

# Small is Beautiful

The total number of rural operational holdings in India increased from 88.9 million in 1980–81 to 13,776 million in 2010–11.

**THE RELATIONSHIP BETWEEN** land size and yield per unit of area cultivated has been intensely debated since the 1960s. A.K. Sen (1962, 1964) was the first economist to establish a positive relationship between small land holdings with crop productivity per unit of land<sup>1</sup>. His studies provided significant evidence that crop productivity per unit of land decreases with increases in land size. These studies provided strong support for land reforms, land ceilings and various other policies to support small and holders and, consequently, promote agricultural growth. A recent study by Chand *et al.* (2011) has shown that crop productivity is inversely related to land size; the smaller the land size, the higher the crop productivity per unit of land<sup>2</sup>. This study also suggests that productivity of Indian agriculture will rise significantly, if land inequality is reduced in favour of smaller size holdings. This article attempts to assess the trend of land trade in favour of small landholdings and how it is critical for the non-farm population in India.

According to the latest statistics, 40 per cent of the world's population depends on agriculture for its livelihood<sup>3</sup>. Of the 525 million farms worldwide, 85 per cent are small farmers who cultivate less than two hectares of land. China has the largest share (37%) of small land holdings in the world, followed by India (22%).

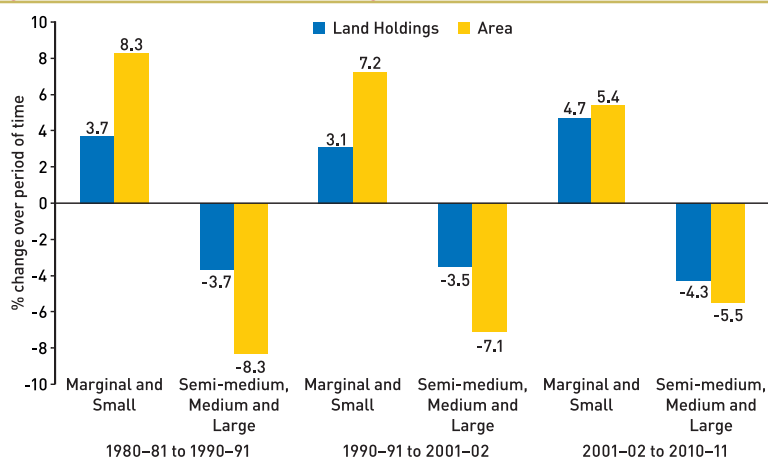
The total number of rural operational holdings in India increased from 88.9 million in 1980–81 to 13,776 million in 2010–11. The operational holdings increased among the 'small and marginal' farmers, who cultivate less than two hectares (ha) of land, from 66 million (74.5%) in 1980–81 to 117 million (84.9%) in 2010–11, while the share of the 'semi-medium, medium and large' farmers decreased (Figure A.1). This trend is consistent through the past three decades from the 1980s. Over time, the growth of small land holdings has slowed. The growing population and the inability of the non-agricultural sector to absorb the additional workforce have led to the sub-division of operational holdings.

The area under operational holdings between 1980–81 and 2010–11 shows an inverse-U trend. It increased from 163.8 million hectares (mha) in 1980–81 to 165 mha in 1990–91, thereafter declining to 159 mha in 2010–11 (Table A.1).

There is a significant decline in the share of area operated by 'semi-medium, medium and large' farmers. It declined by -8.3, -7.1 and -5.5 per cent during the periods of 1980–81 to 1990–91, 1990–91 to 2001–02 and 2001–02 to 2010–2011, respectively. This decline in operated area has been matched by an increase in the share of area among 'small and marginal' farmers during the same period. As a consequence, the average size of holdings has also decreased, from 1.8 ha to 1.2 ha during the same period (Table A.1).

Increased small land holdings plays a positive role in food grain productivity. The agricultural

**Figure A.1: Trend of Operational Holdings and Area in India, 1980–81 to 2010–11**



**Note:** Data are available every five years. The growth rate is calculated between the years mentioned to assess decadal changes.

**Source:** Situation Assessment surveys of Farmers, NSSO 59th round, Report No.497 and Agriculture Statistics At Glance Various Issues.

- Sen, A.K. 1962. An Aspect of Indian Agriculture. *The Economic Weekly*, 14 (4–6).
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- Chand, R., P. P. A. Lakshmi and A. Singh. 2011. Farm Size and Productivity: Understanding the Strengths of Smallholders and Improving their Livelihoods. *Economic & Political Weekly Supplement*, 46 (26 & 27), June 25.
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productivity of a farm depends on the extent of use of yield-enhancing inputs, such as irrigation facilities, fertilisers, quality of seeds, crop intensity grown at the farm, etc. The overall area under irrigation increased from 29.7 per cent in 1980–81 to 47.8 per cent in 2010–11. Fertiliser consumption has also gone up, from 31.8 kilogram (kg) per ha in 1980–81 to 146.3 kg per ha in 2010–2011. As a consequence, the production of food grain has increased by 89 per cent between 1980–81 and 2010–2011. The average yield per ha increased from 1,023 kg in 1980–81 to 1,930 kg in 2010–11.

Table A.1 shows that per ha agricultural output is inversely related to farm size. The lower the farm size, the higher the agricultural output per ha and vice versa. The agricultural output (per ha) was 12,168 kg, 4,731 kg, 4,047 kg, 3,257 kg and 1,797 kg for marginal, small, semi-medium, medium and large farmers, respectively in 2005. These support previous empirical evidence that the smallest farms, i.e., farms of sizes less than 1 ha, have the highest productivity in terms of output per ha.

The critical issue is which category of farmers supplies the most agricultural output for use by the non-farm population. There is an intuition that a

small group of large farmers supplies a relatively larger proportion of their product to the increasing non-farm population. However, there is a tendency among farmers with 'small and marginal holdings' to optimise returns from a small piece of land for self-consumption as well as for sale of a portion of the output to meet other expenses. The situation assessment surveys of farmers provide data on sales of agricultural output by land size of farmers. All farmers are selling more than 50 per cent of their agricultural output with the percentage of output sold positively related to the size of farms. As per the latest data in 2005, marginal farmers sold 51 per cent of their output and large farmers sold 80 per cent of their output. However, the percentage share of total sales of agricultural output is negatively related to the size of the farms. Therefore, 41 per cent of total agricultural output sold comes from 66 per cent of farmers who are marginal. And 5.3 per cent of total sales come from large farmers who are one per cent of the total farmers.

This finding suggest that it is critical to support small and marginal farmers and find ways to increase their efficiency and productivity.

**The lower the farm size, the higher the agricultural output per hectare and vice versa.**

**Table A.1: Area, Operational Holdings, Productivity, Irrigation, Fertiliser Consumption and Production of Foodgrains, 1980–81 to 2010–11**

	1980–81		1990–91		2001–02		2010–11	
	% of Holdings	% of Area	% of Holdings	% of Area	% of Holdings	% of Area	% of Holdings	% of Area
Marginal (less than 1 ha)	56.4	12.1	59.4	15.1	62.3	18.7	67.0	22.2
Small (1.0 to 2.0 ha)	18.1	14.1	18.8	17.4	19.0	20.2	17.9	22.1
Semi- medium (2.0 to 4.0 ha)	14.0	21.2	13.1	23.2	11.8	24.0	10.1	23.6
Medium (4.0 to 10.0 ha)	9.1	29.6	7.1	27.0	5.5	24.0	4.3	21.2
Large (10.0 ha and above)	2.4	23.0	1.6	17.3	1.0	13.2	0.7	10.9
Average size (in ha)	1.84		1.57		1.33		1.16	
Number of holdings (in million)	88.9		1,06.6		1,19.9		1,37.8	
Area operated (in million hectare)	1,63.8		1,65.5		1,59.4		1,59.2	
Yield (in kg/ hectare foodgrain)	1,023		1,380		1,734		1,930	
Area under irrigation (%)	29.7		35.1		43.0		47.8	
Fertiliser consumption (kg/hectare)	31.8		69.7		91.5		146.3	
Production of food grain (in million tonnes)	129.6		176.4		212.9		244.8	

Farm Size, Output and Sales, 2005								
	Average size (in hectares)	No. of farmer households (in lakh)	Output per hectare (kg)	Total Output (in lakh tonnes)	Output per Farmer Household (kg)	Sale of Output per Farmer Household (kg)	Per cent of total sales per farmer household	Per cent of total sales
Marginal (less than 1 ha)	0.40	589.1	12,168	28,670	4,867	2,497	51.3	40.8
Small (1.0 to 2.0 ha)	1.4	160.6	4,731	10,789	6,718	4,385	65.3	19.5
Semi- medium (2.0 to 4.0 ha)	2.7	93.5	4,047	10,292	11,008	7,260	66.0	18.8
Medium (4.0 to 10.0 ha)	5.8	42.6	3,257	8,057	18,922	13,149	69.4	15.5
Large (10.0 ha and above)	17.1	7.8	1,797	2,384	30,763	24,751	80.4	5.3
	1.3	893.5	3,769	60,193	5,013	3,158	63.0	100

Source: Situation assessment surveys of Farmers, NSSO 59th round; Report No. 497 and Agriculture Statistics at a Glance, various issues.