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FARM SIZE- PRODUCTIVITY-VIABILITY IN INDIAN AGRICULTURE- POLICY IMPLICATIONS

P.A. Lakshmi Prasanna*

The relation between farm size, land productivity and viability in agriculture in India is examined in the study. States level data from National Sample Survey Organization (NSSO) 59th round situation assessment survey pertaining to the year 2002-03 is used in the study. At the country level an inverse relation between farm size and land productivity is observed. This relation is holding true in several states when only 3 size category farms are considered. But functional analysis revealed clear inverse relation between farm size and productivity. However in none of the states per capita net receipts were greater than per capita poverty line income in case of marginal farms. Only in three states viz. Punjab, Kerala and Jammu and Kashmir, per capita receipts on small farms was higher than poverty line income. This indicates non-viability of smallholders in majority states when they exclusively depend on crop-cultivation. Since smallholders are more diversified in terms of sources of income for their survival, multi-pronged strategy is needed to improve their livelihood. Harnessing the strength of smallholders viz. higher productivity together with addressing the underlying reasons of lower land productivity on large farms is the strategy to be followed for improving overall performance of Indian agriculture.

1 Introduction

Smallholders constituted 85 per cent of operational holdings and operated 44 per cent of total operational holdings area during 2010-11. Therefore performance of smallholders is a key determinant of performance of Indian agriculture. In recent studies Chand et al (2011) and Gaurav and Mishra (2011) examined farm size wise returns to livelihood security of smallholders. Chand et al (2011) concluded prevalence of inverse relation between farm size and productivity on gross returns basis and Gaurav and Mishra (2011) on net returns basis. Both the studies indicated problems in sustaining smallholders livelihood due to low returns on per capita basis (Chand et al, 2011) and higher cost of production per hectare (Gaurav and Mishra). Rawal and Swaminthan

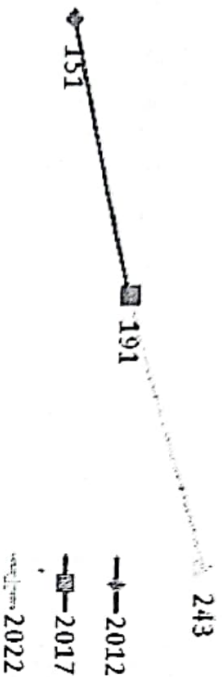


Fig. 2.1: Cropping Intensity in Bihar (%)

Source: Author's Calculation

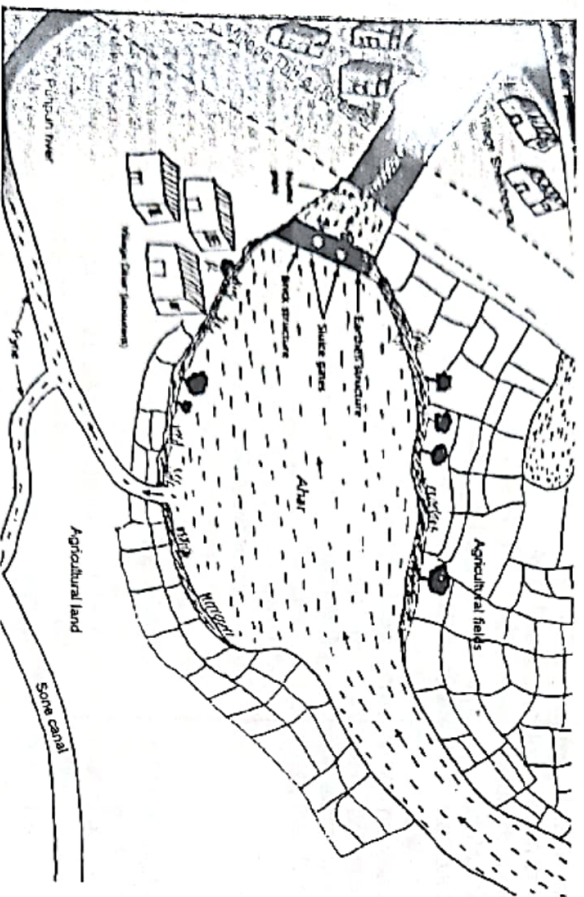


Fig. 3.1: Typical Ahar-Pyne System

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(2011) based on analysis of household survey data from seven villages of three states viz; Andhra Pradesh, Uttar Pradesh and Maharashtra for the year 2005-06 and 2006-07, observed positive relation between gross and net income from farming and scale of operation. They measured scale of operation in terms of access and value of the means of production, level and sources of income and pattern of labour deployment. Against this backdrop, an attempt has been made in the present study :

- i) to extend the farm-size productivity relation analysis to all states so as to get more insights regarding farm size wise productivity, and
- ii) to examine viability of different size category farmers when they depend exclusively on crop-farming.

2 Data and Methodology

The analysis in this study is mainly based on data from NSSO situation assessment survey published in report No: 497 titled "Income, expenditure and productive aspects of farmer households". The additional data needed in the analysis viz; average farm size and family size, were computed from unit level data of NSSO situation assessment survey, 59th round, 33 schedule. The data pertains to the year 2002-03 and is the only latest data available for exploring farm size-productivity linkage for all the states. Both tabular as well as functional analyses were carried out. The study focused on major states only and economics of crop production was analysed first and was followed by productivity and efficiency assessment. Farm viability was assessed focusing exclusively on returns from crop cultivation and comparing it with poverty line income.

3 Results and Discussion

3.1 Economics of Crop Production

At all India level per hectare paid out cultivation expenses ranged between Rs 9608 to Rs 3945 across different farm size categories, and it was inversely related to farm size (Table 1). The inverse relation was holding good at state level also in most of the cases (especially when only 3 size categories of farms were considered i.e. marginal, small and large), exception being Punjab, Haryana and Orissa. At all India level cultivation expenses on marginal holdings was 2.5 times that of large farms, on small farms it was 2 times that of large farms. In 9 states i.e. Andhra Pradesh, Bihar, Haryana, Jammu and Kashmir, Kerala, Punjab, Tamil Nadu, Uttar Pradesh, and West Bengal per ha cultivation expenses of marginal holdings were above Rs 10000. Per ha cultivation expenses were above Rs 10000 in the case of small farmers in 6 states and two states in the case of large farms. Under all size category highest expenditure was observed in the case of Punjab (Rs 18240) followed by Kerala (Rs 16361) and West Bengal (Rs 15585).

Further analysis revealed that on marginal farms at All India level, highest share of cultivation expenses (24 per cent) was incurred towards fertilisers and was followed by labour (22 per cent), seeds (15 per cent) and irrigation (13 per cent). 6 per cent of cultivation expenses was incurred on pesticides. Similar trend was observed with respect to small farms also. On the other hand in the case of large farms, highest share of cultivation expenses was incurred on labour (25 per cent) followed by fertilisers (19 per cent), Seeds (16 per cent), pesticides (9 per cent) and irrigation (8 per cent). State level analysis revealed that in the case of marginal farms in 10 states fertiliser cost constituted major cost of cultivation followed by labour cost in 6 states. As far as small farms are concerned, in 8 states fertiliser cost was the major cost followed by labour cost in 7 states. Out of 16 states, in which large farmers cost of cultivation details are available, in 8 states labour cost was the major cost item (i.e. 50 per cent states) followed by seeds costs in 3 states. Further on large farms labour cost share range was wider compared to that on marginal farms. In all farms size category also in 10 out of 20 states, labour cost was the major cost as shown in Table 1.

In two states viz; Jammu and Kashmir, and Uttar Pradesh, fertiliser is the major input across different farm size groups. Similarly in Andhra Pradesh, Orissa, Tamil Nadu and West Bengal, labour cost is the major input cost across farm size groups. In Madhya Pradesh, seed is the major input cost on various size category farms. Excluding these seven states in all other states major cost input was different on smallholdings compared to large category farms.

Per ha gross receipts from cultivation was also inversely related to farm size (when only three categories were considered viz; marginal, small and large farms) both at All India level and states level exception being Punjab, Orissa and Uttaranchal (among major states). At all India level, receipts on marginal farms and small farmers were 2.7 times and 2.2 times of receipts on large farms. On marginal farms per ha receipts ranged between Rs 8292 (Orissa) and Rs 47396 (Jammu and Kashmir). In the case of small farms, receipts ranged between Rs 7172 (Orissa) to Rs 45169 (Kerala). In the all size category lowest receipts of Rs 5523 was recorded in the case of Rajasthan and highest receipts of Rs 46498 was recorded in the case of Punjab.

At all India level net receipts on marginal farms was 2.89 times higher than on large farms, on small farms 2.39 times that on large farms (Table 2). In almost all the states, net receipts on marginal farms was higher compared to large farms, except in Karnataka. But in all the states including Karnataka net receipts on small farms was higher compared to large farms. This confirms the prevalence of inverse farm size relation in land productivity under Indian context even in the post green revolution period (more so when only three size categories were considered viz, Marginal, Small and large farms). Lowest net receipts were observed in the case of Orissa (Rs 4355) with respect to marginal farms and in Rajasthan (Rs 3231) in the case of small farms. In all size category, once again lowest per ha net receipts was observed in the case of Rajasthan.

In Andhra Pradesh, Maharashtra and Uttar Pradesh, net receipts over paid out costs was higher on smallholdings compared to large farms. This is contrary to observation made by Rawal and Swaminathan (2011). Rawal and Swaminathan (2011) observed positive relation between net income per hectare and the scale of operation. There observation was based on analysis of data from only seven villages from three states viz; Andhra Pradesh, Uttar Pradesh and Maharashtra in contrast to pooled data of the present study.

3.2 Aggregate Land Productivity

A look into distribution of land and net receipts across farm size categories in different states, also indicates that large farmers share in net receipts is lower than their share in land indicating lower productivity of large holders at aggregate level at, all India level. At states level also similar trend was observed in most of the states. Only in the case of Andhra Pradesh and Uttaranchal marginal farmers share was lower in net receipts compared to their share in land. Similarly only in the case of Jharkhand, Orissa, Punjab, Tamil Nadu and Uttaranchal small farmers share in net receipts over paid out costs was lower than their share in land.

Results of regression analysis of effect of farm size on productivity are presented in Table 3. Initially when only all size farms of major states were considered in analysis with average farm size as the only explanatory variable, the explanatory power of the model was only 30 per cent. But when paid out expenditure was included in the model, the explanatory power increased to 64 per cent, in both the models, the coefficient of average farm size was significant at 1 per cent and 3 per cent level respectively. When disaggregated farm size wise data of the major states were analysed, then also, the coefficient associated with average farm size was negative, clearly revealing inverse farm size land-productivity relation at all India level. However farm size coefficient was significant at 1 per cent level when it was the only explanatory variable in the model, but when paid out cost was included in the model, then farm size was significant only at 20 per cent level.

3.3 Efficiency In Cultivation

After looking into farm-size wise economics of crop farming and land productivity, efficiency measurement was attempted using the measures of net income over paid out costs per rupee of total paid out cultivation expenditure (overall efficiency) and net income over paid out costs per rupee of labour expenditure (labour efficiency). The results reveal that at all India level overall efficiency (net receipts per rupee of expenditure) of marginal farmers and small farmers were 1.31 and 1.35 respectively as against overall efficiency of 1.13 on large farms (Table 4). Further it is observed that overall efficiency at all India level increased upto semi-medium size farms and then started declining.

Among major states, in the case of Andhra Pradesh, Himachal Pradesh, Jharkhand,

Karnataka, Kerala, Maharashtra, Tamil Nadu and Uttar Pradesh, efficiency of smallholders is less compared to large farmers, in all other states efficiency of smallholders is high. Highest efficiency of marginal farmers was observed in the case of Assam followed by Jammu and Kashmir, lowest efficiency was reported in the case of Andhra Pradesh. In the case of small farms, highest efficiency was observed in the case of Assam followed by Jammu and Kashmir, and lowest efficiency was observed in the case of Tamil Nadu. In the case of large farms highest efficiency was observed in the case of Kerala and lowest efficiency was observed in the case of Orissa. Further, net returns over paid out costs was below one in the case of : i) marginal farms in Andhra Pradesh, Tamil Nadu, and West Bengal, ii) small farms in Andhra Pradesh, Rajasthan, Tamil Nadu and West Bengal, and iii) large farms in the case of Andhra Pradesh, Gujarat, Orissa and Rajasthan.

With regards to labour efficiency also, it is observed that at all India level, marginal and small farms efficiency was 5.97 and 6.1 respectively compared to 4.63 on large farms (Table 5). As in the case of overall efficiency, labour efficiency also gradually increased upto semi-medium size and then declined. At states level, it is observed that in Himachal Pradesh, Jharkhand, Karnataka, Kerala, Tamil Nadu and Uttar Pradesh, labour use efficiency on marginal farms and small farms was lower compared to large farmers. In some of these states, observed higher share of attached labour cost might led to higher labour efficiency on large farms.

3.4 Viability of Smallholders

In order to evaluate the viability of different size category farms per person net receipts from cultivation was computed (taking family size into account) and it was compared with state specific poverty line income (for the year 2004-05). The analysis results are presented in Table 6.

From Table 6, it is clear that on per capita basis income from cultivation is directly related to farm size. At all India level on marginal farms, per capita income is only one tenth of what is there on large farms. On small farms it is around one-fourth of what is observed on large farms. This in turn can be due to lower per capita availability of land. This aspect is examined and the results are presented in table 7.

State wise viability analysis indicate that, out the 20 states focused in this study, in none of the states marginal farmers were viable, in only 3 states small farms were viable (Table 6). The three states were Jammu and Kashmir, Kerala and Punjab. In these states the per capita land availability was 0.23, 0.28 and 0.26 ha respectively (Table 7). From Table 7, it is evident that per capita availability of land is directly related to farm size both at all India level and states level. Per capita availability of land on marginal farms ranged between 0.06 ha (Kerala) to 0.11 ha (Andhra Pradesh, Chhattisgarh, Karnataka, and Maharashtra). This range varied from 0.20 (Uttaranchal) to 0.31 ha (Tamil Nadu) in the case of small farms. Thus, broadly per person net receipts across different farm sizes is observed to be directly related to per person

land availability. However, in the states of Andhra Pradesh and Tamil Nadu small farmers per capita availability of land was higher than that of the three states in which small farmers were viable. But still in these two states, small farmers were not viable and labour was the major costing input on these farms. Thus labour unavailability and higher wages of agricultural labour might be the reason behind the observed trend. Out of 20 states in 8 states semi-medium farms were viable and in 18 states medium and large farms were viable. In Punjab at overall level, farms were viable, but even in this state, marginal farms were not viable. Singh et al (2009) analysing viability of smallholders in Punjab, reported that the viability varied with productivity of zone. In Rajasthan not even large farms were viable, further in this state as stated earlier, lease rent was the major cost item on these farms. In Kerala interestingly both marginal farms (where labour was the major cost item) and large farms (where the major cost item was seed) were not viable. Further Mahesh (2000) observed that productivity was associated with cropping pattern on different size category farms in the state of Kerala. This indicates cropping pattern differences between the large farms and small farms might be yet another determinant for non-viability of small farms besides per capita availability of land.

Taken together these observations indicate that productivity on per capita basis is low on smallholdings. This calls for improving per capita productivity of smallholders by (i) improving land to man ratio (ii) improving land productivity through efficient management of inputs and marketing of outputs. An attempt was made to arrive at per capita break even land size needed for to reap net receipts above poverty line, under existing productivity, cost condition and accounting for variations in family size on different category farms. The results are presented in Table 8. The results indicate that at all India level per person land availability on marginal holdings has to be increased by 4.27 times and on small farms it has to be increased by 1.71 times so as to bring these holdings above poverty line if these farms exclusively depend on crop cultivation for their income. The per person availability of land on marginal farms need to be increased by 2 to 9 times across states so as to make them viable. In Orissa on marginal farms, per capita availability of land needs to be increased by 9 times, to make these farms viable. Similarly on small farms per person availability of land need be raised between 2 to 6 times across different states. In all size farm categories also break even farm size is higher than what is available on per capita basis. Sen and Bhatia (2004) also observed that the average size of farms in many states in 1997-98 was not adequate to meet the requirements implied by the poverty line except in Andhra Pradesh, Gujarat, Haryana, Madhya Pradesh, Punjab, Rajasthan and West Bengal.

4 Suggestions for Improving Viability of Smallholders

From the analysis, it is clear that in none of the state marginal farms were viable if they exclusively depend on crop cultivation. For improving per capita income from crop cultivation, improvement in land to man ratio can be brought through (i) land ceiling and distribution of surplus land (ii) facilitating operation of tenancy markets

and (iii) financing purchase of land by smallholders. All these mechanisms are in operation in India and their limitations are well documented (Haque, 2003). Land acquisition for development purposes, competition from corporate bodies for using land in bio-fuel production and soil carbon markets, predicted decline in area suitable for cultivation because of climate change (Zhang and Cai, 2011) are some emerging challenges with respect to land availability faced by smallholders in Indian agriculture. Under these circumstances it becomes further more difficult to improve the per capita land availability. Under such circumstances, the alternate option is to create alternate/ supplementary employment opportunities.

According to NSSO situation assessment survey in 2002-03, at all India level net receipts from crop constituted around 30 per cent of total income on marginal farms and around 60 per cent in the case of small farms. Wages constituted around 50 per cent of total income on marginal farms, and around 30 per cent on small farms. On both marginal and small farms, net receipts from livestock enterprise constituted only around 5 per cent of total income. The balance is contributed by net receipts non-farm sector. Hence on small farms, non-farm sector was the third major source of income. Diana and Lakshmi (2011) observed that when marginal farms were further disaggregated into different size category farms, income from cultivation was neither the first nor the second major source of income in any of the states in sub-marginal category farms. On the contrary on large farms cultivation was the major income source, followed by non-farm sector, contribution of wages was the lowest. Similar situation was observed in most of the states. Thus for improving the viability of smallholders, efforts need to be there for improving income from all these sources.

Despite being third major source of income, share of earning from non-farm sectors on marginal farms and small farms is very low (10 to 15 per cent). This could be due to age factor coupled with illiteracy, reflecting as limitation on skill of farmers restricting their ability to shift completely to a non-farm job of high remuneration. Hence creating opportunities for smallholder cultivators outside agriculture but within countryside, matching with their skill can be one immediate policy option for improving their livelihoods.

In a recent study Motiram and Singh (2012) analysing the data of India Human Development Survey (IHDS), 2005, using transitional matrix approach, reported that at all India level in rural areas, almost half the children of farmers end up as farmers and more than half the children of agricultural labourers (roughly 56 per cent) end up as agricultural labourers. Further they reported higher downward mobility i.e. farmer's sons becoming agricultural labour in the case of SC/ST categories. These results indicate that socio-economic limitations and inequity in opportunities is leading to lower intergenerational occupational mobility in India. Hence these constraints need to be addressed for moving surplus labour from agriculture to non-agriculture and improve their livelihood in the long run.

For harnessing the potential of smallholders in crop production and improving their

viability, proper management of input use and their costs, and proper cropping choices on these farms will be some useful strategies. In improving the accessibility of smallholders to various inputs and services at affordable price public sector has a crucial role to play.

5 Conclusions and Policy Implications

In 2002-2003 per ha net receipts over paid out cost of small farmers was higher than large farms in all states. Net receipts of marginal farms were also higher than that of large farms in all major states except Karnataka. However it is pertinent to note that clear inverse relation between farm size and land productivity was not observed in several states when five size category farms were considered. The inverse size relationship is holding good in most of the states only when three size category farms are considered i.e. marginal farms, small farms and large farms. But functional analysis revealed inverse farm size- land productivity relation.

In none of the state, per capita net receipts from crop farming in the case of marginal farms was greater than per capita poverty line income. Only in three states per capita receipts on small farms was higher than poverty line income. This indicates non-viability of smallholders when they exclusively depend on crop-cultivation. Since smallholders are more diversified in terms of sources of income, multi-pronged strategy is needed to improve their livelihood. Skill building and reducing inequality in opportunities are the steps needed for improving livelihood of smallholders in the intergenerational perspective. Harnessing the strength of smallholders viz; higher land productivity in crop-farming (with cost management) together with addressing the underlying reasons of lower land productivity on large farms is the strategy to be followed for improving overall performance of Indian agriculture.

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Table 1 : Total paid out Cultivation Expenses on different Size Category Farms in 2002-03 (Rs/ha)

State	Marginal	Small	Semi-medium	Medium	Large	All Sizes
Andhra Pradesh	11705	10437	7729	7787	4656	8867
Assam	3385	3251	1970	7136	NA	3704
Bihar	11108	9782	8965	6403	8608	9763
Chhattisgarh	3686	3196	3207	4398	3402	3564
Gujarat	8042	7601	6449	7976	5981	7396
Haryana	14195	12607	13699	14339	14346	13825
Himachal Pradesh	6537	5948	8557	5208	293	6554
Jammu and Kashmir	10217	7070	5876	3834	NA	7853
Jharkhand	4045	3167	3255	1712	1764	3323
Karnataka	7379	7456	6137	4771	6792	6278
Kerala	15610	14915	24066	15009	37	16361
Madhya Pradesh	5047	4192	3929	4406	3151	4027
Maharashtra	7676	5921	5556	5167	5485	5745
Orissa	3937	3417	3345	4991	8540	3778
Punjab	14751	16174	17976	18758	21565	18240
Rajasthan	5357	4758	4132	2402	1860	3096
Tamil Nadu	11432	8571	8882	9029	5281	9388
Uttar Pradesh	12832	10778	9744	10808	715	10003
Uttaranchal	6780	6189	7884	1065	NA	6745
West Bengal	16740	15535	12090	10351	NA	15585
India	9608	7727	6787	6452	3845	7194

NA = Not Available

Table 2 : Net Receipts over paid out Costs per ha across different Size Category Farms in different States in 2002-03 (Rs)

State	Marginal	Small	Semi-medium	Medium	Large	All Sizes
Andhra Pradesh	5653	6457	6046	6413	3439	5973
Assam	20212	18452	12224	17700	NA	21082
Bihar	16548	15247	15332	12657	12817	15518
Chhattisgarh	6422	5886	5559	4707	3792	5561
Gujarat	9507	9679	7762	7359	3972	8149
Haryana	21626	17750	17096	12357	16009	15975
Himachal Pradesh	13105	12757	11230	13295	1168	12446
Jammu and Kashmir	37178	35255	23264	15531	NA	31522
Jharkhand	13088	10824	10126	7276	9018	11342
Karnataka	8316	9169	8255	7037	8730	8170
Kerala	29080	30254	31809	14709	368	28281
Madhya Pradesh	8180	5966	6494	6242	4492	6194
Maharashtra	8846	7242	6556	5956	6833	6809
Orissa	4355	3755	3169	4532	1088	3970
Punjab	28976	27689	27339	30752	24886	28258
Rajasthan	5877	3231	3838	1855	752	2427
Tamil Nadu	8553	5137	7001	14931	5422	8207
Uttar Pradesh	13891	13814	12243	13402	1108	11947
Uttaranchal	20032	14004	121676	31521	NA	36375
West Bengal	15855	15179	13436	14527	NA	15304
India	12624	10401	9432	8000	4361	9424

NA = Not Available

Table 3 : Effect of Farm Size on Productivity

	coefficient		P value		Dependent variable: Gross Receipts (Rs/ha)	
	value	P value	coefficient	P value	coefficient	P value
Constant	37060.76	4.36E-06	17467.09	0.014849	24148.89	2.83E-20
Average farm size (ha)	-12540.3	0.010984	-7806.01	0.037748	-854.757	0.010161
Paid out expenses/ha			1.712584	0.000884		
Number of observations	20		20		96	
R square	0.30866		0.645741		0.068215	
					1.974589	5.72E-10
					0.384343	

Table 4 : Net Returns over paid out Costs per Rupee of Total paid out Cultivation Expenditure on different Size Category Farms in Major States

State	Marginal	Small	Semi- medium	Medium	Large	All Sizes
Andhra Pradesh	0.48	0.62	0.78	0.82	0.74	0.67
Assam	5.97	5.68	6.24	2.48	NA	5.69
Bihar	1.49	1.56	1.77	1.98	1.49	1.59
Chhattisgarh	1.74	1.84	1.73	1.07	1.11	1.56
Gujarat	1.18	1.27	1.20	1.00	0.66	1.10
Haryana	1.52	1.41	1.25	0.86	1.12	1.16
Himachal Pradesh	2.00	2.14	1.31	2.55	3.99	1.90
Jammu and Kashmir	3.64	4.99	3.96	4.31	NA	4.01
Jharkhand	3.24	3.42	3.11	4.60	5.11	3.41
Karnataka	1.13	1.23	1.35	1.49	1.29	1.30
Kerala	1.86	2.03	1.32	0.98	10.00	1.73
Madhya Pradesh	1.52	1.42	1.65	1.55	1.43	1.54
Maharashtra	1.15	1.22	1.18	1.15	1.25	1.19
Orissa	1.11	1.10	0.95	0.92	0.13	1.05
Punjab	1.96	1.71	1.52	1.64	1.15	1.55
Rajasthan	1.10	0.68	0.93	0.78	0.41	0.78
Tamil Nadu	0.75	0.60	0.79	1.66	1.03	0.87
Uttar Pradesh	1.08	1.28	1.26	1.24	1.55	1.19
Uttaranchal	2.95	2.26	15.43	29.81	NA	5.39
West Bengal	0.95	0.98	1.11	1.41	NA	0.98
India	1.31	1.35	1.39	1.24	1.13	1.31

NA = Not Available

Table 5 : Net returns over paid out Costs per Rupee of Labour Expenditure on different Size Category Farms in Major States

State	Marginal	Small	Semi- medium	Medium	Large	All Sizes
Andhra Pradesh	1.95	2.61	3.27	3.01	1.95	2.66
Assam	31.00	24.71	22.85	9.86	NA	24.69
Bihar	7.67	6.77	7.64	6.36	5.29	7.17
Chhattisgarh	7.31	6.81	6.25	2.59	2.41	5.01
Gujarat	7.50	7.96	6.29	5.03	1.90	5.72
Haryana	13.98	12.16	9.35	6.15	5.96	8.56
Himachal Pradesh	12.30	7.83	7.28	9.14	22.73	9.32
Jammu and Kashmir	22.83	26.32	20.19	21.79	NA	23.02
Jharkhand	13.65	13.98	10.39	14.52	27.41	13.81
Karnataka	3.83	4.97	5.22	5.88	4.43	4.89
Kerala	3.88	3.82	2.94	2.05	40.11	3.57
Madhya Pradesh	13.48	8.79	8.13	7.40	6.84	8.15
Maharashtra	4.11	4.59	4.13	3.81	3.72	4.08
Orissa	3.52	3.60	2.50	2.30	0.26	3.15
Punjab	12.06	9.25	8.68	8.69	5.65	8.32
Rajasthan	13.81	8.69	10.02	6.36	3.15	7.69
Tamil Nadu	2.45	1.90	2.40	4.07	2.78	2.65
Uttar Pradesh	9.10	9.40	8.01	7.34	11.50	8.68
Uttaranchal	23.62	11.08	39.83	144.58	NA	28.35
West Bengal	2.88	2.66	2.82	3.30	NA	2.82
India	5.97	6.10	6.20	5.40	4.63	5.83

NA = Not Available

Table 6 : Per person Net Receipts from Cultivation on different Size Category Farms and Poverty Line Income in Major States of India (Rs.)

State	Poverty Line Income per year			
	Marginal	Small	Semi-medium	Large
Andhra Pradesh	602	1961	2969	5926
Assam	1962	3993	4730	9525
Bihar	1002	2989	6161	7851
Chhattisgarh	695	1482	2224	3168
Gujarat	723	2238	3932	7563
Haryana	1031	3738	7691	9071
Himachal Pradesh	1113	3022	4127	8627
Jammu and Kashmir	2948	7977	9517	14941
Jharkhand	1048	2715	3260	5675
Karnataka	917	2468	3490	5858
Kerala	1806	8323	14377	15960
Madhya Pradesh	834	1497	2692	5721
Maharashtra	934	2069	3388	5475
Orissa	442	942	1284	3914
Punjab	825	7269	11849	24647
Rajasthan	547	777	1645	1633
Tamil Nadu	755	1593	3915	17003
Uttar Pradesh	932	2840	4182	7734
Uttaranchal	1522	2816	51585	18072
West Bengal	1134	3289	4774	8211
All India	1001	2498	4031	6586
				10141
				2093
				4276

NA = Not Available

Table 7 : Per capita Land Availability on different Size Farms in different States of India (ha.)

State	All Sizes				
	Marginal	Small	Semi-medium	Medium	Large
Andhra Pradesh	0.11	0.29	0.49	0.94	1.72
Assam	0.10	0.22	0.39	0.54	NA
Bihar	0.06	0.20	0.39	0.62	1.36
Chhattisgarh	0.11	0.25	0.40	0.67	1.53
Gujarat	0.08	0.23	0.51	0.95	2.67
Haryana	0.05	0.21	0.45	0.73	1.79
Himachal Pradesh	0.08	0.24	0.37	0.65	11.67
Jammu and Kashmir	0.08	0.23	0.41	0.90	NA
Jharkhand	0.08	0.25	0.32	0.72	2.45
Karnataka	0.11	0.27	0.42	0.83	1.98
Kerala	0.06	0.28	0.45	1.09	2.05
Madhya Pradesh	0.10	0.25	0.41	0.84	2.51
Maharashtra	0.11	0.29	0.52	0.92	1.81
Orissa	0.10	0.25	0.41	0.85	4.92
Punjab	0.03	0.26	0.43	0.80	1.50
Rajasthan	0.09	0.24	0.43	0.88	2.24
Tamil Nadu	0.09	0.31	0.56	1.13	3.27
Uttar Pradesh	0.07	0.21	0.34	0.58	4.97
Uttaranchal	0.08	0.20	0.42	0.57	NA
West Bengal	0.07	0.22	0.36	0.56	NA
All India	0.08	0.24	0.43	0.82	2.20

NA = Not Available

Table 8 : Poverty Line break even per capita Land on different Farm Size Categories (ha.)

State	Marginal	Small	Semi-medium	Medium	Large	All Sizes
Andhra Pradesh	0.62	0.54	0.58	0.55	1.02	0.59
Assam	0.23	0.25	0.38	0.26	na	0.22
Bihar	0.26	0.28	0.27	0.34	0.33	0.27
Chhattisgarh	0.60	0.66	0.70	0.82	1.02	0.70
Gujarat	0.45	0.44	0.55	0.53	1.07	0.52
Haryana	0.23	0.28	0.29	0.40	0.31	0.31
Himachal Pradesh	0.36	0.37	0.42	0.36	4.05	0.38
Jammu and Kashmir	0.13	0.13	0.20	0.28	na	0.15
Jharkhand	0.34	0.41	0.43	0.56	0.49	0.39
Karnataka	0.47	0.42	0.47	0.55	0.45	0.48
Kerala	0.18	0.17	0.16	0.35	14.03	0.18
Madhya Pradesh	0.48	0.66	0.61	0.57	0.88	0.63
Maharashtra	0.49	0.60	0.66	0.73	0.64	0.64
Orissa	0.90	1.04	1.23	0.85	3.59	0.98
Punjab	0.17	0.18	0.18	0.16	0.20	0.17
Rajasthan	0.76	1.39	1.17	2.41	5.90	1.85
Tamil Nadu	0.49	0.82	0.60	0.28	0.78	0.51
Uttar Pradesh	0.32	0.32	0.36	0.33	3.96	0.37
Uttaranchal	0.29	0.41	0.05	0.18	na	0.16
West Bengal	0.29	0.30	0.34	0.31	na	0.30
All India	0.34	0.41	0.45	0.53	0.97	0.45

NA = Not Available