

EGS and the Poor

Evidence from Longitudinal Village Studies

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The Employment Guarantee Scheme (EGS) in Maharashtra is one of the most acclaimed poverty alleviation schemes providing 100 million person-days of employment in a typical year. This paper attempts to analyse the role of EGS in augmenting the wage income of rural households, its performance in terms of targeting the poor from the non-poor and also its relationship with farm employment.

AGRICULTURE by itself is unable to provide additional employment and income to a growing labour force as growth rate of the agriculture lag behind the growth rate of labour force. A number of empirical studies have shown the existence of considerable amount of surplus agricultural labour. Moreover, after the mid-1970s increased production was associated with decline in per hectare labour absorption [Bhalla, 1987, Vaityanathan, 1986]. To tackle the unemployment and underemployment in rural areas government initiated a number of schemes.

The Employment Guarantee Scheme (EGS) in Maharashtra is one of the most acclaimed schemes of poverty alleviation which provides 100 million person-days of employment in a typical year. It is implemented throughout the state, however, its importance in terms of its share in total employment and wage earnings of the rural households is conditioned by agro-economic factors and resource endowment of the region. The present study is an attempt to analyse the role of EGS in augmenting the wage income of rural households, its performance in terms of targeting the poor from non-poor and also its relationship with farm employment.

The study is based on data from two Maharashtra villages from the ICRISAT village level studies [Jodha et al, 1977]. Shirapur is typical of villages on the Bombay Deccan. The soils are vertisols in the lower lying areas. Rainfall is erratic. The cropping pattern is dominated by post-rainy season sorghum; about 60 per cent of cropped land is fallowed during the rainy season.

Kanzara is representative of villages in the Vidarbha region. Black cotton soils are common. Rainfall is assured. Cotton is an important cash crop and occupies about 50 per cent of cropped area. Almost all cultivable land is cropped in the kharif season.

In both villages, 40 households were monitored intensively by a resident investigator at two to four week intervals over 10 cropping years from 1975-76 to 1983-84. For this study, data from 1979-80 to 1983-84 are used because disaggregated information on the sources of off-farm income was collected only for that five-year period.

During this period, there were 249 poten-

tial labour force participants, who could have worked in the EGS, amongst the sample households in both villages. The employment aspects of the study focus on these workers whose main potential source of labour income (if they participated) was casual unskilled labour. Potential labour force participants who were older than 60, who were disabled, or who had regular sources of income were excluded from the sample. Earnings of other workers, mainly the permanent servants, the self-employed, and those with regular jobs, were included in the income-related aspects of the study. The overwhelming majority of people with regular sources of employment were men; therefore, the sample of potential labour force participants contains relatively more women (58 per cent) than men (42 per cent).

IMPORTANCE OF EGS

Over the five-year period of analysis, days worked on EGS projects represented about 20 per cent of total employment in Shirapur and 10 per cent in Kanzara (Table 1). The potential to absorb labour in predominantly dryland agriculture is substantially greater in the rainfall-assured Vidarbha region than in the drought-prone Bombay Deccan. Therefore, that the EGS was a force in equalising employment across the two villages is not that surprising. The reservation wage or cost of participation in terms of income forgone was undoubtedly higher in Kanzara than in Shirapur. Moreover, the supply of projects (most likely) in response to that demand was greater in Shirapur.

Of the four village-by-gender categories in Table 1, work in the EGS mattered most

for women in Shirapur accounting for 28 per cent of total employment. Men in Shirapur supplemented their agriculturally related income with off-farm sources of employment, mainly carting sand for co. 'ractors. Except for EGS work, women's off-farm income opportunities were negligible. After 1981, the importance of EGS employment declined somewhat especially for men in Shirapur [Bhende, 1986]. More off-farm employment opportunities in the form of transporting sand by lorry became available. Over time, work sites were further from the village. From 1980 onwards, work sites 4-5 km from the village were common. The sites closer

TABLE 2: SHARE (PER CENT) OF EGS WAGES IN TOTAL HOUSEHOLD INCOME BY VILLAGE AND FARM SIZE GROUP FROM 1979-80 TO 1983-84

Farm Size Group	Shirapur	Kanzara
Landless labour	14	11
Small	8	4
Medium	3	2
Large	3	0
Average	7	4

TABLE 3: FREQUENCY DISTRIBUTION OF SHARES OF EGS IN HOUSEHOLD INCOME BY VILLAGE FROM 1979-80 TO 1983-84

Per Cent Share	Shirapur	Kanzara
0	79	108
0.1 - 5.0	31	25
5.1 - 10.0	23	9
10.1 - 20.0	23	10
20.1 - 30.0	11	5
30.1 - 40.0	11	4
40.1 - 50.0	4	1
50.0	3	3

TABLE 1: MEAN DAYS OF EMPLOYMENT BY VILLAGE AND GENDER FROM 1979-80 TO 1983-84

Source of Employment	Shirapur		Kanzara	
	Men	Women	Men	Women
Own farm	39	23	60	18
Farm wage	33	21	58	53
Off-farm	49	2	17	0
EGS	25	18	15	4
Total	146	64	150	75
Involuntary unemployment	28	17	19	18
Number of observations	55	70	49	75

to the village (after 1981) featured the excavation of harder rock strata for an irrigation canal. This nearby site required more effort to dig and lift soil and rocks to the surface than the more distant sites or the earlier projects closer to the village.

Similarly, the nearest work site of minor irrigation project being implemented under the EGS from 1978 through 1980 was 8-10 km from Kanzara; consequently there was less participation on the EGS project in the earlier years during the period of analysis. Participation in the EGS fell sharply in 1983-84, an excellent agricultural year.

Ultimately, the EGS has to be judged by how effective it is in enhancing the income

of the rural poor [Ravallion, 1989]. The direct transfer benefits in wage and in kind payments are presented in Table 2 as a share of total household income defined as returns to owned resources [Singh and Asokan, 1983]. The EGS contribution to mean average household income was 7 per cent in Shirapur and 4 per cent in Kanzara.

In general, the share of EGS wages in total household income was inversely related to farm size, particularly in Kanzara where favourable climate and soils confer greater economic rewards to owning and operating land than in Shirapur [Walker and Ryan, 1990]. In the latter village, several of the small, medium and even large farm house-

holds had levels of per capita consumption expenditure below the Dandekar-Rath [1971] poverty line.

The averages in Table 2 mask the widespread inter-household variation in income generation as a result of the EGS (Table 3). Although many households in each study village did not participate in and hence derive income from the EGS in any given year, some households did rely heavily on the EGS to supplement their income. Supplementing other income sources was the main role of the EGS as only six household-by-year observations had shares greater than 50 per cent.

PARTICIPATION

Of the 249 people in the sample of potentially economically active casual workers, the participation of men and women in the EGS differed markedly. The majority of men in that sample in both villages worked on EGS projects at least once from 1979-83 (Table 4). In contrast, only about one-third of the women participated in the EGS.

For those who participated, the distribution of days worked was more heavily concentrated for women than for men especially in Shirapur where six women accounted for two-thirds of the days worked on EGS. Given the limited availability of other sources of off-farm employment, these women specialised in working on EGS projects.

Overall, the distribution of EGS employment was concentrated. The 20 people who annually averaged 60 or more days on the scheme had an EGS employment share of 55 per cent; the other 85 people who participated more sporadically accounted for the remaining 45 per cent of EGS employment. The data in Table 4 support the view that direct transfer benefits from the EGS have been much larger for some participants than others. If these benefits have been skewed towards the poorest households, then the EGS has had more impact on the severity than on the prevalence of poverty [Ravallion, 1990].

The self-targeting character of the EGS was evident in the Maharashtra study villages in the early 1980s. Wealth in the form of total assets was strongly and inversely related to participation (Table 5). The size of that relationship was particularly large for women: as wealth increase, women's participation fell off more sharply than men's in both Shirapur and Kanzara. One can conclude that the efficiency of self-targeting was greater for women than for men within each village.

Between the two villages, the effect of wealth on participation was considerably stronger in Kanzara, where farm employment opportunities were more abundant. These inter-village differences in the size of the estimated coefficients on wealth again suggest that the reservation wage is higher in Kanzara than in Shirapur. To obtain roughly the same size of wealth effects, one

TABLE 4: FREQUENCY DISTRIBUTION OF EGS EMPLOYMENT (AVERAGE DAYS/YEAR) BY VILLAGE AND GENDER

EGS Employment Days/Per Year	Shirapur				Kanzara			
	Male		Female		Male		Female	
	Observations	Mean EGS Employment	Observations	Mean EGS Employment	Observations	Mean EGS Employment	Observations	Mean EGS Employment
0	17	0	47	0	22	0	58	0
1 - 10	7	7	6	4	11	5	11	4
11 - 30	12	20	4	15	8	18	3	16
31 - 60	12	43	5	46	5	50	1	37
61 - 90	6	77	2	73	2	76	1	67
> 90	1	91	6	136	1	117	1	119

TABLE 5: ELASTICITIES FROM A TOBIT ANALYSIS OF EFFECT OF WEALTH ON DAYS OF PARTICIPATION IN EGS IN MAHARASHTRA VILLAGES, 1979-83

Variable	Shirapur		Kanzara	
	Male	Female	Male	Female
Total asset	-0.49*	-2.86*	-3.17*	-4.40*
	(-4.14)	(-8.70)	(-5.44)	(-3.09)
Ln likelihood function	-1.199	-932	-767	-309
No	801	1020	660	822

Notes: a Year and season dummies were also included but are not reported as they were rarely significant.

b t values in parentheses. * indicates statistical significance at the 0.01 level.

c Seasonal observations for each potential labour force participant residing in the village from the household panel during the kharif, rabi, and summer seasons.

Source: Walker and Ryan, 1990, p 261.

TABLE 6: FREQUENCY DISTRIBUTION OF MEAN ANNUAL INVOLUNTARY UNEMPLOYMENT DAYS AND EGS PARTICIPATION BY VILLAGE AND GENDER (Days)

Range	Men				Women			
	Observation	Mean Involuntary Unemployment	Mean EGS Employment	Total Employment	Observation	Mean Involuntary Unemployment	Mean EGS Employment	Total Employment
Shirapur								
0	11	0	3	88	35	0	2	6
1-20	11	9	10	42	15	6	4	11
21-40	15	30	37	112	6	35	63	120
41-60	12	48	44	178	5	46	96	148
60	6	72	22	103	9	82	32	119
Kanzara								
0	13	0	1	19	27	0	0	4
1-20	14	8	12	75	20	10	1	49
21-40	16	29	22	125	18	31	16	124
41-60	5	47	28	156	7	48	1	107
> 60	1	91	56	208	3	78	0	85

FIGURE 1: CUMULATIVE INCOME DISTRIBUTIONS FROM 1979-80 TO 1983-84 FOR EGS HOUSEHOLDS WITH AND WITHOUT EGS EARNINGS AND FOR ALL HOUSEHOLDS IN THE SAMPLE

FIGURE 2a: MEN EMPLOYMENT DAYS IN SHIRAPUR

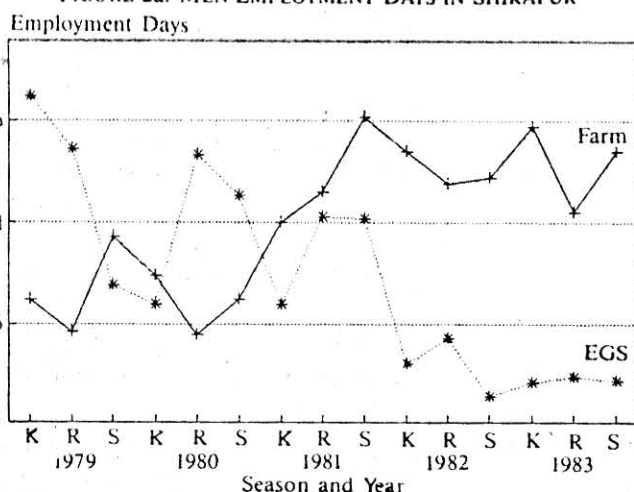
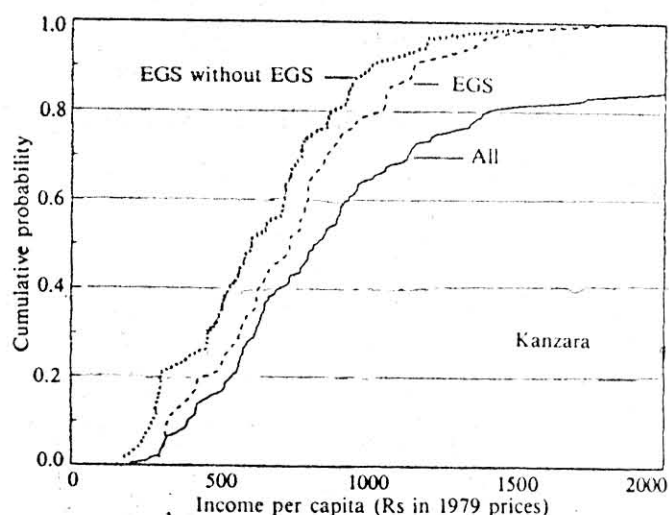
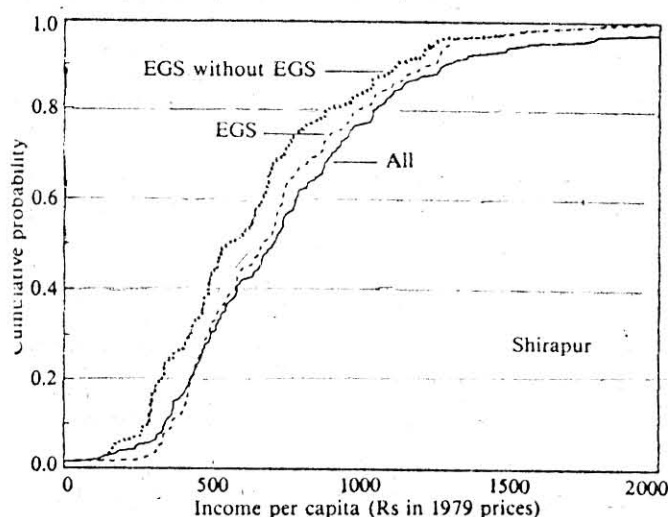
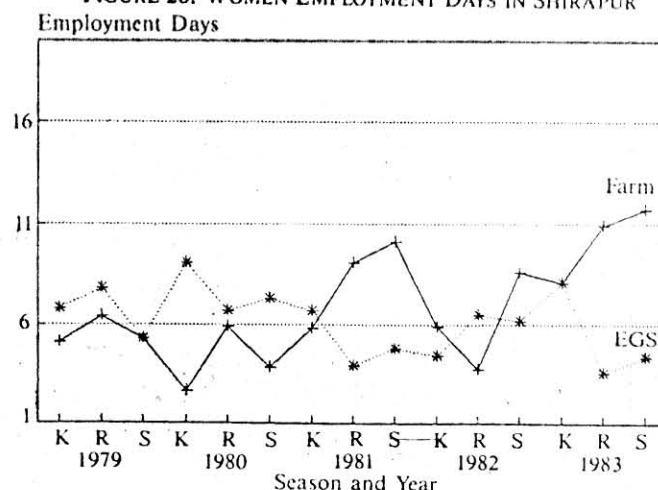


FIGURE 2b: WOMEN EMPLOYMENT DAYS IN SHIRAPUR



would have to substantially raise the EGS wage in Kanzara.

Comparing the cumulative income distributions between the population at large and the population of EGS participants is another way to evaluate the performance of the rural public works programme in targeting the poor [Ravallion, 1989]. In both villages the cumulative income distribution of the EGS participants lies above the distribution for the sample households indicating that the EGS participants were poorer than the rest of the village (Figure 1). But the distributions were similar in Shirapur reflecting the widespread and shared poverty in dryland agriculture on the Bombay Deccan. The wider gap between the two cumulative income distributions in Kanzara indicates that the EGS did a better job in targeting the poor in a village where income was more inequitably distributed.

Though the earnings from the EGS was heavily skewed towards households below the poverty line, relatively few households were able to cross the poverty line because of EGS participation. Assuming that male

participants could have replaced one-half of their EGS earnings with income from other sources and that female participants would not have found sources of employment to substitute for the EGS, one estimates that the EGS was responsible for 5 of 41 households crossing poverty line in 1979, 2 of 46 in 1980, 3 of 40 in 1981, and 3 of 33 in 1982, and 0 of 35 households crossing the poverty line in 1983 in both villages.

UNEMPLOYMENT

Even with the EGS there was a considerable reserve of involuntary unemployment in the two villages during the early 1980s. Amongst the 249 potentially active casual worker sample, the estimated mean unemployment rates were 0.16 and 0.21 for men and women in Shirapur and 0.11 and 0.19 for men and women in Kanzara. Under the reasonable assumption that men who worked in the EGS would have been successful 50 per cent of the time in finding other work and women would have remained unemployed if they had not worked in the

EGS, one can roughly estimate that the EGS was responsible for absorbing about one-half of the potential days of involuntary unemployment in Shirapur and about one-third in Kanzara where the scheme was less active.

(In spite of the overall potential of the EGS to self-select for poor workers, several casual labourers of both sexes reported many days of involuntary unemployment and no or negligible participation in the EGS.) The existence of these labourers is signalled by the bottom line in Table 6. For example, nine women labour force participants in Shirapur were unemployed for about 80 days per cropping year; yet, they only worked 32 days in the EGS. With the exception of men in Kanzara, those experiencing more than 60 days of unemployment per year worked less in the EGS than another group with fewer days of unemployment within the same gender and village combination.

In general, the chronically unemployed in Table 6 were older workers, young girls from higher caste backgrounds, or others who could not or would not perform rigorous

FIGURE 3a: MEN EMPLOYMENT DAYS IN KANZARA
Employment Days

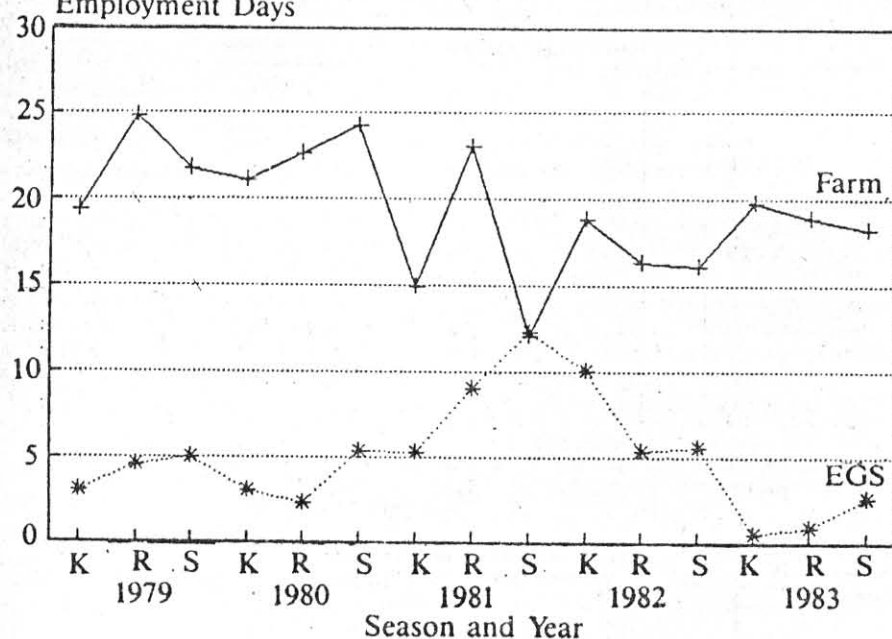
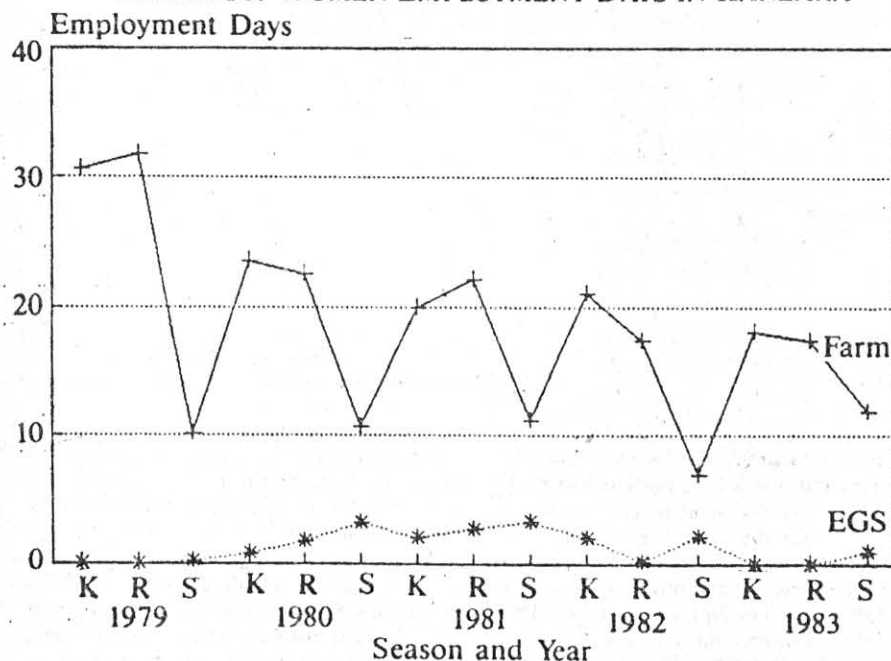


FIGURE 3b: WOMEN EMPLOYMENT DAYS IN KANZARA



manual labour. Several of the chronically unemployed visited the EGS sites, but were not accommodated because of the excess turn-out of labourers relative to the project's capacity. They became discouraged and did not return to the work sites. Among the more able-bodied, opportunities to participate in the EGS were available. As long as the household workforce contained one able-bodied member, that household could benefit from the EGS.

SEASONALITY

Because of differences in emphasis on post-rainy and rainy season cropping, the peak and slack seasons for farm work differ markedly in the two villages. In parti-

cular, the summer season, corresponds to heightened agricultural labour activity with the harvest of 'rabi' 'crops' in Shirapur, but is the slack season in Kanzara especially for women's work (Figures 2 and 3).

To what extent the EGS work complemented the seasonal demand for agricultural work in the village causal labour market? The data graphed in the four panels of Figures 2 and 3 suggest that EGS work was complementary to farm wage work. In Shirapur, the two employment profiles appear to be strongly and negatively associated for (men $r = -0.68$) and for women ($r = -0.64$).

In Kanzara, the association between farm and EGS employment exhibited a weak complementarity. The association expressed in terms of coefficient of correlation (r) was

-0.33 for men and -0.40 for women workers.

The wages offered for farm work were generally higher than the EGS wages during kharif season for male and same was true during summer season for women labourers in Shirapur. However, in Kanzara, wages on EGS projects were little higher than farm wages during all the seasons for both the sexes.

The overall wage rates for EGS and the farm employment had a strong and positive association for men ($r = 0.76$ for Kanzara and 0.88 in Shirapur) and for women ($r = 0.43$ for Kanzara and 0.66 for Shirapur). The wage rate on EGS projects and farm employment varied by 17 to 24 per cent during the study period.

CONCLUSIONS

To sum up, we find that the EGS provide employment when farm and off-farm employment opportunities are inadequate to absorb idle labour force in the rural areas. The scheme succeeded in targeting the poor from non-poor. The scheme was unable to make any significant dent on the prevalence of poverty *per se* nevertheless, it has helped in reducing the severity of poverty augmenting the incomes of the rural poor.

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