

CHAPTER IX

INTENSITY OF USE OF LAND

9.1 INTRODUCTION

Among all inputs used in agricultural production, land is treated as the basic input. The larger land area makes it possible to produce more output. However, it is the main problem to get the larger land area. In such a situation intensive use of land is the ultimate solution for getting more output. In this Chapter we would like to see how far the existing land of the local rural economy has been put in raising different crops. We would also like to explore the possibility of potential use of the existing land to that the level of output can be increased many more times of the present level.

9.2 SOME MEASURES OF INTENSITY OF USE OF LAND

In its simplest meaning the land use intensity implies the number of times a same piece of land is used for raising different crops. Therefore, the land intensity index is very much important for the consideration of farm activities. In fact, the net cultivated area of a farm is not considered as the true index of farm activities as it excludes the double or tripple cropped area which only can be known from the land intensity index.

There are various methods of measuring intensity of use of land. We have measured intensity index in two ways. The first method (in the table, Intensity Index I) is the official method or

conventional method which is frequently used by the agriculture departments of the state and central governments. The land use Intensity Index I is measured by the gross cultivated area to net cultivable area. The second method is rather unconventional method used by Sarkar (Sarkar, P.C. : 1984). In this method a new concept of gross cultivable land has been used which is 3.5 times of net cultivable land. In other words, the maximum potential use of a plot of land has been measured here with the existing technology mix. It is assumed that from a plot of land in one agricultural year potentially it is possible to raise three paddy crops along with one short duration non-paddy crop like vegetables. On the basis of this potential maximum extent possible use of land, the intensity Index II is measured by the gross cultivated land to gross cultivable land.

The intensity of use of land has been shown in table 9.1. The overall intensity figure 1.83 clearly shows that the area is not wholly covered by the double cropping facilities. Even the Intensity Index II indicates that only approximately half of the total potential land area has been used for crop cultivation. Thus, it is evident that enough possibility remains for intensive cultivation in the region.

Table 9.1
Intensity of Use of Land
(1988-89)

Farm Size (in acres)	Land Use Intensity Index I	Land Use Intensity Index II
Upto 1	1.80	.51
1-2	1.79	.51
2-3	1.82	.52
3-5	1.72	.49
5-10	1.94	.55
Above 10	1.82	.52
Total	1.83	.52

9.3 NUMBER OF STATIONS PER FARM & ACRE

The term 'Station' has been defined as contiguous plot of land under one operational holding. The area of the farms as they are operated today is divided into a number of stations which are widely scattered around the villages.

The number of stations per acre and per farm has been shown in table 9.2 for the agricultural year 1988-89. The number of stations per farm works out to 3.22. The average number of stations per acre is just above 1. However, the detailed study of the table reveals that smallest holding farms have approximately 3 stations per acre. Upto holding 3-5 acres, farms have more than one station per acre. Therefore, relatively the small holding farms' land is more scattered than the big holding farms. It is quite natural

Table 9.2
Mean Number of Stations
(1988-89)

Farm Size (in acres)	Number of Stations	
	Per Acre	Per Farm
Upto 1	2.96	2.00
1-2	1.96	2.67
2-3	1.37	3.44
3-5	1.09	4.12
5-10	.68	5.00
Above 10	.31	5.00
Total	1.05	3.22

that big-farms will have more stations per farm due to their access of large land area. However, per acre station is not high. Hence the farmers having larger land area get the advantage of economic use of land area.

9.4 LAND DISTRIBUTION AMONG FIELDS

A station may be composed of various fields. A field can be defined as the ultimate unit of crop production. In our studied region two types of field have been observed. These two kinds of field have two different types of crop combinations. In the first field a combination of crops, namely, Kharif HYV, mustard or potato and til has been raised. On the other hand, in the second field only two paddy crops traditional monsoon paddy (aman) and Winter HYV paddy (boro) have been raised. In the second field during the

(Kharif) season both traditional aman and Kharif-HYV are raised. Instead of sowing traditional aman in the whole area of the second field farmers occasionally raise the Kharif HYV. A locational difference has been found between these two types of fields. In fact, this difference causes the difference between the crop combinations. The first field is somewhat high land and therefore, it is suitable for winter non-paddy crops potato and mustard. The high land protects the crops from water logging problem. Same reason is true for pre-Kharif til. As first field makes it possible to raise three crops in a year, this type of land is dearer than the second field.

Table 9.3
Fields' Share of Areas
(1988-89)

Farm Size (in acres)	<u>First Field</u> Percentage of Net Cultivable Acre	<u>Second Field</u> Percentage of Net Cultivable Acre
Upto 1	2	98
1-2	2	98
2-3	6	94
3-5	7	93
5-10	7	93
Above 10	8	92
Total	6	94

The table 9.3 shows that the first field covers only 6 per cent of the net cultivable area. Therefore, majority of the land area is the type of second field. The table also shows that the small holding farms do not get much access to raise crops in the first field. Small farms depend mainly on second field.

9.5 PERCENTAGE DISTRIBUTION OF AREA TO CROPS

The percentage distributions of area to different crops have been tabulated in tables 9.4 and 9.5 both in respect of gross cultivated area as well as of net cultivable area.

Table 9.4

Percentage Distribution of Gross Cultivated Area to Crops (1988-89)

Farm Size (in Acres)	Amount of Gross Cultivated Area	Percentage of Area Given to the Crops to Total Gross Cultivated Area					
		Pre-Monsoon Til Oilseed	Kharif-HYV Paddy	Traditional Monsoon paddy	Potato	Mustard	Winter-HYV Paddy (Boro)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Upto 1	19.47	-	7	38	-	1	54
1-2	41.95	1	14	35	1	-	49
2-3	41.04	3	18	34	2	2	41
3-5	51.68	3	16	33	3	2	43
5-10	84.59	4	17	34	2	3	40
Above 10	86.09	4	21	33	3	3	36
Total	324.82	3	17	34	2	2	42

Table 9.5
Percentage Distribution of Net
Cultivable Area to Crops
(1988-89)

Farm Size (in Acres)	Amount of Net Cultivated Area	Percentage of Area Per Net Cultivable Acre					
		Pre Monsoon Til Oilseed	Khariif- HYV Paddy	Tradi- tional Monsoon Paddy	Potato	Mustard	Winter- HYV Paddy
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Upto 1	10.82	-	12	69	-	2	96
1-2	23.41	2	26	62	2	-	88
2-3	22.55	5	32	62	4	4	75
3-5	30.08	4	27	57	4	4	75
5-10	43.66	8	33	63	5	6	79
Above 10	47.30	7	37	59	6	7	66
Total	177.82	6	30	62	4	5	76

The table 9.4 shows that maximum area is given to single crop winter-HYV paddy to total gross cultivated area. It is 42 per cent. The second highest is given to traditional monsoon paddy. However, collectively the land area of khariif-HYV paddy and traditional monsoon paddy exceeds the land area of winter-HYV paddy. In other words, more land area is used for raising summer paddy than the winter paddy. Therefore, for winter paddy, actually land is not the barrier, rather other infrastructural facilities restrict the winter paddy cultivation. The table 9.4 also shows that other crops, til,

potato and mustard have been grown over a very negligible area. These three crops collectively shared only 7 per cent of the total gross cultivated area.

The table 9.5 shows that 76 per cent of the net cultivable area have been used for Winter-HYV paddy while traditional monsoon paddy has been planted over 62 per cent area. The lowest size farms have raised Winter-HYV paddy over the maximum area than any other size of farms.

9.6 CONCLUSION

The amount of land reserve remaining unutilised makes up 48 per cent of the available land. Therefore, enough opportunity remains to increase the output level manifold through intensive cultivation by the existing technology mix. Another important factor irrigation facility appears to be stumbling block for increasing use of land area. This factor, therefore, requires the special attention. A main form of investment for farms is provided by irrigation enterprises, run either by the Government or by private enterprises. Hence the existence of number of stations on a farm do not hinder use of reproducible capital on the farms. The only problem the lack of consolidation creates is to cause some loss of time in moving from one station to the other. Yet, without exceptions, the stations of a farmer are not far from one another.

We must qualify our finding that the amount of land reserve remaining unutilised makes up 48 per cent of the available land. The value of the annual output at constant prices per hectate of cultivable land (a variant of which was provided in this study by paddy output per hectare) may have different values. So the loss of the use of 48 per cent of the available land admits of different values in terms of output per unit of area.