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Targeting versus Universalism: An Evaluation of Indirect Effects of the Employment Guarantee Scheme in India

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Abstract

Although a workfare scheme is potentially a cost-effective poverty alleviation scheme as it attracts only the poor who have an incentive to do unskilled manual works, an investigation of the ICRISAT data in India clarifies that the Employment Guarantee Scheme was *mistargeted*, i.e., a substantial share of the non-poor also participated. The comparison of the EGS and universalism through the village-level SAM (Social Accounting Matrix) model reveals that the former is neither efficient nor equitable than the latter unless the state government carefully designs the scheme so that the EGS assets, such as irrigation facilities, are made accessible to the poor without undermining their positive effects on agricultural productivity.

Key Words: Asia, India, EGS, poverty, targeting, indirect effect, SAM (Social Accounting Matrix) model

JEL Codes: D31, H53, I38, J38

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1. Introduction

Targeting policy or targeted intervention is defined as the short-run intervention which concentrates limited resources to the poor in order to alleviate poverty. It is generally thought that targeting is not only more cost-effective but also more equitable than is the universalism which transfers resources equally to all members in society. However, it is not easy to empirically decide whether targeting is more efficient than universalism because targeting the poor involves substantial costs.

Most studies on targeted intervention have focused mainly on *direct* transfer benefits and few evaluated their indirect transfer effects and risk benefits, even though the impact of any anti-poverty intervention is not limited to direct effects (Ravallion and Datt, 1995). A point of departure of the present analysis is to shed an empirical light on the indirect effects of targeted interventions in comparison with the universalism. As a case study, the impact of the Employment Guarantee Scheme (hereafter EGS) in the Indian State of Maharashtra is evaluated based on the ICRISAT (International Crops Research Institute for the Semi-Arid Tropics) Village Level Studies data. Methodologically, the Social Accounting Matrices (SAMs) are applied drawing upon Subramanian (1996) and Subramanian and Sadoulet (1990) to assess the indirect effects of the EGS.

It is often argued that self-targeting scheme which leaves people to decide whether participate or not reduces the cost of targeting significantly and thus becomes one of the cost-effective alternatives (e.g. Besley and Kanbur, 1993; Dreze and Sen, 1989 ; Sen, 1995). However, Gaiha (1996 a, b, 2000) reveals that the EGS, one of the well-known self-targeting schemes, was ‘mistargeted’ contrary to the conclusions of the former researches. Our focus is to investigate how and why the EGS was mistargeted even though its self-targeting aspects are believed to improve targeting performance (Besley and Coate, 1992). We will then try to clarify whether the self-targeting scheme can become the best alternative to targeting after taking account of its indirect effects.

The next section reviews the arguments of the benefits and costs of targeting in comparison with those of universalism. Sections 3 and 4 provide the salient features of the EGS and data sets. Section 5 discusses how and why the EGS was mistargeted. Section 6 compares the EGS with universalism by SAM models. The last section offers some concluding remarks with policy implications.

2. Benefits and Costs of Targeting

General Arguments

Under budget constraints of the governments, directing the resources to the most needy leads to the most efficient policy, but this ‘first-best’ world is difficult to be achieved in the real world due to various costs of targeting and thus the necessity of considering the ‘second-best’ world arises (Besley and Kanbur, 1993). While targeting is always perfect and thus better than universalism in helping the poor in the first-best world, the former is not always better than the latter in the second-best world because of the existence of targeting costs.

Then we should ask; what kind of costs may arise in the second-best world? Firstly, it is generally assumed that the administrative costs of identifying the poor are higher in finer targeting, *i.e.* the trade-off between the administrative costs of targeting and targeting outcomes exists. However, the empirical study of Latin America by Grosh (1995) reveals that the administrative costs of programmes with good incidence need not be high and that there appears to be only a weak correlation between administrative costs and targeting outcomes. On the other hand, universalism itself cannot be exempted from the administrative costs, such as counting and registering the number of households and the population. Therefore, administrative costs are not necessarily the principal factors which make the fine targeting less cost-effective than universalism. Secondly, we need to take into account the costs specific to targeted schemes. Targeting often affects the behaviour of both the poor as well as the *non-poor*. The scheme which targets only the poor not just causes the problem of moral hazard but also might damage their self-respect (Sen, 1995). On the other hand, under the targeting scheme, the *non-poor* tend to pretend to be poor by providing inaccurate information that they are poor (*ibid.*, p.12). It is obvious that these problems of the behavioral changes do not exist (or are less serious if they exist) in the universalistic scheme.

In order to reduce these costs, some alternative ways of targeting have been proposed. They include ‘the targeting using indicators’ and ‘self-targeting’ (Besley and Kanbur, 1993, Dreze and Sen, 1989). The former is the targeting based on key indicators, such as specific region, gender, age, land-holding and so on.² If the leakage of the poor and the excess coverage of the non-poor are not so large, the accurate targeting will be possible with minimum costs and the scheme will be more cost-effective than universalism.

Self-Targeting

The latter (self-targeting) can be defined as ‘schemes based on self regulatory tests that only the truly poor would pass’ (Besley and Kanbur, 1993, p.78). While the beneficiaries are specified by the governments in the ordinary targeted interventions, whether to participate or not is decided by the beneficiaries themselves in self-targeting scheme. As a result, in the latter, all policy makers have to do is to set out the outline of the programme and set the selection criteria for the would-be beneficiaries. Hence the targeting costs, such as administrative costs of targeting, the incentive distortion, and the disutility and stigma are theoretically zero, although the administrative costs other than targeting may arise. That is why the self-targeting mechanism is often regarded as one of the best ways of targeting. Then the next question arises: among various ways of targeting, is the self-selection scheme such as public employment scheme empirically the most efficient?

A well-known example of self-targeting is a workfare scheme in which participants obtain income or food in exchange for labour and they can decide whether to participate in it by themselves. Another example of targeting is ‘transfers in kind’, the system in which the goods and services (e.g. education and medical treatment) are provided by states at various quality, so as to be demanded discretely (*ibid.* pp.80-81). Some goods, such as cheap grain, are sometimes provided freely by governments for everyone in principle, but they are demanded only by the poor because they are bad in quality. Hence this scheme is universalism *de jure*, but targeting *de facto*. Both are important, but in the present study, we highlight the former (workfare) in order to clarify whether the self-targeting or universalism is better in reducing the poor.³

3. The Features of the EGS

The Employment Guarantee Scheme in Maharashtra was first experimentally initiated by Mr. V.C. Page in 1965. It was subsequently expanded as part of an integrated rural development project, 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 (Gaiha, 2000).

² See Bigman and Srinivasan (2002) for the evidence and discussions of geographical targeting in rural India.

³ See also Barrett and Clay (2003) who show that food-for-work schemes in Ethiopia resulted in targeting errors (or mistargeting) due to mismanagement of key operational details, such as the project’s wage rate.

The EGS has the following features. Firstly, the scheme guarantees that every adult who wants a job in rural areas will be given one, provided that he or she is willing to do unskilled manual work on a piece-rate basis. In this sense, the decision as to whether to participate is left to the participants. Secondly, until 1988, the wage rate was usually below the agricultural wage rate. Thirdly, as the guarantee holds at district level, a person may be required to travel a long distance for a few days of temporary work.

The scheme must satisfy two criteria: being labour-intensive and creating productive assets (Dev, 1995). As the EGS is aimed at minimising the recurrence of droughts by prioritising moisture or water conservation, it may indirectly reduce the possible risk for farming households. Work under the EGS should be so organised that it does not interfere with normal agricultural activities (Gaiha, 2000).

4. The Data

The ICRISAT data set covers information on farm production, consumption, wealth, household endowments, labour supply of household members, credit, and market transactions in ten villages in rural India for up to ten years, from the crop year 1975/76 to 1984/85. Most of the data were collected again in 1989/90. Forty households were chosen and surveyed in each village. These forty households were equally stratified into four groups by the landholding class, namely 1) landless households, 2) small-scale farmers, 3) medium-scale farmers, and 4) large-scale farmers.

This study will use the data of two villages where the EGS operated: Shirapur (Sholapur District), and Kanzara (Akola District, Maharashtra). The income level of these two villages is lower than the national standard in India. Median income of Kanzara was higher than that of Shirapur as rainfall was more assured in the former (Walker and Ryan, 1990). Average rainfall is 690mm, and 820mm in Shirapur and Kanzara respectively (Singh, Binswanger, and Jodha, 1985). In Kanzara, only four percent of the gross cropped area is irrigated, reflecting the assured rainfall. The major production in Kanzara consists of rainy-season cotton and sorghum. The share of irrigated land in the gross cropped area is 14 percent in Shirapur. Sorghum is the most important crop in Shirapur. The form of credit also differs in two villages. While formal loans play an important part in Kanzara, the informal credit is dominant in Shirapur (Walker and Ryan, 1990).

5. How and Why was the EGS Mistargeted?

The EGS in Maharashtra has been regarded as a success of self-targeting (or self selection) mechanism in which a high work requirement results in a good targeting performance. However, Gaiha (1996a,b, 2000) concludes that the EGS was ‘mistargeted’ and the targeting performance worsened over the years by comparing the ICRISAT VLS in 1979 and that in 1989 contrary to the conclusions of the former researches^{4 5}. This conclusion is confirmed by the fact that the share of the poor (and the landless) among the EGS participants corresponds to their share in labour force and it decreased over the years.

Although Gaiha (1996a) compares the share of the poor in the EGS participants and that in the total population (1979; 48%: 54%, 1989; 27%: 29%), whether the *excess coverage* (E-mistake) or the *leakage of covering* (F mistake) is more serious remains unclear.⁶ The disaggregation into E-mistakes and F-mistakes reveals that the large and increasing F-mistake is a main reason of mistargeting and its worsening (Table 1). The more important feature is that most of the poor are not covered by the EGS and ‘leakage’ expanded over the years, rather than the existence of the ‘excess coverage.’⁷ Although the scheme is not aiming to cover all of the poor, the large and increasing F-mistake implies that the EGS has not worked as ‘targeting’ scheme, although its self-selection mechanism has been believed to enhance the targeting performance.

(Table 1 to be inserted)

⁴ This conclusion is based on a particular poverty threshold (Rs. 180) and a specific poverty index (the head-count ratio) in the Foster-Greer-Thorbecke (FGT) class. Gaiha (2000) concludes by second and third stochastic dominance tests that the targeting of the EGS in terms of poverty gap index was better in 1989 at lower income levels and worse over the range Rs. 150-225 than in 1979, and that the targeting of the EGS in terms of squared poverty gap index was better in 1989 than in 1979. However, he concludes that if the income class under Rs. 50 (in which the participants in 1989 are concentrated) is omitted there is a clear worsening of the EGS targeting for all FGT poverty indices over the range Rs. 75-225.

⁵ It should be noted that the analysis of ‘mistargeting’ assumes that welfare can be accurately measured. Although the non-income dimension of welfare and the intra-household distribution should be considered, we will not deal with them for simplicity.

⁶ Following Cornia and Stewart (1987, 1995), F-mistake is defined as the mistake of failure to reach the targeted population, and E-mistake means the excessive coverage of the non-poor occurring when the intervention reaches the non targeted population.

⁷ The reason of the decrease in E mistakes from 1979 to 89 is a significant fall of the share of the EGS participant among the total population (17.7%⇒9.4%). However, it should be noted that if the rates of growth of poor and non-poor populations are different, the comparison of E and F mistakes over time is problematic.

Then why the EGS was mistargeted even though its self-targeting aspect theoretically enhances the targeting performance? Gaiha (1996b) attributes it mainly to the design and implementation of the scheme, i.e. to the political factors,⁸ most of which can be attributed to organizational inflexibility and bureaucratism in the EGS pointed out by Terhal (1995). Gaiha also suggests the possibility that the poor without political support are excluded from the project.

Although the above analysis is comprehensive, some theoretical investigations will give us further insights. Firstly, if Besley and Coate's (1992, pp.253-255) 'screening argument' is applicable to 'mistargeting' of the EGS, the work requirement will be below the optimal level at which 'the screening mechanism' works well so as to prevent the non-poor with higher opportunity costs of participation from participating the scheme. That is, mistargeting implies that 'the work requirement' is not so high and thus the high-ability individuals have incentives to participate in the scheme. Secondly, the aspect of piece-rate labour contracts of the EGS is worth investigating. Since the agricultural labour market in Maharashtra consists mainly of the daily-rated labour (Walker and Ryan, 1990), Baland *et. al.*'s (1999) analysis of the coexistence of daily-wage and piece-rate contracts in agrarian economies may be appropriate for explaining the labour market in Maharashtra. They show that daily-wage workers form a convex set in the space of working ability and that workers of high ability prefer piece-rate wage contracts because these allow them to take advantage of the opportunity to work fast (and earn high wages) instead of being forced to adopt the sluggish pace of daily wage workers and on the other hand workers with low ability prefer to work on piece-rate wage contracts because the pace of work on daily wage contracts is too demanding for them (and thus workers with medium ability prefer to work on daily wage contracts) (Baland *et. al.*, 1999). However, it should be noted that this model holds under a specific circumstance where every worker with a different level of ability can choose between piece-rate contracts and daily-wage contracts without any cost or constraint.

The present analysis focuses on the labour market of the landless because most of the landless are wage workers. While both Besley and Coate (1992) and Baland *et. al.* (1999) are based on the different income-generating abilities among the workers, there still remains an empirical question on how to measure abilities of workers. Since the ICRISAT data do not have

⁸ Gaiha (1996b) argues that the employment rationing (due to the fact that the hike in EGS wages was not accompanied by a matching increase in the outlay) and the deficiencies of the design and implementation, such as the elaborate registration procedure, a long waiting time and the inappropriate choice of work site (very far in some cases) are main causes of mistargeting.

the direct data on worker's ability, we assume that there is a correlation between the income-generating ability and the average farm-wage per hour per worker over a fiscal year. We then compare that average hourly farm-wage and its distribution of the EGS participants (those who are paid by piece-rate wage system) with those of the non-participants to indirectly examine the applicability of Besley and Coate (1992) and Baland *et. al.* (1999).

Table 2 shows that the average hourly farm wages of the EGS-participants were higher than those of the EGS non-participants from 1979 to 1984 and 1989 in both male and female except the cases of female in 1983-84. If the hourly average farm-wage expresses the income-generating ability,⁹ it can be concluded that those who have high income-generating ability tended to participate in the EGS.¹⁰ This implies that the EGS was mistargeted over the years among the landless workers, that is, many of the landless workers whose hourly-farm wages were not high did not participate in the EGS. Disaggregation by gender reveals that the wage differences between participants and non-participants were higher in male than in female except in 1979 and that hourly EGS wages of male were far higher than those of female, which implies that female workers whose income-generating abilities were assumed to be low did not do remunerative (but physically-demanding) works.

(Table2 to be inserted)

Table 3 shows the distribution of the average hourly farm wage of the EGS participants and the non-participants. Based on the theory of piece-rate wage of Baland *et. al.*(1999), only the workers with high ability and low ability participate in the EGS and the workers with medium ability do not. This pattern is observed clearly in 1979 and 1984 but it is less clear in the other years when the low-ability workers participated in the EGS. However, it is safe to conclude that many of the high-ability workers (in top 20% rank of hourly farm wage) had a tendency to participate in the EGS. That is, Table 3 implies, given the high correlation of hourly-farm wage and worker's ability, that a significant portion of the landless workers with high ability tried to take advantage of the opportunity of working fast and hard in the EGS based on the piece-rate

⁹ This assumption is not so unrealistic because there was a high coefficient of correlation ($r=0.80$) between the hourly EGS-wage, based on piece-rate contracts which reflect the individual abilities, and the hourly farm wage based on daily-wage contracts of each EGS participant over the years.

wage system and that many of the landless workers with low ability preferred to work less-demanding works.

(Table 3 to be inserted)

Since the data related to the work requirement or the ability of the workers are not available, it is difficult to decide whether ‘the screening argument’ or ‘piece-rate wage theory’ is appropriate for explaining the mistargeting of the EGS. If the former is applicable, the work requirement was too low to serve as the deterrent for the high-ability workers. However, the further increase in the level of work requirement does not seem to improve targeting performance, because it was likely that the workers with low-ability included the elderly or those with low nutritious levels who could not satisfy higher work requirements. With regard to the latter, it is safely concluded that the piece-rate wage system which attracts the workers with higher ability is one of the reasons of mistargeting. Among landless workers, the majority of those with middle and low abilities could not have access to the EGS, partly because they tend to prefer the farm work based on the daily wage contracts to the EGS. This observation corresponds to the argument of Gaiha (1996b) that the deficiencies of the design and implementation of the scheme deter the poor from participating in it.

The small share of the EGS participants in the total adult landless implies mistargeting itself, since the large portion of the landless were poor and only 44% of the landless were covered by the EGS over the years. With regard to the trend of mistargeting of the early 1980s, given a high correlation between the poor and the landless, we will note that the sharp improvement of targeting performance from 1979 to 1980 was followed by its gradual decline from 1981 to 1984 and there was a further large drop in targeting rates in the late 1980s (the share of EGS participants in the total adult landless: 1979; 30.6%, 1980; 63.8%, 1981; 55.3%, 1982; 53.3%, 1983; 40.5%, 1984; 40.9%, 1989; 15.8%).

In sum, the large portion of the poor landless with relatively lower hourly farm wage could not participate in the EGS and the participants consisted mainly of the less-poorer landless with

¹⁰ The wage difference between EGS participants and non-participants reflect long-term nutritional advantage (see Deolalikar and Gaiha, 1996).

higher wage, not only because of the nature of the piece-wage system and but also because of the deficiencies of the design and the implementation of the scheme.¹¹

6. Indirect Effects of the EGS

Indirect effects can be defined as any effects (other than direct effects) which arise through 1) the creation of assets or infrastructure by the scheme, 2) the changes of market prices or wages (through market mechanism or the change of bargaining power between wage-workers and large farmers), or 3) the additional demand created by a Keynesian-type demand-driven system.¹² All of these are usually observed some time (e.g. several months, or years) after the scheme operated and are called 'second-round effects' and the last two are so-called multiplier effects. While the direct transfer effects occur immediately after the scheme operated and easy to identify, the indirect transfer effects continue for long time and difficult to be distinguished from the effects caused by other factors. However, it is clear that the indirect effects should also be considered in the evaluation of any policy, hence the present analysis focuses on such a long-term effect of the EGS.

The past studies point to substantial indirect effects of the EGS. With regard to the indirect effects arising through the assets, through the investigation of about 36 per cent of the total area of the eight blocks, Planning Commission reports that sizable gains in output through the assets were created by the EGS (GOI, 1980, cited by Ravallion, 1991, p.163). Clearly, this effect is characteristic of the EGS whose primary objective is to improve the productivity of agricultural and other rural resources by constructing the assets such as wells and roads (Hirway and Terhal, 1994). This cannot arise through universal transfer. However, there are restricting factors in this effect in the context of the EGS. Firstly, since the scheme uses unskilled worker and its costs consist of 60 % for wages and 40 % for the rest, 'the productivity is bound to be limited even when the best management methods are employed and the most fruitful projects such as irrigation, land development and soil conservation, afforestation, are properly implemented' (Dandekar, 1983, p.66). In addition, without appropriate project selection and supervision in the EGS, long delays will occur in completion of the work (Hirway and Terhal, 1994, pp.111-112)

¹¹ It does not necessarily imply that the piece-rate contracts aggravate poverty because as the ability of the worker increases, the amount of the work under this contracts will also increase and thus may lead to the more efficient outcome in total (see Baland et. al. ,1999).

¹² The former two follow Ravallion (1991, p.162). The third is based on Saith (1992, p.65).

and thus the long-term rate of return of the project will become considerably lowered. Secondly, the distribution of the benefits brought by the EGS assets was often disproportionate, *i.e.*, they were in favour of the medium and large farmers who were *not* poor (*ibid.*, p.112, Dandekar and Sathe, 1980, pp.710-711). In order for the marginal and small farmers to have access to the EGS assets, institutional arrangements are crucial for them to be able to participate in local-decision making (Hirway and Terhal, 1994, p.113).

Using the ICRISAT VLS data, Gaiha (1997) shows that the EGS has a substantial effect on agricultural wages especially in the long run because the bargaining position of the rural workers toward the large landholders was strengthened due to the existence of the option of the employment in the EGS. The study concludes that a sharp reduction in the share of poor participation was compensated by higher agricultural wage. A similar conclusion to support for the substantial multiplier effect is drawn by Ravallion (1990) who assumes the urban/rural dualistic economy with mobility between a rural sector where wage is flexible and an urban sector where wage is fixed. However, drawing upon 1987-89 data, Ravallion *et. al.* (1993) conclude that only 10 % increase in the EGS wage was passed on the agricultural wage rate and that second-round effects were not large.¹³ There still remains an empirical question over the magnitude of the scheme's multiplier effects.

SAM analysis on the EGS

Among various approaches which can evaluate the indirect effects and the linkages within the village¹⁴, the present analysis focuses on village-level Social Accounting Matrix (SAM) model which captures the linkages among the activities *within* a village and those between a village and the outside world (Taylor and Adelman, 1996)¹⁵. Since the ICRISAT data exclude all the households whose primary and secondary income is not agricultural and thus do not cover all the necessary information for constructing a SAM, the following analysis is basically based on the former studies (Subramanian and Sadoulet, 1990 and Subramanian, 1996) in which a SAM of

¹³ However, the conclusion in Ravallion *et. al.* (1993) is suspect because of their failure to test for Granger-Sims causality between agricultural and EGS wages.

¹⁴ For example, Gaude, *et. al.* (1984), and Gaude, *et. al.* (1987) focus on the rate of return of the project. From the various data about each project (total expenditures, cost price of works, direct and long-run employment *etc.*), they calculate the rate of return in the long run taking into account the indirect costs.

¹⁵ The construction of a village SAM requires a number of simplifying assumptions, such as absence of prices, perfectly elastic supply, and linear, fixed proportion technologies (Taylor and Adelman, pp.25-26). Hence our result is not exempted from the limitations associated with these assumptions.

Kanzara, one of the villages of Maharashtra, in 1984 was constructed to analyze the village structure.¹⁶ These studies use the ICRISAT Village Level Studies (VLS) and the data on non-agricultural activities which were collected by Subramanian (1988). The methodology used in this paper is to change the exogenous variables of their SAM by using the additional data of ICRISAT VLS and to compare the results.

Table 4 is the schematic SAM which shows the structure of their analysis. The initial aggregate SAM used for the present analysis is shown in the appendix. The each column indicates the expenditure account and corresponds to the each row account (i.e. the revenue account), and the column total (the total expenditures) is equal to the row total (the total revenues). This matrix simplifies the structure of the village economy which is characterised by various activities, factors, and the institutions. Following Subramanian and Sadoulet (1990), the rest of India, Government Services, and agriculture are regarded as exogenous in the model. The following experiments are carried out by changing the levels of exogenous accounts. In particular, the wages of the EGS correspond to ‘factor earnings from outside’, and the transfer by the government corresponds to ‘transfer from outside’ in Table 4.

(Table 4 to be inserted)

Table 5 shows the results of various experiments as to the counter-factual of the EGS by using a SAM model. Experiment 1 shows the case without the EGS assuming that the forgone income is zero. In this case the landless and small household classes which include more participants of the EGS lose more than do the medium and large farmers. The accounts of outputs, savings, and rest of India are also reduced significantly through the multiplier effects. Experiments 2 and 3 show the cases where the loss of the EGS in experiment 1 is supplemented by household-based universal transfer and individual-based universal transfer (of the same budget of the EGS)¹⁷ respectively. In these cases, total household income and total output remain almost same. The households which consist of ‘large farmers’ gain more income in case

¹⁶An important feature of the SAM constructed by Subramanian is to solve, by making the agricultural sector exogenous, one of the limitations of SAM model, the assumption that the economy is demand constrained (Subramanian and Sadoulet, 1990, pp.148-149).

¹⁷For simplicity, it is assumed in these experiments that the wage-costs of the EGS are equal to the transfer of the universal scheme, that is, the non-wage costs of the former are equal to the costs other than the transfer of the latter.

of universal transfer, and individual-based universal transfer brings a more regressive result because there are more average members in the larger households than in the smaller households.

(Table 5 to be inserted)

But the assumption that the foregone income is zero is not realistic, because without the EGS the participants would try to use part of their time in other income-generating activities. The necessity then arises to take an explicit account of the forgone income. Datt and Ravallion (1994) and Ravallion and Datt (1995) use the conditional time allocation model (CTAM) which considers ‘the intra-household allocation of time *conditional* on existing public-works employment’ (Datt and Ravallion, 1994, p.1347, emphasis in the original) based on ICRISAT VLS in order to analyze the net direct transfer effects of the EGS. Using their analysis as to average forgone incomes of the EGS (Ravallion and Datt, 1995, p.424), we take into consideration the forgone income in the experiments 4, 5, and 6.¹⁸ Once we take into account the foregone income of the participants (in the experiment 4), the decrease in total household income and in output is reduced by 40 % (compared with the experiment 1). If we add the universal transfer of same budget of the EGS and the forgone income (in the experiment 5 and 6), the total household income will increase by 1 % and the total output will go up by 0.46-0.47 %. Since the experiments 5 and 6 can be regarded as the relevant counter-factual of the EGS in that the forgone income is considered, it can be concluded that the universal transfer is more efficient than the EGS, even if the multiplier effects are taken into account.¹⁹ This is mainly because the forgone income of the EGS is substantial. If we compare the initial state (with the EGS) with the cases with universal transfer (experiments 5 and 6) in terms of equity, the result of household-based transfer scheme (experiment 5) is the most equitable, that of the individual-based universal transfer (experiment 6) comes next, and the initial state is the worst. This result that ‘universalism is more equitable than targeting’ seems to be contradictory at first sight. However, it not only corresponds to the conclusion of Gaiha (1996a, b, 2000) that the EGS was

¹⁸ We assume that the time allocation of 1984 in Kanzara is as same as that of six years (1979-1984) in Kanzara which is calculated by Ravallion and Datt (1995, p.424). According to them, among all activities (84.39 days) corresponding to ‘public works’, 32.96 days should have been spent on wage labour.

¹⁹ This conclusion (universalism is better than targeting) corresponds to that of Ravallion and Datt (1995) who uses the counter-factual approach to analyse the *direct* transfer effects.

mistargeted, but also shows that his conclusion still holds even if multiplier effects are taken into account.

These results must be treated with caution because only a part of the indirect effects, the multiplier effects are considered in the SAM analysis. More important could be the indirect effects through the EGS assets. Due to the limitation of the data, we follow the methodology of Subramanian and Sadoulet (1990) who investigate the effects of investment in irrigation by regarding it as the transfer from the dry lands into the wet lands. We assume here that the two-thirds of the non-wage costs (*i.e.* about 22 % of the total costs of the EGS, if one-thirds of the total costs are the non-wage costs as assumed in Ravallion and Datt (1995)) are spent in the costs of constructing wells and electric pump sets and ‘the benefits of irrigation are---measured by the difference in value added (VA) per acre between irrigated and dry land, which in 1984 was Rs 579 for large farmers’ and ‘this increase was assumed to apply to all farms’ (Subramanian and Sadoulet,1990, p.157)²⁰. The effect of the EGS asset is shown in the experiment 7 in Table 5. The increase in both total household income and outputs is substantial, given that the effect of irrigation is observed in the same year. The implication of this experiment is twofold. Firstly, comparison of the experiment 5/6 and the experiment 7 suggests that universalism is slightly more efficient than the EGS with the indirect effects created by assets. However, the indirect effects arising through assets, such as irrigation, remain for a long time (if depreciation is ignored), and thus these effects are accumulated as long as the EGS continues every year. On the other hand, the effects of universal transfer are limited within a year. Hence, experiment 7 implies that the effects of continuation of the EGS for a couple of years may exceed those of the universalism. Secondly, the benefits of irrigation concentrate on the large farmers, since they can appropriate most of the multiplier effects arising in the process of shifting from dry agriculture to wet agriculture. This result corresponds to the claim that ‘in Maharashtra a disproportionate share of---extra benefits (created by the EGS assets) has gone to the rural rich and this has been an important factor in achieving political support for the EGS’(World Bank,

²⁰ In our case, the multiplier effects are assumed to be distributionally neutral.

²⁰ We assume that in this experiment, for simplicity, *all* the EGS assets are irrigation, but it overestimates their effects because the productivity of irrigation is relatively higher than the other EGS assets. It should be noted that in 1984-85, only 32.3% of the total expenditure of the EGS is spent on irrigation (Hirway and Terhal, 1994, p.113).

1990, p.98). The experiment 7 implies that an indirect effect created by assets is substantial and that careful design and implementation are necessary in order for the poor or the landless to enjoy the benefits of the EGS assets. This conclusion is similar to the results of Narayana, et. al (1988) which show based on CGE model that rural works programs in India can become an effective instrument for virtually alleviating poverty through the long-term indirect effects, including the effects created by roads or irrigation, if they are well planned and executed.

7. Concluding Observations and Policy Implication

In the debates around poverty alleviation policies in developing countries which face the necessity both of reducing the poor and of limiting the public spending, ‘targeting’ is regarded as an attractive way of intervention. However, substantial costs, such as administrative costs are necessary for ‘targeting the poor’ accurately. That is why the theoretical literature has focused on the advantage of self-targeting schemes, such as workfare scheme, which are shown to have relatively small targeting costs (e.g. Besley and Kanbur, 1993; Sen, 1995).

The Employment Guarantee Scheme (EGS) in Maharashtra has long been believed to be a success of the self-targeting scheme through workfare leading to a good targeting performance. However, as Gaiha (1996a, b, 2000) points out, the EGS was ‘mistargeted’ and the targeting performance became worsened over the years. The disaggregation of the landless reveals that the poorer in this subgroup with low income-generating ability (with low hourly farm-wage) are excluded from the EGS due to the political factors, such as failure of the design and implementation, and the economic factors, that is, the piece-rate wage system of the scheme.

Apart from the price effects (e.g. the increasing agricultural wage of the EGS through the improved position of the small farmers or landless workers toward the large landholders), even if the multiplier effects of the EGS are taken into account by the SAM model, it can be concluded that universal transfer of the same budget of the EGS is more efficient in alleviating poverty than the EGS. It corresponds to Ravallion and Datt (1995) who conclude through an investigation of *direct* transfer effects of the EGS, that universal transfer of its same budget had a greater impact on poverty incidence. However, the continuing indirect effects created by the EGS assets might have a potential which makes the EGS more efficient than the universal transfer as Ravallion and Datt (1995) predict. On the other hand, our result also has a caveat that the EGS will become far

less cost-effective than universalism without efforts of policy-makers to select the projects yielding high productivity and maintain the infrastructures in good conditions.

Another caveat is related to the issue of equity. The preceding analysis not only shows ‘mistargeting’ of the EGS where the poorer of the landless are excluded. Also implied is the possibility that the indirect effects created by the EGS assets are appropriated mainly by large farmers. A major solution is to change the design of the EGS to enable the poor to participate in the scheme and to access the EGS assets, such as irrigation facilities. Furthermore, since the preceding analysis points to a limitation of self-targeting schemes, supplementary policies, for example, targeting the landless or households which do not include the would-be (or high-income) participants (e.g. the elderly), should be combined with the EGS.

Further implication of the preceding analysis is related to the methodologies of evaluation of poverty alleviation policies. While the effects of any anti-poverty policy are not confined to direct effects but include indirect effects, most of the past studies focus only on the former. Hence, the village-level SAM or CGE model should be encouraged to construct to analyze the indirect effects of the policy based on the improved household data now available in many developing countries.

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Table 1 Mistargeting of the EGS

	1979	1989
E-mistake ^{*1, *2}	20.0%	9.7%
F-mistake ^{*1, *3}	84.2%	91.1%
The Share of the poor in the participants in the EGS ^{*1}	48.2%	27.3%
The Share of the poor in the total population ^{*1}	54.0%	29.0%

Source: ICRISAT VLS data and Gaiha (1996 a).

Notes ^{*1} Poverty Threshold is set to be per capita income of 180Rs.

^{*2} (E-mistake) = {(The number of the *non-poor* EGS participants) / (The total number of the *non-poor*)} * 100

^{*3} (F-mistake) = {(The number of the poor *not* covered by the EGS) / (The total number of the poor)} * 100

Table 2 Average Hourly Farm Nominal Wage* of the EGS participants and the Non- participants (and the Average Hourly EGS Nominal Wage of the participants) of landless adult workers in Shirapur and Kanzara (Rs.)

	M a l e			F e m a l e			T o t a l		
	Hourly EGS Wage (M)	Hourly Farm Wage of EGS Partici- pants (A)	Hourly Farm Wage of Non par- ticipants (B)	Hourly EGS Wage (F)	Hourly Farm Wage of EGS Partici- pants (A)	Hourly Farm Wage of Non par- ticipants (B)	Hourly EGS Wage	Hourly Farm Wage of EGS Partici- pants (A)	Hourly Farm Wage of Non par- ticipants (B)
	/(M-F)/F * 100(%)	/(A-B)/B * 100(%)			/(A-B)/B * 100(%)		/(A-B)/B * 100(%)		
1979	0.71 (69.0%)	0.72 (24.1%)	0.58	0.42	0.43 (43.3%)	0.30	0.62	0.63 (61.5%)	0.39
1980	0.69 (72.5%)	0.72 (24.1%)	0.58	0.40	0.37 (15.6%)	0.32	0.56	0.57 (39.0%)	0.41
1981	0.83 (76.6%)	0.81 (11.0%)	0.73	0.47	0.55 (7.8%)	0.51	0.68	0.70 (12.9%)	0.62
1982	1.06 (82.8%)	1.05 (19.3%)	0.88	0.58	0.55 (7.8%)	0.51	0.84	0.82 (22.4%)	0.67
1983	1.09 (55.7%)	1.00 (3.1%)	0.97	0.70	0.55 (0%)	0.55	0.95	0.84 (13.5%)	0.74
1984	1.37 (80.3%)	1.03 (3.0%)	1.00	0.76	0.47 (-20.3%)	0.59	1.10	0.78 (2.6%)	0.76
1989	2.01 (42.6%)	2.27 (41.0%)	1.61	1.41	1.43 (25.4%)	1.14	1.81	1.99 (49.6%)	1.33

Source: Calculated from the ICRISAT VLS data.

*The adults who did *not* participate in the agricultural labour markets (*i.e.* whose average farm hourly income is zero) are not included.

Table 3 The Distribution of the Average Hourly-Farm Nominal Wage* of the EGS participants and the Non- participants of landless adult workers in Shirapur and Kanzara

The rank of Hourly-Farm Wage	1979		1980		1981		1982	
	EGS Partici-pants	Non-Partici-pants	EGS Partici-pants	Non-Partici-pants	EGS Partici-pants	Non-Partici-pants	EGS Partici-pants	Non-Partici-pants
80-100%	54.5%	4.8%	31.3%	0%	19.2%	21.0%	25.0%	14.3%
60-80%	27.3%	16.8%	18.0%	23.5%	22.3%	17.1%	20.8%	19.0%
40-60%	9.1%	24.8%	24.7%	11.8%	28.5%	9.5%	25.0%	14.3%
20-40%	7.3%	25.6%	9.3%	38.8%	14.6%	26.7%	12.5%	28.6%
0-20%	28.0%	5.0%	16.7%	25.9%	15.4%	25.7%	16.7%	23.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Share of Total Adult Landless	30.6%	69.4%	63.8%	36.2%	55.3%	44.7%	53.3%	46.7%

The rank of Hourly-Farm Wage	1983		1984		1989		Total	
	EGS Partici-pants	Non-Partici-pants	EGS Partici-pants	Non-Partici-pants	EGS Partici-pants	Non-Partici-pants	EGS Partici-pants	Non-Partici-pants
80-100%	35.3%	9.6%	26.7%	15.4%	66.7%	11.3%	31.2%	11.1%
60-80%	10.6%	26.4%	23.3%	17.7%	16.7%	20.6%	19.8%	20.1%
40-60%	24.7%	16.8%	11.1%	26.2%	0%	23.8%	21.2%	19.0%
20-40%	11.8%	25.6%	12.2%	25.4%	0%	23.8%	11.1%	27.1%
0-20%	17.6%	21.6%	26.7%	15.4%	16.7%	20.6%	16.7%	22.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Share of Total Adult Landless	40.5%	59.5%	40.9%	59.1%	15.8%	84.2%	44.1%	55.9%

Source: Calculated from the ICRISAT VLS data.

*The adults who do *not* participate in the agricultural labour markets are not included.

Table 4 Schematic of the Social Accounting Matrix

	<i>Endogenous</i>							<i>Exogenous</i>		
	Activi- ties Except Agri- culture	Commo- d- ities	Factors	Institu- tions	Capital	Mainte- nance	Stocks	Rest of India	Gove- rn- ment servi- ces	Activity Agri- culture
<i>Endogenous</i> Activities Except Agriculture	---	Commod- ity supplies	---	---	---	---	---	---	---	---
Commodi- ties	Interme- diate Demands	Composit- e Commod- ities	---	Consump- tion expendi- tures	Invest- ment Demand	Mainte- nance Expendi- tures	Stock changes	Exports	---	Interme- diate Demands
Factors	Wages, interest salaries, rents	---	---	Interest paid on consump- tion loans	Payments to labor for investment	Payments to labor for mainte- nance	---	<i>Factor earnings from outside (*1)</i>	---	Wages, salaries
Institutions	Profits to households	---	Factor pay- ments to House- holds	Transfer between House- holds	---	---	---	<i>Transfer from outside (*2)</i>	---	Profits to households
Capital Stocks	---	Commod- ity supplies from stocks	---	Savings Change in Private Stocks	---	---	---	---	---	---
Maintenance	Mainte- nance expences	---	---	Mainte- nance of consumer durable	---	---	---	---	---	Mainte- nance expenses
<i>Exogenous</i> Rest of India	Taxes to rest of India	Imports	Factor pay- ments outside	Transfer to rest of India	Capital outflows	---	---	---	---	Taxes to rest of India
Government Services	---	Commod- ity supplies	---	---	---	---	---	---	---	---
Activity Agriculture	---	Commod- ity supplies	---	---	---	---	---	---	---	---

Source: Based on Subramanian and Sadoulet (1990, p.136).

(*1) The wage of the EGS can be adjusted through the factor earnings from outside.

(*2) The universal transfer can be adjusted through the transfer from outside.

Table 5 With-targeting and Without-targeting through public works (Counter-factual) Comparison and the effects of the assets created by the EGS, by applying a SAM to the economy of Kanzara, Maharashtra,1984 (%)

	Level in BaseYear (Rs)	<i>Experim ents</i>						
		1 <i>Without EGS + Zero-foregone income</i>	2 <i>Without EGS + With House-hold based universal transfer</i>	3 <i>Without EGS + With Individ-ual based universal transfer</i>	4 <i>Without EGS +With foregone income</i>	5 <i>Without EGS +With foregone income +House-hold based universal transfer</i>	6 <i>Without EGS +With foregone income +Individ-ual based universal transfer</i>	7 <i>With EGS +With Indirect Effects Caused by irriga-tion</i>
Factor Incomes:								
Hired Male	261,115	-16.39	-16.26	-16.26	-11.01	-10.88	-10.88	0.32
Hired Female	132,701	-6.89	-6.98	-6.98	-2.26	-2.66	-2.26	0.87
Farm Servants	121,260	-0.15	0.00	0.00	-0.09	0.06	0.06	0.66
Household Income:								
Landless Salaried	80,943	-0.81	1.36	1.59	-0.46	1.68	1.91	0.01
Landless Unsalari ed	288,268	-7.95	-1.51	-1.72	-4.79	1.65	1.44	0.47
Small Farmers	218,963	-5.51	-0.24	-1.11	-3.26	2.01	1.14	0.59
Medium Farmers	431,524	-3.70	-0.97	-0.65	-2.32	0.41	0.73	-0.01
Large Farmers	1,198,676	-0.46	0.66	0.74	-0.29	0.83	0.91	0.81
Total Change in Household income		-2.57	-0.00	-0.00	-1.57	1.00	1.00	0.55
Activity Outputs:								
Dry Agriculture	1,248,141	-1.49	-0.07	-0.08	-0.91	0.51	0.50	0.33
Wet Agriculture	511,497	-1.51	-0.06	-0.07	-0.92	0.53	0.52	0.34
Live Stock	405,032	-0.69	0.01	0.01	-0.42	0.28	0.28	0.69
Agricultural services	40,791	0.00	0.03	0.03	0.00	0.03	0.03	1.06
Village production	61,840	-0.99	-0.05	-0.05	-0.60	0.33	0.34	0.29
Trade	476,066	-1.40	-0.03	-0.03	-0.85	0.52	0.52	0.35
Total Change in Output		-1.33	-0.05	-0.05	-0.81	0.47	0.46	0.40
Total Savings	356,640	-0.91	0.58	0.67	-0.56	0.93	1.02	0.69
Rest of India	2,066,976	-1.18	0.06	0.07	-0.72	0.52	0.53	0.49

Source: Computed from SAM model based on Subramanian and Sadoulet(1990) and ICRISAT VLS data.

Appendix 1. Social Accounting Matrix for Kanzara: Activity accounts (rupees)							[Activity Accounts]				All Activities
Dry Agriculture Small	Medium	Large	Wet Agriculture	Livestock	Agricultural Services	Village Production	Retail Trade	Government services			
Dry Agriculture (small)	0	0	0	0	0	0	0	0	0	0	0
Dry Agriculture (Medium)	0	0	0	0	0	0	0	0	0	0	0
Dry Agriculture (Large)	0	0	0	0	0	0	0	0	0	0	0
Wet Agriculture	0	0	0	0	0	0	0	0	0	0	0
Livestock	0	0	0	0	0	0	0	0	0	0	0
Agricultural Services	0	0	0	0	0	0	0	0	0	0	0
Village Production	0	0	0	0	0	0	0	0	0	0	0
Retail trade	0	0	0	0	0	0	0	0	0	0	0
Government Services	0	0	0	0	0	0	0	0	0	0	0
All Activities	0	0	0	0	0	0	0	0	0	0	0
Social Expenditures	0	0	0	0	0	0	0	0	0	0	0
Cereals and pulses	1,018	2,563	6,257	5,933	7,926	0	0	64,685	0	0	88,382
Other Foods	821	2,067	9,541	8,240	0	0	195	154,694	0	0	175,558
Nonfood	960	2,417	7,762	10,068	153,911	1,665	3,654	185,222	15,000	0	380,659
Agricultural Inputs	20,117	50,651	233,637	147,815	23,122	157	5,117	0	0	0	480,616
Durables	0	0	0	0	0	0	0	17,120	0	0	17,120
All Commodities	22,916	57,698	257,197	172,056	184,959	1,822	8,966	421,721	15,000	0	1,142,335
Family male	5,472	15,273	42,330	23,609	0	0	0	0	0	0	86,684
Family female	6,737	15,082	12,798	2,047	0	0	0	0	0	0	36,664
Hired Male	3,162	6,465	30,390	19,849	0	2,070	1,094	2,080	0	0	65,110
Hired Female	3,393	10,424	56,480	34,540	0	0	0	0	0	0	104,837
Farm servants	0	0	18,011	14,397	26,315	0	0	0	0	0	58,723
Salaried workers	0	0	0	0	0	0	0	0	32,400	0	32,400
Rent*	6,030	15,182	61,805	1,857	0	0	0	0	0	0	84,874
Private credit	2,118	5,332	520	0	0	0	0	0	0	0	7,970
Public credit	3,245	8,171	21,186	16,315	15,188	600	200	400	0	0	65,305
All factors	30,157	75,929	243,520	112,614	41,503	2,670	1,294	2,480	32,400	0	542,567
Landless Salaried	0	0	0	0	0	0	0	0	0	0	0
Landless Unsalariated	8,615	0	0	-111	4,159	0	15,830	3,860	0	0	32,353
Small Farms	32,422	0	0	10,603	7,463	19,970	1,300	0	0	0	71,758
Medium farmers	0	103,323	0	-572	10,376	0	8,376	21,158	0	0	142,661
Large Farmers	0	0	403,879	212,506	156,572	15,349	24,074	26,847	0	0	839,227
All households	41,037	103,323	403,879	222,426	178,570	35,319	49,580	51,865	0	0	1,085,999
Temple	0	0	0	0	0	0	0	0	0	0	0
Village government	8	20	563	412	0	0	0	0	0	0	1,003
Capital	0	0	0	0	0	0	0	0	0	0	0
Maintenance	468	1,179	4,121	2,458	0	980	1,000	0	0	0	10,206
Stock Changes	0	0	0	0	0	0	0	0	0	0	0
Rest of India	408	1,026	4,693	1,531	0	0	1,000	0	0	0	8,658
Total	94,994	239,175	913,973	511,497	405,032	40,791	61,840	476,066	47,400	0	2,790,768

Appendix 1 (cont.) Social Accounting Matrix for Kanzara: Activity accounts (rupees)

Social Expenditures	Cereals & Pulses	Other Foods	Non-Foods	Agricultural Imputs	Durables	All Commodities
0	37,491	4,287	53,215	0	0	94,993
0	94,397	10,793	133,987	0	0	239,177
0	325,669	106,205	482,098	0	0	913,972
0	184,158	104,809	222,530	0	0	511,497
0	0	210,823	0	194,210	0	405,033
0	0	0	0	40,791	0	40,791
0	0	0	59,550	2,290	0	61,840
0	83,844	248,683	122,094	0	21,444	476,065
0	0	0	47,400	0	0	47,400
0	725,559	685,600	1,120,874	237,291	21,444	2,790,768
0	0	0	0	0	0	0
39,853	0	0	0	0	0	39,853
10,510	0	0	0	0	0	10,510
54,849	0	0	0	0	0	54,849
0	0	0	0	0	0	0
0	0	0	0	0	0	0
105,212	0	0	0	0	0	105,212
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	2,375	0	12,775	41,025	34,542	90,717
0	376,309	269,192	584,176	223,249	279,347	1,732,273
105,212	1,104,243	954,792	1,717,825	501,565	335,333	4,718,970

Appendix 1 (cont.)

Landless Salaried	Landless Unsalariated	Farming Small	Farming Medium	Farming Large	All Households
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
5,504	29,162	6,866	30,843	32,837	105,212
22,192	129,703	94,724	176,197	257,631	680,447
11,430	51,729	39,853	110,884	166,845	380,741
12,303	62,088	38,440	107,658	179,581	400,070
0	0	0	0	0	0
2,188	11,604	11,800	10,833	17,832	54,257
53,617	284,286	191,683	436,415	654,726	1,620,727
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
526	2,789	2,031	530	5,423	11,299
0	0	0	0	0	0
526	2,789	2,031	530	5,423	11,299
41	162	176	115	378	872
305	9,895	6,507	5,794	6,730	29,231
140	1,476	1,544	1,745	1,828	6,733
116	4,003	3,403	1,904	3,597	13,023
135	1,516	1,282	1,516	31,969	36,418
737	17,052	12,912	11,074	44,502	86,277
0	0	0	0	0	0
49	256	652	175	601	1,733
34,333	22,335	-6,633	4,327	295,726	350,088
12	65	581	2,531	4,653	7,842
-8,762	-40,795	9,818	-38,138	122,208	44,331
431	2,281	7,919	14,610	70,835	96,076
80,943	288,269	218,963	431,524	1,198,674	2,218,373

Appendix 1 (cont.)		[Institution Accounts]					
Temple	Village Government	Capital	Maintenance	Stock Change	Rest of India	Total	
0	0	0	0	0	0	94,993	
0	0	0	0	0	0	239,177	
0	0	0	0	0	0	913,972	
0	0	0	0	0	0	511,497	
0	0	0	0	0	0	405,033	
0	0	0	0	0	0	40,791	
0	0	0	0	0	0	61,840	
0	0	0	0	0	0	476,065	
0	0	0	0	0	0	47,400	
0	0	0	0	0	0	2,790,768	
0	0	0	0	0	0	105,212	
0	0	0	0	84,191	211,371	1,104,244	
0	0	0	0	64,212	353,770	984,791	
4,955	445	0	640	4,434	871,773	1,717,825	
0	0	0	4,975	12,211	3,762	501,564	
0	0	203,001	10,282	0	50,674	335,334	
4,955	445	203,001	15,897	165,048	1,491,350	4,748,970	
0	0	0	0	0	0	86,684	
0	0	0	0	0	0	36,664	
720	2,037	17,779	2,151	0	173,319	261,116	
0	0	0	0	0	27,864	132,701	
0	0	0	0	0	62,537	121,260	
0	0	0	0	0	226,159	258,559	
0	0	0	0	0	0	84,874	
0	0	0	0	0	0	19,269	
0	0	0	0	0	0	65,305	
720	2,037	17,779	2,151	0	489,879	1,066,432	
0	0	0	0	0	1,327	80,943	
0	0	0	0	0	13,459	288,268	
0	0	0	0	0	2,651	218,963	
0	0	0	0	0	0	431,524	
0	0	0	0	0	62,939	1,198,675	
0	0	0	0	0	80,376	2,218,373	
0	0	0	0	0	0	6,475	
0	0	0	0	0	5,372	8,234	
800	5,752	0	0	0	0	356,640	
0	0	0	0	0	0	18,048	
0	0	0	0	0	0	135,048	
0	0	165,860	0	0	0	2,096,977	
6,475	8,234	386,640	18,048	165,048	2,066,977	13,445,965	