

# **Studies in Population and Development**

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Economic Growth and Human Development  
in Madhya Pradesh**

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## **1. Background**

Madhya Pradesh is widely regarded as one of the chronically sick states of India along with the states of Bihar, Rajasthan, Uttar Pradesh and Orissa and the newly created states of Chhattisgarh, Jharkhand and Uttarakhand in terms of both economic growth and human development.<sup>1</sup> Moreover, there has been little improvement in the relative position of the state vis-a-vis other states of the country. However, it is argued that Madhya Pradesh has probably the best potential amongst the poor states of India to get rid of its chronic development sickness and low levels of human development. The challenge is how to translate this potential into the reality. It is argued that the main cause of persisting underdevelopment in Madhya Pradesh lies in human failure rather than natural factors. Madhya Pradesh has the agro-climatic potential to yield high returns on agriculture because of reasonable-to-high rainfall and availability of perennial river waters. It appears that the type of human activity required to translate the potential of development and improvements in the quality of life into the reality is somehow missing in the state.

Poor human activity, fundamentally, is a reflection of poor human development which manifests in many ways including poor political commitment to development and human welfare, improvements in the quality of life, bad governance, corruption and coercion in public administration system, poor maintenance and upkeep of the development infrastructure, limited participation of the people in development processes, etc. In turn, poor human development has important implications for economic growth and social and economic development in terms of inefficiency of economic and social production system and a high degree of distribution inequality.

This paper attempts to analyse the causes of poor social, economic and human progress in Madhya Pradesh by examining dimensions of poverty, patterns of economic growth and characteristics of human development. The analysis is expected to provide better understanding of the factors that inhibit social and economic development processes and hamper human progress in the state. The paper is expected to contribute to evolving a human development based strategy of economic growth and poverty eradication that ultimately leads to improvements in the quality of life.

The state of Madhya Pradesh first came into existence in 1956 as the result of the reorganisation of Indian states on linguistic basis. On 1 November 2000, the then state of Madhya Pradesh was divided into Chhattisgarh and the existing Madhya Pradesh. Any discussion on economic growth and human development in Madhya Pradesh, therefore, requires analysis of the situation in the undivided Madhya Pradesh as well as analysis of the situation in Madhya Pradesh as it exists today. The analysis, however, suggests the development scenario in the existing Madhya Pradesh is hardly different from the development scenario that existed in the undivided Madhya Pradesh.

Increase in per capita income has traditionally been stressed as the best approach to meet the basic needs of the people. It is in this context that economic growth has been regarded as the basis for eradicating poverty and promoting human welfare. In the recent years, however, attention has shifted to human development as an important intermediate variable in the quest towards human welfare and improvements in the quality of life. The antecedents of the human development-based approach of human welfare may be traced in the basic needs approach promoted by International Labour Organization and the World Bank (Streeten *et al.* 1981; Fei, Ranis and Stewart 1985). It also derives its strength from the concept of capabilities first propounded by Sen (Sen 1984).<sup>2</sup> Participation in the social and economic production processes is critical in this approach of development as it has intrinsic value for the quality of life. Being able to do something not only for oneself but also for other members of the society is one of the elementary freedoms that has been valued throughout the human history.

The economic development approach of poverty eradication and improving the quality of life is radically different from the human development paradigm. The economic development approach focuses on increasing income of average individual whereas human development paradigm calls for expanding individuals' capabilities. The basic tool in economic development is optimization. In the human development approach, the takeoffs are value judgements. Human development paradigm significantly expands the scope of politics and economics to cover human welfare and quality of life. It encourages and promotes explicit open public scrutiny and debate on many 'economic' and 'political' judgements and decisions. However, there exists a strong connection between the two approaches of addressing human welfare. In general, resources required for eradicating poverty and improving the quality of life are generated through economic growth and development. In this sense, economic growth remains perhaps the best engine for poverty eradication and human development. At the same time, human development leads to improvements in the quality of the labour force through improvements in education and health leading to increase in its productivity which, other things being equal, spurs economic growth. Human development is thus an important driver for both economic growth and poverty eradication.

The link between economic growth and human development is not obvious. Economic growth may influence human development and human development may impact economic growth in many ways.<sup>3</sup> The link between economic growth and human development needs to be deliberately forged and regularly fortified by skilful and intelligent development policy to ensure that economic growth leads to enhancing human capability and resulting empowerment leads to acceleration in economic growth. (United Nations

Development Programme 1996).<sup>4</sup> This means that economic development policies should be directed towards:

- increasing opportunities for participation in the economic and social production system,<sup>5,6</sup>
- ensuring equitable distribution of the dividends of economic growth resulting in reducing the gap between the rich and the poor.
- developing and strengthening institutions that enhances human capacity, and
- increasing public expenditure in the social sector.<sup>7</sup>

Human development efforts, on the other hand, needs to be focussed on:

- meeting the human resources needs of the economic and social production system,
- increasing individual productivity by enhancing capabilities,
- increasing the productivity of the economic and social production system through technological innovations and technology up-gradation, and
- supporting and sustaining institutions that enhance human productivity.

A well directed economic growth and development strategy has the potential of accelerating poverty reduction while rapid human progress contributes to speeding up economic growth and hastening development precesses. Conversely, an economic growth strategy that is not inclusive, leads to concentration of wealth and increase in the distribution inequality and has only a limited impact on the capability of majority of the people, especially the deprives and the marginalised ones. Such a growth strategy inhibits popular participation in the social and economic production processes which results in poor capabilities formation.<sup>8</sup>

## **2. Poverty in Madhya Pradesh**

The most commonly used definition of poverty is the exclusion from ordinary living patterns, customs and activities due to lack of resources (Townsend 1979). Traditionally poverty has been measured on the basis of income. A person or a household is considered to be poor if his level of income is less than a cut-off level which is decided in the context of having enough income for food that has a specified amount of calorie. This cut-off level is popularly termed as the poverty line. However, it is now universally accepted that human poverty has many dimensions. It is not just the lack of income or not having things necessary for material well-being. Human poverty, according to the current wisdom, means the deprivation that people suffer throughout their lives. Deprivation means that people do not enjoy the choices and opportunities which are most basic to human development and which make it possible to live a long,

healthy, well-nourished and self-fulfilling life, to be educated and to have a reasonable standard of living, be able to live in freedom, self-respect, dignity and to participate in community.

In order to understand the context of poverty in Madhya Pradesh, it is necessary to analyse both income-based measures of poverty as well as measures that capture different dimensions of poverty. In view of the vastness of the state and its strong and persistent economic, social, cultural and environmental diversity, it is also imperative that poverty is discussed in a regional perspective that highlight variations within the state to present a comprehensive picture of poverty scenario in the state.

*Head Count Ratio.* The head count ratio or the proportion of the population or households below the poverty line is the most widely used income-based measure of poverty. Available estimates suggest that more than 38 per cent of the population of Madhya Pradesh was living below the poverty line around the year 2004-05 with a relatively higher proportion in urban (42 per cent) than in rural (37 per cent) areas (Government of India, 2007). The proportion of population below the poverty line is estimated to be the highest amongst the Scheduled Tribes (57.14 per cent) followed by the Scheduled Castes (41.21 per cent) but only about 12 per cent in the upper castes population. Most of the poverty in Madhya Pradesh is not transient. It is severe and persistent, particularly, among Scheduled Castes and Scheduled Tribes. In the non Scheduled Castes/Tribes population, on the other hand, most of the poverty appears to be transient in nature as is evident through the poverty gap ratio and squared poverty gap ratio. As regards trends, the proportion of the population below poverty line is decreasing but the rate of decrease remains slower than the national average. Moreover, the decrease in the head count ratio appears to be more rapid in rural than in urban areas. During the 1970s, the proportion of population living below the poverty line was higher in rural than in urban areas but since 1980, this proportion has turned higher in urban than in rural areas.

*Assets-based Indicators of Poverty.* The proportion of population living below the poverty line is essentially a monetary measure of poverty and many of the limitations of such measures are widely accepted.<sup>9</sup> These measures do not address the question of the distribution of the benefits accruing out of economic development. For example, the pattern of land ownership in Madhya Pradesh is highly skewed, about 82 per cent of the households falling in small and marginal farmers' category own only 25 per cent of the land. By contrast, less than 2 per cent of the households falling in large farmers' category own 17 per cent of the land (National Institute of Rural Development 1999). Monetary measures of poverty are also insufficient to characterise and analyse the economy driven development because these measures relate to means to achieve ultimate ends rather than the ends in themselves (Hulme and McKay 2005). Such ultimate ends can be conceptualised in terms of Sen's capabilities framework (Sen 1985; 1990),

later extended to distinguish instrumental and intrinsic freedom (Sen 1999). The key issue is that individuals differ in their ability to convert commodities and their associated characteristics into the achievement of functionings due to personal, family, social and environmental factors and upon public provision of key services.

An alternative suggested to address limitations of the monetary measures of poverty is to focus on asset ownership rather than on the household income. Assets that a household possesses, or to which, it has an access, can be related to household income in the sense that the latter may be conceptualised as returns to these assets. In this view, income of a household reflects the assets it commands and the returns, it is able to earn on these assets. Assets may also be important to households in their own right. Having a sufficient level of household assets also offers security. Households having assets can insure themselves against shocks and gain easier access to credit. Assets also capture long term dynamics of household economics much better than the measure of income at one or two points in time. For this reason having longitudinal data may be less crucial. In addition, assets can, in principle, be considered in a range of different dimensions of the capital including the social capital.<sup>10</sup> The assets-based approach is associated with the concept of poverty in a more intuitive way than simple income or consumption measures of poverty. Similarly, deprivation of household assets is a better measure of the 'persistence' of ill-being than the contemporary income or consumption based measures of poverty.<sup>11</sup>

Information about the availability of selected households assets and amenities in India are available through the 2001 population census.<sup>12</sup> This information suggests, that more than 42 per cent of the households in Madhya Pradesh were having none of the six household assets - radio or transistor, television, telephone, bicycle, scooter or motorcycle or moped or any other two wheeler, and jeep or car or any other four wheeler. This proportion was more than 50 per cent in rural households but only about 18 per cent in urban households. If the availability of households assets is taken as a proxy for the level of income, then the highly unequal distribution of income and assets in the state may be judged from the fact that more than 68 per cent of the Scheduled Tribes households in rural areas had none of the six specified household compared to less than 15 per cent in non-Scheduled Castes/Tribes households (Table 3). It is clear that the dividends of development in the state are largely concentrated in the urban areas only. These observations are also supported by the fact that only about 12 per cent of the Scheduled Tribes Households in the rural areas were using banking facilities compared to more than 52 per cent of the non Scheduled Cates/Tribes households in the urban areas. Clearly, Scheduled Tribes, which constituted about 20 per cent of the state population in 2001, are the most disadvantaged ones. Although, there is a separate department in the state government to deal specifically with issues and concerns related to tribal

development in the state, yet, the tribal development strategy of the state appears to largely ineffective in meeting the development needs of the tribal population.

*Human Poverty Index.* Income based measures and assets based measures reflect only one of the many dimensions of poverty. In order to capture the multidimensional nature of poverty, United Nations has developed the human poverty index which is a composite index that measures deprivations in three dimensions — a long and healthy life, knowledge, and a decent standard of living.<sup>13</sup> Although, the human poverty index does not fully reveal the multidimensional nature of poverty, yet it provides a more comprehensive picture of poverty, especially from the human development perspective. The value of the index indicates the proportion of the population affected by the three key deprivations in their lives. It is useful to the policy makers in the sense that it points out causes of poverty and can provide solutions for eradicating poverty.

We have estimated the human poverty index for Madhya Pradesh and for its constituted districts on the basis of a set of indicators which are essentially different from the indicator set used by the United Nations. The reason is that information about indicators used by the United Nations are not available for Madhya Pradesh and for its constituent districts.<sup>14</sup> It may however be noticed that there is only a marginal difference in the set of indicators used in the present analysis and the set of indicators used by the United Nations.

Using the modified set of indicators and taking the year 2001 as the reference year, the human poverty index for Madhya Pradesh is estimated to be 37.12 which indicates that deprivation in the state is quite substantial. Moreover, the human poverty index for the state as whole is very close to the poverty head count ratio and the proportion of the households having none of the six specified assets. This observation supports the view that most of the poverty in the state is severe. It is clear from monetary, asset-based as well as composite indicator of poverty that at least 35 per cent of the population of the state was living in conditions of extreme deprivation circa 2001. Addressing basic development needs of this deprived section of the community appears to be perhaps the most important challenge to human development in Madhya Pradesh.

Estimates of the proportion of children underweight by social class are not available for the districts of the states which inhibit estimation of human poverty index by social class. It is however possible to estimate the modified human poverty index by using only three variables - probability of a birth not surviving to age 5, adult illiteracy rate and proportion of population without access to improved water source. On the basis of these three indicators, the modified human poverty index in Madhya Pradesh has been estimated to be around 32 for the total population; around 36 for the Scheduled Castes , around 48 for the Scheduled Tribes population but only around 27 for the non Scheduled Castes/Tribes population. The very fact that Scheduled Tribes in Madhya Pradesh are at the receiving end of the development diaspora is confirmed from the

observation that almost half of the Scheduled Tribes population appears to be living in conditions of abject poverty and extreme deprivation according to the 2001 population census. In the rural areas of the state, this problem is even more serious.

*Inter-district Variations in Poverty.* Any discussion on poverty in Madhya Pradesh is incomplete without an analysis of inter-district variations in poverty. According to the survey of below poverty line households carried out by the Government of Madhya Pradesh, the proportion of households below the poverty line varies from a low of \_\_\_ in district \_\_\_\_\_ to a high of \_\_\_ in district \_\_\_\_\_. On the other hand, the proportion of households having none of the six households assets varied from less than 15 per cent in district Indore to almost three-fourth in district Dindori according to the information available through the 2001 population census. The inequality in the distribution of income and resources within the state may be judged from the fact that there were 13 districts in the state where more than 50 per cent of the households were having none of the six specified assets for which information was collected at the 2001 population census.

Inter-district variations in the human poverty index are also revealing. Indore, Narsimhapur and Bhopal are the only three districts in the state where the human poverty index was estimated to be less than 25 around the year 2001. By contrast, there are 9 districts in the state where the human poverty index was estimated to be more than 45 and in two districts - Sidhi and Chhatarpur - more than 50. The inter-district disparity in poverty and deprivation may be judged from the fact that the highest human poverty index (District Sidhi) is more than two times the lowest human poverty index (District Indore) across the districts. In four districts - Jhabua, Tikamgarh, Chhatarpur and Sidhi, almost half of the population appears to be living in conditions of extreme poverty and deprivation. In these districts, social and economic development processes appear to have little impact on the quality of life of the majority of the people.

### **3. Economic Growth in Madhya Pradesh**

The primary reason behind persistent poverty and deprivation in Madhya Pradesh appears to be the sluggish economic growth. Among different states of India, the growth of the economy of Madhya Pradesh and associated economic development has been the slowest during the era of economic reforms. Moreover, the very slow growth of state economy coupled with the rapid increase in population has resulted in the near stagnation in the individual income.

Three series of the state domestic product are available for analysing growth in the economy of the state. The 1980-81 series which provides information about state domestic product for the period 1980-81 through 1999-2000 at current and at 1980-81 prices; the 1993-94 series which provides information for the period 1993-94 through 2005-06 at current and 1993-94 prices for both undivided Madhya Pradesh and existing Madhya Pradesh; and the

1999-2000 series which provides information for the period 1999-2000 through 2006-07 for the existing Madhya Pradesh at current and 1999-2000 prices. The three series are not same in their structure and so they cannot be combined into one series from 1980-81 through 2006-07. Moreover, the 1980-81 series is for the undivided Madhya Pradesh whereas the 1999-2000 series is for the existing Madhya Pradesh and so the two cannot be combined.

According to the 1980-81 series, the state domestic product in the undivided Madhya Pradesh increased from an estimated 474 billion rupees in 1980-81 to rupees 1079 billion rupees in 1999-2000 whereas according to the 1993-94 series, it increased from an estimated 566 billion rupees in 1993-94 to 942 billion rupees in 2005-06. On the other hand, in the existing Madhya Pradesh, the state gross domestic product is estimated to have increased from 566.477 billion rupees in 1993-94 to 983.444 billion rupees in 2006-07 at 1999-2000 prices. In order to analyse the growth in the economy of the undivided and the existing Madhya Pradesh, we have divided the period 1980-81 through 2006-07 into three sub-periods: 1980-81 through 1993-94; 1993-94 through 1999-2000; and 1999-2000 through 2006-07. Estimates of gross state domestic product are available for both undivided and existing Madhya Pradesh for the period 1993-94 through 1999-2000. This makes it possible to compare growth in undivided Madhya Pradesh with that in existing Madhya Pradesh.

The real gross state domestic product in the undivided Madhya Pradesh increased at around 4 per cent per year during the period 1980-81 and 1993-94. The growth in the primary sector was less than 2 per cent per year during this period while secondary and tertiary sectors grew at almost 6 per cent per year. During the period 1993-94 through 1999-2000, economy accelerated in both undivided and existing Madhya Pradesh with the existing Madhya Pradesh recording a growth of more than 6 per cent per year in the real gross state domestic product. The growth was the most rapid in the secondary sector during this period. The growth of the primary sector also accelerated during this period in both undivided and existing Madhya Pradesh.

The tempo of economic growth, however, could not be maintained in the post 1999-2000 period in the existing Madhya Pradesh as the increase in real gross domestic product slowed down to just around 3 per cent during the post 1999-2000 period. The slowdown occurred in all the three sectors of the economy but it was the most marked in the secondary sector where the growth slumped to just around 2 per cent per year with the growth of the manufacturing sector turning negative during the post 1999-2000 period compared to almost 9 per cent per year during the pre 1999-2000 period. The growth of trade, hotels and restaurants slumped from almost 7 per cent per year during the pre 1999-2000 period to less than 2 per cent per year during the post 1999-2000 period in the existing Madhya Pradesh. The only sector in which there has been some significant growth during the post 1999-2000 period is the forestry sector. An

acceleration in the growth of forestry sector may be a welcome feature of the state economy as the state has a very large forest cover and a vast majority of the tribal population living in the rural areas depends upon forest produce for its livelihood. The nearly stagnant economy of the state has also remained nearly static since 1999-2000. The primary sector of the economy accounted for almost one third of the gross domestic product in 2005-06 at 1999-2000 prices with agriculture alone accounting for more than one fourth of the state gross domestic product. By contrast, the secondary sector accounted for only one fifth of the gross state domestic product. Moreover, since 1999-2000, there has been very little transition in the state economy which indicates lack of vibrancy in the social and economic production system of the state. It remains primarily agrarian.

The structure of the economy also varies widely across the districts. The share of the primary sector varies from almost 60 per cent in district Sidhi to less than 5 per cent in district Bhopal and about 7 per cent in district Indore. On the other hand, the share of the secondary sector varies from around 12 per cent in district Harda to around 30 per cent in district Betul while that of the tertiary sector varies from around 16 per cent in district Sidhi to almost 74 per cent in district Bhopal. There are at least 14 districts in the state where primary sector of the economy accounts for more than 40 per cent of the gross district domestic product. The secondary sector, on the other hand, has a telling presence only in one district while in 9 other districts, the economy has its roots in the tertiary sector.

The poor state of the secondary sector in the economy of the state is very much evident from the foregoing discussions. The share of the manufacturing sector in the gross state domestic product of the state has virtually remained unchanged since 1999-2000. Most of the industrial activity in the state appears to have confined to a few districts only. There is little indication of any diversification and extension of the industrial base in the state. In at least 15 districts of the state, the manufacturing sector appears to account for less than one fifth of the gross district domestic product. Even in other districts also, share of the secondary sector to gross district domestic product ranges between 20-30 per cent only. In most of the districts of the state, the manufacturing sector does not appear to be the driver of the economy. In most of the districts of the state, the primary sector still remains the driver of the economy. At the same time, there are only a few districts in the state where the economy is almost entirely driven by the service sector.

Another feature of state economy that is of serious concern is a strong and persistent distribution inequality. Estimates of gross district domestic product for the year 2006-07 suggest that just 6 districts - Indore, Bhopal, Jabalpur, Sidhi, Gwalior and Ujjain - accounted for one third of the gross state domestic product whereas only two districts - Indore and Bhopal - accounted for more than 16 per cent of the gross state domestic product at 1999-2000 prices (Government of

Madhya Pradesh, 2009). On the other hand, the combined gross domestic product of 11 districts - Jhabua, Neemuch, Tikamgarh, Barwani, Mandla, Panna, Datia, Harda, Umaria, Sheopur and Dindori - accounted for less than 10 per cent of the gross state domestic product. The gross domestic product of district Indore, the district having the highest domestic product in the state was more than 20 times the gross domestic product of district Dindori which was the lowest in the state. The very high gross domestic product in selected districts of the state suggests that most of the productive activity in the state is confined to select few districts while majority of the districts of the state remain deprived of the dividends and benefits of social and economic development processes.

Poor economic growth in the state has reflections in the increase in real per capita income which increased at a rate of just around 0.7 per cent per year from Rs 12384 in 1999-2000 to Rs 12881 in 2006-07 at 1999-2000 prices in the state. This is in quite contrast to the period 1993-94 through 1999-2000 when the real income per capita increased at the rate of almost 3.8 per cent per year.<sup>15</sup> Estimates of per capita income for different population groups are not available but real per capita income varies widely across the districts ranging from Rs 28207 in district Indore and Rs 25346 in district Bhopal to Rs 7837 in district Barwani. There are 15 districts in the state where the real per capita income was estimated to be less than Rs 10,000 in the year 2006-07. These 15 districts accounted for more than 27 per cent of the population of the state but only about 18 per cent of the gross state domestic product. The distribution of per capita income across the districts, in fact, is highly unequal with a Gini coefficient 0.190.

In order to account for the inter-district inequality in the real per capita income, we have regressed natural logarithm of real income per capita on six variables - degree of urbanisation, proportion of Scheduled Castes population, proportion of Scheduled Tribes population, registered industries per hundred thousand population, agricultural intensity and adult literacy rate. Results of the regression analysis are given in table \_\_\_\_\_. The sign of the regression coefficients of all the variables included in the regression analysis are in the expected direction. However, regression coefficients of registered industries per 100 thousand population and adult literacy rate have not been found to be statistically significant. Moreover, the regression sum of square accounts for more than 76 per cent of the total sum of square.

The regression analysis suggests a very strong relationship between the real income per capita with the degree of urbanisation in the districts of the state. Indore and Bhopal districts which have the highest real income per capita have a very high proportion of the urban population. The strong link of the real income per capita with the degree of urbanisation in the districts that economic growth and associated development and associated economic activity in the state is

confined largely to the urban areas. Districts with low levels of urbanisation are largely devoid of the benefits of economic development.

The regression analysis also reveals a negative association between real income per capita and proportion of Scheduled Tribes and Scheduled Castes population. This association implies that the Scheduled Castes and Scheduled population is largely marginalised in the social and economic development processes in the state. This observation is of significance in view of the fact that more than 35 per cent of the state population is either Scheduled Castes or Scheduled Tribes and in at least six districts, the proportion of Scheduled Castes and Scheduled Tribes population is more than 50 per cent.

Inter-district variations in the assets based indicators of economic growth and development are also very strong.<sup>16</sup> There were eight districts where less than 20 per cent of the households were using the banking facility whereas in five districts, this proportion was more than 35 per cent. In district Dindori, only about 11 per cent households were using the banking facility compared to almost 45 per cent in district Indore.

Inter-district variations in monetary and non-monetary measures of economic growth and development appear to be strongly correlated. The inter-district variations in the proportion of households having none of the six specified assets have been found to be statistically significantly correlated to inter-district variations in the real per capita income. Similarly, the inter-district variations in the proportion of households using banking facilities has been found to be inversely related to inter-district variations in the proportion of households having none of the six specified assets.<sup>17</sup>

The foregoing discussions highlight the poor state of economy of the existing Madhya Pradesh. It appears that the momentum generated in the beginning of the 1990s could not be sustained during the post 1999-2000 period. The slow to very slow growth of the state economy after 2000 has resulted in virtually little increase in the personal income of the inhabitants of the state and contributed little to improving the quality of life, especially, of tribal people living in remote rural areas. The sluggish growth in the state economy appears to have resulted in the lack of investment in such critical areas of human development as education and health. At the same time, economic growth and associated economic development has largely been confined to a few districts of the state resulting in an increase in the inter-district inequality in the distribution of resources. The benefits of social and economic development programmes and activities in the state have largely remained confined to selected districts only while there appears little transition in the economy in most of the districts. There appears little evidence of either horizontal or vertical diversification of the social and economic production system. One argument is that poor human development is the cause behind the stagnation of the state economy.

### **3. Human Development in Madhya Pradesh**

Human development is the expansion of the capabilities of an average individual. According to Sen, capability is the ability and the potential to do and to be. Human development is thus the broadening of the set of valuable beings and doings an individual can achieve and freedom to achieve valuable doings and beings. Capability gives the combinations of functionings achievable by an individual. It is this set of functioning that reflects the freedom of an individual to make choices of possible livings. Capabilities include endowments, individual capacity and social opportunities. The three components of capability are complementary. They reinforce each other.

Measuring and monitoring human development requires measuring and monitoring the three components of human capability. The human development index (HDI) first used by the United Nations Development Programme (United Nations Development Programme, 1991) is an attempt in this direction. It is the unweighted average of the indices of attainment in the three dimensions of capabilities- endowments, social opportunities and individual capacity.<sup>18</sup> The human development index and its three constituent indices are estimated in a manner that they vary from a minimum value of zero to a maximum value of one.<sup>19</sup> Any country, state, district or any other region can be classified as very poor, poor, average, good and very good in terms of human progress on the basis of human development index.<sup>20</sup>

Planning Commission of India has prepared human development index for major states of India for the years 1981, 1991 and 2001 (Government of India 2002) which suggest that the human development index in Madhya Pradesh increased from 0.245 in 1981 to 0.328 in 1991 and to 0.394 in the year 2001.<sup>21</sup> Madhya Pradesh is one of three states of India which have been able to improve their rank in terms of the human development index *vis-a-vis* other states of the country.<sup>22</sup> Government of India has also concluded that the momentum in human development in Madhya Pradesh that begun during the 1980s could be maintained during the 1990s also (Government of India 2002).<sup>23</sup> It may however be noted that despite these improvements, human development in Madhya Pradesh remains poor (Human development index less than 0.400). Moreover, the pace of human progress in the state has been slower than the national average.<sup>24</sup> During the eighties, improvements in the human development index in the state was marginally faster than the national average but during the nineties, there has been a marked slow down in the increase leading to widening of the gap in human development between the state and the country.

Madhya Pradesh was the first Indian state to bring out state specific human development report in 1995 and subsequently in 1995, 2002 and 2007. These reports suggest that human development varies widely across the districts of the state with the human development index ranging from district Indore (0.710) to district Jhabua (0.398) around the year 2005 (Government of India

2005). District Jhabua is the only district in the state where human development may be termed as poor (Human development index less than 0.400). In general, the human development index ranged between 0.400 to 0.600 in majority of the districts. There are only 11 districts where the human development index ranged between 0.600 to 0.800 around the year 2005 but there is no district in the state where human development could be categorised as either very good or very poor.<sup>25</sup> There has also been very little change over time in the relative ranking of districts on the basis of the estimated value of the human development index.

The human development index is the simple unweighted average of three indexes - index of economic attainment; index of educational attainment; and the index of health attainment. Aggregate statistics like the human development index are most suited for descriptive purposes such as rank-ordering of the geopolitical units and gauging the progress in human development over time in the same geopolitical unit. These statistics are however less useful for analytical purposes. One reason is that different components of the human development index are generally imperfectly correlated and so it is difficult to examine possible causal interrelationships among different components (the endogeneity problem). Similarly, it is difficult to properly interpret the causal relationships that are exogenous to the human development index. Finally, inclusion of income as a factor in the calculation of the human development index means that the human development index of any geopolitical or administrative unit will be less sensitive to the well-being of the least-advantaged members of the unit.<sup>26</sup>

There are two ways to circumvent these problems. The first is to exclude income component from the construction of any index designed to measure human development. There are more than one way to do this. One way is to use the index like the physical quality of life index in place of the conventional human development index (Morris 1979). The other is to construct the modified human development index that takes into consideration education and health components of the conventional human development index but excludes the economic component (Ramirez, Ranis, Stewart 1998). A more rational approach, on the other hand, is to examine the three indexes separately that constitute the conventional human development index instead of combining them into one index.

If the income component is excluded from the human development index, then the level of the modified human development index, then there was no district in the state where the level of human development was poor or very poor in the year 2005.<sup>27</sup> The level of human development has been found to be good in 31 districts but average in 14 districts. There was no district where the level of human development could be classified as very good. The modified human development index was the highest in district Indore (0.782) and the lowest in district Mandla (0.521). Obviously, the performance of the state in terms of education and health dimensions of human development is relatively better than

that in the income dimension. This is again a reflection of the sluggish growth of the economy of the state.

It would be revealing to analyse how the change in the three indices constituting the human development index contribute to the change in the human development index itself. The change in the human development index over time can be decomposed into the change in the income index, health index and the education index in the following manner:

$$HDI_2 - HDI_1 = \Delta HDI = \Delta I + \Delta H + \Delta E$$

where I represents the income index, H the health index and E the education index. One critique to the above identity is that it does not reflect the effect of interaction between the three components of the conventional human development index. One way of incorporating interactions into the analysis is to express the identity not in terms of means but in terms of variances. This shift also moves the analysis in the direction of the causal analysis, which is primarily directed towards understanding the sources of variation in the human development index across the districts of the state.<sup>28</sup> It can be shown that

$$\text{Var}(\Delta HDI) = \text{Var}(\Delta I) + \text{Var}(\Delta H) + \text{Var}(\Delta E) + 2[\text{Cov}(\Delta I, \Delta H) + \text{Cov}(\Delta I, \Delta E) + \text{Cov}(\Delta H, \Delta E)],$$

where Var stands for variance and Cov stands for covariance.

The above equation implies that the variance of the distribution of the change in the human development index across the districts of the state can be decomposed into the variance of the distribution of the change in the distribution of the health index, education index and income index across the districts and the covariance of the inter-district distribution in the change in the three indexes. This decomposition reveals how variation in the change in the indices of income, health and education contributes to the variation in the change in the human development index.

Results of the decomposition analysis are given in Table 9.<sup>29</sup> It may be seen from the table that inter-district variation in the change in the human development index has reduced substantially over time. It may also be seen from the table that the decrease in the inter-district variation in the human development index has largely been the result of the decrease in the inter-district variation in the change in the index of health, although the inter-district variation in the change in the education index and the income index has also decreased over time, albeit marginally as compared to the change in the health index. Moreover, the interaction effects of the change in the three components of the human development index appear to have contributed towards reducing the inter-district variation in the change in the human development index. Clearly, interaction between the income, health and education components of the human development index have played an important role in reducing the inter-district variation in the change in the human development index in the state.

## **Economic Growth and Human Development**

It is possible to explore the relationship between economic growth and human development in the state on the basis of the district level data. The district level data also make it possible to explore the empirical relationship that exists among the three dimensions of human development. Since the dimension of economic attainment used in the estimation of the human development index can also be taken as a proxy for economic growth and development, the relationship among the three dimensions of the human development index also provides a basis for examining the relationship between economic growth and human development.

The simple zero order correlation coefficients among the three dimensions of human development index are given in table 10 separately for the years 1995, 1998, 2002 and 2005.<sup>30</sup> The correlation between the indexes of the three dimensions of human development have not been found to be statistically significant in the years 1995 and 1998. However, in 2002 and 2005, the correlation between the index of educational attainment and the index of income attainment has been found to be statistically significant, although the correlation is not very strong. On the other hand the correlation of the health index with the education index and income index has been found to be weak and statistically insignificant. These correlations suggest that in the past there was little association between economic development and human development in the state but the situation appears to have changed in recent times. It appears that economic development was not the principal driver for human development in the past but, in recent years, economic development appears to have started influencing the human development processes, at least in a limited sense.<sup>31</sup>

We have further explored the relationship between economic growth and human development through cross-district regression for the year 2002. Table 11 summarizes results of the regression of the health index (H), on income index (I), and education index (E) while table 12 summarizes results of regression of the education index on income index after controlling the proportion of urban population (URB) proportion of Scheduled Caste population (SC) and the proportion of Scheduled Tribe population (ST).<sup>32</sup> The regression coefficients of H on E and I have not been found to be statistically significant but the regression coefficient of E on I has been found to be statistically significant. By contrast, the index H has been found to be statistically significantly associated with the proportion of urban population and proportion of Scheduled Castes and Scheduled Tribes population in the district. Since, the health dimension of human development has a very strong behavioural orientation, findings of the regression analysis indicate that the achievements in terms of economic growth and educational advances are yet to influence the health seeking behaviour of the people of the state in a significant manner.<sup>33</sup>

Conversely, regression of the income index (I) on health index (H) and on education index (E) reveals that variations in the income index are statistically significantly influenced by the variations in health index even after controlling variations in the proportion of urban population, proportion of Scheduled Castes population and the proportion of Scheduled Tribes population (Table 13). However, variations in the income index are not statistically insignificant influenced by the variations in education index when variations in proportion of urban population, proportion Scheduled Castes population and proportion of Scheduled Tribes population are controlled (Table 14).

### **Issues in Economic Growth and Human Development in Madhya Pradesh**

The most important issue in the context of human progress in Madhya Pradesh appears to be revival of the economy so that economic growth can have a telling impact on the real per capita income in the state. In the post 1999-2000 period, there has been considerable slow down in all but four sectors of the state economy. In fact, in none of the 13 major sectors of the economy, a two-digit growth could be recorded in the state during the post 1999-2000 period. As the result of the slow down in the economy, the growth of per capita real income in the state virtually stagnated during the post 1999-2000 period. It, in fact, decreased between 1999-2000 and 2002-03.<sup>34</sup> This was in quite contrast to somewhat satisfactory growth in the economy during the pre 1999-2000 period when the state economy grew at more than 6 per cent per year and three sectors of the economy - fishing, construction, and banking and insurance - recorded two-digit growth. Putting the economy back on the growth track is perhaps the most important challenge for Madhya Pradesh.

The priority, in the revival of the economy, appears to be the revival of the manufacturing sector which was the only sector recording a negative growth during the period 1999-2000 through 2005-2006. The negative growth in the manufacturing sector appears to have reflections on the trade, hotels and restaurant sector as well as banking and insurance sector, the growth of which slowed considerably during the post 1999-2000 period. The industrial policy, announced in 2004, focuses on attracting foreign investments for establishing large industries. This approach may not be very effective in the state as the manufacturing sector requires vertical and horizontal diversification for its revival. Vertical diversification means that the manufacturing activity must not be confined to the industrial growth centres only. Rather, it should penetrate deep in rural and remote areas to enhance the participation of the people in the economic production system. Horizontal diversification, on the other hand, implies that manufacturing should not be limited to traditional areas of industrial production. Rather, there should be continued efforts to expand the base of industrial production. This is particularly possible in Madhya Pradesh as the state

is very rich in natural resources. The trend, in the past, has however been to export raw material outside the state for processing. It would however be more appropriate that the state develops the capacity to process the rich natural resources it has such as forest produce and minerals and export finished goods to revive the manufacturing sector. A rural, household industry based approach of promoting the industrial activity may probably and so obviously be very effective in this regard. Such an approach will also contribute towards the vertical and horizontal diversification of the production base in the state. The 2004 industrial policy, however, is silent in this regard. Despite the fact that Madhya Pradesh is very rich in mineral resources<sup>35</sup> yet the industrial sector in the state remains in a poor shape and its contribution to value addition and employment remains low (Minocha 2001).

Another area of concern in the context of economic growth is the less than satisfactory performance of the primary sector of the state economy, particularly agriculture. The primary sector remains the mainstay of the economy of the state. It accounts for almost one third of the gross state domestic product at the current prices and provides employment to nearly 70 per cent of the labour force. However, growth of the primary sector in the existing Madhya Pradesh has hovered around 3 per cent per year at constant prices throughout the period 1993-94 through 2005-06. This is so despite the fact that the state has abundance of landmass, perennial water resources, very large forest base and vast mineral resources. However, growth of both agriculture and forestry has always been less than 3 per cent per year in the existing Madhya Pradesh.

The problem of less than satisfactory performance of the agriculture sector in the state is basically the problem of agricultural productivity. Reasons of low agricultural productivity in the state are well known. They include highly unequal distribution of land holdings,<sup>36</sup> gross under coverage of irrigation<sup>37</sup> and low to very low use of fertilizers.<sup>38</sup> Almost two-third of the net sown area in the state remains single crop and depends critically on rains which are often erratic. The state government has followed the strategy increasing irrigation facilities, promoting the use of fertilizers and mechanisation of the agriculture production system to enhance agricultural productivity. This strategy essentially suits large and medium size farmers but affects marginal farmers and landless labourers very adversely. It also leads to considerable reduction in the work opportunities in the rural areas as the result of mechanization of the agriculture production system. The landless agricultural labourers have little opportunity but to migrate to urban areas in search of the livelihood.

The situation is no better for small and marginal farmers either. Their land holdings are not large enough to adopt the irrigation-fertilizer-mechanisation model of increasing agricultural productivity. They continue to adopt traditional methods of agriculture with the result that the produce from agriculture is not sufficient to earn bread and butter for the family which remains large because of

high fertility and mortality.<sup>39</sup> The solution arrived at to cope with the problem is to lease the land to big farmers on a paltry annual fee and move to urban areas for petty lowly paid jobs. This migration of marginal and small farmers and landless labourers from rural to urban areas has some very important implications to human development.<sup>40</sup>

The challenge is how to increase the productivity of small and marginal farmers and enhance the gainful work opportunities for landless agriculture labourers. The irrigation-fertilizer-mechanisation model is not suited for the purpose. This model requires very heavy investments in the agriculture production system and is technology intensive. There is a need of evolving a low cost, labour intensive model of increasing agriculture productivity based on appropriate agriculture production technology so that it can be adopted by even the small and marginal farmers. One approach may be linking agriculture with the rural, household level manufacturing activity.

Madhya Pradesh has a large forest area and a large tribal population.<sup>41</sup> Forest produce is the main source of livelihood for the tribal people. Increasing the forest produce while preserving and protecting forests may be another strategy to enhance the growth of primary sector of the economy. Since, tribal population is one of the most deprived sections of the population, increasing forest produce may also contribute increasing participation of the local people, especially the tribal people in the social and economic production system. Increasing the participation of the local people in the production system will also lead to reducing inequality in the distribution of income which is so pervasive in the state. A comprehensive silvicultural programme directed towards increasing forest output and adding to the amount and value of the growing stock appears to be the need of the hour.

The tertiary sector of the state economy presents a mixed picture. The transport and communications sector and the banking and insurance sector has been 7-8 per cent during the post 1999-2000 period but the growth of trade sector had slumped. One of the reasons of the slump in the trade sector is the poor performance of the primary and secondary sectors of the economy. In fact, the tertiary sector of the economy can thrive only upon strong primary and secondary sectors. This has not been the case in Madhya Pradesh. If the growth of the primary and the secondary sector of the state economy has faltered and this has a direct impact on the tertiary sector.

One implication of the sluggish growth of the state economy is reflected in the participation of the people in the social and economic production system. Information available through the 2001 population census suggests that only about 58 per cent of the working age population (population in the age group 15-49 years) was categorised as main workers.<sup>42</sup> Rest of the working age population was categorised as either marginal workers or non-workers. This shows that the economy of the state is not able to provide sufficient employment opportunities

to a very substantial proportion of the working age population. What is even more alarming is the fact that the proportion of main workers to the working age population has decreased drastically between 1991 and 2001 population census.<sup>43</sup> The situation is compounded further by the fact that the poorest and the most deprived section of the community has very little, almost no, capacity and capability to participate in the economic and social production system. This leads to persistence, even increase, in the distribution inequality.

There are also some very strong inter-district disparities in industrialization. There are many districts in the state without a single large scale industry that can provide employment to 1000 workers at the same time.<sup>44</sup> The same is the situation of the service sector which is largely confined to those districts in which big metropolitan towns are located. In districts where agriculture is in a poor shape and where there is either no or very little industrial activity, there is little scope for the growth and expansion of the service sector. In most of the districts with substantial Scheduled Tribes population, this situation prevails. The impact of economic growth and associated development is also the least in these districts.

At the same time, human development in the state remains in a virtual mess. Although, there has been some improvement in the ranking of the state *vis-a-vis* other states of the country in terms of the human development index, yet human development in the state remains poor.<sup>45</sup> The challenge in this regard is universalising education and lasting improvements in the health status of the people which continues to be amongst the poorest in the country.<sup>46</sup> It appears that neither the social and economic development nor the government policies and programmes has been effective enough to meet the basic human development needs of the people of the state.<sup>47</sup>

Among the host of factors that impinge upon the health of an individual, at least three can be identified as the most critical.<sup>48</sup> First is the nutritional status of the people, especially children and women in the reproductive age. The second is the availability of health care services according to the needs of the people and that are accessible to the people, especially the poorest and the most deprived ones at an affordable cost and the third is the environmentally safe and hygienic living conditions which include safe drinking water and sanitation facilities as the minimum. It is well known that any economic and social production system that influences these three components in a positive manner contributes to improving the health of the people.

The nutritional status of the population depends largely on food security which, in turn, is determined by the availability of food and the capacity of the people to buy food which depends upon the levels of household income. It is here that the extent and patterns of economic growth plays a very important role. For increasing the average household income, it is essential to increase opportunities of gainful or productive work in the economic and social production system.

Another requirement for ensuring lasting improvements in the health status of the people is the availability and accessibility of health care services at an affordable cost. Although, in recent years, there has been a very substantial expansion of the private health care services, yet, in the rural and remote areas, the health care services are available only through the public health care delivery system which is known for its inefficiency and inappropriateness. Moreover, the capacity of the public health care delivery system in meeting the health needs of the people of the state has gone down substantially as the government is unable to increase investments into the system so that the system can meet the growing needs of the people.<sup>49</sup> Development of the public health care delivery system in the rural areas is based on population norms adopted by the Government of India. These norms, however, are inadequate to meet the health care needs of the sparsely located rural population as well as to the tribal population which has its own typical spatial pattern.<sup>50</sup> Moreover, in the urban areas, the public health care services are limited to a few dispensaries and civil hospitals only and the main sufferers are the people living in urban slums.<sup>51</sup>

The private health care delivery system, on the other hand, is virtually confined to the large metropolitan areas only. Moreover, the private health care is costly, beyond the reach of the majority of the population living in rural and remote areas and in urban slums. The government has also not been able to effectively regulate the private delivery of health care with the result that the health care available through the private health care system to the rich and better off is significantly different from the health care available to the poor in terms of both contents and quality.<sup>52</sup> Obviously, such a situation is not going to contribute to improving the health of the people of the state in a sustained manner. There is a need for a long term public health policy that can meet the growing health needs of the people, especially the poor and the deprived ones and, at the same time, can regulate the private health care delivery system which is now flourishing in the state.

The end result of the prevailing economic scenario and the availability and accessibility of health care services is deprivation for the majority of the people in terms of health and well-being. The worst sufferers are the Scheduled Castes and the Scheduled Tribes living in the rural and remote areas. They have very limited opportunity of participation in the economic and social production system and highly vulnerable in terms of food security. They also remain devoid of even the basic health care facilities. All these factors contribute to low to very low levels of health.

The public health care delivery system continues to be highly bureaucratic and top-down in terms of the approach and clinic oriented in terms of management and organization. The result is that the reach of public health services is limited. It is not able to reach the poorest and the most deprived

sections of the community living in rural and remote areas, the community in which the disease burden is the highest.

Unlike the health scenario, the education scenario in Madhya Pradesh appears to be relatively better. There have been significant gains in education, especially primary education in the state. This could be made possible through very substantial increase in public spending in education, especially, primary education<sup>53</sup> and the innovative Education Guarantee Scheme which received international acclaim. Through the Education Guarantee Scheme, the state government could ensure a school in every habitat of the state by 1998 which resulted in universal access to primary education. Under the *Padhna Badhna Aandolan*, non-literates constituted that *Padhna Badhna Samiti* and the *Samiti* engaged any literate person to be their teacher. The government supported the movement by providing the teaching-learning material and setting in place an evaluation system. These initiatives have primarily been instrumental in rapid gains in literacy during the 1990s.

The focus and attention on universalizing the primary education has however been associated with a neglect of higher education despite the fact that higher education system plays a crucial role in the processes of social and economic development by meeting the manpower needs of the economic and social production system (Mehrotra and Chaurasia 2001). Although, universalization of primary education is a laudable goal in itself, yet it is the higher education system that really contributes to the productivity of the social and economic production system.<sup>54</sup> The higher education system in the state still lacks direction as far as economic growth and human development in the state is concerned. The state has gained in terms of literacy but remains poor in terms of highly skilled and thoroughly trained manpower which are essential for improving the efficiency as well as productivity of the economic and social production system. The improvements in terms of literacy also appear to have little impact on the health of the people probably because of grossly inadequate health care services, especially in the rural and remote areas.

Another issue that is of vital importance to both economic growth and human development is the existence of institutions that contribute to human capacity building.<sup>55</sup> Institutions make great difference in capabilities expansion and hence in human development at least in three contexts. First, institutions might enhance the pro-poor orientation of the economic and social production system, thus directly aiding the most deprived section of the population. Second, institutions might contribute to the evolution of economic development policies that foster the general interest, with no special concern for the poor. Third, institutions, especially institutions of higher education and research are necessary for developing new technologies for the economic and social production system and for providing thoroughly trained and skilled manpower necessary for enhancing productivity.

Institutions can be grouped into four categories- state or public institutions, social institutions, market institutions and political institutions.<sup>56</sup> One common theme across all institutions that is relevant to both economic growth and human development is decentralization (Klugman 1994). A shift from a highly centralized institutional settings of production of goods and services to a decentralized institutional setup in which local people actively participate in the productive activity and where local level forces dominate the economic and social production system, is widely regarded as essential for local capacity building, individual capabilities expansion and hence for human development. It is also well known that a decentralized economic and social production provides better opportunity of participation in the production processes than a centralized system.

Madhya Pradesh was the first state of India to implement the 73<sup>rd</sup> and 74<sup>th</sup> amendments of the Indian Constitution. There has been a sincere attempt, at least at the political level, to promote decentralization and popular participation in governance through Panchayat Raj institutions and through the introduction of a district governance model.<sup>57</sup> There has also been efforts to promote popular participation in the existing public institutions, especially in health and education.<sup>58</sup> The logic of the decentralization efforts was to bring the decision-maker nearer to the people. It was expected that democratically elected people's organizations like Gram Panchayat would play a proactive role in all matters related to development at the local level. It was also conceived that this process of institutional strengthening at the local level would revive involvement of the people and their representatives in the decision-making processes at the local level thereby improving the local capacity and capability for action. However, there are little indications that the decentralization of the public administration system and government efforts towards increasing the participation of the people and their representatives in the processes of governance has resulted in any significant decentralization of the social and economic production system. As the result, the government efforts of decentralization and people's participation in governance has not been able to include the excluded in the economic and social production system (Sah 2004). The poor and the deprived ones continue to remain marginalised not only in the economy but also in the politics.

There has been attempt to evolve a comprehensive programme for the upliftment of Dalits, the most deprived section of the society - the Scheduled Castes and the Scheduled Tribes - in the form of the Bhopal Declaration.<sup>59</sup> The Bhopal Declaration outlined a new paradigm of addressing the problem of the exclusion and exploitation of the Scheduled Castes and the Scheduled Tribes from the main streams of the society and to increase their participation in the social and economic production system.<sup>60</sup> Much of this initiative was however driven politically and the operationalization of the initiative was entrusted to the bureaucracy which continued to be highly centralised. Being politically

motivated, the decentralization efforts got derailed with the change in the popular government.<sup>61</sup>

## **Conclusions**

The chronic sickness of Madhya Pradesh appears to lie in both sluggish economic growth and poor human development and the two appear to be interrelated. The poor state of the economy of the state appears to be a major hindrance in the state investment in creating infrastructure and facilities that promote human development and human welfare such as health and education and in providing opportunities for the productive utilisation of its work force. In turn, poor human development is reflected in the lack of skilled manpower and high to very high disease burden which appear to be major impediments to the vertical and horizontal expansion of the state economy and thus hampers economic progress.

How can Madhya Pradesh break the vicious cycle of sluggish economic growth and poor human development and move towards the virtuous cycle of rapid economic growth and accelerated human development? Probably and so obviously, a change in the basic approach towards economic development as well as in the basic philosophy of human development is needed. The economy of the state requires revitalization. Madhya Pradesh has abundant natural resources in terms of land, water, forests, minerals, etc. Any growth strategy for the state, therefore, should be based on these resources. This means that the development strategy of the state should focus on the growth and development of the primary sector of the economy. Since, more than two third of the population of the state depends upon the primary sector of the economy for subsistence, revitalization of the primary sector of the economy will not only contribute to increase in personal income but will also contribute significantly to reduction in the household and regional level income disparities. It is however important that the development strategy must have a focus on human development. Economic growth and associated development will not be sustained unless it is preceded or accompanied by accelerated improvements in human capacity. The priority focus in the economic and social policy has been on getting the economic fundamentals 'right' as a necessary precondition for economic growth and economy driven development, while arguing that improvements in human development must await such economic growth and development. Pumping more capital and infusion of new production technology through inviting foreign direct investment may not lead to a significant increase in the productivity of the social and economic production system in the absence of skilled manpower and well-developed human resources.

Another important imperative for Madhya Pradesh is to create, strengthen and sustain institutions for capacity building at the local level. Capacity building is critical to human development and human development plays a critical role in

the productivity of the economic and social production system. Although, Madhya Pradesh has taken a number of exemplary initiatives in this regard in the past, yet the current scenario appears to be bleak. The state can make significant achievements in terms of economic growth and human development through empowering Panchayats - the democratically constituted and constitutionally legal organizations of the people. Empowering Panchayats, however, require strong political commitment and a long term development policy which is currently lacking in the state.

Given the importance of both economic growth and human development in improving the quality of life of the people, a 'lens and mirror mechanism' is suggested at the policy level to ensure that economic growth and development leads to accelerated improvements in human development and human development leads to rapid economic growth and hastening the pace of economy driven development. The argument is that all economic development programmes and activities should be viewed through a human development 'lens' in the sense of the impact of these activities on human development. In other words, all economic development activities and programmes must have human development impact assessment as an essential exercise of planning. Similarly, all human development activities must have a reflection in the development 'mirror' in the sense that these activities must harness economic growth and economy driven development. The institutionalisation of this 'lens and mirror' mechanism in the social and economic production system will ensure that economic growth and economy driven development actually results in enhancing capabilities of the common man and enhanced capabilities of the common man are effectively utilised in material progress. The Panchayats and other organizations of the people appear to be best suited to put this 'lens' and 'mirror' mechanism in place.

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Table 1: Population below poverty line in Madhya Pradesh.

Period	Proportion of the population living below poverty line at current prices		
	Combined	Rural	Urban
1973-74	61.78	62.66	57.65
1977-78	61.78	62.52	58.66
1983	49.78	48.9	53.06
1987-88	43.07	41.92	47.09
1993-94	42.52	40.64	48.38
1999-2000	37.43	37.06	38.44
2004-05	38.3	36.9	42.1

Source: Planning Commission

Table 2: Characterisation of poverty in Madhya Pradesh, 2004-05.

Population	Head count ratio	Poverty gap	Squared poverty
All	37.25	7.69	2.33
Scheduled Tribes	57.14	12.53	4.02
Scheduled Castes	41.21	8.45	2.5
Other Backward Castes	32.32	6.4	1.87
Upper Castes	11.7	1.9	0.46

Table 3: Disparities in economy driven development in Madhya Pradesh, 2001.

Population	Proportion of households using banking facilities (Per cent)			Proportion of households having none of the specified assets (Per cent)			HPI
	Total	Rural	Urban	Total	Rural	Urban	
All	27.92	21.1	47.75	42.15	50.46	17.99	
SC	19.69	15.93	31.99	47.11	53.38	26.61	
ST	13.53	12.1	30.95	65.66	68.09	36.03	
Others	35.04	26.86	52.19	32.81	41.38	14.85	

Remarks: The specified assets are: radio/transistor; television; telephone; bicycle; any two wheeler; any four wheeler.

Source: Census 2001.

Table 4: Inter-district variations in poverty measures in Madhya Pradesh.

District	Households below poverty line				Households without assets				Human poverty index			
	Total	SC	ST	Non SC/ST	Total	SC	ST	Non SC/ST	Total	SC	ST	Non SC/ST
Sheopur	47.69	58.62	78.44	29.40	59.13	67.11	71.87	51.77	45.25	45.03	58.98	41.66
Morena	29.41	43.45	84.22	23.94	41.31	47.86	66.08	38.89	39.09	42.20	49.55	37.64
Bhind	25.40	40.82	11.30	20.35	35.80	44.02	40.78	33.15	35.88	39.41	39.44	35.40
Gwalior	29.68	36.41	77.74	21.27	21.94	29.17	56.52	17.77	29.04	32.91	49.56	24.35
Datia	20.81	32.66	62.70	14.28	40.17	48.74	53.31	36.45	33.86	30.12	45.15	28.09
Shivpuri	48.25	74.78	96.19	27.59	45.91	52.42	74.09	38.09	42.66	42.17	51.96	38.39
Guna	51.10	68.37	81.37	37.59	49.39	58.66	71.96	42.09	38.35	38.81	51.66	32.92
Tikamgarh	43.06	49.14	70.25	38.19	37.67	42.46	63.66	33.73	49.66	53.07	58.79	51.47
Chhatarpur	35.42	47.94	75.36	26.72	35.62	42.82	59.05	31.28	50.70	56.82	62.37	50.68
Panna	61.32	72.92	84.48	50.36	46.64	53.40	67.75	38.90	44.05	46.59	48.31	41.41
Sagar	51.92	60.67	73.09	44.81	50.55	57.55	77.22	44.37	37.64	38.55	52.34	34.66
Damoh	66.27	80.79	81.39	57.55	53.04	61.42	74.72	45.90	41.90	43.75	54.82	38.82
Satna	65.36	87.95	87.13	52.90	35.76	41.29	62.08	28.37	41.53	44.54	54.52	38.20
Rewa	35.24	50.22	52.71	27.23	33.55	42.71	55.86	26.64	43.17	50.96	56.68	43.39
Umaria	47.70	49.22	56.83	36.17	44.24	42.03	56.35	31.91	47.19	43.58	55.49	46.97
Shahdol	48.63	66.36	51.01	41.18	40.67	37.26	55.13	26.32	48.59	48.01	58.13	48.51
Sidhi	62.77	78.23	71.36	53.45	46.99	49.85	65.45	36.22	50.73	55.10	62.34	52.29
Neemuch	37.29	45.76	64.95	31.34	26.16	31.46	50.02	22.09	35.08	33.22	51.95	29.22
Mandsaur	38.61	54.57	63.55	32.68	31.75	43.06	48.26	28.13	36.50	36.24	43.55	30.89
Ratlam	46.37	60.95	65.27	27.28	35.10	37.42	65.51	20.59	30.03	27.76	43.11	24.75
Ujjain	45.35	73.16	45.91	31.02	30.77	44.20	44.22	24.90	28.34	30.64	32.17	21.72
Shajapur	44.04	63.73	81.52	34.34	40.27	53.66	52.10	35.07	31.49	29.49	31.83	23.87
Dewas	37.52	54.74	60.24	23.76	38.53	49.90	62.30	29.17	35.32	37.46	52.70	30.78
Jhabua	57.01	45.82	59.92	20.67	66.18	58.32	72.77	20.65	49.30	42.27	51.73	46.44
Dhar	42.77	54.70	53.95	19.20	46.08	46.48	61.95	25.40	40.46	35.40	48.30	35.38

District	Households below poverty line				Households without assets				Human poverty index			
	Total	SC	ST	Non SC/ST	Total	SC	ST	Non SC/ST	Total	SC	ST	Non SC/ST
Indore	27.50	42.35	55.24	15.93	14.44	21.59	37.43	10.11	22.72	28.51	46.53	18.15
Khargone	41.72	53.33	58.32	25.12	51.72	57.40	69.11	39.28	34.93	28.24	44.43	27.57

District	Households below poverty line				Households without assets				Human poverty index			
	Total	SC	ST	Non SC/ST	Total	SC	ST	Non SC/ST	Total	SC	ST	Non SC/ST
Badwani	59.21	143.54	56.65	38.93	59.01	59.60	70.24	33.53	46.88	40.14	54.49	43.46
Khandwa	41.01	48.36	55.25	28.38	52.23	55.25	74.77	40.40	34.11	30.20	48.17	28.85
Rajgarh	49.86	68.23	73.14	43.40	47.96	57.35	59.53	44.88	41.60	44.09	43.72	37.42
Vidisha	46.59	62.08	68.63	39.31	51.01	63.40	73.51	45.55	37.48	41.17	54.50	32.21
Bhopal	38.14	47.73	49.67	33.87	21.94	31.98	31.48	19.21	24.64	30.11	29.37	18.83
Sehore	45.71	65.34	61.54	35.36	44.43	54.76	67.19	37.37	36.64	36.73	47.47	30.98
Raisen	42.53	56.99	58.84	33.83	52.09	60.87	71.22	45.43	29.98	27.32	37.42	22.86
Betul	43.14	52.35	50.86	33.22	49.00	46.81	68.80	35.06	36.02	22.52	45.11	29.01
Harda	38.89	47.14	62.39	21.59	47.38	55.16	71.24	34.25	36.55	28.88	47.53	29.31
Hoshangabad	36.00	46.18	56.51	26.63	38.90	46.87	58.53	32.32	31.76	29.27	42.67	25.48
Katni	44.40	62.95	57.81	33.59	43.31	47.35	62.30	34.67	38.04	38.23	48.27	33.07
Jabalpur	49.20	56.71	61.02	41.61	31.66	35.48	59.85	23.65	27.10	25.13	39.05	19.19
Narsinghpur	37.27	51.63	46.85	31.25	50.62	58.58	72.09	44.36	23.93	20.94	28.65	17.06
Dindori	46.99	55.26	47.60	43.39	73.46	67.66	78.37	64.21	46.44	36.84	49.70	45.09
Mandla	62.48	58.44	66.15	56.30	63.15	53.07	73.34	49.18	43.43	27.42	48.11	39.59
Chhindwara	35.67	36.61	46.34	25.90	50.35	46.51	69.95	38.73	33.87	24.15	42.77	28.69
Seoni	49.52	62.49	54.34	42.38	49.76	47.84	64.97	39.17	38.13	26.72	41.49	32.21
Balaghat	46.37	49.59	58.00	41.91	40.44	39.51	57.11	35.07	41.53	25.45	43.31	36.02

Table 5: Growth in the economy of Madhya Pradesh at factor cost.

Factors of production	Undivided Madhya Pradesh		Existing Madhya Pradesh	
	1980-81 to 1993-94	1993-94 to 1999-2000	1993-94 to 1999-2000	1999-2000 to 2005-06
Total	4.017	5.302	6.033	3.225
Primary	1.866	2.182	3.086	2.952
Secondary	5.95	8.246	9.585	2.414
Tertiary	5.69	6.73	7.038	3.828
Agriculture	3.611	1.456	2.985	2.788
Forestry	-9.562	0.746	0.05	2.583
Fishing	12.907	14.5	14.75	4.255
Mining and Quarrying	6.255	5.913	4.907	4.439
Manufacturing	6.351	7.637	8.608	-0.721
Construction	0.273	12.499	14.177	6.022
Electricity, gas, water supply	16.586	5.316	6.495	6.847
Transport	5.992	7.538	7.487	7.854
Trade, hotel and restaurants	5.087	5.75	6.556	1.911
Banking and insurance	13.562	14.047	13.768	7.311
Real estate	3.641	3.154	3.252	4.648
Public administration	7.345	7.003	6.975	3.445
Others	6.342	8.353	8.61	2.222
Population	2.383	2.056	2.184	1.964
Per capita GSDP	1.594	3.192	3.786	1.236

Source: Authors calculations.

Table 6: Transition in the structure of the economy of Madhya Pradesh.

Year	Share to the Gross Domestic Product (Current prices)			
	Primary	Secondary	Tertiary	Community
1993-94	43.19	21.15	25.36	10.3
1996-97	39.64	23.31	26.29	10.75
1999-00	33.34	20.64	31.22	14.8
2002-03	28.39	20.99	35.45	15.18
2005-06	32.11	20.5	33.14	14.26

Source: Authors calculations.

Table 7: Inter-district variations in measures of economic growth and development in Madhya Pradesh.

District	Gross domestic product 1999-2000 prices (Rs in lakh)	Composition of gross domestic product				Per capita income at 1999-2000 prices (Rs)
		Total	Primary	Secondary	Tertiary	
Sheopur	60733	100.00	46.72	14.05	39.24	8734
Morena	179995	100.00	32.78	22.79	44.43	9200
Bhind	144338	100.00	30.24	25.66	44.11	8406
Gwalior	380429	100.00	11.10	24.39	64.52	17985
Datia	85844	100.00	34.61	21.35	44.04	11259
Shivpuri	154846	100.00	39.36	18.27	42.36	8666
Guna	218862	100.00	38.11	21.12	40.77	10454
Tikamgarh	122219	100.00	31.76	26.41	41.83	8085
Chhatarpur	170472	100.00	30.23	26.74	43.03	9278
Panna	95448	100.00	42.88	19.73	37.39	9049
Sagar	269459	100.00	26.10	22.58	51.32	10806
Damoh	144716	100.00	32.24	24.72	43.04	10935
Satna	257637	100.00	22.63	25.87	51.51	10672
Rewa	225062	100.00	26.84	22.84	50.32	9013
Umaria	62496	100.00	32.57	26.46	40.97	9630
Shahdol	264056	100.00	48.47	20.01	31.52	13416
Sidhi	423370	100.00	59.34	24.54	16.11	16249
Neemuch	123425	100.00	35.25	16.94	47.81	13856
Mandsaur	209984	100.00	34.98	21.60	43.42	14074
Ratlam	237029	100.00	31.24	16.20	52.56	15418
Ujjain	376048	100.00	26.31	25.41	48.28	16907
Shajapur	173800	100.00	41.37	18.55	40.08	11074
Dewas	191898	100.00	38.65	23.43	37.92	11504
Jhabua	133652	100.00	39.09	19.25	41.66	7948
Dhar	248082	100.00	40.85	22.57	36.59	11171
Indore	954983	100.00	6.88	19.91	73.21	28207
Khargone	189401	100.00	34.47	22.83	42.70	9742
Badwani	106635	100.00	35.23	16.15	48.62	7837
Khandwa	228032	100.00	32.57	22.20	45.24	10940
Rajgarh	156361	100.00	38.36	23.85	37.80	10017
Vidisha	174117	100.00	42.14	17.62	40.24	11754
Bhopal	634400	100.00	4.26	21.97	73.77	25436
Sehore	145835	100.00	46.66	16.22	37.12	10812
Raisen	149975	100.00	40.71	25.16	34.14	10413
Betul	223993	100.00	34.32	30.58	35.10	12699
Harda	81757	100.00	50.44	11.71	37.85	14188
Hoshangabad	224432	100.00	29.82	23.12	47.06	16549
Katni	173849	100.00	19.79	24.15	56.06	12991
Jabalpur	488444	100.00	12.09	25.74	62.17	18041
Narsinghpur	136127	100.00	43.77	14.48	41.75	11800

District	Gross domestic product 1999-2000 prices (Rs in lakh)	Composition of gross domestic product				Per capita income at 1999-2000 prices (Rs)
		Total	Primary	Secondary	Tertiary	
Dindori	45761	100.00	47.82	13.60	38.58	7951
Mandla	95955	100.00	32.26	24.13	43.61	8162
Chhindwara	326632	100.00	46.77	16.03	37.20	14665
Seoni	144997	100.00	39.58	20.39	40.03	10594
Balaghat	198857	100.00	40.74	21.71	37.55	11490

Source: Government of Madhya Pradesh (2009)

Table 8: Results of the regression analysis of per capita income at 1999-2000 prices.

Variables	B	SE(B)	$\beta$	't'
Percent urban	0.011	0.278	0.600	4.926
Percent SC	-0.020	0.009	-0.388	-2.193
Percent ST	-0.006	0.003	-0.416	-2.262
Registered industries/100000 population	0.005	0.003	0.203	1.754
Agriculture intensity	0.001	0.000	0.189	2.238
Adult literacy rate	0.004	0.003	0.130	1.544
Constant	9.063	0.278		
$R^2 = 0.727, F=20.577, p=0.000$				

Table 9: Inter-district variations in human development index in Madhya Pradesh.

District	Education Attainment Index			Health Attainment Index			Income Attainment Index			Human Development Index		
	1995	1998	2002	1995	1998	2002	1995	1998	2002	1995	1998	2002
Balaghat	0.420	0.580	0.769	0.570	0.558	0.558	0.210	0.411	0.415	0.400	0.516	0.581
Bastar	0.080	0.290	na	0.570	0.732	na	0.310	0.520	na	0.320	0.514	na
Betul	0.340	0.490	0.759	0.270	0.492	0.494	0.310	0.320	0.359	0.310	0.434	0.537
Bhind	0.380	0.596	0.808	0.490	0.602	0.582	0.450	0.515	0.306	0.440	0.571	0.565
Bhopal	0.540	0.646	0.813	0.770	0.663	0.665	0.520	0.524	0.510	0.610	0.611	0.663
Bilaspur	0.320	0.522	na	0.590	0.614	na	0.250	0.529	na	0.390	0.555	na
Chhatarpur	0.240	0.398	0.649	0.100	0.429	0.424	0.320	0.477	0.273	0.220	0.435	0.449
Chhindwara	0.310	0.465	0.729	0.570	0.574	0.591	0.500	0.547	0.440	0.460	0.529	0.587
Damoh	0.320	0.479	0.719	0.330	0.428	0.484	0.470	0.462	0.501	0.370	0.456	0.568
Datia	0.330	0.524	0.803	0.290	0.360	0.504	0.370	0.604	0.322	0.330	0.496	0.543
Dewas	0.280	0.463	0.695	0.600	0.677	0.639	0.450	0.568	0.497	0.440	0.569	0.610
Dhar	0.180	0.367	0.611	0.590	0.620	0.641	0.390	0.624	0.424	0.390	0.537	0.559
Durg	0.490	0.620	na	0.660	0.654	na	0.410	0.593	na	0.520	0.622	na
Guna	0.170	0.382	0.702	0.330	0.449	0.476	0.250	0.570	0.300	0.250	0.467	0.493
Gwalior	0.520	0.651	0.764	0.570	0.586	0.672	0.400	0.541	0.435	0.500	0.593	0.624
Hoshangabad	0.410	0.529	0.765	0.240	0.565	0.510	0.460	0.555	0.478	0.370	0.550	0.584
Indore	0.550	0.679	0.811	0.820	0.652	0.746	0.480	0.581	0.526	0.620	0.637	0.694
Jabalpur	0.480	0.602	0.818	0.490	0.529	0.542	0.100	0.413	0.356	0.360	0.515	0.572
Jhabua	0.010	0.236	0.471	0.560	0.429	0.513	0.120	0.403	0.133	0.230	0.356	0.372
Khandwa	0.310	0.450	0.705	0.430	0.551	0.544	0.170	0.433	0.440	0.300	0.478	0.563
Khargone	0.190	0.379	0.700	0.450	0.583	0.576	0.190	0.239	0.217	0.280	0.400	0.498
Mandla	0.230	0.408	0.720	0.590	0.640	0.626	0.170	0.298	0.388	0.330	0.449	0.578
Mandsaur	0.340	0.504	0.795	0.420	0.477	0.558	0.450	0.648	0.544	0.400	0.543	0.632
Morena	0.260	0.467	0.766	0.470	0.558	0.540	0.380	0.500	0.255	0.370	0.508	0.520
Narsinghpur	0.460	0.556	0.833	0.240	0.586	0.531	0.310	0.661	0.466	0.340	0.601	0.610
Panna	0.180	0.386	0.700	0.070	0.409	0.466	0.270	0.484	0.243	0.170	0.426	0.470

District	Education Attainment Index			Health Attainment Index			Income Attainment Index			Human Development Index		
	1995	1998	2002	1995	1998	2002	1995	1998	2002	1995	1998	2002
Raigarh	0.270	0.469	na	0.610	0.563	na	0.270	0.496	na	0.380	0.509	na
Raipur	0.280	0.561	na	0.400	0.589	na	0.380	0.534	na	0.350	0.561	na
Raisen	0.250	0.443	0.797	0.440	0.505	0.505	0.680	0.678	0.632	0.460	0.542	0.645
Rajgarh	0.140	0.373	0.617	0.190	0.495	0.487	0.210	0.507	0.408	0.180	0.458	0.504
Rajnandgaon	0.290	0.488	na	0.470	0.557	na	0.170	0.491	na	0.310	0.512	na
Ratlam	0.300	0.450	0.756	0.390	0.545	0.551	0.400	0.664	0.584	0.360	0.553	0.630
Rewa	0.330	0.475	0.705	0.160	0.429	0.476	0.150	0.449	0.254	0.210	0.451	0.478
Sagar	0.420	0.561	0.755	0.230	0.475	0.484	0.250	0.446	0.456	0.300	0.494	0.565
Sarguja	0.160	0.395	na	0.590	0.663	na	0.220	0.426	na	0.320	0.495	na
Satna	0.290	0.557	0.732	0.100	0.300	0.410	0.280	0.486	0.307	0.220	0.448	0.483
Sehore	0.240	0.481	0.724	0.360	0.637	0.491	0.510	0.540	0.466	0.370	0.553	0.560
Seoni	0.370	0.472	0.741	0.590	0.605	0.582	0.170	0.439	0.326	0.380	0.505	0.550
Shahdol	0.180	0.364	0.700	0.230	0.500	0.535	0.250	0.428	0.338	0.220	0.431	0.524
Shajapur	0.210	0.421	0.792	0.340	0.486	0.555	0.370	0.649	0.505	0.310	0.519	0.617
Shivpuri	0.150	0.418	0.703	0.330	0.318	0.372	0.300	0.611	0.343	0.260	0.449	0.473
Sidhi	0.100	0.431	0.634	0.250	0.577	0.550	0.420	0.488	0.481	0.260	0.499	0.555
Tikamgarh	0.240	0.392	0.646	0.000	0.449	0.463	0.230	0.531	0.296	0.160	0.457	0.468
Ujjain	0.360	0.504	0.763	0.660	0.563	0.580	0.380	0.627	0.555	0.470	0.565	0.633
Vidisha	0.320	0.483	0.721	0.380	0.415	0.495	0.450	0.544	0.431	0.380	0.481	0.549
Barwani	na	na	0.513	na	na	0.576	na	na	0.177	na	na	0.422
Dindori	na	na	0.657	na	na	0.626	na	na	0.387	na	na	0.557
Harda	na	na	0.738	na	na	0.510	na	na	0.516	na	na	0.588
Katni	na	na	0.739	na	na	0.542	na	na	0.345	na	na	0.542
Neemuch	na	na	0.751	na	na	0.558	na	na	0.570	na	na	0.626
Sheopur	na	na	0.589	na	na	0.540	na	na	0.412	na	na	0.514
Umaria	na	na	0.695	na	na	0.535	na	na	0.245	na	na	0.492

Table 10: Modified human development index in existing Madhya Pradesh, 2002.

Districts	Education attainment index	Health attainment index	Modified human development index
Balaghat	0.769	0.558	0.664
Barwani	0.513	0.576	0.545
Betul	0.759	0.494	0.627
Bhind	0.808	0.582	0.695
Bhopal	0.813	0.665	0.739
Chhatarpur	0.649	0.424	0.537
Chhindwara	0.729	0.591	0.660
Damoh	0.719	0.484	0.602
Datia	0.803	0.504	0.654
Dewas	0.695	0.639	0.667
Dhar	0.611	0.641	0.626
Dindori	0.657	0.626	0.642
Guna	0.702	0.476	0.589
Gwalior	0.764	0.672	0.718
Harda	0.738	0.510	0.624
Hoshangabad	0.765	0.510	0.638
Indore	0.811	0.746	0.779
Jabalpur	0.818	0.542	0.680
Jhabua	0.471	0.513	0.492
Katni	0.739	0.542	0.641
Khandwa	0.705	0.544	0.625
Khargone	0.700	0.576	0.638
Mandla	0.720	0.626	0.673
Mandsaur	0.795	0.558	0.677
Morena	0.766	0.540	0.653
Narsinghpur	0.833	0.531	0.682
Neemuch	0.751	0.558	0.655
Panna	0.700	0.466	0.583
Raisen	0.797	0.505	0.651
Rajgarh	0.617	0.487	0.552
Ratlam	0.756	0.551	0.654
Rewa	0.705	0.476	0.591
Sagar	0.755	0.484	0.620
Satna	0.732	0.410	0.571
Sehore	0.724	0.491	0.608
Seoni	0.741	0.582	0.662
Shadole	0.700	0.535	0.618
Shajapur	0.792	0.555	0.674
Sheopur	0.589	0.540	0.565
Shivpuri	0.703	0.372	0.538
Sidhi	0.634	0.550	0.592
Tikamgarh	0.646	0.463	0.555
Ujjain	0.763	0.580	0.672
Umaria	0.695	0.535	0.615
Vidisha	0.721	0.495	0.608

Table 11: Components of change in the human development index in Madhya Pradesh.

Components of change in HDI	1995-1998	1998-2002
Var ( $\nabla$ HDI)	45.599	11.163
Var ( $\nabla$ E)	2.718	3.501
Var ( $\nabla$ H)	24.713	3.129
Var ( $\nabla$ I)	12.44	10.923
2Cov( $\nabla$ E, $\nabla$ H)	2.659	-0.644
2Cov( $\nabla$ E, $\nabla$ I)	4.158	-3.673
2Cov( $\nabla$ H, $\nabla$ I)	-0.549	-2.073

Source: Author's calculations

Table 12: Simple zero order correlation coefficients between education index (E), health index (H) and income index (I) in Madhya Pradesh.

	(E,H)	(E,I)	(H,I)
1995	0.3664	0.2225	0.2438
1998	0.2878	0.1610	-0.0376
2002	0.1599	0.5014*	0.2977
2005	0.2467	0.5245*	0.2596

\* Statistically significant.

Source: Authors calculations

Table 13: Results of the regression of the index of health attainment, (H) on the index of education attainment, (E) and the index of income attainment, (I) in Madhya Pradesh, 2002.

Independent variable	B	SE(B)	$\beta$	t	p
(E)	0.124	0.157	0.133	0.787	0.436
(I)	0.151	0.082	0.246	1.836	0.074
URB	0.003	0.001	0.554	4.065	0.000
SC	-0.001	0.003	-0.119	-0.446	0.658
ST	0.002	0.001	0.492	1.535	0.133
Constant	0.315	0.154		2.046	0.048
$R^2 = 0.495$			$F = 7.646$		

Source: Authors calculations.

Table 14: Results of the regression of the index of education attainment, (E) on the index of income attainment, (I) in Madhya Pradesh, 2002.

	B	SE(B)	$\beta$	t	p
(I)	0.146	0.079	0.221	1.841	0.073
URB	0.001	0.001	0.105	0.831	0.411
SC	-0.010	0.003	-0.489	-2.063	0.046
ST	-0.003	0.001	-0.926	-3.544	0.001
Constant	0.822	0.085		9.655	0.000
$R^2 = 0.548$			$F = 12.134$		

Source: Authors calculations.

Table 15: Results of the regression of the index of economic attainment (I) on the index of health attainment (H).

Independent variable	B	SE(B)	$\beta$	t	p
(H)	0.6151	0.286	0.377	2.152	0.037
URB	-0.0005	0.001	-0.060	-0.318	0.752
SC	-0.0051	0.006	-0.254	-0.862	0.394
ST	-0.0039	0.002	-0.696	-2.219	0.032
Constant	0.2378	0.201		1.186	0.243
$R^2 = 0.298$			$F = 4.253$		

Source: Authors calculations.

Table 14: Results of the regression of the index of economic attainment (I) on the index of education attainment (E).

	B	SE(B)	$\beta$	t	p
HDI(E)	0.535	0.290	0.353	1.841	0.073
URB	0.001	0.001	0.121	0.759	0.452
SC	-0.003	0.006	-0.160	-0.509	0.613
ST	-0.001	0.002	-0.246	-0.654	0.517
Constant	0.069	0.297		0.232	0.817
$R^2 = 0.278$			$F = 3.857$		

Source: Authors calculations.

Table 15: Proportion of main workers to the working age population in Madhya Pradesh.

Particulars	1991	2001
Total	68.19	58.5
Male	95.67	82
Female	37.81	32.53

Source: Census 1991, 2001

#### End Notes

1. The states of Chhattisgarh, Jharkhand and Uttarakhand were created out of the states of Madhya Pradesh, Bihar and Uttar Pradesh respectively on 1 November 2000.
2. In this concept, development is seen as a process of expanding the real freedom that people enjoy; people are regarded as the real wealth of any nation or the society. In this approach, the process of development expands human capabilities by expanding the choices that people have to live full and creative lives. It is important that the development process must benefit all individuals equitably and builds upon the participation of each of them.
3. Two chains can be identified to describe the relationship between economic growth and human development, one from economic growth to human development and the other, conversely, from human development to economic growth. For a discussion on various links in each chain, see Ramirez, Ranis and Stewart (1998) and United Nations Development Programme (1996).
4. In the absence of appropriate policy, economic growth may be jobless, ruthless, rootless, voiceless and futureless. For details, see United Nations Development Programme (1996).
5. Traditionally, increase opportunities for participation in the economic and social production system is equated with the creation of jobs (United Nations Development Programme 1996). However, participation in the social and economic production system is a much wider concept than just job creation and increase in employment opportunities.
6. While the meaning of economic production system is clear, the term social production system needs a description. Social production system is primarily directed towards producing next generation of human resources for the economic production system. The social production system leads to the formation of 'social capital' which is essential for social capacity building and for human development. The term social production system is similar to the concept of social reproduction as discussed in 1996 Human Development Report (United Nations Development Programme 1996).
7. Popular participation in the economic and social production system takes care of the joblessness and rootlessness features of economic growth; equitable distribution of the gains of economic growth takes care of ruthlessness while development and strengthening of institutions of human capacity building take care of voicelessness of economic growth.

8. For a discussion, see United Nations Development Programme (1996).

9. First, it does not distinguish between the transitional poverty and the chronic poverty. Second, income or consumption is the means to achieve ultimate ends rather than the end in itself. Although, in practice, micro data suggest that income and the achievement of most of the ultimate ends tend to be positively correlated with each other across individuals or households, yet such correlations tend to be modest (Appleton, Song 1999). In other words, for a given income level, non-monetary welfare outcomes may vary widely. Third, contemporary income is defined in terms of financial inflows at one point of time. This implies that other resources available to the household, such as physical assets and savings, are ignored. The income-based approach of analysing poverty also ignores fluctuations in income-levels over time. It has been observed that income based measures of poverty or well-being typically show large fluctuations over time, and this is often especially significant for the poorest, although these fluctuations and the vulnerability they imply are a key aspect of ill-being (Hulme, McKay 2005). Fourth, the extent of error typically associated with measuring income or consumption. Measurement of both income and consumption is complex because of the diversity of consumption and diversity of sources of income. The data about income and consumption are normally collected through house-to-house survey in which the information collected is generally associated with significant recall error, especially when the respondent is illiterate. In the regime of subsidized government services and facilities, there is also a tendency of not reporting actual income or consumption expenditure in such surveys. This results in the under-estimation of the income or consumption expenditure.

10. The assets that a household possesses, or to which it has access, can be related to household income in the sense that the latter may be conceptualised as returns to these assets. In this view, income of a household reflects the assets it commands and the return it is able to earn on these assets. In addition to the return in terms of income, assets are also likely to be important to households in their own right; representing wealth and status, economic and social security and easier access to credit. Deprivation of key assets may therefore be thought of a good indicator of ill-being in its own right. Indicators of deprivation of assets aim to measure living standards directly by looking at 'enforced lack' of a set of material goods or social activities. By enforced lack, we mean the items that a household would like to have but cannot afford because of the lack of either resources or opportunities or different choices and preferences. In this way, deprivation indicators also take into account the role of preferences and choices of the households and the individuals.

11. It is argued that lack of households assets and adequate housing conditions are more likely to be associated with lack of resources over a prolonged period of time than with the current income or consumption expenditure. Deprivation indicators permit to look more broadly at exclusion from life of a society either because of the lack of resources or because of the lack of opportunities or because of specific preferences and choices.

12. During the 2001 population, information about the availability of five assets - radio/transistor, telephone, scooter/motorcycle/moped, and car/jeep/van - was collected from each household. In addition, information related to the condition of the house, presence of latrine, availability of electricity or solar energy as the source of lighting was also collected from each household. Moreover, each household was also enquired about the use of banking facilities.

13. The human poverty index is the combination of four indicators:

1. Probability of a live birth no surviving to age 40 or probability of death from birth to age 40.
2. Adult illiteracy rate.
3. Population without sustainable access to improved water source, and
4. Proportion of children underweight for age.

14. The indicators used are i) probability of birth not surviving to age five, ii) adult (16-65 years) illiteracy rate, iii) population without access to improved water source (Tap, handpump, Tubewell) and iv) proportion of children under weight for age. Estimates of the probability of birth not surviving to age five are derived from the children ever born and children surviving data available through the 2001 population census. Similarly, estimates of adult literacy rate and population without access to improved water source are derived from the information available through the 2001 population census. Estimates of the children underweight, on the other hand, are based on the Bal Sanjeevani campaign of the Government of Madhya Pradesh. For details about the Bal Sanjeevani campaign, see (Government of Madhya Pradesh, 2009).

15. The per capita income is based on the net state domestic product that takes into account the depreciation in assets. All estimates are at 1999-2000 prices.

16. The proportion of households using banking facilities vary from a minimum of just 11.27 per cent in district Dindori to 44.71 per cent in district Indore. The proportion of households having none of the specified assets varies from a low of 14.44 per cent again in district Indore to a maximum of 73.46 per cent again in district Dindori.

17. The rank order correlated coefficient between the real income per capita and the proportion of households having none of the six specified assets is statistically significant ( $r = -0.520$ ;  $p < 0.01$ ). On the other hand, the rank order correlation coefficient between the proportion of households having none of the six specified assets and the proportion of households using banking facility is also statistically significant ( $r = -0.603$ ;  $p < 0.01$ ).

18. In the human development index prepared by the United Nations Development Programme, attainment in endowments are captured through economic attainment measured in terms of per capita income; attainment in social opportunities are captured through educational attainment measured in terms of adult literacy rate; and attainment in individual capacity are captured through attainment in the health status measured in terms of expectation of life at birth.

19. For details, about the calculation of the human development index, see Government of India (2002), Government of Madhya Pradesh (2002) and United Nations Development Programme (1996). While the basic methodology remains same, the minimum and maximum values of indicators used in the calculation vary.

20. Human development may be termed as very poor if the value of human development index is less than 0.2; it may be termed as poor if the human development index ranges between 0.2 to 0.4; average if the index varies between 0.4 to 0.6; good if the index ranges between 0.6 to 0.8 and very good if the human development index is more than 0.8

21. Planning Commission of India uses a different set of indicators than used by the United Nations Development Programme. The education index is measured by the literacy rate among more than 6 years old population and the gross enrolment ratio while the health index is a combination of the infant mortality rate and the expectation of life at birth. Similarly, the income index is a combination of per capita product and the incidence of poverty. For details, see Government of India (2002).

22. Madhya Pradesh was ranked 14 among the 15 major states of India in 1981. This rank improved to 12 in the year 2001 largely because of improvements in the index of education attainment.

23. The improvement in the rank may be the result of relatively faster improvement in the human development index in Madhya Pradesh as compared to other states. The rank may also improve if the improvement in human development index in Madhya Pradesh is slow but improvements in some other states of the country is even slower.

24. In India, human development index improved by 0.079 absolute points between 1981 and 1991 and by 0.091 absolute points between 1991 and 2001. By contrast, human development index in Madhya Pradesh improved by 0.083 points between 1981 and 1991 but by 0.066 absolute points between 1991 and 2001. For details, see Government of India (2002).

25. The districts are Indore, Bhopal, Raisen, Ujjain, Mandsaur, Ratlam, Neemuch, Gwalior, Shajapur, Devas, Narsimhapur.

26. For a critical commentary on aggregate indexes like human development index, see Hicks and Streeten (1979), Sagar and Najam (1998), Silber (1983). A critical discussion of income as a measure of human development can be found in Dreeze and Sen (1989), Moon (1991), Moon and Dixon (1985), Morris (1979), Nissan (1993) and Sahn and Stifel (2000).

27. The modified human development index takes into account the dimensions of education attainment and health attainment but excludes the dimension of economic attainment of the conventional human development index. It is the unweighted average of the index of educational attainment and the index of health attainment with the index of educational attainment and the index of health attainment.

28. If the variance in the change in the human development index across the districts of the state is much greater than the variance in the change in the three components of the human development index than the latter could not be a significant cause of the former regardless of the levels of their respective means.

29. The analysis is restricted to 30 districts of the state in which there had been no change in the administrative boundary between 1995 and 2002. In the remaining districts, there had been a change in the administrative boundary between 1995 and 2002 and so these districts are not comparable over time.

30. The correlations are based on the district level data available through the Madhya Pradesh Human Development Report 1995, 1998 and 2002. Since different indicators have been used in different reports, the information from the three reports cannot be combined.

31. The relation between the index of economic attainment and the index of health attainment still remains weak.

32. District level values of HDI(H), HDI(E) and HDI(I) are taken from the Third Madhya Pradesh Human Development Report 2002 (Government of Madhya Pradesh). Data related to the proportion of urban population and proportion of

Scheduled Castes and Scheduled Tribes Population are taken from the 2001 population census.

33. The health seeking behaviour depends upon a number of factors. They can be grouped into physical, social and economic, cultural, and political factors. A very important determinant of the health seeking behaviour is the availability and utilization of health care services. The availability of health care services depends upon both public policy and economic factors, the utilization of the available health care services is determined by a host of factors that include social and demographic factors, social structures, level of education, religious and cultural belief and practices, gender issues and status of women, prevailing economic and political systems, environmental conditions, and, above all, the cost, and quality of health care services.

34. The estimated state per capita income in 1999-2000 was Rs 12384 per person per year which decreased to Rs 10880 in 2002-03 at 1999-2000 prices according to the estimates prepared by the Central Statistical Organisation.

35. Undivided Madhya Pradesh ranks high in the production of limestone, copper ore, daspore, pyrophillite, coal, iron, maganese, calcite, corundum, etc. See Verma (1997) for details of production and its spatial distribution.

36. The distribution of land remains highly unequal. About 82 per cent of the farmers are small and marginal farmers and they own only about 25 per cent of the agricultural land. By contrast, just 2 per cent of the farmers in the state are large farmers but they own more than 17 per cent of the agricultural land.

37. Only about 37 per cent of the net sown area in the state is irrigated despite the fact that perennial sources of water are in abundance in Madhya Pradesh.

38. Use of fertilizers is just about 46 Kg per hectare on average around the year 2000. It was less than 10 Kg per hectare, on average, around 1980-81.

39. The value of the agriculture produce, at constant princes, has in fact gone down over the years.

40. The impact of migration on human development are many. For a detailed discussion on the subject, see United Nations Development Programme (2003)

41. Forest area in Madhya Pradesh accounts for nearly 30 per cent of the area of the state. According to the 2001 population census, the tribal population in the state accounts for per cent of the total population.

42. A main worker is a person who is engaged in any economically productive activity for 183 days or more, i.e. six months or more. All workers who are engaged in any economically productive activity for less than 183 days or six months are defined as marginal workers. In the human development context, it is the main work participation rate that is of importance.

43. Between 1991 and 2001, the proportion of main workers to the working age population decreased from 68 per cent to 59 per cent. Among males, this decrease was of the order of almost 18 per cent - from 96 per cent to 82 per cent.

44. There is a very heavy concentration of industries in selected, highly urban districts of the state. For details, see Verma (1997).

45. The last human development report for Madhya Pradesh was released in the year 2002. Since then, there is little information about the state of human development in the state.

46. According to the latest estimates available through the sample registration system, Madhya Pradesh has the highest death rate and second highest infant mortality rate in the country. For details, see Government of India (2005).

47. The sample registration data indicates that Madhya Pradesh (undivided as well as existing) has always been ranked as the poorest five states of India in all indicators of health. A survey carried out by the National Council of Economic Research indicates that the diseases burden in Madhya Pradesh remains highest in the country (Shariff and Sudarshan 1996).

48. For a discussion on the determinants of health of the population, see Kindig (1997)

49. The public expenditure on health increased marginally from around 4 per cent in 1980-81 to around 7 per cent in the year 2000-01. See table 16 for trends in public sector expenditure during the period under reference.

50. The normative public health care delivery system in the rural areas consists of sub-health centres, primary health centres and community health centres. According to the norms laid down by the Government of India, there should be one sub-health centre for every 5000 population (3000 population for hilly and difficult areas); one primary health centre for every 30000 population (20000 population for hilly and difficult areas); and one community health centre for every 120000 population (80000-100000 population for hilly and difficult areas). The Government of Madhya Pradesh has not evolved state specific norms for the development of public health care delivery system in the rural areas, especially

in the vast tribal tract. Rather, it has adopted the norms set by the Government of India. On the other hand, there are no norms for health care delivery system in the urban areas.

51. Most of the population living in urban slums are the rural migrants. They have been forced to leave the rural areas as there are little opportunity for gainful work in the rural areas. Most of these migrants happen to be small and marginal farmers and landless agricultural labourers.

52. Mathews and Johnson (2004) have observed that private provision of health care remains very inequitable with very significant bias in favour of the rich. They have also observed that the quality of private health care services accessed by the rich is likely to be considerably higher than the quality of the private health care services accessed by the poor. This discrimination has important implications for the health of the poor.

53. The expenditure in the education increased from 21 per cent of the total government spending during the period 1980-81 to more than 34 per cent during the year 2000-01. See table 16.

54. The higher education system may further be divided into professional education and non-professional education. While the professional education is more closely linked to the productivity of the economic production systems, it is the non-professional education which contributes to the building up the society and in shaping behavioural patterns. A unique feature of the non-professional higher education system in Madhya Pradesh is that it is dominated by the government institutions (Chaurasia, 1999). Private sector involvement or the economy driven investment in the non-professional higher education system in the state is extremely limited. One reason is that because of the dominance of the government, the non-professional higher education system in the state is not adaptive to the changing needs of the social and economic production system; it is gradually getting out of context. A similar situation prevailed in case of professional higher education also until very recently. There is however a lot of private investment in professional education in the state.

55. This linkage requires that the growth and expansion of the economy should result in increased investments in institutional strengthening at the level of the society as well as at the level of the government - in strengthening the existing institutions and in building new institutions which shape the human behaviour and contribute to the development of the capacity of an average individual - according to the needs of the social and economic production system.

56. State institutions are central, state and local government organizations oriented and committed towards human development and welfare. Social institutions include religious and cultural organizations, non-government organizations as well as non-market organizations. Markets, on the other hand, are institutions created by conscious design and governed by well defined sets of rules. They govern production of goods and services. Although, in theory, markets are equal opportunity provides, in practice, they provide different opportunity to different people. Finally, political institutions encompass the 'constitutional' element of the polity and may be distinguished from public policy and political events, both of which are generally more evanescent.

57. The district government model was an attempt to decentralize the development planning process. The key to the district government model was empowering the District Planning Committee and introduce a system of preparing district development plans. A number of administrative powers of different government departments, erstwhile exercised at the state level were delegated to the District Planning Committee. For details about the district government, see (Government of Madhya Pradesh *no date*).

58. There were many attempts to decentralize the administration of public institutions and to promote participation of the people in the day to day management. These included constitution of Rogi Kalyan Samiti in every public hospital and Participatory Management Committee in every graduate and post graduate college of the state.

59. The details of the Bhopal Declaration can be accessed at <http://ambedkar.org/News/TheBhopalDeclaration.htm>.

60. The agenda adopted for the upliftment of Scheduled Castes and Scheduled Tribes included the following measures:

1. A grant of Rs. 75,000 per hectare would be given to the landless Scheduled Castes and Scheduled Tribes families enabling them to purchase land in case allotment of government land is not possible.
2. At least 30 percent of government purchases would be compulsorily made from the entrepreneurs, traders and suppliers in all the departments for economic empowerment of these groups and giving them opportunities to play a key role in country's economy.
3. At least 20 percent of the construction contracts costing up to Rs. 2 lakh would be awarded to the contractors, suppliers belonging Scheduled Castes and Scheduled Tribes. The Work Code of Public Works Department would be amended for the purpose.
4. In next five years, 25000 unemployed beneficiaries would be identified and be helped in every possible way to become owners of industries.
5. Grain Banks for food security would be established in 11,000 villages having dense population of Scheduled Castes and Scheduled Tribes specially those populated by primitive tribes.
6. A sum of Rs. 30 crores would be spent on providing basic amenities in urban

localities having sizeable population of Scheduled Castes and Scheduled Tribes and next year 25 percent of the funds meant for development would be spent in improving civic facilities in such areas.

7. In next year 75,000 residential units would be constructed out of which 5000 would be allotted to sanitary workers.

8. Self Help Groups of poor families in the districts having scrub forests would be set up and every member would be given right for afforesting two hectare land and harvest minor forest produce.

9. In next five years 10,000 business shops would be constructed at commercial sites in urban areas for the entrepreneurs of these categories and 8000 shops would be constructed under Swavlamban Yojana next year.

10. The leaseholders of these communities would be given loan and grants from the Scheduled Castes and Scheduled Tribes Finance and Development Corporation if they have been given Patta for mining by the Panchayats concerned.

11. All the localities populated densely by Scheduled Castes and Scheduled Tribes would have drinking water facilities by April 2004.

12. All the rural students in primary schools studying in Class I to III would be given textbooks free of cost. The girl students in Class I to V would be given state scholarships.

13. The girl students belonging to Scheduled Castes and Scheduled Tribes who seek admission into IX class would be provided one time incentive of Rs. 1000.

14. The girl students of these categories who take admission in class XI would be given one time incentive of Rs. 2000.

15. Each block headquarters would have hostels with 50 seats each for boys and girls in next five years.

16. Bridging the digital divide, 1500 students belonging to Scheduled Castes and Scheduled Tribes would be enrolled in one year computer diploma course this year and this process would continue.

17. The State government would give research scholarship to 100 students of these categories every year to help them continue higher education.

18. Five students each from Scheduled Castes and Scheduled Tribes would be given an Overseas Scholarship from State's own resources to help them pursue higher education in foreign countries.

19. Each Panchayat would be given cash award of Rs. 25000 for ensuring hundred percent attendance of students of these categories and less than 10 percent drop out.

20. District level and sub divisional level Vigilance Committees will be formed in sensitive districts which report practice of bonded labour. A survey would be conducted through BANISS, Mhow.

21. It would be mandatory for the revenue and police departments to register cases under Scheduled Castes and Tribes (prevention of atrocities) Act, 1989 in cases of atrocities related to land.

22. Members of the society who socially boycott members of Scheduled Castes and Tribes communities and persecuting them would be imposed a collective fine.

23. Entry of dalits into public functions and religious places would be ensured.

24. Arm licences will be issued to these categories for self-defence in sensitive areas.

25. All the dry latrines will be converted into flush latrines in the current year.

26. In the light of government's decision to ensure 30 percent government purchase from the entrepreneurs of these communities, Scheduled Castes Finance and Development Corporation and Tribal Finance and Development Corporation would provide loans to 1000 entrepreneurs of these categories every year.

27. Persons belonging to Scheduled Castes and Tribes would be given loans for

executing tourist facility activities in and around national parks and sanctuaries.

28. The State government will help at least 2000 beneficiaries every year to come out of indebtedness by providing loan under the Micro Credit Scheme through Scheduled Castes and Tribes Finance and Development Corporation and Tribal Finance and Development Corporation.

61. With the change in the popular government, the process of decentralization and promoting the participation of the people and their organizations has virtually stopped. Abolition of the district government model was one of the agenda of the election manifesto of the Bhartiya Janata Party which came into power after the general elections in the year 2003. The point that is important is that the district government model was abolished not on merit but purely on political considerations.