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# ECONOMIC GROWTH AND POVERTY DYNAMICS

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## Abstract

This paper briefly reviews the literature on economic growth and poverty and then examines whether economic growth influences poverty dynamics. The literature relating to the impact of economic growth on poverty reduction usually relies on national or state-level information on economic growth and incidence of poverty. While this may capture broader dimensions of growth, it is usually economic growth at the district or village level that is likely to have a greater impact on poverty reduction. This paper uses household-level data in rural India to capture poverty dynamics and district- and village-level estimates of economic growth. Physical assets, village infrastructure and urban linkage play a significant role in reducing poverty. The paper also finds that growth alone may not be sufficient to achieve poverty reduction. Other factors may need to be in place before growth has a poverty-reducing impact.

**Key words:** chronic poverty, economic growth, panel data.

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# Economic Growth and Poverty Dynamics

## Shashanka Bhide and Aasha Kapur Mehta

## 1 Introduction

There has been considerable national and international debate on the 'trickle-down' effect of economic growth on reducing poverty. Does economic growth indeed lead to significant poverty reduction? Policy reforms aim to create conditions for more efficient allocation of scarce resources and faster economic growth. The draft approach paper to the 11th Plan (Planning Commission, 2006) is titled *Towards Faster and More Inclusive Growth*. If economic growth is 'inclusive' it will improve economic opportunities and incomes for all sections of the population, and lead to poverty reduction. However, there is evidence to show that the poor may be left out of the economic opportunities presented by growth owing to existing initial conditions, such as ill health, lack of education, information, poor access to infrastructure, networks and distance: these may prevent the poor from bidding for jobs created by growth.

This paper briefly reviews the literature on economic growth and poverty and then examines whether economic growth influences poverty dynamics. The literature relating to the impact of economic growth on poverty reduction usually relies on national- or state-level information on economic growth and incidence of poverty. While this may capture broader dimensions of growth, it is usually economic growth at the district or village level that is likely to have a greater impact on poverty reduction. This paper uses household-level data in rural India to capture poverty dynamics and district- and village-level estimates of economic growth. As such, this paper examines the impact of economic growth at the village and district level on poverty dynamics at the household level in rural areas.

The average growth of the Indian economy in the Tenth Plan period (1997-1998 to 2006-2007) is expected to be about 7 percent. Although this is below the targeted 8 percent, it is the highest in any plan period. Despite this, 'large parts of our population are still to experience a decisive improvement in their standard of living' (Planning Commission, 2006: 1), or in other words persist in poverty. It draws attention to the importance of growth by reiterating: 'it is only in a rapidly growing economy that we can expect to raise the incomes of the mass of the population sufficiently to bring about a general improvement in living conditions' (ibid).

However, Planning Commission estimates based on the latest National Sample Survey (NSS) quinquennial round conducted in 2004-2005, which are fully comparable with 1993-1994, show that 27.5 percent of the population was below the poverty line in 2004-2005. Majority of the poor, more than 73 per cent live in rural areas (see Table 1). The high levels of growth; the international compact on the Millennium Development Goals (MDGs) and the

halving of poverty; the monitorable targets of the Tenth Plan; and the fact that the 'reduction in poverty between 1993-94 and 2004-05 is only 0.74 percent points per year rather than 1.66 percent points per year implied by the earlier 1999-2000 data' (Planning Commission 2006: 58) draw attention, once again, to issues that have been raised in the context of the growth– redistribution–poverty debate.

The decline in the job-creating capacity of growth, with employment growth falling from 2.7 percent per annum between 1983 and 1993-1994 to 1.07 percent per annum between 1993-1994 and 1999-2000, in spite of accelerated gross domestic product (GDP) growth is cause for serious concern (SP Gupta Committee, 2002). The rate of growth of employment fell sharply in all sectors, particularly agriculture, and 'the elasticity of employment in agriculture, which was reasonably high during the period 1983 to 1994 (0.3), plummeted to nearly zero during the 1990s ... India faces a real problem in generating enough employment in the years ahead to keep pace with the growth in the labour force, let alone to raise wages and productivity of the vast majority of workers who are currently engaged in low-productivity and low-paying occupations' (Bhalla and Hazell, 2003: 3481-3482). Growth cannot be an end in itself: it must be 'inclusive' and must get translated into better living conditions and job opportunities, especially for those below the poverty line.

There has been considerable international debate around issues of the 'trickle-down' effect of growth on reducing poverty and the inequitable distribution of the benefits of growth between and within countries. For instance, Ahluwalia *et al.* (1979: 1) used cross-country data for 36 low-, middle- and high-income countries to analyse the relationship between growth and poverty in developing countries, to find that 'despite the developing countries' impressive aggregate growth of the past 25 years, its benefits have only reached the poor to a very limited degree. Not only have the poorest countries grown relatively slowly, but growth processes are such that within most developing countries, the incomes of the poor increase much less than the average.' They conclude that, while it is 'feasible to design national and international policies that would eliminate the lag between the growth of the incomes of the poor and the growth of developing countries as a whole – and indeed of the rest of the world … the very substantial modifications in both national and international policies that are (required are) unlikely to take place without a considerable reordering of social priorities' (Ahluwalia 1979: 23). A substantial reduction in poverty would require a combination of policies that accelerate the growth of poor countries, distribute the benefits of growth more equitably and enable a reduction in growth of population.

Seven large sample consumer surveys have been conducted by the NSS on a quinquennial basis since 1973-1974. During the period between 1973-1974 and 1999-2000, the incidence of poverty expressed as a percentage of people below the poverty line declined continuously, from 54.9 percent to a hotly contested supposed 26 percent in 1999-2000. It is now estimated at 27.5 percent for 2004-2005. The rural–urban distribution of the poor in India

over these six rounds is shown in Table 1. Since 1987-1988, around 75 percent of those in poverty have lived in rural areas.

**Table 1: Rural–urban distribution of the poor in India, 1973-1974 to 2004-2005**

| Year | No. of poor in rural areas (in millions) | No. of poor in urban areas (in millions) | Total population below poverty line (in millions) | % below poverty line | % of India's poor located in rural areas | % of India's poor located in urban areas |
|---|---|---|---|---|---|---|
| **1973-1974** | 261.3 | 60.0 | 321.3 | 54.9 | 81.33 | 18.67 |
| **1977-1978** | 264.3 | 64.6 | 328.9 | 51.3 | 80.36 | 19.64 |
| **1983** | 252.0 | 70.9 | 322.9 | 44.5 | 78.04 | 21.96 |
| **1987-1988** | 231.9 | 75.2 | 307.1 | 38.9 | 75.51 | 24.49 |
| **1993-1994** | 244.0 | 76.3 | 320.3 | 36 | 76.18 | 23.82 |
| **1999-2000** | 193.2 | 67 | 260.2 | 26.1 | 74.3 | 25.7 |
| **2004-2005** | 220.9 | 80.8 | 301.7 | 27.5 | 73.2 | 26.8 |

*Source: Planning Commission (1997), Press Information Bureau (2001), Press Information Bureau, (2007) and own calculations.*

Therefore, the bulk of India's poor are located in rural areas and most are dependent on agriculture. Ahluwalia (1978) argued that agricultural growth was important in achieving poverty reduction in India. Given that agriculture provided a livelihood for a large majority of the rural population, which also accounted for bulk of the poor, this was a logical proposition. The strategy of investing in programmes that led to quicker adoption of green revolution technologies and agricultural growth was therefore promoted also as a poverty reduction strategy. Hence, it was deemed critical to correct the 'deceleration in agricultural growth from 3.2% observed between 1980 and 1996-97 to a trend average of only 1.5% subsequently' and that 'a second green revolution is urgently needed to raise the growth rate of agricultural GDP to around 4%' (Planning Commission, 2006: 5).

Growth may be a necessary but not a sufficient condition for poverty reduction in rural areas and the impact of growth on poverty varies depending on the nature of the agricultural growth process; for instance, if growth takes place in a setting of extreme inequality in endowments, its benefits are not likely to 'trickle down' to large segments of the poor (Gaiha, 1995). Estimating the elasticity of the headcount ratio with regard to agricultural income in International Crop Research Institute for Semi Arid Tropics (ICRISAT) villages, Gaiha (ibid) finds it to be barely 0.77. If a modest rate of growth of agricultural income, say, 1 percent per year, is assumed, it will take about 50 years for the headcount ratio in Maharashtra (about 30 percent in 1989-1990) to fall to half (about 15 percent). Gaiha concludes that agricultural growth alone will not make a dent in rural poverty, or it will take too long. Rapid poverty alleviation thus requires direct anti-poverty interventions. Consumer price stabilisation in rural

areas may have to be assigned a key role in an anti-poverty strategy. An effective buffer stock operation, combined with a well targeted public distribution system (PDS), may help minimise the hardships of the poor. Therefore, growth alone is not sufficient for poverty reduction; employment generation, an effective PDS and better governance are also needed to shift the chronically poor out of low-income traps (Gaiha 1989; 1995).

Drawing attention to the increase in regional inequality, especially in the incidence of rural poverty, Jha (2000: 3) finds that, despite better growth, poverty reduction has been sluggish, owing to increased inequality, slow increase in agricultural wages and the rise in price in the PDS as a result of a reduction of subsidies. Citing Ravallion and Datt (1996a), Jha (2000: 23) points out that the effectiveness of economic growth in reducing poverty depends considerably on the pattern of this growth. 'If growth is primarily concentrated in the non-farm sector, its ability to reduce poverty in places characterized by "poor" human resources and "poor" initial development conditions (in absolute terms, as well as relative to urban areas) is limited.'

Corroborating the explanations offered in the literature, the World Bank India Country Study attributes the differential performance across states in poverty reduction to the lower growth in poor states; the characteristics of agricultural growth in the 1990s; the problems of infrastructure, social services and poverty programmes, especially in poorer states, which are linked to their increasing fiscal problems; poor incentive frameworks; and weaknesses in governance and institutions (IBRD, 2000).

Krishna *et al.* (2005) provide evidence from Gujarat where, despite growth rates exceeding 9 percent a year over the 1990s, poverty in 36 villages located in the northeast part of the state changed hardly at all. 'Growth alone is hardly sufficient to achieve poverty reduction on any significant scale. Public policies will be needed to directly address the separate causes for descent into poverty' (ibid: 1163). Less than five percent of households have obtained employment in the growing private sector over the past 25 years. Another 5 percent found work within the growing informal sector. Large initial inequality, i.e. skewed land ownership in villages, combined with debt at high interest rates and tied labour services from poorer households, prevents members of poorer households from seeking out alternative income-earning opportunities. 'Lack of any reliable institutional links connecting job seekers in villages with job opportunities in the city explain the slow spread of the benefits of industrial growth' (ibid: 1185). Individual rather than institutional links explain better why some households have escaped from poverty and other households have languished and remain behind. 'Distance to market, nature of link road (paved or unpaved), frequency of bus service, nature of political links, etc., have relatively little to do with how many village households escaped from poverty and how many others fell into poverty at the same time' (ibid: 1185).

Regressing headcount measures of poverty for the period 1960-1961 to 1993-1994 at the all-India level in both urban and rural areas against several variables, Sen (1996) identified the following:

- Agricultural incomes are important not only for rural but also for urban poverty.
- Non-agricultural impulses, particularly public expenditure, are not only important but are especially so in the determination of rural poverty.
- The relative price effect is, if anything, much more important than the effect of inflation *per se*.
- The initial conditions with respect to physical and human infrastructure, in terms of irrigation, female literacy and infant mortality, with which a state began are significant for poverty reduction. 'Thus, of the difference of 1.8 percent per annum between the rates of poverty reduction in Kerala and Madhya Pradesh, fully 1.6 percent per annum could be attributed to the fact that Kerala began with higher female literacy (1 percent) and lower infant mortality (0.6 percent)' (Ravallion and Datt, 1996b, cited in Sen, 1996: 2473).

Since prices affect purchasing power of incomes and wages, higher prices of food and other essential items are likely to aggravate rural poverty unless the poor are protected from such price increases (Gaiha, 1995). Sudden consumer price increases exacerbate the hardships of low-income households, as they are forced to buy on a daily basis even when prices are high (Gaiha, 1989: 697). Given the stickiness of money wage rates in the face of inflation, for the vast majority of the rural population, an increase in prices would erode real incomes and push them below, or further below, the poverty line (Saith, 1981). In distress situations, those who get paid in kind, such as share croppers, may be less affected by sharp increases in food prices than will agricultural labourers who receive cash wages that are not indexed to inflation.

The International Bank for Reconstruction and Development (IBRD, 2000) provides some estimates of the annual average growth in wage rates of unskilled male agricultural labourers. The data show that, in real terms, the rate of growth of real daily wages in rural areas slowed in the 1990s, suggesting that agricultural growth in the 1990s may have been less poverty reducing.

Bhalla and Hazell (2003) argue that, if a meaningful dent in underemployment and poverty is to be made, then growth will need to be accelerated in all sectors of the economy, but it will be particularly important to promote agricultural growth. A mix of policies aimed at 1) accelerating the rates of sectoral and national economic growth; 2) reversing the trend of deceleration of agricultural growth and public investment in agriculture; 3) promotional policies for labour-intensive and higher income-generating allied agricultural and non-agricultural activities in rural and urban areas for domestic and export markets; and 4)

diversification of agriculture towards hitherto neglected dryland central and eastern regions, has the potential to lead to an appreciable acceleration in agricultural and rural employment, and to reduce poverty. The authors also refer to the importance of special employment and anti-poverty programmes in generating employment and reducing poverty.

Rao *et al.* (1986) review Ahluwalia (1978) and Saith (1981) to find that, to explain poverty, not only growth of agricultural outputs, but also the factors that determine the pattern of that growth, should be analysed. They note that Ahluwalia deals primarily with trends in rural poverty from 1956-1957 to 1973-1974 and tries to explain them by agricultural performance measured by agricultural net domestic product per person. His work indicates no significant all-India trend, although he finds an inverse relation between the incidence of poverty and the change in agricultural output per head. State-level data do not show a consistent pattern. On the contrary, Saith has found different results with 'essentially the same set of data'. Saith uses agricultural performance and prices and finds that the price variable is considerably more important than the production variable. In addition, after price and production fluctuation effects were taken into account, the incidence of poverty increased over time. Unlike Ahluwalia's study, agricultural performance only 'partially' affected the incidence of poverty.

The Rao *et al.* (1986) study tries first to separate out the influence of institutional, infrastructural and technological factors that seem to underlie agricultural performance, and then to capture the effect of different variables by cross-sectional analysis of the 59 NSS regions. They find that the rural poverty ratio is greater in regions where the proportions of scheduled caste and scheduled tribe population and of agricultural labour are highest. Clearly, these groups need to be given special emphasis in any anti-poverty programme. The rate of urbanisation is negatively related to the rural poverty ratio. The development of irrigation and rural electrification seem to be associated with a lower poverty ratio. The effects for roads and fertiliser use are not conclusive and need further investigation. Higher prices lead to higher poverty by depressing purchasing power and altering the patterns of consumption. Also, regions with high growth rates in agriculture and high agricultural output per person have a low poverty ratio. Productivity per hectare, on the other hand, generally is positively related to rural poverty.

Since it has been agricultural-led broad-based economic growth that has lessened poverty, particularly rural poverty, recent trends in agricultural growth and its impact on rural development raise serious concerns (Singh, *et al.*, 2002). The current reality in the context of agriculture is that the targeted 4 percent per annum GDP growth in agriculture and allied sectors has not been achieved, and growth in the first two years of the Tenth Plan averaged only 0.9 percent per annum (Planning Commission, 2005). 'With the monsoon weak in 2004, agricultural growth in 2004-05 will be modest at best, being placed at 1.1 per cent according to advance GDP estimates.' The Planning Commission (2005: 187) estimates that 'GDP growth in agriculture and allied sectors during the first three years of the Tenth Plan

averages only one percent per annum … In fact, per capita agricultural GDP shows no significant upward trend after 1996-97, only fluctuations.' Actual growth outcomes in agriculture make it clear that, in the absence of strategic and long-term investments in this sector, we will not be able to look to this as a source for enabling escape from poverty.

There is, therefore, substantial literature exploring the links between growth and poverty reduction. While much of the literature confirms that poverty decline tends, on average, to be faster in times and places of fast, prolonged growth than alongside slow growth, the findings are often conflicting (Eastwood and Lipton, 2000). However, it can be concluded that, while agricultural growth needs to be accelerated, there is an emerging consensus that 'growth alone is a rather blunt tool for poverty reduction and a policy agenda that addresses both distributional concerns and poverty reduction could enhance both economic growth and equity' (Son and Kakwani, 2004: 1). Therefore, direct interventions, such as creation of jobs for the poor through public works programmes, have been important policy measures often adopted by governments in developing countries to achieve poverty reduction.

# 2 Methodology

## 2.1 Analytical framework

This paper uses the sample panel data described in the earlier papers by Bhide and Mehta (2005). In this paper, we are using a sub-sample of the original sample,[1] because of the limited availability of data on village-level output. The approach followed is to formulate a probit model that captures the impact of various factors on poverty dynamics at the household level. We refer to the analytical framework of Hulme and Shepherd (2005) to describe the role of different factors on poverty dynamics.

The basic model adopted in the present analysis is:

$P(pov) = a_0 + a_1 X1 + a_2 X2 + a_3 X3 + a_4 X4 + ----- + a_k Xk + u$ ---- (1)

Where

Pov = 0 or 1 depending on the change in household status with reference to poverty.

X1, X2, -- Xk = variables or factors influencing poverty status

[1] The original sample comprised of 3996 households spread over 250 villages as described in Bhide and Mehta (2005). However, the present study uses only a sub-sample of the original sample, as data required for estimating village-level output is available for only 190 villages.

U = random error term

P = Probability of (.).

Although more complex models of discrete status of the household, such as multinomial logit or ordered probit, can be formulated to capture more general movement of the households, we have chosen to follow a simpler specification that fully captures the key issues in the study of poverty dynamics.

The data on the dependent variable are constructed based on either: 1) the movement of households with reference to the 'poverty line' between waves of the survey (poverty dynamics); or 2) expenditure level of the household relative to the poverty line in a survey year (poverty incidence). The independent variables are defined at the household level or village level where the households reside, or district level in which the sample villages are located.

The household-level variables we have used are social groups (e.g. scheduled castes and scheduled tribes), demographic factors (such as size of household and composition in terms of proportion of children 14 years and younger) and proportion of females (including girl children). The household-level information also includes data on possession of physical assets such as agricultural land, cultivation of irrigated land, livestock and own house. The village-level factors include population of village, level of development of infrastructure (a composite of several variables) and growth rate of village-level output. The district-level variables include percentage of urban population in total population and growth rate of crop output of the district. The growth rates are computed for the period for which the poverty dynamics are observed. The variables used in the analysis are defined in Annex 1.

In order to capture the impact of economic growth on poverty dynamics, the growth variable is estimated in terms of: 1) growth of output from all sectors at the village level; and 2) growth of value of crop output at the district level.

While economic growth at the national or regional level may 'trickle down' to the poor, growth at the local level and in sectors where the poor are most likely to be employed is likely to have greater relevance to poverty dynamics or poverty reduction. In this sense, the growth of village-level output or income measures economic growth at the 'local' level, whereas 'national' or 'regional' growth would have a more indirect or distant impact. The village output variable is more comprehensive than sectoral growth. In order to capture the growth environment over a wider spatial unit, we have additionally used the rate of growth of crop output at the district level in which the specific sample villages are located. The district-level variable we have used captures only agricultural crop output. While this captures growth in the sector most likely to influence rural poverty, its limited coverage is a shortcoming. However, there are no other measures of economic growth available at the district level.

It also needs to be noted that the growth variables used may be influenced by some of the explanatory variables, such as village infrastructure, leading to estimation bias. However, although growth is likely to be influenced by infrastructure and other variables, it is less likely to be influenced by poverty dynamics. Given the limited number of observations over time, we are unable to test this proposition.

The basic model specified in equation (1) is used to analyse both incidence and dynamics of poverty, although the explanatory variables vary for each case. The two sets of findings (i.e. dynamics of poverty and incidence of poverty) are compared. An attempt is also made to assess the correlation between economic growth and incidence of poverty.

## 2.2 Data

The data used in the present analysis pertain to the household, village and district. The household data come from three waves of a national panel survey of rural households in India carried out at three different time periods: 1970-1971, 1981-1982 and 1998-1999. The sample and its design are described in Bhide and Mehta (2005). The household data are supplemented by village- and district-level data from different data sources. The decadal population Census provides information on population for the districts and villages and also village-level infrastructure, and these documents have been used for data for the years 1971, 1981, 1991 and 2001.

While the data on village infrastructure and population for the villages and districts is available from Census sources and the National Council of Applied Economic Research (NCAER) survey, data on economic growth at the village or district level are not readily available. Since this analysis focuses on rural poverty, we considered agricultural growth to be the key component of economic growth influencing rural poverty. However, we need to further sharpen the specification of the economic growth variable, as district-level data on agricultural output for the entire duration of the survey period are not readily available.

In addition, district-level data on agricultural production have been collected for the years closest to the household survey years (1970-1971, 1981-1982 and 1998-1999). Again, no single source of information provided all the required data for all districts and for all the years. The India Harvest database of the Centre for Monitoring Indian Economy (CMIE) was used to gather data on selected major crops for the districts covered in the household survey.[2] Where data were inadequate we have used other official sources and, in some cases, state-level data have also been used to estimate growth rates of crop output between 1970-1971 and 1981-1982 and between 1981-1982 and 1998-1999 at the district level. While calculating growth rates, the average of data for each three-year period has been used instead of

[2] http://www.cmie.com/database/?service=database-products/sectoral-services/indian-harvest.htm.

estimates for just one year, so as to reduce the influence of abnormalities owing to events occurring in a particular year.

District-level estimates of growth rate of output are a better reflection of the changes in the economic environment of the poor rural households as compared with the growth estimates at the level of the state. However, if we can estimate village-level output growth, it would provide a more accurate measure of impact of changes in the economy on the direct environment of the poor. In this study, we have used the data on the income levels of households, which were 'listed' at the time of the survey. As a first step in carrying out the survey, all households in the village were listed; one of the questions in this phase pertained to the annual household income of each household. Thus, we have information on a large number of households in the sample villages for the three waves of the survey. We have been able to construct a panel of such listed households in 190 villages out of the around 250 original panel villages. This paper uses the data on the sample households located in these 190 villages for which we have been able to estimate village-level income.

While this information is very valuable, it also has important limitations. One such limitation is that it is not possible to verify the income levels through use of other corroborating data. This may be particularly important, as the value of imputed family labour income or of imputed income for produce that is not marketed may be underrepresented in such estimates. Second, since the information is available for the survey year only, any abnormal shocks in that particular year may influence data.

However, despite these limitations, we have used the income of listed households to arrive at village-level income or output for the three survey years and calculated growth of village-level output. The nominal output levels were deflated by state-level Consumer Price Index for Agricultural Labour.

# 3 Incidence of poverty and economic growth

## 3.1 Incidence of poverty

Before we discuss the impact of economic growth on incidence of poverty, we first present the results of estimated impact of selected factors at the household, village and district level on poverty, distinguished by its severity. We define two poverty groups, severely poor (SP) and moderately poor (MP), based on the deviation of consumption from the poverty line.

Households whose consumption is less than 25 percent of the poverty line are classified as SP; households whose consumption is less than poverty line but not below 25 percent are classified as MP. Clearly, severe poverty reflects lack of access to assets and conditions that make it much harder to increase income levels.

Earlier research, (Bhide and Mehta 2005) showed that the factors that influenced incidence of SP were similar to those influencing MP. The results reported here, using a sub-sample of the original data used in Bhide and Mehta (2005), support those findings. In this paper, we have examined the impact of various factors, first on incidence of SP and MP across three years. Tables A1 and A2 in Annex 2 provide the estimated regression results on incidence of poverty where we do not include growth variables in the regression model.

Results on incidence of severe poverty show that scheduled caste and scheduled tribe status, large household size and large proportion of children among household members are the factors that are consistently associated with severe poverty in each of the three rounds of the survey. The factors that are associated with lower incidence of SP are access to land, livestock, village-level infrastructure and urban linkage (relatively large urban population of the district). Irrigation and village size turn out to be statistically significant, with negative impact on incidence of poverty, but this happens in only two out of the three years.

The pattern with respect to the impact of various factors on the incidence of MP is similar to the pattern of factors influencing SP. Scheduled tribe/scheduled caste status, large household size and larger proportion of children in the household are all associated with higher incidence of MP. The factors associated with lower MP are access to land and livestock at the household level, infrastructure at the village level and level of urbanisation at the district level. Cultivation of irrigated land and size of the village turn out to be important in 1970-1971 and 1981-1982 but not in 1998-1999.

Thus, village-level infrastructure and urbanisation at the district level are significant in providing income opportunities for the poor. Access to physical assets is also important but the policy choices need not be limited to just these. The findings suggest that adverse impact of social groupings can be offset by improved village infrastructure and income opportunities in the urban neighbourhood. We have not examined the strength of each of these factors in terms of how much improvement in village infrastructure or in urbanisation is needed to fully offset the disadvantage of the adverse social grouping.

## 3.2 Growth and incidence of poverty

The regression model presented in equation (1) includes a growth variable among the explanatory variables. The mechanism by which growth leads to poverty reduction may be direct or indirect. For example, if the growth were in terms of output per unit of land through improvement in land productivity, then households operating small and marginal land holdings would benefit from such growth directly and their income would rise. The indirect effects of higher productivity of land would be the consequent improvement in real wages of landless labour. The indirect effects would also include additional demand for goods and services made by the landowning households as their income improves. If economic growth is from non-agricultural sources, such as industry or services, then creation of new jobs in

such sectors provides income opportunities for the rural poor, and they may migrate to places where there are new jobs.

In the present analysis, we focus mainly on the impact of agricultural growth. Three different variables are considered in the regression analysis:

(1) Growth rate of crop output in the district (dgr) in which the sample household is located.

(2) Growth rate of real income of the village (vygr) in which the household is located.

(3) Growth rate of per capita real income of the village (pvygr) in which the household is located.

Each growth variable is introduced separately in the regression model. The results are summarised in Annex Tables A3-A4 for 1980-1981 and A5-A6 for 1998-1999. The analysis is conducted for two years only, as the growth estimates of the previous period are available only for these.

Considering the results for 1981-1982 in the case of SP (Table A3), only village-level growth has a significant impact on the incidence of poverty. District-level growth has no significant impact. In the case of moderate poverty, growth has no significant impact, whether at the village level or at the district level. The impact of village-level growth on SP is such that poverty incidence is greater where growth is higher.

Before we discuss this result further, we present the results for 1998-1999. In this case, village-level growth has significant and negative impact on incidence of severe poverty: the higher the growth, the lower the incidence. Village-level growth has no impact on MP. District-level growth has a positive impact on SP and MP (Tables A5 and A6). Thus, in 1998-1999, lower incidence of SP is associated with higher output growth in the village. There is likely to be less SP in villages where income growth is faster. Importantly, district-level growth may not have such a positive or poverty-reducing impact as we find that incidence of poverty (SP or MP) is greater in villages where district-level crop output growth is higher.

**Table 2: Impact of growth on incidence of poverty**

| Item | 1981-1982 | 1998-1999 |
|---|---|---|
| **Village-level growth on** | | |
| SP | Increase | Decrease |
| MP | Ns | Ns |
| Poverty | Increase | Ns |
| | | |
| **Per capita village-level growth on** | | |
| SP | Increase | Decrease |
| MP | Ns | Ns |

| Poverty | Increase | Decrease |
|---|---|---|
| | | |
| **District agricultural output growth on** | | |
| SP | Ns | Increase |
| MP | Ns | Increase |
| Poverty | Ns | Increase |

*Source: based on results presented in the Annex A3-A6*

*Note: Ns= Not significant even at 10 percent level of probability.*

It is also important to note that the impact of the other factors remains nearly the same as before the introduction of the growth variable. Thus, social backwardness, lack of access to assets or large households imply greater probability of a household being poor, even when there is economic growth (village-level output growth).

Thus, village-level growth and district-level growth appear to have somewhat opposite effects. The results also differ between 1981-1982 and 1998-1999. Village-level growth has a poverty-reducing effect in 1998-1999 and a poverty-increasing effect in 1981-1982. Does this imply that growth is becoming a more relevant factor in poverty reduction now compared with before? The results for district-level growth suggest that growth at a larger geographical level may not affect the poor in specific villages.

We need to remember that the variable we have taken is the crop output growth at the district level. If we consider the results with respect to the impact of urban linkage (captured through proportion of urban population in the district), which has a negative impact on incidence of poverty, then it is clear that agricultural growth at a broader geographical level may not have a significant poverty-reducing effect at the micro level, but other non-agricultural opportunities may provide poverty-reducing effects.

# 4 Economic growth and exit from poverty

The dependent variable in the regression model in equation (1) is now defined to reflect income mobility of the household. We first consider the case of exit from poverty. We distinguish between two cases: exit from SP and exit from MP. The two cases may differ in terms of the degree of the impact.

When we consider exit from SP, social status does not remain a significant influence during the period 1970-1971 to 1981-1982. In the second period, 1981-1982 to 1998-1999, scheduled tribe status is significant in retarding the exit whereas scheduled caste status is not significant. However, in the case of exit from MP, both scheduled tribe and schedule caste status are important inhibitors of exit in the first period but not in the second. Thus,

social grouping appears to play some role in influencing exit but other factors may be more important in determining poverty dynamics as well.

Among the other household characteristics, the initial conditions (conditions at the beginning of the period over which we consider poverty dynamics) with respect to physical assets, particularly land and livestock, promote exit from SP. Land is significant in leading to exit from SP in both the periods, whereas livestock is significant only in the second period. Land is not significant in influencing exit from MP in the second period. Livestock is not significant in the first period. Access to irrigated land is significant. Thus, the role of assets in reducing marginal or moderate poverty may be influenced by quality of assets and not just access. Assets do play an important role in exit from SP.

Household size also plays a mixed role in influencing exit from poverty. Larger household size as an initial condition helps in exit from SP when we analyse the first of the two periods. But this effect is not uniform across alternative regressions in the second period. Greater percentage of children in the household, an indicator of greater dependency ratio, is an inhibitor of exit in both the periods considered. Larger percentage of females in the household was not significant in explaining exit from SP in either period. Thus, larger household size reflecting a larger number of income earners would help in exiting from SP. The results also show that a large household comprising more children as an initial condition is not helpful in exiting from poverty. Exiting from MP is not so dependent on household size. The composition in terms of percentage of children in the initial period is also not a significant factor in influencing exit. However, higher percentage of females actually improved probability of exit from moderate poverty in the second period (1981-1982 to 1998-1999). Thus, across both the periods, household size and its composition appear to be significant in influencing exit from SP but not MP.

We included village population (villpop) as an indicator of income opportunities in the village. It does not seem to have a uniform significant effect on exit from SP or MP in either of the two periods considered. Size of village population actually slows down exit in only one case, i.e. exit from MP during the second period. Although lower poverty incidence is usually associated with larger village size, larger village size does not lead to reduction in poverty.

Among the village-level characteristics, village infrastructure has an unambiguous poverty-reducing effect. With the exception of two cases, this variable is associated with lower incidence of poverty, exit from poverty and slower entry into poverty.

The potential for urban linkage of the villages, captured by the variable higher percentage of urban population of the district, also has a generally positive impact on poverty reduction. It is associated with lower incidence of poverty, exit from poverty and slower entry into poverty. Only in a few cases is the impact not significant or counter to that noted above.

Better infrastructure at the village level and proximity to urban neighbourhoods that provide income opportunities for rural areas appear to be important in reducing poverty.

Now we consider the impact of growth variables on exit from poverty. Table 3 below summarises the findings from the regression models presented in the Annex tables. Growth at the village level or at the district level has a poverty-reducing impact for the rural poor. The impact is less ambiguous for the second period and for the SP. In the first period, the impact is significant for exit from MP but not for exit from SP. Growth is also associated with lower incidence of poverty in the second period (Table 2). However, the district-level growth is in fact associated with higher incidence of poverty in the second period. In other words, growth may be taking place in areas where there is lower incidence of poverty, but such growth does help in reducing poverty further. When economic growth is within the village, chances of the poor escaping from poverty increase significantly. This impact is greater in the second period under consideration in the analysis.

**Table 3: Impact of economic growth on exit from poverty**

| Movement | Period 1: 1970-1971 to 1981-1982 | | |
|---|---|---|---|
| | Village growth | Per capita village growth | District growth |
| **Exit from** | | | |
| SP | Ns | Ns | Ns |
| MP | Ns | Promote | Promote |
| | Period 2: 1981-1982 to 1998-1999 | | |
| **Exit from** | | | |
| SP | Promote | Promote | Promote |
| MP | Promote | Promote | Ns |

*Source: based on Annex A7-A10.*

*Note: Ns= Not significant even at 10 percent level of probability.*

# 5 Economic growth and entry into poverty

The factors that result in non-poor becoming poor may be related to both household-level factors and the broader environment. Table 4 summarises the results presented in greater detail in the Annex tables. We did not find any case where non-poor became SP in the sample. Therefore, we have examined cases where non-poor became MP or MP became SP.

In the first period, growth was not a significant factor in influencing entry into poverty. In the second period, however, growth may in fact be associated with more non-poor becoming MP or more MP becoming SP. This is in contrast with the poverty-reducing effects of growth. Why do non-poor households become poor in villages experiencing high growth? Since we have accounted for factors such as scheduled tribe/scheduled caste status, assets and

village infrastructure, possible explanations could be adversities such as ill health or changes in the price conditions facing the households.. But the results do show that village-level or district-level growth would have an impact on dynamics of household income – positive or negative. We are unable to explore this further in this paper owing to lack of required data.

**Table 4: Impact of economic growth on entry into poverty**

| Movement | Period 1: 1970-1971 to 1981-1982 | | |
|---|---|---|---|
| | Village growth | Per capita village growth | District growth |
| **Entry from non-poor to** | | | |
| MP | Ns | Ns | Ns |
| | | | |
| **Slipping from MP to** | | | |
| SP | Ns | Ns | Ns |
| | | | |
| | Period 2: 1981-1982 to 1998-1999 | | |
| **Entry from non-poor to** | | | |
| MP | Ns | Ns | Promote |
| | | | |
| **Slipping from MP to** | | | |
| SP | Promote | Promote | Ns |

*Source: based on Annex A11-A14.*

*Note: Ns= Not significant even at 10 percent level of probability.*

## 6. Conclusions

This study has examined a three wave panel dataset for rural households of India to assess the impact of agricultural growth on poverty. Growth is captured at the level of the village and district in which the sample households reside. The impact of growth has been examined taking into account some of the other well-known factors that influence incidence and dynamics of poverty. In the Indian context, social backwardness (as captured by the scheduled caste or scheduled tribe status) and lack of physical assets are known to be such factors. In our earlier research, we found that village-level infrastructure and rural–urban linkages are also important factors influencing incidence and dynamics of poverty.

The present analysis extends the earlier analysis in two important ways. First, it examines the impact of various household-, village- and district-level factors on incidence of poverty separately for SP and MP households for the three waves of the panel. Second, it examines the impact of various factors, including growth, on exit from poverty as well as entry into poverty.

Even though the data used here are a subset of the dataset used in our earlier analysis, the results obtained reinforce those obtained from our earlier research, in terms of the impact of

various factors on incidence of poverty. The poverty-reducing roles of physical assets, village infrastructure and urban linkage are prominent. The impact of growth on exit from poverty is captured more clearly in the second period than in the first. In other words, growth alone may not be sufficient to achieve poverty reduction. Other factors may need to be in place before growth has a poverty-reducing impact. This corroborates the findings in the literature that dynamics of poverty reduction in rural areas go beyond growth performance.

Impact of growth on entry into poverty is less clear, although the results do show that higher growth may also lead to some non-poor slipping into poverty and some MP slipping into SP. While the present study is not able to examine issues such as episodes of ill health or other adverse events for the households, which may have led to worsening of their economic condition, other research conducted by the Chronic Poverty Research Centre (CPRC) India and others (Krishna *et al.*, 2005; Mehta and Ghosh, 2005; Mehta and Gupta, 2006) has drawn attention to farmer suicides and health shocks leading to entry into poverty and the need for policies to address this.

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# Annex

### Annex 1: List of explanatory variables used in regression analysis

| Variable | Description |
|---|---|
| SC | Dummy variable with value =1 if the household belongs to scheduled caste and =0 otherwise |
| ST | Dummy variable with value =1 if the household belongs to scheduled tribe and =0 otherwise |
| House | Dummy variable with value =1 if the household has own house and =0 otherwise |
| Livestock | Dummy variable with value =1 if the household has own livestock and =0 otherwise |
| Vinfra | Index of infrastructure at the village level |
| Irrig | Dummy variable with value =1 if the household has irrigated cultivated land and =0 otherwise |
| Urblink | Percentage of urban population of the district |
| Villpop | Population of the village |
| Land | Land owned by the household |
| Child% | Percentage of children (less than 14 years of age) among the household members |
| Female% | Percentage of females among the household members |
| Hdsize | Number of household members |
| vygr2 | Annual growth rate (%) of income of the village in the period 1981-1982 to 1998-1999 |
| Pvygr2 | Annual growth rate (%) of per capita income of the village in the period 1981-1982 to 1998-1999 |
| dgr8198 | Annual growth rate of crop output of the district in the period 1981-1982 to 1998-1999 |
| vygr1 | Annual growth rate (%) of income of the village in the period 1970-1971 to 1981-1982 |
| Pvygr1 | Annual growth rate (%) of per capita income of the village in the period 1971-1971 to 1981-1982 |
| dgr7081 | Annual growth rate of crop output of the district between the period 1970-71 to 1981-82 |

*Notes:*

*1. Village population data is from the Census for 1971, 1981 and 2001*

*2. Village infrastructure index is constructed as a sum of scores indicating the presence (=1) or absence (=0) of a variety of services within village; the services or infrastructure items considered are roads, phone, school, health facility, village-level worker (agricultural extension), post office and market for produce.*

*3. Village income is obtained by aggregating household income of those households listed in the survey years; the households were asked what their annual income was and the data has been recorded; this is only a proxy for village output.*

*4. Village per capita income is obtained by dividing the village income by total number of household members in the listed households.*

*5. dgr is the annual growth rate (%) of crop output in real value calculated based on data on crop output for the relevant periods.*

**Annex 2: Results of regression analysis**

**Table A1: Factors influencing SP, household, village and other**

| Ind vars | Coef 70 | P>\|z\| | Coef 81 | P>\|z\| | Coef 98 | P>\|z\| | Impact on incidence | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Increase | Decrease | Not significant |
| SC | 0.42651 | 0.00 | 0.19360 | 0.03 | 0.540032 | 0.00 | 3 | 0 | 0 |
| ST | 1.01115 | 0.00 | 0.76037 | 0.00 | 0.943927 | 0.00 | 3 | 0 | 0 |
| House | -0.08086 | 0.79 | 0.00679 | 0.98 | -0.818764 | 0.02 | 0 | 1 | 2 |
| Livestock | -0.50832 | 0.00 | -0.41200 | 0.00 | -0.125315 | 0.10 | 0 | 3 | 0 |
| Vinfra | -0.12579 | 0.00 | -0.20521 | 0.00 | -0.129487 | 0.00 | 0 | 3 | 0 |
| Irrig | -0.72082 | 0.00 | -0.61446 | 0.00 | 0.025068 | 0.73 | 0 | 2 | 1 |
| Urblink | -0.00920 | 0.00 | -0.01779 | 0.00 | -0.019384 | 0.00 | 0 | 3 | 0 |
| Villpop | -0.00001 | 0.30 | -0.00002 | 0.03 | -0.000003 | 0.72 | 0 | 2 | 1 |
| Land | -0.20219 | 0.00 | -0.14527 | 0.00 | -0.127572 | 0.00 | 0 | 3 | 0 |
| Child% | 0.01326 | 0.00 | 0.01456 | 0.00 | 0.013473 | 0.00 | 3 | 0 | 0 |
| Female% | 0.00303 | 0.12 | -0.00426 | 0.04 | 0.003959 | 0.06 | 1 | 1 | 1 |
| Hdsize | 0.16149 | 0.00 | 0.11715 | 0.00 | 0.217888 | 0.00 | 3 | 0 | 0 |
| Constant | -0.77894 | 0.03 | 0.11482 | 0.68 | -0.452274 | 0.23 | | | |
| Number of obs | 2524 | | 276 | | 2506 | | | | |
| LR $chi^2(12)$ | 1099.8 | | 912.5 | | 1046.7 | | | | |
| Prob > $chi^2$ | 0.00 | | 0.00 | | 0.00 | | | | |
| Log likelihood | -1101.8 | | -1123.6 | | -953.4 | | | | |
| Pseudo $R^2$ | 0.33 | | 0.29 | | 0.35 | | | | |

*Note: Coef 70, Coef 81 and Coef 98 refer to the regression coefficients for the periods 1970-1971, 1981-1982 and 1998-1999, respectively. The columns (P>\|z\|) indicate the probability of significance of the estimated probit model coefficients. This notation is common in all the annex tables reporting results of regression analysis.*

**Table A2: Factors influencing MP, household, village and other**

| Ind vars | Coef 70 | P>\|z\| | Coef 81 | P>\|z\| | Coef 98 | P>\|z\| | Impact on incidence | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Increase | Decrease | Not significant |
| SC | 0.50645 | 0.00 | 0.25948 | 0.00 | 0.38965 | 0.00 | 3 | 0 | 0 |
| ST | 0.62211 | 0.00 | 0.67098 | 0.00 | 0.51181 | 0.00 | 3 | 0 | 0 |
| House | -0.44094 | 0.13 | 0.26589 | 0.33 | -0.34099 | 0.38 | 0 | 0 | 3 |
| Livestock | -0.48093 | 0.00 | -0.50647 | 0.00 | -0.04102 | 0.54 | 0 | 2 | 1 |
| Vinfra | -0.03766 | 0.12 | -0.10915 | 0.00 | -0.12329 | 0.00 | 0 | 3 | 0 |
| Irrig | -0.52580 | 0.00 | -0.22807 | 0.00 | -0.08863 | 0.16 | 0 | 2 | 1 |
| Urblink | -0.00881 | 0.00 | -0.00623 | 0.02 | -0.00056 | 0.80 | 0 | 2 | 1 |
| Villpop | -0.00004 | 0.01 | -0.00002 | 0.04 | 0.00001 | 0.25 | 0 | 2 | 1 |
| Land | -0.01504 | 0.00 | -0.06755 | 0.00 | -0.04715 | 0.00 | 0 | 3 | 0 |
| Child% | 0.00713 | 0.00 | 0.00562 | 0.00 | 0.00692 | 0.00 | 3 | 0 | 0 |
| Female% | -0.00294 | 0.11 | -0.00291 | 0.14 | 0.00175 | 0.32 | 0 | 0 | 3 |
| Hdsize | 0.08910 | 0.00 | 0.07700 | 0.00 | 0.13411 | 0.00 | 3 | 0 | 0 |
| Constant | -0.02521 | 0.94 | -0.41509 | 0.17 | -0.70528 | 0.09 | | | |
| | | | | | | | | | |
| Number of | 2326 | | 2497 | | 2456 | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| obs | | | | | | | | | |
| LR $chi^2(12)$ | 306.05 | | 285.01 | | 367.64 | | | | |
| Prob > $chi^2$ | 0 | | 0 | | 0 | | | | |
| Log likelihood | -1282.12 | | -1190.26 | | -1227.19 | | | | |
| Pseudo $R^2$ | 0.1066 | | 0.1069 | | 0.1303 | | | | |

**Table A3: Factors influencing SP in 1981-1982, household, village and other**

| Ind vars | Coef 81 | P>\|z\| | Coef 81 | P>\|z\| | Coef 81 | P>\|z\| | Impact on incidence | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Increase | Decrease | Not significant |
| SC | 0.20780 | 0.02 | 0.20517 | 0.02 | 0.19360 | 0.03 | 3 | 0 | 0 |
| ST | 0.80547 | 0.00 | 0.80138 | 0.00 | 0.76027 | 0.00 | 3 | 0 | 0 |
| House | 0.07049 | 0.77 | 0.06057 | 0.80 | 0.00700 | 0.98 | 0 | 0 | 0 |
| Livestock | -0.41695 | 0.00 | -0.41246 | 0.00 | -0.41200 | 0.00 | 0 | 3 | 0 |
| Vinfra | -0.21298 | 0.00 | -0.21035 | 0.00 | -0.20522 | 0.00 | 0 | 3 | 0 |
| Irrig | -0.60661 | 0.00 | -0.61286 | 0.00 | -0.61445 | 0.00 | 0 | 3 | 0 |
| Urblink | -0.01688 | 0.00 | -0.01719 | 0.00 | -0.01779 | 0.00 | 0 | 3 | 0 |
| Villpop | -0.00003 | 0.02 | -0.00003 | 0.01 | -0.00002 | 0.03 | 0 | 3 | 0 |
| Land | -0.14386 | 0.00 | -0.14442 | 0.00 | -0.14527 | 0.00 | 0 | 3 | 0 |
| Child% | 0.01426 | 0.00 | 0.01437 | 0.00 | 0.01456 | 0.00 | 3 | 0 | 0 |
| Female% | -0.00384 | 0.06 | -0.00396 | 0.06 | -0.00426 | 0.04 | 0 | 3 | 0 |
| Hdsize | 0.11985 | 0.00 | 0.12020 | 0.00 | 0.11715 | 0.00 | 3 | 0 | 0 |
| vygr1 | 0.00290 | 0.00 | | | | | 2 | 0 | 0 |
| pvygr1 | | | 0.00246 | 0.00 | | | | | |
| dgr7081 | | | | | -0.00006 | 0.99 | 0 | 0 | 1 |
| Constant | 0.14578 | 0.60 | 0.13869 | 0.62 | 0.11482 | 0.68 | | | |
| | | | | | | | | | |
| Number of obs | 2676 | | 2676 | | 2676 | | | | |
| LR $chi^2(12)$ | 930.18 | | 923.08 | | 912.46 | | | | |
| Prob > $chi^2$ | 0.00 | | 0.00 | | 0.00 | | | | |
| Log likelihood | -1114.7 | | -1118.3 | | -1123.6 | | | | |
| Pseudo $R^2$ | 0.29 | | 0.29 | | 0.29 | | | | |

**Table A4: Factors influencing MP in 1981-1982, household, village and other**

| Ind vars | Coef 81 | P>\|z\| | Coef 81 | P>\|z\| | Coef 81 | P>\|z\| | Impact on incidence | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Increase | Decrease | Not significant |
| SC | 0.25640 | 0.00 | 0.25816 | 0.00 | 0.26151 | 0.00 | 3 | 0 | 0 |
| ST | 0.67602 | 0.00 | 0.67439 | 0.00 | 0.66857 | 0.00 | 3 | 0 | 0 |
| House | 0.28488 | 0.29 | 0.28146 | 0.30 | 0.28116 | 0.30 | 0 | 0 | 3 |
| Livestock | -0.50673 | 0.00 | -0.50689 | 0.00 | -0.50682 | 0.00 | 0 | 3 | 0 |
| Vinfra | -0.11031 | 0.00 | -0.10951 | 0.00 | -0.11001 | 0.00 | 0 | 3 | 0 |
| Irrig | -0.21598 | 0.00 | -0.22214 | 0.00 | -0.22641 | 0.00 | 0 | 3 | 0 |
| Urblink | -0.00557 | 0.04 | -0.00573 | 0.03 | -0.00603 | 0.02 | 0 | 3 | 0 |
| Villpop | -0.00002 | 0.03 | -0.00002 | 0.03 | -0.00002 | 0.03 | 0 | 3 | 0 |
| Land | -0.06783 | 0.00 | -0.06790 | 0.00 | -0.06779 | 0.00 | 0 | 3 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Child% | 0.00545 | 0.00 | 0.00551 | 0.00 | 0.00558 | 0.00 | 3 | 0 | 0 |
| Female% | -0.00263 | 0.18 | -0.00275 | 0.16 | -0.00297 | 0.13 | 0 | 0 | 3 |
| Hdsize | 0.07781 | 0.00 | 0.07804 | 0.00 | 0.07713 | 0.00 | 3 | 0 | 0 |
| vygr1 | 0.00138 | 0.11 | | | | | 0 | 0 | 2 |
| pvygr1 | | | 0.00107 | 0.24 | | | | | |
| dgr7081 | | | | | -0.00423 | 0.52 | | | 1 |
| Constant | -0.39812 | 0.18 | -0.40347 | 0.18 | -0.41507 | 0.17 | | | |
| | | | | | | | | | |
| Number of obs | 2497 | | 2497 | | 2497 | | | | |
| LR $chi^2(12)$ | 287.5 | | 286.4 | | 285.4 | | | | |
| Prob > $chi^2$ | 0.0 | | 0.0 | | 0.0 | | | | |
| Log likelihood | -1189.0 | | -1189.6 | | -1190.1 | | | | |
| Pseudo $R^2$ | 0.11 | | 0.11 | | 0.11 | | | | |

**Table A5: Factors influencing SP in 1998-1999, household, village and other**

| **Ind vars** | **Coef 98** | **P>\|z\|** | **Coef 98** | **P>\|z\|** | **Coef 98** | **P>\|z\|** | **Impact on incidence** | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Increase** | **Decrease** | **Not significant** |
| SC | 0.530439 | 0.00 | 0.527343 | 0.00 | 0.557599 | 0.00 | 3 | 0 | 0 |
| ST | 0.906996 | 0.00 | 0.898486 | 0.00 | 0.933457 | 0.00 | 3 | 0 | 0 |
| House | -0.808461 | 0.02 | -0.804670 | 0.02 | -0.837171 | 0.02 | 0 | 3 | 0 |
| Livestock | -0.131275 | 0.08 | -0.129701 | 0.09 | -0.154400 | 0.04 | 0 | 3 | 0 |
| Vinfra | -0.130876 | 0.00 | -0.131199 | 0.00 | -0.136422 | 0.00 | 0 | 3 | 0 |
| Irrig | 0.019210 | 0.79 | 0.012441 | 0.86 | 0.011859 | 0.87 | 0 | 0 | 3 |
| Urblink | -0.019438 | 0.00 | -0.019515 | 0.00 | -0.020319 | 0.00 | 0 | 3 | 0 |
| Villpop | -0.000003 | 0.65 | -0.000004 | 0.58 | 0.000001 | 0.85 | 0 | 0 | 3 |
| Land | -0.126715 | 0.00 | -0.126227 | 0.00 | -0.129994 | 0.00 | 0 | 3 | 0 |
| Child% | 0.013509 | 0.00 | 0.013529 | 0.00 | 0.013338 | 0.00 | 3 | 0 | 0 |
| Female% | 0.004011 | 0.06 | 0.004079 | 0.05 | 0.004287 | 0.04 | 3 | 0 | 0 |
| Hdsize | 0.218540 | 0.00 | 0.218238 | 0.00 | 0.220830 | 0.00 | 3 | 0 | 0 |
| vygr2 | -0.002126 | 0.06 | | | | | 0 | 2 | 0 |
| pvygr2 | | | -0.002193 | 0.01 | | | | | |
| dgr8198 | | | | | 0.026759 | 0.00 | 1 | 0 | 0 |
| Constant | -0.577570 | 0.13 | -0.562279 | 0.14 | -0.460123 | 0.22 | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Number of obs | 2506 | | 2506 | | 2506 | | | | |
| LR $chi^2(12)$ | 1050.57 | | 1054.49 | | 1055.83 | | | | |
| Prob > $chi^2$ | 0 | | 0 | | 0 | | | | |
| Log likelihood | -951.42 | | -949.46 | | -948.79 | | | | |
| Pseudo $R^2$ | 0.3557 | | 0.357 | | 0.3575 | | | | |

**Table A6: Factors influencing MP in 1998-1999, household, village and other**

| Ind vars | Coef 98 | P>\|z\| | Coef 98 | P>\|z\| | Coef 98 | P>\|z\| | Impact on incidence | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Increase | Decrease | Not significant |
| SC | 0.38852 | 0.00 | 0.38620 | 0.00 | 0.39757 | 0.00 | 3 | 0 | 0 |
| ST | 0.50762 | 0.00 | 0.50272 | 0.00 | 0.47705 | 0.00 | 3 | 0 | 0 |
| House | -0.33916 | 0.38 | -0.33528 | 0.39 | -0.34760 | 0.37 | 0 | 0 | 3 |
| Livestock | -0.04009 | 0.55 | -0.03772 | 0.58 | -0.06501 | 0.34 | 0 | 0 | 3 |
| Vinfra | -0.12347 | 0.00 | -0.12346 | 0.00 | -0.12751 | 0.00 | 0 | 3 | 0 |
| Irrig | -0.09074 | 0.16 | -0.09548 | 0.14 | -0.11229 | 0.08 | 0 | 2 | 1 |
| Urblink | -0.00059 | 0.79 | -0.00064 | 0.77 | -0.00133 | 0.54 | 0 | 0 | 3 |
| Villpop | 0.00001 | 0.26 | 0.00001 | 0.28 | 0.00001 | 0.10 | 1 | 0 | 2 |
| Land | -0.04705 | 0.00 | -0.04692 | 0.00 | -0.04814 | 0.00 | 0 | 3 | 0 |
| Child% | 0.00692 | 0.00 | 0.00691 | 0.00 | 0.00679 | 0.00 | 3 | 0 | 0 |
| Female% | 0.00175 | 0.32 | 0.00177 | 0.32 | 0.00198 | 0.26 | 0 | 0 | 3 |
| Hdsize | 0.13425 | 0.00 | 0.13437 | 0.00 | 0.13568 | 0.00 | 3 | 0 | 0 |
| vygr2 | -0.00025 | 0.76 | | | | | | | 2 |
| pvygr2 | | | -0.00044 | 0.39 | | | | | |
| dgr8198 | | | | | 0.02666 | 0.00 | 1 | | 0 |
| Constant | -0.71998 | 0.08 | -0.72807 | 0.08 | -0.72196 | 0.08 | | | |
| | | | | | | | | | |
| Number of obs | 2456 | | 2456 | | 2456 | | | | |
| LR $chi^2(12)$ | 367.7 | | 368.4 | | 379.0 | | | | |
| Prob > $chi^2$ | 0.00 | | 0.00 | | 0.00 | | | | |
| Log likelihood | -1227.1 | | -1226.8 | | -1221.5 | | | | |
| Pseudo $R^2$ | 0.13 | | 0.13 | | 0.13 | | | | |

**Table A7: Exit from SP, 1970-1971 to 1981-1982**

| Ind vars | Coef | P>\|z\| | Coef | P>\|z\| | Coef | P>\|z\| | Exit from poverty | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Promote | Inhibit | NS |
| SC | 0.03173 | 0.81 | 0.04067 | 0.75 | 0.05456 | 0.67 | 0 | 0 | 3 |
| ST | -0.25499 | 0.14 | -0.24053 | 0.16 | -0.18827 | 0.28 | 0 | 0 | 3 |
| House | -0.08808 | 0.83 | -0.06559 | 0.87 | -0.08469 | 0.83 | 0 | 0 | 3 |
| Livestock | 0.17001 | 0.15 | 0.17522 | 0.14 | 0.17476 | 0.14 | 0 | 0 | 3 |
| Vinfra | 0.19326 | 0.00 | 0.19071 | 0.00 | 0.20684 | 0.00 | 3 | 0 | 0 |
| Irrigation | 0.20288 | 0.15 | 0.19260 | 0.17 | 0.21015 | 0.14 | 0 | 0 | 3 |
| Urblink | 0.02585 | 0.00 | 0.02600 | 0.00 | 0.02407 | 0.00 | 3 | 0 | 0 |
| Vsize | 0.00001 | 0.47 | 0.00002 | 0.44 | 0.00002 | 0.39 | 0 | 0 | 3 |
| Land | 0.11477 | 0.00 | 0.11707 | 0.00 | 0.12009 | 0.00 | 3 | 0 | 0 |
| Children% | 0.00462 | 0.10 | 0.00474 | 0.09 | 0.00476 | 0.09 | 0 | 3 | 0 |
| Females% | -0.00312 | 0.31 | -0.00306 | 0.32 | -0.00257 | 0.41 | 0 | 0 | 3 |
| Hdsize | 0.05045 | 0.01 | 0.05105 | 0.01 | 0.05020 | 0.01 | 3 | 0 | 0 |
| vygr | -0.00103 | 0.32 | | | | | 0 | 0 | 1 |
| pvygr | | | -0.00021 | 0.85 | | | 0 | 0 | 1 |
| dgr7081 | | | | | 0.01653 | 0.11 | 0 | 0 | 1 |
| Constant | -1.62095 | 0.00 | -1.63436 | 0.00 | -1.68361 | 0.00 | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Number of Observations | 744 | | 744 | | 744 | | | | |
| LR $chi^2(13)$ | 127.2 | | 126.2 | | 128.7 | | | | |
| Prob > $chi^2$ | 0.0 | | 0.0 | | 0.0 | | | | |
| Log likelihood | -451.9 | | -452.3 | | -451.1 | | | | |
| Pseudo $R^2$ | 0.12 | | 0.12 | | 0.12 | | | | |

**Table A8: Exit from SP, 1981-1982 to 1998-1999**

| Ind vars | Coef | P>\|z\| | Coef | P>\|z\| | Coef | P>\|z\| | Exit from poverty | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Promote | Inhibit | NS |
| SC | -0.037787 | 0.81 | -0.009943 | 0.95 | -0.099487 | 0.52 | 0 | 0 | 3 |
| ST | -0.303885 | 0.12 | -0.271050 | 0.16 | -0.415629 | 0.03 | 0 | 1 | 2 |
| House | -0.374192 | 0.43 | -0.337864 | 0.48 | -0.238487 | 0.62 | 0 | 0 | 3 |
| Livestock | 0.380897 | 0.01 | 0.363408 | 0.01 | 0.342829 | 0.02 | 3 | 0 | 0 |
| Vinfra | 0.108123 | 0.01 | 0.108783 | 0.01 | 0.114179 | 0.00 | 3 | 0 | 0 |
| Irrigation | 0.203232 | 0.13 | 0.222122 | 0.10 | 0.116942 | 0.38 | 1 | 0 | 2 |
| Urblink | 0.035409 | 0.00 | 0.035569 | 0.00 | 0.031068 | 0.00 | 3 | 0 | 0 |
| Vsize | -0.000005 | 0.84 | -0.000001 | 0.98 | -0.000010 | 0.67 | 0 | 0 | 3 |
| Land | 0.087346 | 0.00 | 0.087280 | 0.01 | 0.097540 | 0.00 | 3 | 0 | 0 |
| Children% | -0.007728 | 0.02 | -0.008038 | 0.02 | -0.006532 | 0.05 | 0 | 3 | 0 |
| Females% | -0.004042 | 0.35 | -0.004324 | 0.32 | -0.005306 | 0.22 | 0 | 0 | 3 |
| HHDsize | -0.019148 | 0.21 | -0.018717 | 0.22 | -0.026662 | 0.08 | 0 | 1 | 2 |
| vygr2 | 0.005191 | 0.00 | | | | | 1 | 0 | 0 |
| pvygr2 | | | 0.004890 | 0.00 | | | 1 | 0 | 0 |
| dgr8198 | | | | | 0.032324 | 0.06 | 1 | 0 | 0 |
| Constant | 0.070762 | 0.90 | -0.015718 | 0.98 | -0.162073 | 0.77 | | | |
| | | | | | | | | | |
| Number of Observations | 546 | | 546 | | 546 | | | | |
| LR $chi^2(13)$ | 99.1 | | 106.9 | | 89.6 | | | | |
| Prob > $chi^2$ | 0.0 | | 0.0 | | 0.0 | | | | |
| Log likelihood | -328.2 | | -324.3 | | -332.9 | | | | |
| Pseudo $R^2$ | 0.13 | | 0.14 | | 0.12 | | | | |

**Table A9: Exit from MP, 1970-1971 to 1981-1982**

| Ind vars | Coef | P>\|z\| | Coef | P>\|z\| | Coef | P>\|z\| | Exit from poverty | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Promote | Inhibit | NS |
| SC | -0.54342 | 0.00 | -0.53845 | 0.00 | -0.53908 | 0.00 | 0 | 3 | 0 |
| ST | -1.19618 | 0.00 | -1.15617 | 0.00 | -1.29970 | 0.00 | 0 | 3 | 0 |
| House | 1.78801 | 0.01 | 1.86832 | 0.00 | 1.86465 | 0.01 | 3 | 0 | 0 |
| Livestock | -0.01902 | 0.91 | 0.00881 | 0.96 | -0.05030 | 0.77 | 0 | 0 | 0 |
| Vinfra | 0.26074 | 0.00 | 0.26072 | 0.00 | 0.28151 | 0.00 | 3 | 0 | 0 |
| Irrigation | 0.41201 | 0.00 | 0.43342 | 0.00 | 0.36657 | 0.01 | 3 | 0 | 0 |
| Urblink | 0.00551 | 0.33 | 0.00614 | 0.28 | 0.00457 | 0.41 | 0 | 0 | 3 |
| Vsize | 0.00004 | 0.34 | 0.00003 | 0.43 | 0.00004 | 0.27 | 0 | 0 | 3 |
| Land | 0.05545 | 0.01 | 0.05451 | 0.01 | 0.05668 | 0.01 | 3 | 0 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Children% | -0.00058 | 0.86 | -0.00022 | 0.95 | -0.00024 | 0.94 | 0 | 0 | 3 |
| Females% | 0.00954 | 0.01 | 0.00983 | 0.01 | 0.00924 | 0.02 | 3 | 0 | 0 |
| Hdsize | 0.00143 | 0.94 | 0.00304 | 0.88 | 0.00137 | 0.94 | 0 | 0 | 3 |
| vygr1 | 0.00257 | 0.13 | | | | | 0 | 0 | 1 |
| pvygr1 | | | 0.00412 | 0.02 | | | 1 | 0 | 0 |
| dgr7081 | | | | | 0.02637 | 0.06 | 1 | 0 | 0 |
| Constant | -2.35925 | 0.00 | -2.44025 | 0.00 | -2.62685 | 0.00 | | | |
| | | | | | | | | | |
| Number of Observations | 562 | | 562 | | 562 | | | | |
| LR $chi^2(13)$ | 125.8 | | 128.7 | | 127.0 | | | | |
| Prob > $chi^2$ | 0.0 | | 0.0 | | 0.0 | | | | |
| Log likelihood | -284.0 | | -282.6 | | -283.4 | | | | |
| Pseudo $R^2$ | 0.18 | | 0.19 | | 0.18 | | | | |

**Table A10: Exit from MP, 1981-1982 to 1998-1999**

| **Ind vars** | **Coef** | **P>\|z\|** | **Coef** | **P>\|z\|** | **Coef** | **P>\|z\|** | **Exit from poverty** | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Promote** | **Inhibit** | **NS** |
| SC | -0.18093 | 0.33 | -0.20306 | 0.28 | -0.20553 | 0.27 | 0 | 0 | 3 |
| ST | -0.10565 | 0.77 | -0.08882 | 0.81 | -0.17354 | 0.63 | 0 | 0 | 3 |
| Livestock | -0.15719 | 0.43 | -0.18150 | 0.36 | -0.14777 | 0.46 | 0 | 0 | 3 |
| Vinfra | 0.09409 | 0.04 | 0.08774 | 0.06 | 0.10304 | 0.03 | 3 | 0 | 0 |
| Irrigation | 0.28887 | 0.06 | 0.31417 | 0.04 | 0.25085 | 0.10 | 3 | 0 | 0 |
| Urblink | 0.00648 | 0.30 | 0.00600 | 0.34 | 0.00865 | 0.18 | 0 | 0 | 3 |
| Vsize | -0.00004 | 0.18 | -0.00003 | 0.26 | -0.00005 | 0.08 | 0 | 1 | 2 |
| Land | -0.00587 | 0.79 | -0.00675 | 0.76 | -0.00611 | 0.78 | 0 | 0 | 3 |
| Children% | -0.00189 | 0.63 | -0.00221 | 0.57 | -0.00128 | 0.74 | 0 | 0 | 3 |
| Females% | -0.00658 | 0.15 | -0.00618 | 0.18 | -0.00580 | 0.20 | 0 | 0 | 3 |
| Hdsize | 0.01924 | 0.41 | 0.01871 | 0.43 | 0.02721 | 0.24 | 0 | 0 | 3 |
| vygr2 | 0.00559 | 0.05 | | | | | 1 | 0 | 0 |
| pvygr2 | | | 0.00605 | 0.02 | | | 0 | 1 | 0 |
| dgr8198 | | | | | -0.02549 | 0.16 | 0 | 0 | 1 |
| Constant | 0.84929 | 0.04 | 0.85384 | 0.03 | 0.41935 | 0.25 | | | |
| | | | | | | | | | |
| Number of Observations | 391 | | 391 | | 391 | | | | |
| LR $chi^2(13)$ | 21.3 | | 24.1 | | 18.3 | | | | |
| Prob > $chi^2$ | 0.05 | | 0.02 | | 0.11 | | | | |
| Log likelihood | -225.3 | | -224.0 | | -226.8 | | | | |
| Pseudo $R^2$ | 0.05 | | 0.05 | | 0.04 | | | | |

**Table A11: Slipping from MP to SP, 1970-1971 to 1981-1982**

| Ind vars | Coef | P>\|z\| | Coef | P>\|z\| | Coef | P>\|z\| | Worsening of poverty | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Promote | Inhibit | NS |
| SC | 0.13251 | 0.51 | 0.13561 | 0.50 | 0.13406 | 0.50 | 0 | 0 | 3 |
| ST | 0.41269 | 0.17 | 0.39901 | 0.19 | 0.40131 | 0.19 | 0 | 0 | 3 |
| House | 0.04112 | 0.93 | 0.01323 | 0.98 | 0.03797 | 0.93 | 0 | 0 | 3 |
| Livestock | 0.32734 | 0.10 | 0.32257 | 0.10 | 0.32425 | 0.10 | 3 | 0 | 0 |
| Vinfra | -0.21312 | 0.00 | -0.21566 | 0.00 | -0.21623 | 0.00 | 0 | 3 | 0 |
| Irrigation | -0.49410 | 0.01 | -0.49857 | 0.01 | -0.49684 | 0.01 | 0 | 3 | 0 |
| Urblink | -0.00404 | 0.57 | -0.00429 | 0.55 | -0.00423 | 0.55 | 0 | 0 | 3 |
| Vsize | -0.00008 | 0.08 | -0.00008 | 0.09 | -0.00008 | 0.07 | 0 | 3 | 0 |
| Land | -0.00468 | 0.86 | -0.00495 | 0.85 | -0.00483 | 0.85 | 0 | 0 | 3 |
| Children% | -0.01074 | 0.01 | -0.01080 | 0.01 | -0.01073 | 0.01 | 0 | 3 | 0 |
| Females% | -0.00672 | 0.13 | -0.00687 | 0.12 | -0.00677 | 0.13 | 0 | 0 | 3 |
| Hdsize | -0.02622 | 0.33 | -0.02726 | 0.32 | -0.02569 | 0.34 | 0 | 0 | 3 |
| vygr1 | 0.00007 | 0.97 | | | | | 0 | 0 | 1 |
| pvygr1 | | | -0.00074 | 0.74 | | | 0 | 0 | 1 |
| dgr7081 | | | | | -0.00310 | 0.86 | 0 | 0 | 1 |
| Constant | 1.61761 | 0.01 | 1.63297 | 0.01 | 1.63753 | 0.01 | | | |
| | | | | | | | | | |
| Number of Observations | 326 | | 326 | | 326 | | | | |
| LR $chi^2(13)$ | 51.7 | | 51.8 | | 51.7 | | | | |
| Prob > $chi^2$ | 0.0 | | 0.0 | | 0.0 | | | | |
| Log likelihood | -199.5 | | -199.5 | | -199.5 | | | | |
| Pseudo $R^2$ | 0.11 | | 0.11 | | 0.11 | | | | |

**Table A12: Slipping from MP to SP, 1981-1982 to 1998-1999**

| Ind vars | Coef | P>\|z\| | Coef | P>\|z\| | Coef | P>\|z\| | Entry to poverty | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Promote | Inhibit | NS |
| SC | -0.0783511 | 0.715 | -0.0851 | 0.69 | -0.16177 | 0.439 | 0 | 0 | 3 |
| ST | 0.7546978 | 0.022 | 0.754765 | 0.021 | 0.602009 | 0.055 | 3 | 0 | 0 |
| Livestock | -0.3737907 | 0.084 | -0.40384 | 0.062 | -0.38726 | 0.073 | 0 | 3 | 0 |
| Vinfra | -0.0323221 | 0.561 | -0.03134 | 0.571 | -0.00874 | 0.873 | 0 | 0 | 3 |
| Irrigation | -0.0886786 | 0.615 | -0.08552 | 0.628 | -0.11249 | 0.524 | 0 | 0 | 3 |
| Urblink | -0.0234658 | 0.001 | -0.02382 | 0.001 | -0.02195 | 0.002 | 0 | 3 | 0 |
| Vsize | 0.0000115 | 0.763 | 1.46E-05 | 0.705 | -5.06E-06 | 0.891 | 0 | 0 | 3 |
| Land | -0.0267819 | 0.33 | -0.02546 | 0.351 | -0.0207 | 0.451 | 0 | 0 | 3 |
| Children% | 0.0047193 | 0.29 | 0.004584 | 0.305 | 0.00492 | 0.273 | 0 | 0 | 3 |
| Females% | 0.0077097 | 0.158 | 0.007948 | 0.146 | 0.006839 | 0.208 | 0 | 0 | 3 |
| Hdsize | 0.0272456 | 0.317 | 0.029284 | 0.283 | 0.025801 | 0.351 | 0 | 0 | 3 |
| vygr2 | 0.0061922 | 0.091 | | | | | 1 | 0 | 0 |
| pvygr2 | | | 0.005244 | 0.089 | | | 0 | 1 | 0 |
| dgr8198 | | | | | 0.003445 | 0.862 | 0 | 0 | 1 |
| Constant | 0.6460092 | 0.18 | 0.548947 | 0.232 | 0.295149 | 0.494 | | | |
| | | | | | | | | | |
| Number of Observations | 279 | | 279 | | 279 | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| LR chi$^2$(13) | 24.17 | | 24.21 | | 21.27 | | | | |
| Prob > chi$^2$ | 0.0193 | | 0.019 | | 0.0465 | | | | |
| Log likelihood | -176.62 | | -176.59 | | -178.06 | | | | |
| Pseudo $R^2$ | 0.064 | | 0.0642 | | 0.0564 | | | | |

**Table A13: Entry into MP, 1970-1971 to 1981-1982**

| **Ind vars** | **Coef** | **P>\|z\|** | **Coef** | **P>\|z\|** | **Coef** | **P>\|z\|** | **Entry to poverty** | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Promote** | **Inhibit** | **NS** |
| SC | 0.28043 | 0.05 | 0.27708 | 0.05 | 0.28078 | 0.05 | 3 | 0 | 0 |
| ST | 0.17780 | 0.66 | 0.16431 | 0.69 | 0.18421 | 0.65 | 0 | 0 | 3 |
| Livestock | 0.20460 | 0.16 | 0.20162 | 0.17 | 0.20647 | 0.16 | 0 | 0 | 3 |
| Vinfra | -0.15455 | 0.00 | -0.15724 | 0.00 | -0.15232 | 0.00 | 0 | 3 | 0 |
| Irrigation | -0.29996 | 0.00 | -0.30795 | 0.00 | -0.29539 | 0.00 | 0 | 3 | 0 |
| Urblink | -0.00527 | 0.19 | -0.00553 | 0.17 | -0.00526 | 0.19 | 0 | 0 | 3 |
| Vsize | -0.00001 | 0.48 | -0.00001 | 0.56 | -0.00002 | 0.46 | 0 | 0 | 3 |
| Land | -0.00041 | 0.95 | -0.00044 | 0.95 | -0.00040 | 0.95 | 0 | 0 | 3 |
| Children% | 0.00379 | 0.10 | 0.00384 | 0.09 | 0.00377 | 0.10 | 3 | 0 | 0 |
| Females% | 0.00400 | 0.13 | 0.00404 | 0.12 | 0.00398 | 0.13 | 0 | 0 | 3 |
| Hdsize | -0.02148 | 0.11 | -0.02195 | 0.10 | -0.02116 | 0.11 | 0 | 0 | 3 |
| vygr2 | -0.00031 | 0.79 | | | | | 0 | 0 | 1 |
| pvygr2 | | | -0.00093 | 0.45 | | | 0 | 0 | 1 |
| dgr7081 | | | | | 0.00164 | 0.85 | 0 | 0 | 1 |
| Constant | -0.79763 | 0.00 | -0.81343 | 0.00 | -0.79431 | 0.00 | | | |
| | | | | | | | | | |
| Number of Observations | 1415 | | 1415 | | 1415 | | | | |
| LR chi$^2$(13) | 60.0 | | 60.5 | | 59.9 | | | | |
| Prob > chi$^2$ | 0.0 | | 0.0 | | 0.0 | | | | |
| Log likelihood | -615.8 | | -615.6 | | -615.8 | | | | |
| Pseudo $R^2$ | 0.05 | | 0.05 | | 0.05 | | | | |

**Table A14: Entry into MP, 1981-1982 to 1998-1999**

| **Ind vars** | **Coef** | **P>\|z\|** | **Coef** | **P>\|z\|** | **Coef** | **P>\|z\|** | **Entry to poverty** | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Promote** | **Inhibit** | **NS** |
| SC | 0.49034 | 0.00 | 0.49038 | 0.00 | 0.48813 | 0.00 | 3 | 0 | 0 |
| ST | 0.96655 | 0.00 | 0.94813 | 0.00 | 0.92173 | 0.00 | 3 | 0 | 0 |
| House | -0.71769 | 0.01 | -0.69806 | 0.01 | -0.64632 | 0.02 | 0 | 3 | 0 |
| Livestock | -0.12710 | 0.31 | -0.12331 | 0.32 | -0.13201 | 0.29 | 0 | 0 | 3 |
| Vinfra | -0.12559 | 0.00 | -0.12561 | 0.00 | -0.12201 | 0.00 | 0 | 3 | 0 |
| Irrigation | -0.09925 | 0.21 | -0.10410 | 0.19 | -0.11705 | 0.14 | 0 | 0 | 3 |
| Urblink | 0.00392 | 0.20 | 0.00389 | 0.21 | 0.00178 | 0.57 | 0 | 0 | 3 |
| Vsize | 0.00000 | 0.96 | 0.00000 | 0.93 | 0.00000 | 0.80 | 0 | 0 | 3 |
| Land | -0.02582 | 0.00 | -0.02528 | 0.01 | -0.02580 | 0.00 | 0 | 3 | 0 |
| Children% | 0.00478 | 0.02 | 0.00478 | 0.02 | 0.00432 | 0.04 | 3 | 0 | 0 |
| Females% | 0.00730 | 0.00 | 0.00743 | 0.00 | 0.00723 | 0.00 | 3 | 0 | 0 |
| Hdsize | 0.02170 | 0.04 | 0.02126 | 0.05 | 0.01974 | 0.07 | 3 | 0 | 0 |
| vygr2 | 0.00131 | 0.23 | | | | | 0 | 0 | 1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| pvygr2 | | | -0.00010 | 0.89 | | | 0 | 0 | 1 |
| dgr8198 | | | | | 0.03007 | 0.00 | 1 | 0 | 0 |
| Constant | -0.19775 | 0.56 | -0.30157 | 0.36 | -0.34871 | 0.29 | | | |
| | | | | | | | | | |
| Number of Observations | 1648 | | 1648 | | 1648 | | | | |
| LR $chi^2(13)$ | 108.1 | | 106.7 | | 116.0 | | | | |
| Prob > $chi^2$ | 0 | | 0 | | 0 | | | | |
| Log likelihood | -803.34 | | -804.02 | | -799.37 | | | | |
| Pseudo $R^2$ | 0.06 | | 0.06 | | 0.07 | | | | |