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Impact of High Yielding Vartieties on Agricultural Labour in Madurai district.

S. VARADARAJAN*

A Study to evaluate the impact of cultivation of high yielding varieties on demand for labour, wage structure, pattern of labour use and productivity of labour revealed that cultivation of high yielding varieties I. Covered 36.99 per cent of the gross crop area of the sample farms. II. Created additional demand of 30 man days of labour per hectare. III. Increased the share of on-farm labour (i.e. family labour and attached labour) in total IV. Thus for, helped reduction in under-employment more than unemployment. V. Increased per capita earning of attached labour marginally (Rs. 3.23 against Rs. 2.96). VI. Increased number of days of active employment (184 days as against 170 man days). VII. Reduced disparity in wages earned by attached labourers and casual labourers and there by increased stability of the system of contract employment that offered security of job to farm workers. VIII. Increased average value produce of labour (Rs.14.33 against Rs. 12.08 per man day unit) by 18.63 per cent.

An attempt to improve the conditions of Agricultural labourers calls for both "work making" and "work stretching" (i.e.) creation of additional rural employment by promoting cottage and increasing agricultural productivity. Till recent times the scope for later was considered meagre. Recent improvement in agricultural production techniques, has helped a 'green revolution' and has given a new hope of solving rural unemployment by work stretching in the farm sector itself. At this juncture a study on agricultural labour with an object of estimation of additional demand for labour utilization pattern, wage structure and productivity of farm labour due to introduction of high yielding varieties programme will be highly useful. With the above object a study was conducted in Madurai district to study the impact of high yielding varieties and the results are presented here under.

MATERIAL AND METHODS

Madurai East Block was selected since it had the largest area under high yielding varieties in Madurai Agricultural division. Sixty holdings were randomly selected from ten villages at the rate of six holdings in each. In each village three farms each from high yielding growers (progressive farmers) and traditional variety cultivators were selected for the study. The results were tabulated and used for comparative studies.

* Department of Agricultural Economics, Tamil Nadu Agricultural University, Coimbatore-641003.

TABLE I. Requirement of labour per crop hectare for progressive and traditional farms.

Name of the village	Progressive			Traditional		
	Men	Women*	Total	Men	Women*	Total
Appanthirupathi	124	84	208	123	67	190
Kallanthiri	106	72	178	104	62	166
Melamadi	119	86	205	114	72	186
Narasingam	104	67	171	104	54	168
Porasapatty	119	91	210	114	59	173
Puduthamaraipatty	116	82	198	99	64	163
Thamaraipatty	121	69	190	14	52	166
Rajakambeeram	116	82	198	96	57	153
Uthangudi	116	77	193	93	57	151
Varichiyur	121	79	200	106	64	170
Overall average	116	79	195	106	62	168

*Women in man day equivalent

RESULTS AND DISCUSSIONS

It is observed that the labour requirement is uniformly higher in progressive farms than that of traditional farms (Table I). The additional labour requirement varied from 12 to 44 man days per crop hectare. On an average progressive farms use 27 additional man days per crop hectare which consists of 10 man days of men labour and 17 man equivalents of woman labour. Therefore as the coverage under high yielding varieties increase the labour requirement per hectare would also increase, since high yielding varieties proved to be a little more labour intensive. The mean difference in man day requirement per hectare between progressive and traditional varieties was found to be highly significant.

This shows that the cultivation of high yielding varieties offered scope for reducing the unemployment and under employment in agriculture. The demand of 27 man days per hectare has resulted from 36.99 per cent of coverage under high yielding varieties. For a cent per cent with high yielding varieties the demand would be much higher. The demand for additional labour revealed that five man days are required for plant protection, six man days are required for weeding and 14 man days for harvesting, cleaning and bagging operations and 2.5 man day for miscellaneous work.

The above Table showed that progressive farms used 27 man days of labour per hectare in excess of labour used per hectare in traditional farms. In progressive farms the share of on-farm labour in total labour use was 38.35 per cent. As against this the share of the same in traditional farms was only 25.37 per cent. Consequently the share of casual labour was less in progressive farms (61.65 per cent) than that of traditional farms (74.63 per cent). Therefore it was evident from the study that the family members and attached labourers worked more intensively when

TABLE II. Utilization pattern of labour in selected villages (Man days per hectare)

Villages	Progressive				Traditional			
	Family labour	Attached labour	Casual labour	Total	Family labour	Attached labour	Casual labour	Total
Appanthirupathi	31	43	128	202	19	38	127	184
Kallanthiri	22	31	123	176	14	31	115	160
Melamadi	36	43	121	200	12	36	133	181
Narasingam	19	39	108	166	14	17	123	154
Porasapatty	19	45	140	205	7	24	135	166
Puduthamaraipatti	27	41	125	193	12	24	123	159
Thamaraipatti	22	51	113	186	19	26	115	160
Rajakambeeram	31	67	94	192	14	24	111	149
Uthankudi	34	48	108	188	7	19	118	144
Varichiyur	31	51	113	195	14	34	118	166
Overall average	27	46	177	190	14	27	122	163
Percentage:	14.30	24.05	61.65	100	8.55	16.82	74.63	100

more labour was required for farm operations. A fall in the share of casual labour (from 74.63 per cent to 61.65 per cent) resulted not only from the rise in share of on-farm-babour but also from a fall in the total man days of casual labour used (from 122 man days to 117 man days per hectare). It indicated that, as the demand for labour increased on-farm-labour was used more intensively not only to meet the shortage in supply (if any) but also to substitute for a part hired labour. The obvious inference that could be drawn from this analysis, was that the cultivation of high yielding varieties had so far helped reduction in under employment rather than in unemployment. However, as the coverage under high yielding varieties increased demand for labour would increase to that level which would create additional employment also.

Wage structure: Average earning per capita per year and per day of ettached labourers, in progressive and traditional farms are presented in Table III.

TABLE III. Average earning of attached labour per capita per annum village-wise (Rupees per year).

Village	Average earning per capita in			
	Progressive		Traditional	
	No. of days employed	Amount Rs	*No.of days employed	Amount Rs
Appanthirupathi	183	712.50	167	541.00
Kallanthiri	67	268.33	176	690.00
Melamadai	142	367.67	157	358.00
Narasingam	192	520.63	200	778.00
Porasapatty	182	644.17	233	553.00
Puduthamarai-patty	142	430.00	71	230.00
Thamaraipatty	267	770.00	167	387.00
Rajakambeeram	183	538.00	250	700.00
Uthangudi	208	616.67	150	430.00
Varichiyur	275	1080.00	127	356.60
Overall average	184	594.80	170	502.38

* Labourers are in employment throughout the year-what is reported here is the actual number of man days of labour put in by them in whole year.

As seen in the Table III above, the percapita annual earning fluctuated hea

vily. It varied from Rs. 268-30 to Rs. 1080/-in progressive farms and from Rs. 230/- to Rs.778/- in traditional farms. It was a striking feature that the per capita earning of labourers varied with the variations in total number of man days of labour actually put in by the attached labour. Attached labourers are normally taken on contract basis to the employment for a year or two. For this period they were offered in most (about 97 per cent) cases free residence and minimum payment in kind. Normally they were paid about 3 to 6 bags of paddy grain per year per adult male and 2 to 4 bags per adult female labour. A small sum of cash was also paid by agreement. These were the minimum acceptable both to the employer and employee. In practice labourers were accepting this as payment for their routine works. For harvesting ploughing and other hard works they are paid wages as for the casual labourers - mostly in kind as a percentage of volume of grain harvested or so. This payment in proportion to the work turned out had caused the variation in per capita earning per annum of attached labour.

Productivity of farm labour: The average (gross value) productivity of labour for progressive and traditional farms are presented in Table IV.

Average produce of labour used in progressive farms varied from Rs.12.75 to 15.93 in different sample village, the mean value for the mean value for the sample as a whole being Rs.14.33. The same for traditional farms varied from Rs.10.45 to 13.46, the mean value being Rs.12.08. in no village average productivity of labour in progressive farm was lesser than that of traditional farms. The mean difference between progressive and traditional farms was Rs.2.25 which was 18.63 per cent of average product of labour in traditional farms. Therefore it was proved beyond doubt that cultivation of high yielding varieties, even at the level of only 36.99 per cent coverage of total crop area had significantly increased average labour productivity by 18.63 per cent.

TABLE IV. Average productivity of labour in sample farms-villagewise
(Rs. per man day)

Villages	Average value produce of labour in	
	Progressive	Traditional
Appanthirupathi	14.42	11.15
Kallanthiri	13.16	12.05
Melamadai	13.72	12.50
Narasingam	14.75	12.53
Porasupatty	12.75	12.74
Puduthamaraipatty	15.00	11.62
Thamaraipatty	15.63	10.45
Rajakambeeram	13.96	11.85
Uthangudi	13.95	13.46
Varichyiur	15.93	12.48
Overall average	14.33	12.08