An Assessment of the Inequality in Income and Land Holdings among Rural Rice Farmers of District Swat

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ABSTRACT

The study was conducted in district Swat during 2007 to assess the degree of inequalities existing among rural rice farmers' income and land holdings. To this end, primary data was collected through structured questionnaire using a sample of one hundred rice farmers allocating to three tehsils selected purposively, each comprising three villages selected on the basis of proportional sampling technique. Lorenz curve approach and Gini-coefficient was used for the measurement of inequality in farmers' income and land holdings. The results obtained from Lorenz square box and Gini-coefficient indicated higher degree of inequality existing among farmers' income and size of land holdings. Based on the findings of the study, appropriate land reforms' structure should be introduced. Government should give incentives to poor farmers for increasing their income which will reduce these inequalities.

INTRODUCTION

Pakistan has a dual economy where few enjoy all sorts of conceivable luxuries whereas the majority of people have no access to basic facilities like drinking water facility, sanitation, health, education and training facilities. Some are getting richer and richer at the cost of the poor. The society has been divided between "Have and have Nots". There is a need to reduce economic inequalities by promoting social justice, social stability and social welfare, increasing production and providing equal opportunities for all. Inequalities exist in all the communities in general and particularly among the rural farmers' community. Different studies have been conducted in this regard. Greater income inequality has been linked to lower life expectancy in cross-national comparisons (Wilkinson, 1996); higher mortality rates (Kaplan *et al*. 1996; Kennedy *et al*. 1996) and worse self-rated health (Kennedy *et al.* 1998) at the U.S. state level; higher mortality at the U.S. metropolitan level (Lynch *et al*. 1998); as well as higher rates of obesity at the U.S. state level (Kahn *et al*. 1998). Several approaches exist for the measurement of income inequality across a geographic area (Atkinson 1970; Sen 1973 and Cowell 1977) i.e. the Gini coefficient; the decile ratio; the proportions of total income earned by the bottom 50%, 60%, and 70% of households; the Robin Hood Index; the Atkinson index; and Theil's entropy measure. In the present study, the Lorenz curve approach followed by the Gini coefficient has been used to assess the degree of inequality in income and land holdings existing among rural rice farmers in district Swat.

MATERIALS AND METHODS

District Swat was the universe of the study. The study was conducted in district Swat during 2007. Three Tehsils of district Swat (Kabal, Barikot and Matta) were selected purposively. Three villages from each Tehsil have been selected proportionally and a sample of hundred rice farmers was used. The study is based on primary data which was personally collected from the respondents through structured questionnaire, selected randomly. The questionnaire was based on both closed and open form questions. The data was collected in the farmer's fields, homes or in community centers (Hujras). The Lorenz curve and Gini-coefficient were used as analytical tools for the study. The Lorenz curve has been constructed in square box by cumulating percentages of sample farmers, size of land holdings and farmers' income. The severity of inequality in income and size of land holding has been determined from the difference between the diagonal line and the Lorenz curve in the square box diagram. The Gini-coefficient, which is derived from the Lorenz curve, was obtained through the formula:

$G = 1 + 1/n + 2/n^2 \bar{A} \quad [A_1 + 2A_2 + 3A_3 + \ldots + n A_n]$

Where

G = Gini- coefficient

$\bar{A}$= Average income / land holding of rice farmers

RESULTS AND DISCUSSION

Results indicated that the bottom 20% of sample farmers had got only 1.40% of total money income followed by top 20% receiving 60.80% of the total income. Similarly the bottom 50% of the sample farmers received only 9.40% of the total income representing higher degree of severity existing among rural rice farmers of district Swat. Furthermore, bottom 20% of sample farmers possessed only 2.00% of total land holdings followed by top 20% possessing 61.00% of the total holdings. Similarly the bottom 50% of the sample farmers had only 9.60% of the total holdings representing higher degree of severity existing among rural rice farmers of district Swat in terms of size of land holdings (Table). The ratio of the percentage of farmers' income received by the bottom 20% of sample farmers to the income

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received by the top 20% is (1.40 / 60.80) is 0.02, indicating the degree of inequality in the distribution of farmers' income. Similarly, the ratio of the percentage of farmers' land holding possessed by the bottom 20% of sample farmers to the holding possessed by the top 20% is (2.00 / 61.00) is 0.03 indicating the degree of inequality in the distribution of farmers' land holding.

CONCLUSION AND RECOMMENDATIONS

The study revealed that there existed inequality in farmers' income and size of land holding. The largest share of farmers' income was getting by the smallest portion of the rice farmers and vice versa. Similarly, the largest share of land holding was kept by the smallest portion of the rice farmers and vice versa. It was supported by the facts and figures obtained from Lorenz curves and Gini-coefficients. Appropriate land reforms are needed. Furthermore, the rice farmers should not depend upon agriculture sector only but non-farm activities should also be undertaken for increasing their income. The Govt. should give incentives to rice farmers so as to increase farmers' income.

The degree of severity in farmers' income and land holdings can be observed through the difference between the diagonal line and Lorenz curves in Fig. 1 and 2 respectively. The observed difference was significant in both the cases. It was also supported by the values of Gini-coefficient, which were observed as 0.69 and 0.77 for the inequality in income and land holding respectively.

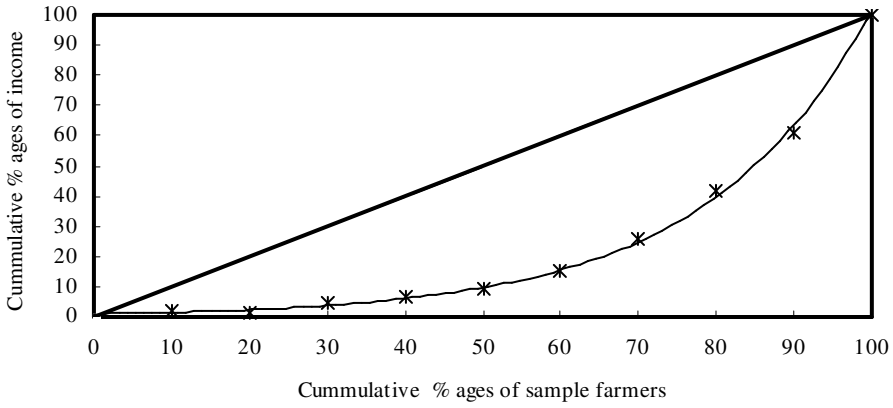

Fig. 1: Lorenz Curve for rice farmers' income

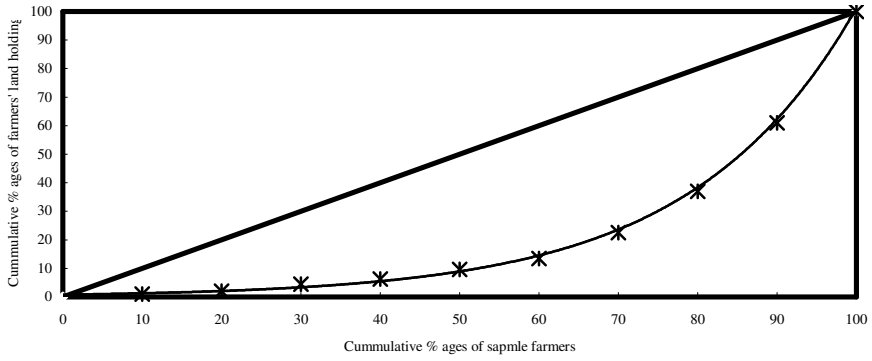

Fig. 2: Lorenz Curve for rice farmers' land holdings

Table: ***Cumulative percentages of sample farmers, farmers' income and farmers' land holding***

Group of 10 farmers	Cumulative percentages of sample farmers	Cumulative percentages of farmers' income	Cumulative percentages of farmers' land holding
1	10.00	2.00	1.00
2	20.00	1.40	2.00
3	30.00	4.50	4.50
4	40.00	6.30	6.30
5	50.00	9.40	9.60
6	60.00	15.50	13.50
7	70.00	26.00	22.50
8	80.00	42.00	37.00
9	90.00	60.80	61.00
10	100.00	100.00	100.00

Source: Field survey

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