The University of Manchester

Economics Discussion Paper

EDP-0513

A Review of the Employment Guarantee Scheme in India

by

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August 2005

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A Review of the Employment Guarantee Scheme in India[1]

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Abstract

This study reviews the Employment Guarantee Scheme (EGS) in the state of Maharashtra in India, and the recent proposal to extend it to the rest of rural India. An attempt is made to synthesise existing studies to assess its benefits and costs, both as a short term-relief measure and as an intervention with a longer-term developmental role. Although overall participation in the EGS fell sharply over the period 1980-97, the EGS continues to confer significant transfer and stabilisation benefits in some of the poorer regions. Various aspects of the scheme (e.g. targeting, stabilization benefits, indirect effects, dynamic effects) are then analysed, based on the ICRISAT panel data and a recent household survey in Ahmadnagar. The results, based on the former, include: (i) a marked deterioration in the targeting of the EGS over the period 1979-89; (ii) a strong positive effect of the EGS on agricultural wages and of EGS assets on agricultural productivity; and (iii) strong promotional and protective roles with a larger outlay and accurate targeting of the poorest in a Rawlsian variant. In contrast, the analysis, based on the latter, suggests (i) high direct transfer benefits of the EGS to the poor; (ii) the indirect benefit through a positive effect of the EGS on agricultural wages is not so strong; (iii) the income stabilising benefits are substantial, (iv) mild disincentive effects on job-search. Some lessons for the proposed National Rural Employment Guarantee Scheme in a modified version are discussed, focusing on an appropriate wage rate to target the poorest better, income stabilization benefits, long-term developmental potential, and political activism among the rural poor.

Key Words: Employment, Guarantee, Wages, Poverty, Targeting, India
JEL Classification: D3, H53, I38, J45, J78

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[1] This study was sponsored by the Inter-Regional Inequality Facility at Overseas Development Institute (ODI). Grateful thanks are due to Edward Anderson, who coordinates this Facility, for his constructive suggestions. We would also like to thank Paramjit Kaur for her able research assistance. The authors are responsible for the views expressed here, without implicating the ODI or the institutions to which they are affiliated.

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1. Introduction

The objective of this study is to review the Employment Guarantee Scheme (hereafter the EGS) in the state of Maharashtra, and the recent proposal to extend it to the rest of rural India. An attempt will be made to synthesise existing studies to assess its benefits and costs, both as a short term-relief measure and as an intervention with a longer-term developmental role[3].

In the semi-arid region to which Maharashtra belongs, agriculture is a highly seasonal activity. During the lean periods, large sections of rural households eke out a bare subsistence through short spells of mostly unremunerative employment. Motivated by this concern, Mr V. C. Page-a social activist- launched the Employment Guarantee Scheme (EGS) experimentally in 1965[4]. It was subsequently expanded as part of an integrated rural development project, in part due to an extended drought in 1971 and the need for widespread employment relief, culminating in the EGS Act (No.XX of 1978) and its implementation in Maharashtra in 1979. From a modest beginning, the EGS expanded rapidly into the most important poverty alleviation programme in Maharashtra. Its innovativeness has led to a new initiative in the form of the National Rural Employment Guarantee Bill aiming to extend the scheme to the poorest 150 districts in India in the initial phase. As the poverty reducing potential of the National Rural Employment Guarantee Scheme has been widely debated, it is timely to review the EGS in Maharashtra from a broader, national perspective.

In the next section, the objectives and benefits of the EGS are reviewed. Section 3 focuses on its salient features and recent developments. In Section 4, we briefly examine the implementation of this scheme. Drawing upon recent studies, Section 5 assesses the actual and potential impacts of the EGS on poverty. In Section 6, the political economy dimensions of the EGS are discussed. Section 7 offers concluding observations on the lessons that follow from the important findings of this review.

2. Conceptual and Analytical Framework[5]

As the EGS is a special case of Rural Public Works (hereafter RPWs), a brief exposition of the conceptual and analytical framework is given below as the basis for assessing its performance.

(1) Objectives

[3] For a sample of recent studies, see Gaiha,1996a, 1996b, 1999c, 1997a, 1997b, 2000, 2002, 2003a, 2005, Gaiha and Imai, 2004, Imai, 2003, 2006, Scandizzo et al. 2004, 2005, Hirway and Terhal, 1994, Datt and Ravallion, 1994, Ravallion et al. 1993, Ravallion and Datt, 1995, and Murgai and Ravallion, 2005.

[4] Mr V.C. Page served as Chair of the Maharashtra State Legislative Council from 1960 to 1978.

[5] This section draws upon Gaiha (1993, 2002).

Even if land reforms – especially land redistribution – are carried out successfully and the beneficiaries are provided with access to credit and modern agricultural inputs, a large fraction of the rural poor in a densely populated agrarian economy (such as that of India) is likely to remain unaffected simply because there is not enough surplus land to distribute among them[6]. Furthermore, the potential beneficiaries may find that the income from cultivation of small plots falls short of subsistence requirements. Most of those without access to land are forced to rely primarily on agricultural employment with long seasonal spells of inactivity. In such a context, RPWs have a potentially significant role in poverty alleviation. Indeed, it is arguable that, even without participating in a RPW, agricultural labourers may benefit, as their bargaining power vis-à-vis their employers may increase. The gain may well be substantial in oligopsonistic rural labour markets provided, of course, RPWs are undertaken on a large scale. Also, given the difficulties of targeting anti-poverty interventions, there is a strong incentive case for RPW. Specifically, through a work-requirement, RPW are expected to exclude the more affluent sections. For all these reasons, RPWs are now an integral part of a poverty-alleviation strategy – especially in densely populated agrarian economies. These are the main reasons why the EGS in a modified version is now being expanded to 150 of the poorest districts in rural India.

(2) Rationale

The incentive case for RPW in poverty alleviation rests on two arguments. One is the screening argument i.e. a work - requirement tends to exclude the non-poor (or, more generally, the relatively affluent) (Besley and Coate, 1992). The other is the deterrent argument i.e. the work-requirement does not deter poverty-reducing investments (say, in job search and building of human capital). These are considered in turn below.

The screening argument is motivated by administrative difficulties in identifying the poor. Abilities are not directly observable. Although earnings could yield some clues, their estimates tend to be patchy and unreliable. Given these difficulties, self-selection mechanisms such as a work-requirement are appealing. Under certain conditions, the work - requirement is a cost-minimising poverty alleviation strategy (as compared with uniform transfers). Assuming that the poor work, the work - requirement will reduce their earnings from elsewhere and, therefore, necessitate larger transfers to get them out of poverty. This is the cost of selection through work - requirement; but there is also a cost reduction on account of lower transfers to the non-poor (as their incentive to masquerade as poor is weakened). There is a particular work - requirement which resolves this trade–off optimally, provided that the poor are a small fraction of the population and their earning potential is limited.

[6] The Gini coefficient of owned land distribution in the ICRISAT sample in 1989 was as high as 0.79, with about 21 per cent of the households as landless or nearly landless (Gaiha, 1995). For a comparative analysis of inequality in the distribution of operational holdings in Maharashtra and all-India, see Echeverri-Gent (1993).

The deterrent argument takes a different form. Transfers reduce the returns to effort and thus induce individuals to choose a lower level of effort. This increases the number of poor, as also the cost of poverty alleviation. Under certain conditions, however, an optimal work - requirement can be determined. This requirement induces income-enhancing choices, provided that the share of the poor in the population is small, and their earning potential is low[7].

(3) Benefits – Transfer and Stabilisation Benefits

In principle, RPW confer transfer and stabilisation benefits. Both benefits matter in poverty alleviation. The transfer benefits can be direct – the gross benefits to participants less any cost they incur in participating – or indirect – including the share of the poor in the extra income generated by the scheme's output, and any other second-round effects on income from other sources. The stabilisation benefits arise mainly from the scheme's effect on the risk faced by the poor of a decrease in consumption. Since many of the poor only just manage to survive, a reduction in the risk of consumption falling below a subsistence level matters a great deal.

In some parts of Maharashtra slack periods continue to be long with few employment opportunities. So the options for landless agricultural labourers are long and expensive job search, and, in the event of a failure to supplement incomes, borrowings at exorbitant rates of interest or liquidation of assets. The insurance role of the EGS is further reinforced by the frequency of crop, price and idiosyncratic shocks to which smallholders and agricultural labourers are highly vulnerable (Gaiha and Imai, 2004). Some of the issues that warrant careful scrutiny are (i) whether the income stabilization effect varies with household characteristics and duration of participation, (ii) do crop and other shocks induce greater participation in the EGS, and (iii) whether the EGS has any effect on precautionary savings (Scandizzo et al. 2004).

(4) Promotional and Protective Roles

The promotional role of the EGS focuses on whether the poor are enabled by the EGS to move out of poverty, while the protective role has to do with protecting the vulnerable from slipping into poverty. Specific issues on which new light will be thrown include: (i) whether there is a case for confining the scheme to the most backward regions; (ii) whether the EGS outlays matter; and, finally, whether targeting the poorest makes a difference (Gaiha and Imai, 2002, Gaiha, 2005).

3. Details of the EGS

(1) EGS – Salient Features[8]

[7] As this conclusion of Besley and Coate (1992) is based on an analytic solution, a precise quantification is difficult without some simulations.

[8] This draws upon GOM (1997) and Gaiha (2002).

(a) Genesis

In a large part of India –especially in the semi-arid region to which Maharashtra belongs – agriculture is a highly seasonal activity. During the lean periods, large sections of rural households eke out a bare subsistence through short spells of mostly unremunerative employment. If employment opportunities expand, the severity of hardships would lessen. As noted earlier, this culminated in the EGS Act and its implementation in Maharashtra in 1979. The EGS expanded soon into the most important poverty alleviation programme in Maharashtra.

(b) Nature

The scheme guarantees that every adult who wants a job in rural areas will be given one, provided that the person is willing to do unskilled manual work on a piece-rate basis.[9] Self-selection of the poor is built into the EGS. First, no choice of work is offered. Secondly, until 1988, the wage rate was usually below the agricultural wage rate.[10] Thirdly, as the guarantee holds at the district level, a person may be required to travel a long distance for a few days of temporary work, though in principle every adult is supposed to be offered a job within 8 kms distance from his home.[11]

The employment seeker has to get his/her name registered under this scheme with the registering authority of the village (e.g. the Village Level Worker (VLW) or Gram Sevak) by filling in a form. Thereafter a formal request for employment is made to the Samiti Officer (i.e. the Tahsildar) by filling in another form. The Tahsildar is obliged to provide work within 15 days of receiving the 'demand for work'. The employment seeker is required to work for a minimum of 30 days on the site assigned by the Tahsildar. The person must present himself/herself for work within 7 days of the issuing of the letter by the Tahsildar. Failure to provide employment within 15 days entitles the person to an unemployment allowance (of Rs.2 per day).[12] Ex-gratia payment up to Rs.10,000 is admissible in case of death or disablement of a

[9] Note that for those unable to work, there are other schemes (e.g. pensions, subsidized food).

[10] Following the High Court directive, the EGS wage rate was hiked in conformity with the Minimum Wages Act. The piece-rates for different types of manual/unskilled work are so fixed that an average person working diligently for 7 hours a day would earn a wage equal to the minimum wage prescribed for agricultural labour for the concerned zone, under the Minimum Wages Act (GOM, 1997). The minimum wage takes into account both subsistence needs and efficiency considerations.

[11] However, the participants are often required to travel distances longer than 8 kms. This is particularly disadvantageous to the less energetic poor. Also, since women from poor households combine outside work with exacting domestic chores, the longer the distance, the greater is the disincentive for them to participate in the EGS. This was corroborated in the Ahmadnagar sample.

[12] Hirway and Terhal (1994) draw attention to the use of an elaborate procedure which involves completing several documents, contacting several different persons, and exasperating bureaucratic negligence and bribery. Consequently, the poor suffer more. To illustrate, lack of coordination between technical and revenue departments often results in delays in execution of EGS projects, forcing the poor to seek alternative sources of employment. Worse, as noted by Joshi (1998), the unemployment allowance is rarely paid.

worker on the site. Some amenities provided on the site include potable water, creches, resting place and first aid.

(c) Projects

The scheme operates through identification of projects which must satisfy two criteria; they must be labour–intensive and create productive assets. The labour–intensity criterion is defined rather strictly- the ratio of cost of unskilled labour to equipment, materials, supervision charges and so on must be 51:49 or higher.[13,14] Productive works are, however, somewhat loosely defined as those which directly or indirectly lead to an increase in production or which, if not undertaken, would cause production to decline. With a view to minimising the recurrence of droughts, priority is given to moisture conservation and water conservation works (e.g. percolation and storage tanks). Other priorities are soil conservation and land development works, afforestation, roads, and flood protection schemes. It is mandated that work under the EGS should be so organised that it does not interfere with normal agricultural activities. Also, this scheme is not activated when work is available on other plan or non-plan works in progress.[15]

(2) Recent Changes and Developments

(a) Decline in EGS participation and expenditure

As shown in Fig.1, over the period 1980-97, there was a sharp decline in EGS participation- the person days of employment fell from 20.55 crores to 9.01 crores. The expenditure also fell- from Rs 30.17 crores to Rs 24.66 crores (at constant prices)[16]. Although participation fluctuated, there was a sharp reduction in 1989, following the EGS wage hike in 1988. Between 1987-89, there was a reduction in person days of employment of over 5.50 crores, with a large part due to rationing (Ravallion et al. (1993), Gaiha (1997a)). The brunt of the reduction was borne by the poor (Gaiha, 1997a). Soon after, there was a gradual rise in EGS participation until 1993, followed by a steady decline in subsequent years[17].

[13] This was down from 60:40. A few exceptions include canal works of medium and major irrigation projects which involve rock cutting.

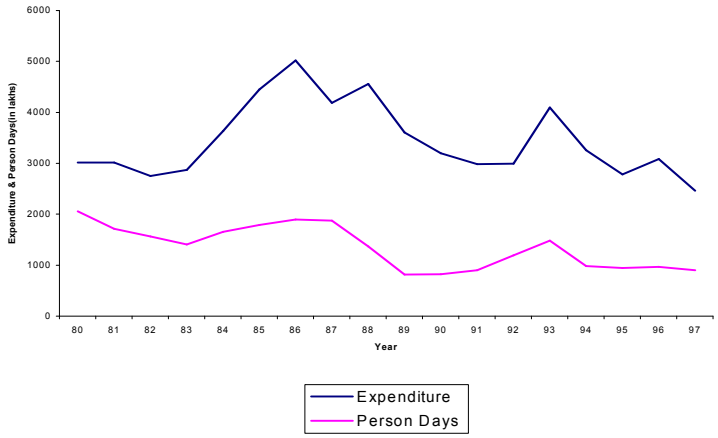
[14] Often, as a consequence of inflation of material costs, some of these are deliberately included in labour costs in order to fulfil this norm (Dev, 1993)

[15] New projects under this scheme are undertaken only when (i) at least 50 labourers are available, and (ii) they cannot be absorbed in on-going works. However, exceptions can be made for works in hilly areas (GOM, 1997).

[16] As of 2003-04, the EGS expenditure as a share of development expenditure was a little over 4 per cent (GOM, 2005).

[17] To the extent that our findings from the Ahmadnagar sample are generalisable, rationing is implicit in the small budgets for backward areas.

Figure 1 EGS Employment and Expenditure during 1980-1997



Over the period 1991-96, the composition of EGS expenditure also changed[18]. The share of (usual) EGS projects fell slightly-from 74 per cent to about 70 per cent; that of the *Shram Shaktidware Gram Vikas* (SSGV, designed to take up all development activities in a village in an integrated manner) halved, from about 12 per cent to about 6 per cent; while that of Jawahar Wells (a sub-scheme of the EGS targeted to marginal and small farmers) rose sharply, from over 13 per cent to about 23 per cent. These compositional changes weakened the poverty reducing effect of the EGS. Replacement of community assets with individual assets diverted the benefits of the EGS away from the poorest landless households to the moderately poor or relatively affluent owning land (Gaiha, 2005).

(b) Nation-wide Employment Guarantee

The National Rural Employment Guarantee Bill sparked a debate on the desirability and feasibility of extending the EGS to the poorest 150 districts in the initial phase[19, 20]. Some of the features of this Bill reflect lessons learnt from distortions that have crept into the scheme (e.g. manipulation of muster rolls, delays in offer of work and payment of wages, unsatisfactory design and execution of projects) while some others are contentious (e.g. fiscal burden of the nation-wide scheme). While the minimum wage provision has been dropped, there is a sharp division of opinion on its

[18] For details, see GOM (1997).

[19] District is an administrative unit in a state. There are 600 districts in 28 states. The number of districts within a state and their populations, however, vary. In Maharashtra, for example, there are 35 districts, with a population of over 7 million in Pune district and about 28 thousand in Satara district (GOM, 2005).

[20] This bill was tabled in Parliament in December, 2004, and a modest budgetary allocation was made for a food-for-work programme in March, 2005. It has now been decided to table the bill again in the monsoon session in 2005, with some modifications. These include wage fixation by state governments, guaranteed employment of 100 days to *all* households and not just BPL households, and implementation by village Panchayats.

desirability (e.g. Dreze, 2004, Gaiha, 2004, and Murgai and Ravallion, 2005)[21]. Also, whether village Panchayats are equipped to implement the nation-wide scheme needs careful scrutiny, given the pervasiveness of rent-seeking behaviour among them and weak accountability mechanisms (Gaiha, 2003b). Finally, apprehensions about its fiscal sustainability persist, given the meagre allocation in UPA government budget for 2005-2006, for a modified version.

4. Implementation Issues

A three–tier set up, comprising committees for planning, direction and co-ordination, exists at the state, district and Panchayat Samiti (block council) levels. At the state level, overall responsibility is vested in the Planning Department, at the district level, in the Collector, and, at the Panchayat Samiti[22] level, in the Tehsildar.

The Planning Department makes a budgetary provision. Quarterly credit limits are released to the Collectors. An account of expenditure is required to be maintained at the district and Panchayat Samiti levels in accordance with the normal government procedures.

Weekly and monthly progress reports are sent by the implementing agencies[23] to the Collectors for onward transmission to the Planning Department. To minimise the malpractices, a high level vigilance committee under the chairmanship of the Revenue Secretary has been constituted. Vigilance squads have also been constituted at different levels. The workers have been given identity cards-cum-wage books in which their attendance and wages are shown.

How the scheme is implemented is important, as there is a link between the poor implementation at the level of village *Panchayats* and the poor targeting performance of the JRY (Jawahar Rozgar Yojana, – a nation-wide RPW). A measure of procedural violations viz. use of private contractors, and non-availability of muster rolls, despite instructions to the contrary, for example, accounts for much of unsatisfactory targeting performance of the JRY. Some of the malpractices and the associated corruption would be checked if there is greater transparency in the functioning of *Panchayats*.

The EGS is financed through taxes levied specifically for it and a matching contribution from the state government. The former include (i) a tax on profession,

[21] The minimum wage rate provision was Rs. 60 per day-an average of state level statutory minimum wage rates in 2005 (Murgai and Ravallion, 2005).

[22] The Panchayat Samiti –an elected body-has mainly two sets of functions; (a) delegated functions: to implement and coordinate the policy directives of the state government with regard to development and extension programmes, and (b) development functions: to plan and implement production and social welfare programmes, especially with regard to agriculture, irrigation, small industries, education, and health. For a more detailed exposition, see Gaiha et al. (2000).

[23] Field-staff of technical departments/line agencies are responsible for these reports (Hirway and Terhal (1994).

trades, etc., (ii) an additional tax on motor vehicles, (iii) a surcharge on sales tax, (iv) a surcharge on land revenue, and (v) a tax on non-residential urban land and buildings[24].

5. Impacts of EGS

(1) Data

The present analysis is based on three different data sets. District-wise data on participation in the EGS, and type of EGS works and expenditure were obtained from a document prepared by the Planning Department, Govt. of Maharashtra (GOM, 1997). Two sets of results based on household data are reported here: one set is based on the ICRISAT panel survey that covers the semi-arid tract (SAT) in Maharashtra and Andhra Pradesh (described in detail by Walker and Ryan, 1990) and another on a survey conducted in two villages in Ahmadnagar district in Maharashtra[25].

(2) Direct Transfer Benefits

(a) Poor Participants [26]

Earlier studies point to accurate targeting of the EGS. One, for example, reported that 90 per cent of the workers in a sample of 1500 EGS workers in 1978-79 lived below the poverty threshold, as against a head-count index of poverty of 49 per cent for rural Maharashtra.[27] More recent studies point to similar conclusions.[28] Of particular interest is a study based on the ICRISAT data over the period 1979-83.[29] It confirms that the EGS was well targeted as days of participation decreased rapidly with increases in wealth and participation was higher in the more backward of the two villages. As shown below, if the ICRISAT data are disaggregated by income class, and analysed using different tests of targeting accuracy, some strikingly different conclusions follow. Since the more recent data for 1989 have not been examined so far, first the targeting of the EGS over the period 1979-89 is examined. This is then supplemented by the evidence from the Ahmadnagar sample.

[24] The Maharashtra State Tax on, Trades, Callings and Employment Act of 1975 provides a dedicated financing mechanism. There are five specific taxes, of which the most important is the 'professional tax' borne mainly by registered professionals Professions (e.g. lawyers, doctors, accountants) and formal sector employees in the urban sector (Herring and Edwards, 1983).

[25] See Appendix 1 for details of this survey.

[26] Poor participants mean those from poor households defined by Rs.180 per capita per annum (at 1960-61 prices). This poverty cut-off point has been extensively used in the Indian poverty literature (Srinivasan and Bardhan, 1988).

[27] For details, see Dandekar and Sathe (1980).

[28] A much smaller but more recent survey by Acharya and Panwalkar (1988) found that the mean income of participating households was about 20 per cent below the poverty threshold in 1985-86.

[29] For details, see Bhende et al. (1990).

Although much of the present analysis is limited to participation of the poor in the EGS, some attention is also given to their income gains. Accordingly, an appropriate measure of income without the EGS is necessary. If the opportunity cost of time spent in the EGS is zero, the entire EGS earnings must be deducted from household income. But, if this is not the case, an estimate of the opportunity cost of time must be worked out. Household income net of EGS earnings but inclusive of the opportunity cost of time is then an appropriate measure of income without the EGS. Going by the Datt-Ravallion (1994) analysis, it is taken to be 25 per cent of (average) EGS earnings in the sample.

The overall EGS participation rate (i.e. EGS participants as a proportion of total workers) dropped sharply over the period 1979-89 (i.e. from 17.70 per cent to 9.44 per cent). Alongside, the share of poor participants (i.e. poor EGS participants as a proportion of poor workers) also fell (from 19.30 per cent to 14.29 per cent). Thus not only was the coverage of the poor small but it also reduced over the period in question, implying a worsening of the mistargeting of the EGS.

(b) E' and F' Errors

Variants of the E (excessive coverage) and F (failure to include) errors, E' and F', are employed, in which the non-poor included and the poor excluded are expressed as proportions of the non-poor and poor, respectively. But, since participation in anti-poverty schemes may itself vary, the share of the non-poor in total participants, S, is also computed. Given the poverty threshold, the following estimates of targeting errors were obtained. Some comments on Table 1 are given below.

Table 1

Targeting Errors, 1979 and 1989

Year	E'	F'	S
1979	15.67	80.70	38.89
1989	7.21	85.71	54.76

Source: Gaiha (2000)

(i) The F' errors are substantially larger than the E' errors in both years, suggesting that the proportions of poor excluded from the EGS were larger than the proportions of non-poor participating in it.

(ii) While the E' error fell over the period 1979-89, the F' error rose moderately, implying that a (relative) reduction in the share of non-poor included was accompanied by a rise in the share of poor excluded. Or, in other words, proportions of both poor and non-poor participants fell.

(iii) However, the S index rose sharply, from an excess of the poor among the EGS participants in 1979 to an excess of the non-poor in 1989.

In sum, the mistargeting worsened as a greater exclusion of the poor from the EGS was accompanied by a higher share of the non-poor among the participants over the period 1979-89.

(3) Indirect Transfer Benefits

(a) EGS and Agricultural Wages

If the EGS provides an effective employment guarantee, it will be reflected in a strong relationship between agricultural and EGS wages. An analysis with the ICRISAT monthly data confirms a strong effect of the EGS on agricultural wages (Gaiha, 1997a).

Briefly, the procedure used is as follows. Given the interdependence among agricultural, EGS and non-farm wages, a (Granger–Sims) causality test is carried out. After confirming that the EGS and non-farm wages together cause changes in agricultural wages, a dynamic specification is estimated to throw further light on the dependence of agricultural wages on EGS and non-farm wages. Finally, as there is often a possibility of spurious results with time–series data – specifically, if the wage series are random walks - a test was used to rule it out.[30]

Confining to the results for the EGS, its short and log run effects on agricultural wages are large. Specifically, if EGS wages rise by a rupee, agricultural wages would rise by about 17 paise in the short–run, and by about 28 paise in the long–run.

A few mechanisms through which the EGS influences agricultural wages are: (i) gains in agricultural productivity through the assets created and, associated with such gains, a shift in the demand for agricultural labour; and (ii) a higher reservation wage as a consequence of a "guaranteed" employment option in slack periods. Besides, since there is some evidence of the contribution of the EGS to a sense of collective identity among rural workers, it is plausible that their bargaining position vis-à-vis that of large landholders would strengthen, leading to higher agricultural wages. For all these reasons, the effect of the EGS on agricultural wages is likely to be more substantial in the long–run.[31]

(b) Benefits from EGS Assets

[30] For a brief exposition of the econometric specifications, see Appendix 2.

[31] The long–run effect of non-farm wages is lower but significant. This presumably reflects that, while both the EGS and non-farm activities tend to raise the reservation wage, it is only the former that has a further positive effect on agricultural wages through higher agricultural productivity. For details, see Gaiha (1997a, b).

The evidence is essentially of two types: based on surveys and on counterfactual simulations.

Among the surveys, the most detailed was carried out jointly by the Govt. of Maharashtra and the Planning Commission (GOI, 1977). Even though it is an old survey, the findings are revealing. 91 per cent of the users of the EGS assets were cultivators and 6 per cent were agricultural labourers. About 70 per cent of the users reported gains in agricultural production, and 40 per cent reported changes in cropping patterns. Much of the area that benefited from EGS works belonged to large landholders. Specifically, while 9 per cent of the area benefited belonged to small landholders (i.e. with holdings < 5 acres or 2 hectares), 32 per cent of the area belonged to large landholders (i.e. with holdings >25 acres or 10 hectares). Moreover, more than a quarter of all users of EGS works reported purchasing farm assets from the additional income generated by these works. Even though these estimates cannot be accepted at face value, it is safe to infer that a disproportionately large share of the benefits from EGS assets accrued to large landholders.

Although some simulations that are available do not relate specifically to the EGS but to rural public works (RPW) in general, they are useful as they provide a basis for assessing the potential contribution of EGS assets.[32] Since they cover the period 1980-2000, both short and long-term effects are analysed in considerable detail.[33]

If RPW are well-designed, executed and targeted, they have substantial effects on the poor. Not only the poor improve their welfare substantially but the economy also grows faster, provided the resources are raised through additional taxation. An important implication of these results is that RPW are not just a short–term relief measure but, given careful planning and efficient execution, can also contribute substantially to both poverty alleviation and rural development in the long–term.

Consistent with these simulation results, Imai (2006) finds that the potential indirect effects through the EGS assets are substantial, based on a village-level Social Accounting Matrix built with the ICRISAT data. However, the results show that the scheme has to be carefully designed so that the EGS assets, such as irrigation facilities, are made accessible to the poor without undermining their positive effects on agricultural productivity[34].

[32] These simulations are based on an applied general equilibrium model for India. For details, see Narayana et al. (1988), and Parikh and Srinivasan (1989).

[33] A limitation, however, is their failure to take into account labour market effects. If the preceding analysis has any validity, this is a serious shortcoming.

[34] The SAM model is used to assess the multiplier or the second round effects (in the absence of any price effects) by comparing various cases e.g., EGS and a uniform transfer of the same budget. The simulation results show that (i) the potential benefits to the poor are lower with the EGS than uniform transfers, and (ii) for the second-round effects of the EGS to more than compensate for the superiority of uniform transfers, the former must be carefully designed so that the assets created, such as irrigation facilities, are accessible to the poor without undermining their positive effects on agricultural productivity (Imai, 2006).

(4) Income Stabilisation

Whether the EGS helped stabilise incomes in rural areas could be inferred from a before – and – after comparison of income variability. However, if significant changes occur in the nature and scale of economic activities over time, account has to be taken of their impact on income variability. This is often difficult. As an alternative, a with– and-without comparison could be carried out. One difficulty with the latter is the presumption that the two groups are similar in all respects except the characteristic in question (in the present context, whether an adult member of a household participated in the EGS). As noted earlier, although there are agro-climatological differences between the two villages that could have implications for the variability of household incomes, the shares of labourers, cultivators and others, as well as average farm sizes of small, medium and large cultivators are similar. So unless the composition of participants differs considerably between the two villages- this is in fact not the case as the proportions of non-poor are far from non-negligible in both- a comparison of variability of household incomes with- and- without the EGS is of some interest. However, since the comparison is restricted to a particular year, that is, 1984, the generalisability of the results is somewhat limited. Nevertheless, the results have some value, as these are consistent with the findings over a longer period.[35] Briefly, the comparison points to a lower variance of household incomes of those who participated in the EGS.

A more detailed econometric analysis with the ICRISAT panel survey for 1979-84 casts more light on the income stabilising role of the EGS (Scandizzo et al. 2004). Specifying a system of equations for the determination of agricultural wages, EGS wages, (alternative measures of) participation in the EGS and a measure of variability of (monthly) wage earnings, a reduced form estimation is carried out, using different techniques.[36]

Although there is some unevenness in the results, the effect of EGS participation on the variability of labour earnings is negative. Since this measure of variability of labour earnings is constructed from monthly data, and the contribution of the EGS is separated from that of various household (e.g. caste and occupation) and village (e.g. rainfall) characteristics, this is a more convincing demonstration of the income stabilising role of the EGS (notwithstanding the fact that the measure of household income variability is confined to labour earnings).

[35] Walker and Ryan (1990) base their conclusion on a comparison of the coefficient of variation of incomes of landless labour households in Aurepalle (Andhra Pradesh), Kanzara and Shirapur (both in Maharashtra), over the period 1979-84. Since the coefficient of variation was higher in Aurepalle (where the EGS did not operate) than in Shirapur and Kanzara (where the EGS operated), it is concluded that the EGS had an income stabilising role.

[36] (a) Participation in the EGS is specified in terms of whether an adult participated or not, duration of participation (number of days of participation in a year) and EGS earnings (in real terms). (b) Since monthly household income data were not available, coefficient of variation of labour earnings is used as a proxy.

(5) Protective and Promotional Roles

So far, using various tests, it has been demonstrated that the EGS was mistargeted in (a sample of) Maharashtra villages, and that the mistargeting worsened over the period 1979-89. These tests, however, rely on static targeting indicators e.g. proportion of rural poor who participated in the EGS in a given year. While these indicators are useful, they are limited to participation of the poor. But whether in fact participation in this scheme has any impact on the poverty status of a household over time cannot be captured through such indicators. Specifically, two aspects of this impact are of interest i.e. the protective and promotional.[37] The former focuses on the protection of the vulnerable from falling into poverty and the latter on enabling the poor to escape persistent poverty. As changes in poverty over time depend on whether the number of the poor who ceased to be poor exceeds that of the non-poor who slipped into poverty, a separation of these two aspects may yield insights into the poverty alleviating potential of the EGS. Accordingly, the analysis is designed to assess the protective and promotional roles of this scheme, using the ICRISAT panel survey of two Maharashtra villages over the period 1979-84 (Gaiha and Imai, 2002). This analysis suggests that the protective and promotional roles of this scheme are generally limited without substantial increase in the total outlay and perfect targeting of the poorest in a Rawlsian variant. Two reasons are pertinent here: one is the (relatively) small EGS budget in the sample villages, and the second is unsatisfactory targeting.

(6) Supplementary Analysis

The above analysis is supplemented by a specially designed survey carried out [38]recently by one of the authors in two villages in Ahmadnagar district within the broad framework employed earlier to assess the benefits of the EGS (see Gaiha 2002, 2003a, and 2005 for details).

(a) Transfer Benefits

Nearly 60 per cent of the participants were poor, and most of them were extremely poor (Gaiha, 2005).EGS earnings were a large share of household incomes of both the poor and non-poor. Among the former, the share of EGS earnings ranged from 18 to 40 per cent while among the non-poor it ranged from 18 to 33 per cent. However, in order to calculate direct transfer benefits, the opportunity cost of time spent in the EGS must be deducted from EGS earnings. As high job-search and travel costs

[37] This distinction is due to Dreze and Sen (1989).

[38] The analysis involves comparison of joint distributions of household income for a number of poverty thresholds – with and without the EGS – over the period 1979-84, after taking account of the opportunity cost of the EGS. The protective effect of the EGS is strong if the number of those falling into poverty is significantly reduced relative to the case without it; and the promotional effect is strong if the number of those escaping from poverty is significantly larger relative to that without the EGS. Both effects are weak even with perfect targeting of the poorest, or alternatively with substantially larger EGS budgets. It is only when the two are combined that the protective and promotional effects become strong.

render the option of working in neighbouring villages much less attractive than the wage differences imply, a more likely alternative to participating in the EGS is farm/non-farm employment in the same village. Since slack period opportunities are few and far between, the opportunity cost of participating in the EGS is taken to be no more than Rs.20 for day. Using this estimate, the direct transfer benefit to one of the poorest households worked out to be Rs.2400 (i.e. about 60 per cent of the EGS earnings).

The effect of the EGS on agricultural wages is a form of indirect transfer benefit. Although agricultural wages rose in the last three years, they were well below those in some neighbouring villages. Expansion of irrigation on a small scale made it easier to grow a summer crop. As this crop coincided with peak EGS activity, there was competition among farmers to hire labourers and agricultural wages rose. However, whether the EGS alone made a significant difference was contested by some participants.[39] So, given the scale and duration of EGS activities, a small positive effect on agricultural wages is plausible.

Another form of indirect transfer benefit is through the output of EGS assets (e.g. percolation tanks enabling irrigation of farms in neighbouring areas). That location of such assets matters a great deal was reflected in the responses of several poor EGS participants. As the percolation tank in Padoshi was located in the foothills and their farms were on top of the hill, they were deprived of its benefits. Even among those with farms around the tank, the benefits accrued to those with wells. Those who benefited in this way were able to grow another crop. Drinking water facility during the summer of course benefited a larger number. The benefits would have been greater if the village Panchayat had a role in the selection and location of such assets. Besides, their maintenance by the village community would enhance the flow of benefits. That the maintenance of these assets would be a self-interested response from the community in case their ownership was vested in it was not considered.[40]

(b) Stabilisation Benefits

Without the EGS, the prospects for the majority of the participants (including the non-poor) of making ends meet were grim. If unable to find (relatively) unremunerative employment in the same village, an option would be to seek employment in better irrigated neighbouring villages or work in a brick making unit elsewhere. Not only does it entail an expensive job search but also long daily journeys (in a few cases of up to 20-35 kms one way).

[39] A VLW (village level worker) in Panodi discounted a significant positive effect of the EGS on the ground that other options had also become available.

[40] Convinced that technical departments/line agencies could not be expected to be responsible for the maintenance of such assets, the VLWs were emphatic that only the Panchayats could handle this responsibility. If this view is shared by higher level officials, it is puzzling why budgetary provisions for maintenance are so niggardly.

Failure to secure employment of any kind of course involved grimmer choices: cuts in food expenditure, liquidation of assets and loans at exorbitant rates of interest. To the extent therefore that the EGS facilitated income smoothing among poor households and prevented them from making costly adjustments (e.g. sale of livestock) during slack months, the stabilising benefit is likely to be substantial.

(c) Incentives

The responses were mixed, with a large number of respondents denying the disincentive effects of the EGS.[41] Two reasons were emphasised in support of this view. One was the scaling down of the EGS and, associated with that, the small duration of employment in recent years. This meant that the benefit accrued to a few and only for part of the slack period. So, the dependence on it was limited, if any. Another reason was the keen desire for economic betterment through self–employment in a non-farm activity (e.g. brick making). What prevented them from engaging in such activities was not the availability of employment under the EGS but their lack of access to credit facilities. Whether the latter would do away with the need for anti-poverty interventions such as the EGS was disputed by a few on the ground that some protection against market uncertainties would in any case be necessary.[42,43] There was, however, some evidence of a mild disincentive effect of the EGS, discouraging job search in neighbouring villages. Availability of work nearer the home and flexibility in work-schedules were the underlying considerations – especially for the female participants.[44]

(7) Prospects of National Rural Employment Guarantee Scheme

As the national-level, there is a proposal to extend the EGS in a modified form to the poorest 150 districts in rural India but with a meagre budgetary allocation[45].

Drawing upon the National Sample Survey Data in 1990's, Murgai and Ravallion (2005) simulate potential impact of such a scheme on poverty, taking into account forgone income from other sources. With the assumption that the EGS operates for the whole year, their simulations show that a guaranteed minimum wage rate sufficient for the average rural family to reach the poverty line would reduce the

[41] Seven out of the twelve poor participants, for example, denied the disincentive effects. The results with the ICRISAT data, however, corroborate that participants in the EGS-especially the poor-tend to opt out of it when better economic opportunities arise. For details, see Gaiha (1996a), and Scandizzo et al. (2005).

[42] In fact, four control group respondents were emphatic that their dependence on anti-poverty schemes would lessen substantially if access to credit improved. But this was contested by a few on the grounds of uncertainty of agricultural yields and returns.

[43] Several respondents (including those in the control group) pointed out that the number of EGS sites had declined in recent years.

[44] A respondent in Padoshi, for example, admitted candidly that the EGS discouraged her from seeking work outside the village. After completing work on one EGS site, she looked for work on another EGS site in the same village, as opposed to exploring farm/non-farm opportunities in another village.

[45] Whether a more ambitious nation-wide EGS would be feasible seems doubtful, given the budgetary constraint.

headcount index from 34% to 25% at a fiscal cost of 3.7% of GDP. If the scheme operates for 100 days only in the lean season, poverty rates would fall from 34% to 31% at a fiscal cost under 1.5% of GDP. While these are interesting results, the conclusion that untargeted cash transfers would be more cost-effective cannot be accepted at face value, as this analysis does not take into account the indirect transfer (e.g. through higher agricultural wages) and stabilisation benefits. Apart from the fiscal burden becoming a major constraint, serious doubts about the poverty alleviating potential of the proposed scheme cannot be set aside without better design and implementation to maximise the benefits to the poor (Gaiha 2004)[46].

6. Political Economy

Arguably RPWs in general and, the EGS in particular, have contributed to political activism and organisation among the rural poor (Echeverri-Gent, 1993, Joshi and Moore 2000, Gaiha 2002). Concentration of a large number of workers in one place increases their interaction and helps them overcome their social and other differences. Also, the EGS as a fall back option provides a measure of security. Finally, eager to secure the support of EGS workers, politicians build independent organisations. As a result, multiple channels emerge to represent workers' interests and the political system becomes more responsive to them[47].

It is often asserted that targeting failures or leakages to non-target groups are justifiable as they help expand the political constituency for the EGS.[48] This is not persuasive for two reasons. One is that such leakages are not inherently self-limiting i.e .leakages are likely to be self-reinforcing in a context of acute inequality of endowments, resulting in programme capture. Another is that, as long as the EGS concentrates on public goods (e.g. roads, flood protection, prevention of soil erosion), everybody- including rich farmers- would benefit.

7. Concluding Observations

Although overall participation in the EGS fell sharply over the period 1980-97, the EGS continues to confer significant transfer and stabilisation benefits in some of the poorer regions (e.g. tribal villages) during long seasonal slacks . As alternative employment options are few and far between, the dependence on the EGS is unavoidably high for those who are able to participate in it. If the overall participation rates are low, it is partly a consequence of the nature of projects

[46] On the fiscal constraint, see *The Economist*, 2005.

[47] For an elaboration of the conditions that would facilitate the mobilization of the poor (e.g. democratic competition, opportunities for collective action, and enforceability of employment as an entitlement, see Joshi, 1998, and Joshi and Moore, 2000).

[48] This summarises Echeverri – Gent's (1993) view.

undertaken and low outlays and not so much a result of slackening of demand for the EGS.[49]

In some ways, the contrast between the findings from the ICRISAT and Ahmadnagar samples is striking, and points to the need for a reallocation of EGS outlays.

In the ICRISAT sample, there was a marked deterioration in the targeting of the EGS over the period 1979-89. The share of the non-poor (including some relatively affluent) rose, as also their share in total EGS earnings. As a result, some reduction in the direct transfer benefit to the poor cannot be ruled out. The indirect transfer benefit through the positive effect of the EGS on agricultural wages was, however, substantial. Although the ICRISAT survey does not contain any data on the distribution of benefits from EGS assets, another survey pointed to substantial concentration of the benefits among large landholders. An analysis of the income stabilising benefits of the EGS, based on the ICRISAT data, suggests that they are significant. This is not surprising, given that the EGS peaks during the agriculturally slack period. Turning to the dynamic poverty alleviating potential of the EGS i.e. whether the vulnerable were protected from falling into poverty and whether the poor were enabled to escape from persistent poverty, larger outlays with greater participation of the poorest in the EGS yielded unambiguously superior poverty outcomes.

The direct transfer benefits of the EGS to the poor in the Ahmadnagar sample are high, given the high proportion of acutely poor participants and their heavy dependence on the EGS. The indirect benefit through a positive effect of the EGS on agricultural wages was not so strong, presumably because of the short duration of agricultural employment – especially in the tribal village. The benefits of the output of EGS assets accrued largely to those living in their vicinity – a case in point being farmers located around a percolation tank. As EGS projects were handed down by district authorities often independently of the proposals put up by village Panchayats, this is not surprising. The income stabilising benefits were of course substantial, given that alternative employment options were limited. In fact, for some of the poorest participants failure to secure EGS employment would have resulted in severe economic hardships, as a likely option was liquidation of the few assets that they possessed.

Although it is not easy to reconcile (relatively) clean and honest implementation of the EGS in the Ahmadnagar sample with other evidence, some features of this sample seem pertinent. These are (i) absence of acute economic disparities, (ii) widespread awareness of the EGS, and (iii) small outlays. So perhaps what the poor lost in terms

[49] Factors leading to the low participation rates among the poor other than low outlays include; 1) wage is not low enough to discourage the non-poor from participating in the EGS; 2) Piece-rate wage system of the EGS tends to attract those with greater physical stamina and dexterity; 3) elaborate registration procedure; 4) delays in payment as the amount of work done has to be assessed ; 5) long distance between work-site and home; 6) compositional changes in EGS activities, involving contractors and skilled work; and 7) potential loss of reputation as a consequence of frequent switching into and out of the EGS (Scandizzo et al., 2005).

of small outlays was to some extent compensated for by clean and honest implementation of the EGS.

From a broader perspective, it is arguable that the contribution of the EGS to political activism and building of coalitions among the poor is of considerable significance in itself, as it makes the political system more responsive to their interests. A sense of collective identity – despite social and religious differences – is inculcated through close interaction on work-sites. Reinforced by a sense of economic security during lean periods, prospects of collective action among the poor are likely to improve.

Some concerns about the design and implementation of RPW in general and the EGS in particular, however, remain (i) If public investment substitutes for private investment – as in the case of Jawahar Wells Scheme as a component of the EGS – the (net) benefit may well be small. It may be more appropriate to promote private investment through easier access to micro-credit. (ii) As no separate provision for the maintenance of EGS assets is made, their potential benefits are not fully realised. Adequate provision must be combined with vesting of responsibility for maintenance in the local community as that is likely to be cost-effective (iii) Given a fixed outlay, a lower wage would allow a wider coverage of the poor. Enhanced outlays under the EGS are feasible provided other similar interventions (e.g. Jawahar Rozgar Yojana) are merged under it. As wastage is smaller under the EGS, it would be more cost-effective than administering each intervention/programme separately. If larger outlays are accompanied by a reallocation in favour of backward regions, the benefits to the poorest would be substantially greater without additional administrative costs.

Some lessons distilled from this review are listed below. First, high wages would not only impose a huge fiscal burden but also ration the poorest out. EGS wage rates have to be set low enough so that non-poor workers do not crowd out the poor. Secondly, a larger allocation to the poorest regions would help improve the targeting of the EGS as well as confer substantially larger income stabilization benefits. Thirdly, a more careful attention must be given to location of EGS assets so that their benefits accrue to the poor segments of cultivating and non-cultivating households. Finally, given the long-term developmental role of the EGS, the quality and maintenance of EGS assets ought not to be overlooked. This can only be accomplished through greater coordination between Panchayats and local bureaucracy, on the one hand, and by strengthening coalitions of the poor, on the other.

In conclusion, the poverty alleviating potential of the EGS is high <u>despite</u> a sharp fall in total participation in this scheme in recent years.

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Appendix 1: Description of the Data Sets

(a) ICRISAT Survey

The data collected are based on panel surveys carried out at regular intervals from 1975 to 1984 covering production, expenditure, time allocation, prices, wages, and socio-economic characteristics of 240 households in 6 villages representing 3 agro-climatic zones in the semi-arid region in South India. Given the agro-climatic conditions and purposive selection of the villages, the VLS data are not representative of all of rural south India or, for that matter, even of its semi-arid region. Nevertheless, the longitudinal nature and richness in terms of variables included are what make the ICRISAT VLS data unique.

As part of the ICRISAT VLS, detailed data on time allocation, especially time spent on public employment schemes, were collected continuously for 3 villages from the sample households for the period 1979 to 1984. Of these, 2 (Shirapur and Kanzara) are located in Maharashtra where the EGS operates. Some of the data files (including those covering the EGS) were updated for 1989. Given the sample design, 12 households were selected randomly from each stratum in the sample villages. However, only a fraction of the original panel of households could be retrieved. The present analysis is based on the samples for these two villages. Since the EGS operates only in Maharashtra, an issue is the representativeness of these two villages of the SAT sample for Maharashtra. Table A-1 provides a description of agroclimatological differences in the sample villages.

Briefly, the contrast between Sholapur and Akola villages in terms of rainfall, soil quality, cropping patterns, and technological advancement is striking. Since Shirapur is in Sholapur and Kanzara in Akola, the contrast is represented in the sub-sample for the EGS. On the other hand, the shares of labourers, cultivators and others, as well as average farm sizes of small, medium and large cultivators are largely similar. Thus a small sub-sample of two villages is unlikely to be a serious constraint.

Table A-1
Characteristics of Study Regions and Villages

Region and Village					
Mahubnagar		Sholapur		Akola	
Aurepalle	Dokur	Shirapur	Kalman	Kanzara	Kinkheda
Rainfall unassured; pronounced rainfall uncertainty at sowing		Rainfall unassured; frequent crop failure		Rainfall assured	
Red soil; marked soil heterogeneity		Deep black soils in lowlands; shallower lighter soils in uplands		Black soils; fairly homogneous	
Kharif, or rainy season, cropping		Rabi, or post-rainy season, cropping		Kharif cropping	
Paddy, castor, and local kharif sorghum		Rabi sorghum		Upland cotton, mung bean, and hybrid sorghum	
Agricultural intensification around dug wells and tanks		Some dug wells		Limited irrigation sources in 1970s and early 1980s	
Neglect of dryland agriculture					
Harijans and caste rigidities; inequitable distribution of land ownership		Technologically stagnant		Sustained technical change in dryland agriculture	
		Tenancy; dearth of bullocks; more equitable distribution of land		More educated	

Source: Walker and Ryan (1990)

(b) Ahmadnagar Survey

To supplement the analysis based on the ICRISAT panel survey, a special survey was carried out by one of us. While there is some overlap between the two surveys, the latter focuses more on the process of implementation of the EGS. But more importantly, it seeks to illustrate some of the mechanisms through which the EGS impacts on household incomes and well-being of some of the poorest sections. Accordingly, a small sample of participating and non-participating households, and representatives of official agencies at the state, district, tehsil/block and village levels were interviewed.[50]

[50] The interviews were carried out by P. Sadolikar of Empirical Research Agency Pvt. Limited in Pune, under the overall guidance of Raghav Gaiha.

Given the time and budget constraints, it was decided to conduct the field-work in Ahmadnagar district as the level of EGS activity was reported to be high there. Besides, since a major concern of this study was to examine the exclusion of the poorest from anti-poverty interventions, another consideration that favoured the selection of this district was the high concentration of the tribal population in it. In this district, two tehsils were selected viz. Akole and Sangamner, with the former recording the highest number of registered labourers and the latter the next highest (for the EGS). From each tehsil, one village was selected in consultation with tehsil officials. From the tribal zone in Akole, Padoshi was chosen, and, from the dry region in Sangamner, Panodi.

(i) Participants

As a wide range of topics was included in the questionnaire and detailed responses had to be obtained, it was decided to restrict the sample to 20 EGS participants. In consultation with the Sarpanch (the Chairperson of the village Panchayat), a list of participants in the EGS was prepared. A random sample was then selected, making sure that SC/ST, agricultural labourers and women were represented in it.

(ii) Non-Participants

From the two sample villages, 10 non-participants were randomly selected, making sure that these belonged to (relatively) poor households (i.e. SC/ST/ Other Backward Classes(OBC)).

(iii) Officials

Several officials involved in the implementation of the EGS at different levels were interviewed. These comprised officials in the Planning Department, District Collector, Tehsildar and Village Level Worker (VLW).

Appendix 2: Estimation of Wage Equation

The estimating equation was of the following form:

$$WA_t = \alpha + \beta_1 WA_{t-1} + \beta_2 WA_{t-2} + \beta_2 WE_t + \beta_3 WE_{t-1} + \beta_4 WNF_t + \beta_5 WNF_{t-1} + \beta_6 D_1 + \beta_7 D_2 + \epsilon_t$$

where WA, WE and WNF denote farm, EGS and non-farm wages, respectively, with t as time subscript, and D_1 and D_2 as monthly dummies that took the value 1 for April and May, respectively, and 0 otherwise. In an alternative specification, a linear time trend (with T as an additional explanatory variable) was introduced. Using OLS, these equations were estimated with the ICRISAT data for the periods 1979-84 and 1979-89 (excluding the period 1985-88 for lack of data). The results based on the latter are summarised here. For details, see Gaiha (1997a, b).