policy implications for effecting improvements in the agrarian structure of NWFP economy.

**Key Words:** Economic appraisal; Land holdings; NWFP; Pakistan

### INTRODUCTION

Agriculture sector occupies a predominant position in the economies of most developing countries which is also true for Pakistan. The most cherished goal of every nation is development, which in turn a multidimensional process involving the reorganization and re-orientation of entire economic and social system (Government of Pakistan, 2001-2002). In agricultural and developing economies like Pakistan, development aims at a progressive improvement in levels of living achieved primarily through increase in incomes, output and productivity of the farming community, especially the small peasant cultivators. In most of the developing economies like Pakistan, the ownership of the land is one of the important indicators of not only the economic well being of the rural households but also their social and political status in the society. Patterns of land ownership and distribution also determines to a large extent, the access of rural population to various social and economic institutions and their services. The distribution of land holdings in a region also affects the utilization of farm resources and adoption of modern technology and ultimately determines the pace of the development of the region (Singh & Kahlon, 1977). Incidentally in Pakistan, not much systematic work has so far been done to analyse the overtime changes in the structure of agriculture industry during the inter-census periods from 1960 to 1990. The present paper is therefore an attempt at conducting temporal analysis of the structural changes of land holdings in terms of their number, size, concentration, pattern of ownership and resource endowment as it changed from 1960 to 1990.

The major objective of this study has been to examine the structural changes in land holdings and to

measure disparities in ownership and distribution of holdings in terms of Gini-coefficients and Lorenz ratios with special reference to NWFP.

### MATERIALS AND METHODS

The purpose of this study was to examine the overtime-structural changes that have occurred in the size, distribution- and ownership pattern of agricultural holdings in NWFP. The base-line information for this purpose was available in the form of "Pakistan Agricultural Census, 1960". Similarly, for comparison, data from the second, third and fourth Agricultural census, 1972, 1980 and 1990 respectively were also available. A detailed analysis of these inter-census data at four points of time enabled the present study to capture the true nature of changes that had occurred in the structure of agriculture industry of the province during 1960, 1972, 1980 and 1990 respectively.

Frequency distribution of farm holdings and farm area in respect of size of holdings in NWFP were studied at the four points in time i.e., 1960, 1972, 1980 and 1990, respectively and the consequent changes in the skewness of distribution overtime were determined. This magnitude of change during inter period was known by Lorenz ratio of concentration and Gini-coefficient by using the following formula:

$$\text{Gini coefficient} = \frac{\sum_{i=1}^{n-1} (x_i + 1)Y_i}{\sum_{i=1}^{n-1} X_i(Y_i + 1)}$$

$$\text{Lorenz ratio} = 1 - \sum_{i=1}^n \frac{(Y_i + Y_i - 1)(X_i + X_i - 1)}{10,000.00}$$

(Theil, 1967)

Where

X = Cumulative percentage frequency in respect of number of holdings corresponding to the size of class.

Y = Cumulative percentage frequency in respect of operated area (farm area) corresponding to size of class I (i=1,2,3---n) and  $X_i - 1 = Y_i - 1 = 0$

Trends in tenurial patterns were analysed and the degree and direction of change in the ownership patterns overtime were measured. Special attention was devoted to the study of the behaviour of pure and mixed tenancy overtime; the proportion of owned area to operated area was also studied.

The magnitude of the sub-division and fragmentation of holdings and farm area in 1990 was compared to the situation in 1960, 1972 and 1980 both in respect of size of holding and type of ownership. This analysis was helpful to ascertain the degree of success in government efforts at consolidation of holdings in the province. Overtime changes in the land use and cropping intensities with respect to size of holdings and type of ownership were also determined, by:

$$\text{Land use intensity} = \frac{\text{Cultivated area}}{\text{Total culturable area}} \times 100$$

$$\text{Cropping intensity} = \frac{\text{Total cropped area}}{\text{Total cultivated area}} \times 100$$

(GOP, 1990)

## RESULTS AND DISCUSSION

In order to examine overtime-structural changes in size distribution and ownership patterns of agricultural holdings in NWFP, Census data at four points of time

were categorized into various size groups. These were very small (less than one acre), very large (150 acres and above), small (up to 5 acres), medium (5-25 acres) and large (25 acres and above). The data on overtime structural changes in the above mentioned aspects are depicted in Table I, II and III. Based on the analysis of the data at four points of time, a summary of findings is given below.

1. The small number of farms decreased during 1960 to 1972 but increased during 1972 to 1980 and 1980 to 1990, in small farm size category. On the other hand a declining trend was observed in medium and large farm size categories (Paul & Mondal, 1994)

2. Overall, the total farm area tended to decrease by about 25% during 1960 – 1980, but showed a drastic increase in farm area to the extent of 1729.1 thousand acres (29.80%) during the period of 1980-1990 (Chatha & Singh, 1992).

**Table I. Distribution of farms by size**

Farm size	Interval	1960	1972	1980	1990
Very small	< 1 acre	190.75	55.63	63.57	177.30
Very large	> 150 acres	2.46	2.15	1.48	1.078
Small	< 5 acres	453.22	257.71	323.12	741.00
Medium	5 – 25 acres	181.52	176.82	177.58	292.73
Large	25 acres and >	39.66	31.4	27.19	35.00
Overall		674.4	465.93	527.89	1068.82

**Table III. Distribution of farm area by size (000 acres)**

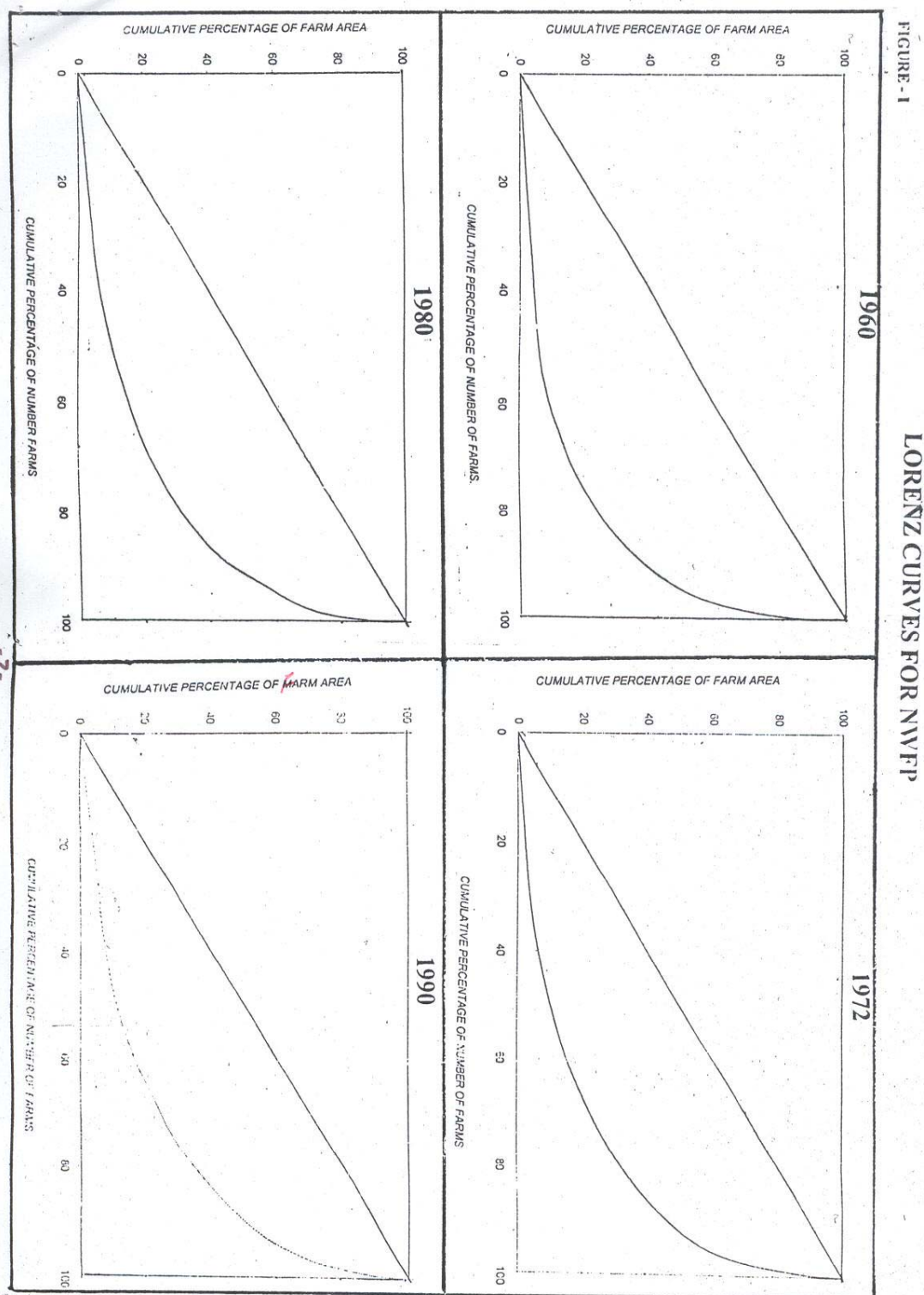
Farm size	1960	1972	1980	1990
Very small	83.26	28.12	30.56	85.44
Very large	954.32	575.42	542.48	289.016
Small	736.14	540.17	666.8	1401.47
Medium	1913.56	1722.27	1699.49	2697.57
Large	2814.03	1989.13	1732.3	1729.047
Overall	5463.73	4251.57	4098.59	5827.69

3. By tenurial pattern, the owner operated farms came to be the largest group. Owner farms increased during the entire period. Owner-cum-tenant farms tended to decline during 1960-1990. In case of tenant farms, there was an overall decrease of 1047.4 thousand acres or 60.8% over the period of time 1960-1990 (Hines & Rhoades, 1994).

**Table II. Distribution of farms by tenure (000 numbers)**

Farm Size	Owner	1960 Owner cum tenant	Tenant	Owner	1972 Owner cum tenant	Tenant	Owner	1980 Owner cum tenant	Tenant	Owner	1990 Owner cum tenant	Tenant
Very small	122.6	6.6	57.5	43.0	1.9	10.8	55.4	1.45	6.8	161.16	2.87	13.3
Very large	0.89	0.73	0.73	0.48	1.3	0.4	0.85	0.58	0.04	0.905	0.14	0.02
Small	252.2	60.9	140.1	166.9	34.2	56.7	241.6	26.3	55.2	599.06	41.14	100.8
Medium	62.0	61.1	58.4	79.7	54.2	43.0	105.5	35.6	36.4	211.61	40.145	41.0
Large	10.8	15.4	13.5	9.6	14.9	6.9	13.4	10.1	3.7	23.36	7.95	2.7
Overall	325.0	137.4	212.0	256.2	103.3	163.2	360.2	72.02	95.7	834.04	89.24	144.5

Source Table I, II and III (Government of Pakistan, 1960; 1972; 1980; 1990)



4. A continuous decline in the cultivated area in province during 1960-1980 was observed. However, it drastically increased during 1980-1990 period by as much as 31.6%.

5. The size distribution of farm analysed with the help of Lorenz-Gini concentration revealed that these have come about some definite signs of change towards an equitable distribution of land in NWFP. The share of very

large farms was clearly declining both in total number as well as in total area. Lorenz ratios and Gini-coefficients thus calculated for the four successive census periods are depicted below

Census year	Lorenz Ratio	Gini Coefficient
1960	0.717	0.55
1972	0.636	0.41
1980	0.602	0.37
1990	0.582	0.35

6. A comparison of the Lorenz curves drawn for the NWFP at the four points in time i.e., 1960, 1972, 1980 and 1990 also indicated that over the 30 years period inequality in land distribution in the province had recovered to some extent (see Fig. 1).

## SUGGESTIONS

Keeping in view the results of the study, the following suggestions are made.

1. The lasting solution of the problem of distribution of land appears to be in cooperative farming movement, which needs to be tried honestly.
2. Available empirical evidence from some other studies suggests that small landholders are not only efficient but also significantly contributing towards marketable surplus in all the major crops. The small farm community, which is otherwise most efficient, needs help on two fronts, namely appropriate cost reduction technology and reasonably attractive output price. Small farmers association, which should be organized allowing membership to only the small owners, and tenants, which could serve as an official channel for institutional credit, inputs and marketing arrangements and finance themselves from commissions on their turnover.

3. One of the root causes of the inaccessibility of the small farms to improved inputs was their meager and dwindling share in the institutional credit. Prevalent credit policies are to be blamed for it. Number of small farms has been increasing fast, but eagerly awaiting government's attention in the name of social justice and productive efficiency. The nation would gain economically, politically and socially if positive steps are taken by the government to give due importance to the small farms.

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(Received 10 May 2003; Accepted 16 June 2003)