India's Challenge to Meet the Millennium Development Goals

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Working Papers Series
Center on Globalization and Sustainable Development

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Abstract

On its current economic trajectory, India will achieve some of the eight Millennium Development Goals, but will miss many of the others. The good news is that India is making great strides with regard to the first of the Millennium Development Goals: reducing extreme poverty. Even though there is an active debate about the "exact" measure of extreme poverty, all indicators suggest rapid progress, enough on the current trajectory so that the headcount poverty rate in 2015 will be less than half of the rate in 1990, as called for by the Millennium Development Goals.

At the same time, India is likely to miss several of the other goals, related to hunger, IMR, under-5, and MMR, disease, and the physical environment. The proportion of children in India who are chronically undernourished remains very high. So too does the MMR and IMR. And the goal of environmental sustainability is not being achieved, as parts of India are suffering from worsening crises of water, soils, and deforestation.

What India requires is a significant increase of targeted investments in clinics, schools, nutrition programs, disease control, irrigation, rural electrification, rural roads, and other basic investments, especially in rural India as the current budgetary allocations are inadequate. Higher public investments in these areas need to be accompanied by systemic reforms that will help overhaul the present system of service delivery, including issues of control and oversight. Additionally, India should "plan for success." The Planning Commission should ensure that current programs as well as the next Five-Year Plan are built around achieving the Millennium Development Goals. Indeed, not only the Union Government, but every state and even every district, should base their investment programs around achieving the Millennium Development Goals.

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India's Challenge to Meet the Millennium Development Goals[1]

Nirupam Bajpai, Jeffrey D. Sachs, and Nicole H. Volavka

The Millennium Development Goals (MDGs) bring to the forefront the importance of human development in the context of sustainable economic and social development. They join together the international community by creating a framework for advancement that can be measured by the progress on a number of targets and indicators and by creating an arena for global partnerships in development. The goals aim for specific levels of achievement on a number of development indicators, such as halving the proportion of people living in extreme poverty or suffering from hunger between 1990 and 2015, ensuring that all children are in school and reducing infant mortality and improving maternal health. All progress is measured using 1990 as the benchmark year and 2015 as the year by which the goals should be achieved. India, along with most other countries in the world, endorsed its commitment to achieve the MDGs at the Millennium Summit held in New York in 2000. Below is a summary of the goals, their related targets and some selected indicators that India, along with much of the international community, is striving to achieve by 2015.

Goal 1: Eradicate extreme poverty and hunger
- Target 1: Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day
  - Poverty headcount ratio (percentage of population living below poverty line)
- Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger
  - Prevalence of underweight children (under five years of age)
  - Proportion of population below minimum level of dietary energy consumption

Goal 2: Achieve Universal Primary Education
- Target 3: Ensure that, by 2015, children everywhere, girls and boys alike, will be able to complete a full course of primary schooling.
  - Net enrollment ratio in primary education
  - Primary completion rate
  - Literacy rate of 15 to 24-year-olds

Goal 3: Promote gender equality and empower women
- Target 4: Eliminate gender disparity in primary and secondary education and in all levels of education no later than 2015
  - Ratio of girls to boys in primary, secondary and tertiary education
  - Ratio of literate women to men ages 15 to 24

> ➢ Share of women in wage employment in the nonagricultural sector
> ➢ Proportion of seats held by women in national parliament

Goal 4: Reduce child mortality
- Target 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate
  - ➢ Under-five mortality rate
  - ➢ Infant mortality rate
  - ➢ Proportion of one-year-old children immunized against measles

Goal 5: Improve maternal health
- Target 6: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio
  - ➢ Maternal mortality ratio
  - ➢ Proportion of births attended by skilled health personnel

Goal 6: Combat HIV/AIDS, malaria and other diseases
- Target 7: Have halted by 2015 and begun to reverse the spread of HIV/AIDS
  - ➢ HIV prevalence among pregnant women ages 15-24
  - ➢ Condom use rate of the contraceptive prevalence rate
  - ➢ Percentage of 15-24 year-olds with comprehensive correct knowledge of HIV/AIDS
- Target 8: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases
  - ➢ Prevalence of death rates associated with malaria
  - ➢ Proportion of population in malaria-risk areas using
  - ➢ Prevalence and death rates associated with tuberculosis
  - ➢ Proportion of tuberculosis cases detected and cured under directly observed short course (DOTS)

Goal 7: Ensure environmental sustainability
- Target 9: Integrate the principles of sustainable development into country policies and program and reverse the loss of environmental resources
- Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation
  - ➢ Proportion of population with sustainable access to an improved water source, urban and rural
  - ➢ Proportion of population with access to improved sanitation, urban and rural
- Target 11: Have achieved, by 2020, a significant improvement in the lives of at least 100 million slum dwellers

Goal 8: Develop a global partnership for development

India makes up only 2.4 percent of the world surface area of 135.79 million square kilometers, but accounts for almost 17 percent of the world's population and is home to over one third of the world's poor people. With a population of over one billion, India's progress towards meeting the goals will not only have a significant impact on its own people, but on the status of development in South Asia and the world at large.

This paper will focus primarily on the goals and their targets relating to poverty, hunger, education and health. While India is on track to meet the goal of reducing extreme poverty by one half, over half of its population suffers from another type of poverty—hunger. Rates of child malnutrition are extremely high, leading to infection and disease. The country is severely off course in reducing its very high rates of infant, under-five and maternal mortality and is also behind target on primary school completion rates and gender equality in education. These shortfalls not only affect the lives of those presently living under harsh circumstances, but trap future generations in the cycle of poverty as well.

II Progress towards the Goals

Poverty

India is well on track to cut poverty within its borders in half by 2015 (MDG 1). In 1990, 37.5 percent of India's people lived below poverty line and in 1999-00, this had decreased to 26.1 percent, as opposed to the 30 percent that would be necessary to say that the country was "on track" to achieve the goal[2] (Table 1). Part of this early success can be attributed to the Indian economy sustaining an annual average GDP growth of over 6 percent since the initiation of economic reforms in the country. Additionally, the Government of India has set more ambitious goals for poverty reduction. In its Tenth Five-Year Plan (2002-07), the government has set out to reduce the poverty ratio by five percentage points by 2007 and by 15 percentage points by 2012 (GOI, Economic Survey 2001-02). The government has thereby set a significantly more ambitious aim to reduce the poverty ratio to about 11 percent by 2012, versus the MDG target of 18.75 by 2015.

Historically, the experience of India in terms of growth acceleration is also similar to that of countries in East Asia and China. The decadal average annual growth rate of the Indian economy, after fluctuating around 3.5 percent for the decades of the 1950s, 1960s and 1970s, took a quantum leap to 5.6 percent in the decade of the 1980s. Similarly, after hitting a low of 1.3 percent in 1991-92 in the aftermath of a fiscal and balance of payments crisis, the annual rate of growth has rapidly accelerated in the post-crisis period, reaching a high of 8.5 percent in 2003-04. As a consequence, the poverty ratio for India has declined from 37.1 percent in 1990-91 to 26.1 percent in 1999-2000.

In terms of economic growth, pockets of medium to high growth exist in India. For instance, the high growth regions are in the western states of Gujarat and Maharashtra, and the southern states of Tamil Nadu and Karnataka. A more

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[2] This is based on the headcount ratio of consumption poverty, that is, the proportion of the population having monthly per capita consumption expenditure that is lower than the poverty line.

disaggregated, region-wise picture of poverty (head count ratio) shows that, to a significant extent, there are heterogeneities in each of the Indian states except perhaps Bihar, which is uniformly poor. Sharp contrasts are witnessed in Andhra Pradesh, Karnataka and Maharashtra, though variations can be seen in smaller states like Haryana, and Punjab as well.

The National Sample Survey in India segregates these regions by low (up to 20 percent), medium (21-40 percent), high (41- 60 percent) and very high (more than 60 percent) levels of poverty. Southern Bihar, southern Orissa, southwestern Madhya Pradesh and southern Uttar Pradesh fall in the very high poverty bracket. These regions comprise of the districts of Chotanagpur and Santhal Parganas in Bihar, Koraput and Phulbhani districts in Orissa, the Jhansi region in Uttar Pradesh and Betul, Hoshangabad and Khandwa in the south west of Madhya Pradesh, adjoining Maharashtra. Two peculiar features of these regions are, that either they are mainly tribal (except Jhansi) or rocky and dry, yet densely populated because of their agro-climatic features. The one major inference drawn here is that tribal areas are predominantly and distinctly poor.

The high poverty (41-60 percent) areas are in Bihar, portions of Madhya Pradesh, inland Maharashtra, northern Tamil Nadu, eastern and central Uttar Pradesh, and parts of West Bengal. The reasons here are similar; tribal, thickly populated semi-arid areas, and those which have been neglected historically, are poor. Parts of West Bengal have made strides in poverty alleviation. Medium level poverty persists in regions of western states; a few regions have made more progress than others, compared to the eastern ones where there is uniform poverty. Typical examples are Madhya Pradesh, Maharashtra, Tamil Nadu and Uttar Pradesh. Lastly, the western coastal regions, all of Andhra Pradesh and Punjab, as well as parts of Madhya Pradesh and Rajasthan, which are a continuum of a north-south belt that experienced a green revolution, are pockets of low poverty.

Sundaram and Tendulkar (2003a) and (2003b) analyze in detail the movement of five indicators of income poverty between 1983 and 1993/94 and between 1993/94 and 1999/00: headcount ratio, poverty gap index, (reflecting depth dimension) squared poverty gap, Sen Index (the two indices representing severity dimensions) and absolute size of the poor population. The authors give two estimates for 1993/94, one with uniform recall period (URP) comparable to those for 1983, and another with mixed reference period (MRP) comparable to those for 1999/00. The authors find clear evidence of decline in absolute income poverty in terms of all the five indicators in rural India and in the country as a whole. In urban areas, however, this is true for four out of five indicators, the only exception being the absolute size of the urban population.

Between the pre and post reform periods, the relative pace of decline in poverty is found to be higher in the 1990s (post-reform period) than in the pre-reform period. Between 1983 and 1993/94, an average annual decline of 0.64 million for rural population was offset by 0.65 million increase in the urban population, with absolute size of the poor population remaining almost unchanged for the country as a whole. However, in the post reform period, an annual average decline of 2.47 million in the number of rural poor more than offset the annual average increase in urban poor of 0.30 million

(representing less than half the corresponding pre-reform increase) leaving thereby 2.17 million net annual reduction for the country as a whole.

While most states are on target to meet the MDG on poverty reduction, some states have witnessed little decrease in the proportion of people living below poverty line and in the cases of Madhya Pradesh and Orissa, the absolute number of poor people actually increased (Table 2). Along with Madhya Pradesh and Orissa, Bihar and Assam are all unlikely to meet the poverty reduction goal. The number of poor rose in both Madhya Pradesh and Orissa between 1993-94 and 1999-00, and while this increase was registered in rural areas in Madhya Pradesh, it was registered primarily in urban areas in Orissa (Table 3). Uttar Pradesh and Rajasthan have both made significant strides in poverty reduction. Uttar Pradesh's success has been largely in rural areas, as poverty rates in urban areas have increased and the absolute number of poor has increased in urban Uttar Pradesh (Sundaram and Tedulkar (2003). In Rajasthan, the poverty ratio declined in both rural and urban areas. In Uttar Pradesh, creating opportunities and training for employment in areas such as agro-processing and utilizing natural resources for industry, such as high-grade sand to make glass, are possible strategies that could alleviate urban poverty (Dholakia et al, 2004). Additionally, urban planning and infrastructure should be in place for urban growth to avoid intensification of slums as they expand.

While urban poverty should not be neglected, poverty alleviation measures must primarily focus on development in rural areas. India is primarily rural, with an urbanization rate of 28 percent. Over 60 percent of the population relies on agriculture as a way of life. While high levels of poverty abound in both urban and rural areas, as noted above, the absolute number of poor people in rural areas is 3.5 times greater than the number of poor living in urban areas and the proportion of people living below poverty line is higher in rural areas.[3]

The states of Madhya Pradesh, Rajasthan and Uttar Pradesh make up almost 30 percent of the country's population and about the same proportion of India's poor. While two out of three of these states are on track to meet the MDG on poverty, almost 60 million people in these states still live below the poverty line. Madhya Pradesh in particular needs to step up its efforts to reduce poverty. Rural poverty reduction measures come with the challenge of creating non-agricultural employment in areas such as agro-processing and mineral-based industries, provided that infrastructure in the form of roads, power and water is available. Additionally, investment in agricultural research and development, increased irrigation to enhance agricultural productivity and diversification to higher-value crops, could greatly help in lifting rural areas out of deep poverty. [4] We will discuss these later in the paper.

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[3] In 1999-00, the number of poor in rural areas was 224 million, while the number of poor in urban areas was 63 million. The proportion of people below poverty line was 31.2 percent in rural areas and 24.9 percent in urban areas (Sundaram and Tendulkar, 2003).
[4] Fan, Hazell and Thorat (2000) found that government expenditure for rural poverty reduction and increased productivity growth was most effective when spent on rural infrastructure and agricultural R&D.

Hunger

Hunger poverty is more pervasive than consumption poverty in India, as the proportion of people suffering from hunger was nearly double the proportion below consumption poverty in 1999-00 (53 percent vs. 26 percent). Hunger poverty is measured by calorie deficiency, that is, the inability to consume the calories required by the body. The average calorie norm of 2,110 calories per capita per day has been prescribed by the FAO for South Asia. However, this is much lower than the 2,400 calorie norm that has been typically used in India. The prospect of halving hunger in India by 2015 does not look as good as halving poverty. The MD goal in this area calls for a halving of hunger-poverty between 1990 and 2015 implying thereby bringing down the headcount ratio of calorie deficiency from 62.2 percent in 1990 to 31.1 percent in 2015. While in 1990, 62.2 percent of all Indians consumed fewer calories than required, in 1999-00, the proportion of the undernourished decreased to about 53 percent (World Bank, 2004).[5] If India were on track to meet the goal of halving hunger, about 50 percent of its people would have been undernourished in 1999-00 (Table 1), which is still tremendous. This three percentage point difference may not seem that large, but if the decrease in hunger continues at its current rate, it is projected that 39.2 percent of the population will consume fewer calories than required in 2015, as opposed to the MDG target value of 31.1 percent, which still leaves almost one third of the population suffering from hunger.

There is wide inter and intra state variation in hunger poverty. In 1999-00, an astounding 78 percent of residents of Assam were calorie-deficient, followed by other northeastern states such as Meghalaya and Sikkim, where over 70 percent of the people fell into this category. Andhra Pradesh and Goa were also among the major hunger-poor states, where over 65 percent of their populations were calorie deficient. Jammu and Kashmir, Rajasthan and Uttar Pradesh were at the better end of the spectrum; less than 38 percent of their populations had deficient calorie intake. Intrastate variation is most marked in Gujarat, where the proportion of calorie-deficient people in 1999-00 ranged from 48 to 75 percent. Surprisingly enough, the lowest rates of hunger were in the arid areas and the highest in the southern plains (World Bank, 2004).

Agriculture plays a dominant role in determining calorie deficiency among the Indian population. In 1999-00, people living in households cultivating 1.5 hectares or more of land had calorie deficiency rates that were two thirds lower than those who lived in households without land. Furthermore, when 75 percent or more of land under cultivation was irrigated, the risk of calorie deficiency for individuals was as low as 40 percent, versus 58 percent for those without irrigated land. Landless agricultural laborers were found to be more at risk for hunger poverty than land owners and people living in

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[5] The World Bank (2004) used the normative age-specific calorie requirements recommended by the Planning Commission Task Force (GOI, 1979), with adjustments for heavy, moderate and sedentary workers aged 19 and above. Human Development Report (2003) reported that 25 percent of Indians were undernourished in 1990 and 24 percent were undernourished in 1998-2000. The discrepancy could be due to different definitions of undernourishment. The HDR's definition of undernourished people is "people whose food intake is chronically insufficient to meet their minimum energy requirements."

districts with higher food grain per capita production were less likely to be hunger poor (World Bank, 2004).

The proportion of malnourished children was a remarkably high 54 percent in 1990, and this decreased to 47 percent in 1997, which puts the country slightly off track to halving the proportion of children suffering from hunger by 2015 (Table l). However, achieving this goal would still leave roughly one quarter of India's children malnourished. Even the decline in the proportion of malnourished children since 1992 has not led to any substantial decrease in the absolute number of children in this category, due to population growth.[6]

In 1998-89, about 37 million children – almost one half of children aged 0-35 months— were chronically undernourished or stunted (NFHS II). Approximately 18-23 percent of children were severely underweight or stunted. This data suggests that children suffer from both acute short term food deficits in that they are underweight and from long term chronic malnutrition, in that their growth is stunted (World Bank, 2004). There is a positive association in poor and non-poor states between the proportion of underweight children aged 0-35 months and under-five mortality rates, which are discussed later in the paper.

As is the case with other indicators, there are wide interstate variations in child malnutrition. While between 51 and 55 percent of children were underweight in Bihar, Rajasthan, Madhya Pradesh, Uttar Pradesh (BIMARU) and Orissa, between 24 and 28 percent of children were underweight in the Northeastern states and Kerala (World Bank, 2004). The proportion of underweight children is on the rise in Rajasthan and while the proportion of underweight children declined in Uttar Pradesh and Madhya Pradesh, the absolute number of underweight children increased (World Bank, 2004).

Child malnutrition can result from a number of causes. A late start in breastfeeding and/or early termination of breastfeeding increases the risk of infection in the infants, leading to malnutrition. Supplementary but inadequate feeding after weaning, illness, infections and low maternal and birth weight also lead to child malnourishment. According to the NFHS-II, in the BIMARU states and Orissa, the ratio of children who have to wait one day before being breastfed is about 62 percent, compared to almost 50 percent in other states (World Bank, 2004). Rates of children who suffer from diarrhea, which leads to loss of absorption of nutrients, are also highest in BIMARU states and Orissa.

The Tamil Nadu Integrated Nutrition Project (TINP), started in 1980 by the state government is a successful program that uses growth monitoring to target the neediest children and follows their progress. Children in the program are given supplementary nutrition and if they don't respond, they are provided with health services, which include check-ups, treatment of diarrhea, de-worming and immunization. Expectant and lactating mothers are also offered these services, as well as counseling in nutrition and hygiene.

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[6] About a quarter million fewer children suffered from malnutrition in 1998-99, as opposed to 1992-93 (World Bank, 2004).

The project relies extensively on local nutrition workers, who work with women's and girl's groups to promote strategies for awareness and change, such as birth weight recording followed by monthly weighing of children, and feeding practices. This type of activity also helps to empower local women through increased awareness to take better care of personal and household health, nutrition and hygiene issues. Children and mothers in Tamil Nadu also benefit from the midday meal scheme, which has not only helped increase retention rates in school, but also has improved the nutritional status of children, as well as pregnant mothers.

The Integrated Child Development Services program (ICDS), the main outlet for public spending on child nutrition, has been in existence since 1975. It operates through centers in villages, called *anganwadi,* where local workers are to provide services much the same as described above, in the TINP. While the government provides salaries for the *anganwadi* staff, state governments are responsible for procuring food for supplemental feeding. Wide interstate disparities exist in spending; in 1999-00 Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh were at the lowest end of the spectrum, spending between Rs. 31 and Rs. 52 per child per annum. At the other end of the spectrum, Tamil Nadu spent Rs. 167 per child per year, followed by Haryana and Punjab, which spent Rs. 99 and Rs. 91 per child per year, respectively.[7] As expected, there is a positive association between spending and lower levels of child malnutrition. Quantitative analysis suggests that changes in GDP per capita are inversely associated with changes in the rate of underweight children, while there is no association in changes in per child state spending and the rate of underweight children. Surveys indicate that only 10 to 30 percent of children in states with high rates of child malnutrition, such as Madhya Pradesh and Uttar Pradesh, regularly visit their community *anganwadi* centers (World Bank, 2004). The World Bank argues that this could be due to the amount or regularity of the availability of food supplementation. This is certainly part of the problem, but it could also be a symptom of much larger problems, similar to those we discuss along the lines of education and health.

It is possible that the ICDS would benefit from reforms similar to those we propose in the areas of education and health. It is likely that just as primary schools and PHCs lack proper facilities and infrastructure and suffer from high rates of teacher and doctor absenteeism, the *anganwadi* centers may be plagued with the same problems. In the case of PHCs, these issues lead to patients having to seek out private health care, which can hurtle a poor family further into the depths of poverty. States need to be held responsible for supplying food to the centers, and perhaps state spending on supplementary nutrition could be matched by central expenditure. Additionally, *anganwadi* workers should be properly trained and be held accountable to the community.[8]

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[7] In is interesting that Orissa spent Rs. 90 per child per year, as it does not fall in line with the seeming pattern of low-spending and high malnourishment, as the BIMARU states do.
[8] Anganwadi staff is paid by the central government, and they are usually members of the local village who have received 5 to 8 years of schooling (World Bank, 2004).

Education

India is far behind in the goal to achieve universal primary school enrolment. In 1999-00, the net primary enrollment rate was only 52.5 percent—a long way off from the goal of 100 percent enrollment by 2015 (World Bank, 2004).[9] Primary completion rates rose slightly between 1993 and 2000, from 58.7 percent to 61.4 percent, but dropout rates are clearly still very high.

Although more than 90 percent of Indians have a primary school located within one kilometer of their residence, the quality of the teaching and the lack of facilities, such as classrooms and basic water and sanitation, lead to a lack of functional literacy in many of the children who manage to complete school (Bajpai and Goyal, 2004). Another major factor affecting student enrollment in and completion of primary school is teacher absenteeism. Data from a 2003 World Bank survey indicate that about 25 percent of teachers were absent on any given day they were supposed to teach.

The Indian government has set goals for improving access to and completion of elementary education that are more ambitious than the MDGs. The National Program of Universal Education, known as Sarva Shiksha Abhiyan (SSA) was launched by the government as part of its commitment to universalize access to and ensure completion of primary schooling by 2010. The SSA sets out to have all children complete five years of schooling by 2007, to have all children complete eight years of schooling by 2010, to eliminate gender and social disparities in primary schooling by 2007 and by 2010 in secondary schooling, and to have universal retention of children in primary school by 2010. The Tenth Five-Year Plan sets out to increase the literacy rate to 75 percent by 2007 and to reduce gender gaps in literacy and wage rates by at least 50 percent by 2007. While it is extremely promising that the government itself has laid out these goals, which go beyond the MDGs within a shorter time frame, it remains to be seen whether any of these will be met.

The literacy rate of 15-24-year olds increased from 64.3 percent in 1990 to 73.3 percent in 2001 (Table 1). It is noteworthy that primary school completion rates were lower than youth literacy rates, bringing to light the question of the definition of literacy and/or the manner in which it is measured. While the increase in literacy rates is of significance, the numbers may be misleading as to what such literacy rates actually mean about the presence of effective literacy in the population (Bajpai and Goyal, 2004). Nevertheless, it is heartening that literacy rates in this age group have improved and that they surpass the overall literacy rate, which was 65.4 percent in 2001 (RGI, 2001).

Within this overall literacy rate, there are large urban/rural and gender disparities, and gender disparities are more pronounced in rural areas. The literacy rate in urban areas was 80 percent, compared to 59 percent in rural areas (RGI, 2001). Women in rural areas were 35 percent less likely to be literate than men, while in urban areas, women were about 15 percent less likely to be literate than men. The scheduled castes and tribes were

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[9] The gross primary enrolment rate for 1999-00 was significantly higher than the net rate, at 95 percent (World Bank, 2004).

less likely to be literate than the others and within the scheduled caste and tribe population, males had higher literacy rates than females. Among the major states, Bihar, Uttar Pradesh, Madhya Pradesh and Rajasthan had among the lowest levels of literacy and gender disparity in literacy was particularly noticeable in these states. Not surprisingly, these states suffer from high dropout rates among school-age children, as well as low youth literacy rates.

India is off-track in terms of improving the proportion of girls to boys in primary education. The ratio was 0.71 in 1990-91 and climbed to 0.77 by 1999-2000 (Table 1). It is estimated that if improvements continue at their current rate, the ratio of girls to boys in primary school will be 0.83 in 2015, which is substantially below the goal of equal schooling for girls and boys by that year. In secondary and tertiary education, there is even more room for improvement, as in 1999-00, the ratio of girls to boys in secondary school was .67 and in tertiary school it was a mere .51 (HDR, 2003).

Gender disparity in schooling varies across India and is greatest in Bihar, Uttar Pradesh, and Rajasthan, where gross primary enrollment rates are about two thirds or less for females than for males (World Bank, 2004). At the same time, gross primary enrollment rates for girls and boys are on or near-par in Punjab, Haryana, Sikkim and Kerala. Between 1980-81 and 1999-00, there was a lessening of gender disparity in primary enrollment ratios in most states, but Uttar Pradesh and Orissa actually experienced a minor relative decrease in their ratios.[10]

The degree of gender disparity in primary schooling has been shown to be associated with the level of spending on primary education (World Bank, 2004). States that spend more on the education of children between the ages of 6 to 11 are more likely to have higher female to male ratios than states that spend less. Additionally, states with higher per capita GDP tend to have lower levels of gender disparity in primary schools. If there are constraints in schools in terms of capacity of the number of schools, classrooms and teachers, then parents would be more likely to send their male children to school than female children. Additionally, households with higher incomes may be more inclined to send girls to school, as budget constraints that may lessen female attendance could be relaxed. While increased spending on primary education and higher household income levels may help to narrow the gap between female and male enrolment ratios, there are overarching problems within the school system that need to be addressed, such as quality of teaching, as discussed above.

As mentioned earlier, among other factors, the provision of midday meals for school children has been seen as a key element in increasing enrolment and retention of students. Historically, Tamil Nadu has been successful in using the midday meals scheme to enhance rates of enrolment and retention over time. In Tamil Nadu in 1986-87, the total primary school dropout rate (girls and boys combined) was 22.9 percent and by 2000-01, it had decreased to 14.4 percent. The dropout rate for girls during the same period was reduced by more than two-thirds, from 25 percent to 16 percent. At the same

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[10] Kerala also experienced a minor relative decline in its gross primary enrollment ratio, but its ratio was and still is among the highest in India, at over 90 percent.

time, the dropout rate for boys decreased from 19.8 percent to 12.9 percent (Government of Tamil Nadu, various years).[11]

There are wide interstate disparities in dropout rates of children in grades one through five. In 1999-00, over 50 percent of children in Bihar did not complete primary schooling, while over 90 percent of children completed primary school in Kerala (World Bank, 2004). Maharashtra, Karnataka and Tamil Nadu, followed Kerala with the country's highest primary school completion rates-- all above 75 percent. The northeastern states, along with Bihar, Uttar Pradesh, Madhya Pradesh and Rajasthan ranked at the bottom, with completion rates at about 50 percent or lower. Taken together, Uttar Pradesh and Madhya Pradesh and Rajasthan account for almost one third of India's population, and the poor performance of these states not only fails the children within them, but diminishes India's chances of meeting the MDG on education.

Madhya Pradesh, one of India's poorest states, has been working to improve its poor education record and in 1997, the state government began the Education Guarantee Scheme (EGS) in an effort to ensure universal access to primary school throughout the state. The EGS is part of Madhya Pradesh's broad decentralization program and it builds a three-way partnership among the state government, local governments (usually a village council or *panchayat*), and the community. The responsibility of identifying needs for schools falls on the community, the *panchayat* oversees the schools' functioning, and the government grants funds for salaries, training and supplies within a three-month time period following community identification of need. The binding time frame is essential, in that its statutory framework forces movement from rhetoric to action, similar to the Employment Guarantee Scheme in Maharashtra (Government of M.P., 2000). Another key element is one that reflects a decentralized aspect of the scheme: teachers are locally appointed and overseen by the *panchayat*, which can help reduce the high rates of absenteeism that plague the educational system.

Within the first year of operation, an average of 40 primary schools emerged each day in Madhya Pradesh, revealing the overwhelming demand for facilities. Of the 15,568 EGS schools that cropped up between 1997 and 1998, most of them were in tribal areas; SC/ST make up almost 70 percent of enrolment in these schools and girls account for about 45 percent enrolment. Not only has the EGS been instrumental in scaling up access to schools, but it has provided access to segments of the population that have been traditionally left behind, making strides towards greater social and gender equality in the state. The program spread to Rajasthan and Uttar Pradesh in 1999 and to Orissa in 2000.

Dholakia et al (2004) point out that a change in societal and cultural attitudes towards education must take place in India. Gender equality is off track in education and the state and central governments should encourage female students and their parents to value formal school education for women. There is a need to attract girls to go to school, rather than doing work around the house or in the fields, particularly in states like Uttar

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[11] The total expenditure for the midday meal program in Tamil Nadu in 2002-03 was Rs. 8.27 million, of which over half, or Rs. 4.74 million was spent on children in the 5 to 9-year age group (The World Bank Case Studies, 2004b).

Pradesh and Rajasthan, where gender disparity in schooling is high. Additionally, education must be viewed as an asset, not a threat. Poor parents often fear that education will put children at a disadvantage in terms of finding low-skilled, manual jobs and may make them unemployed or unemployable over long stretches of time. These attitudes lead to problems on the demand, rather than the supply side.

In 2001-02, India spent about 4 percent of its GDP on education (GOI, Department of Education). Expenditure on education has been rising over the years, but is still lower than the targeted expenditure by the government of 6 percent of GDP. As a proportion of government expenditure on all sectors of education, about half was spent on primary education in 2000. The situation in 1990 was very similar, as India spent 3.8 percent of its GDP on education, of which about 1.8 percent was spent on primary education. In comparison to China, which has the largest education system in the world, India actually spends a larger percentage of its GNP on education, but its literacy rates are notably lower than China's.[12] In 2000, China's literacy rate was about 86 percent, while India's was about 65 percent. China's net rates of school enrolment and its proportion of girls to boys enrolled in school are substantially higher than India's.[13]

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Infant and Child Mortality

It is estimated that 1.72 million children die in India before reaching their first birthday, representing a tremendous waste of human potential and a pressing need to meet the millennium development goal to reduce child and infant mortality by two-thirds by 2015. Unfortunately, if reduction of child and infant mortality continues at its current rate, India is not likely to meet this goal.

The under-five mortality rate (per 1000 live births) in India was 123 in 1990 and deceased to 93 in 2001.[14] If India were on track to reduce this mortality rate by two thirds by 2015 (MDG 4, target 5), the 2000 rate should have been 87, not 93 (see Table 1). The IMR (per 1000 live births) in India is also high. In 1990, it was 80 and in 2000 it was 66. If India were on the track to reducing this by two thirds by 2015, the IMR should have decreased to about 57 by 2001 to meet the MDG target of 27. The Indian Government's IMR goals are to reduce the rate to 45 by 2007 and to 28 by 2012.

Infant mortality rates vary widely between and within states. In 2000, IMR in Kerala was 14 (per 1000 live births), as opposed to a staggering 96 in Orissa.[15] The low IMR in Kerala is an exception in India. Maharashtra's IMR — the second-lowest in

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[12] In 1996, a year for which data on both countries was available, China spent 2.3 percent of its GNP on education, while India spent 3.2 percent.

[13] In 2001, the net primary enrolment ratio in China was 93 percent and the proportion of girls to boys in primary education was 92 percent (Woo et al 2004).

[14] For comparison, the average under-five mortality rate for high-income OECD countries was 7(per 1000 live births) in 2001 and for developing countries, the average was 89 (HDR, 2003).

[15] For comparison, the average infant mortality rate for high-income OECD countries was 5 (per 1000 live births) in 2001 and for developing countries, the average was 62 (HDR, 2003).

India—was 48. Orissa's high IMR is followed by Madhya Pradesh and Uttar Pradesh, with IMRs of 88 and 83, respectively. Given the huge differences across states, it is not unreasonable to suggest that the MDGs to reduce IMR in India as a whole could be applied to individual states. Together, Uttar Pradesh, Madhya Pradesh, Bihar and Rajasthan account for slightly over half of all infant deaths in India. Given that these states also have higher fertility and population growth rates than others, they face an even greater challenge in reducing IMRs. Even if Orissa succeeds in reducing its IMR to a MDG target of 41 by 2015, the state will still have a significantly higher IMR than the all-India MDG target of 27 (World Bank, 2004).

With regard to intra-state variations, in Kerala, the infant mortality rate in the north (19) is more than twice as high as in the south (7.8). The IMR in Karnataka ranges from a high of 76.5 in the inland southern region to a low of 38.8 in the coastal and Ghat regions. In general, the interior region of the country has higher IMRs than the coastal regions.

Nearly two-thirds of infant deaths occur within 11 months of birth and about one half of under-five deaths occur within the first month of birth — the neonatal period (NFHS II). Infanthood death constitutes over 70 percent of under-five mortalities.[16] Given the overlap of the two indicators, it is not surprising that the relationship between IMR and U5MR in states across India is almost a perfect fit. Therefore, many of the causes of infant mortality and interventions to prevent it carry over to under-5 mortality.

Almost one in three of the infants around the world who die before reaching the age of one month, die in India (State of India's Newborns, 2004). About 26 million children are born in India yearly and 1.2 million of them do not reach the age of four weeks, which translates into 30 percent of the 3.9 million neo-natal deaths globally. An astounding one quarter of these Indian neonatal deaths occur in U.P. and when taken together with Madhya Pradesh and Bihar, these states accounted for over half of all newborn deaths in the country and almost 15 percent of worldwide neonatal deaths in 2000.

The divide between the rich and the poor is significant in this respect, as the neonatal mortality rate (NMR) of the population's richest quintile was 26 (per 1000 live births), while the NMR for the poorest quintile was more than double, at 60 (per 1000 live births). Urban and rural disparities are also striking, as the NMR in rural areas was 52 (per 1000 live births) and 34 (per 1000 live births) in urban areas. The reduction in the NMR, which had declined in the 1980s to 53 (per 1000 live births), tapered off to 44 (per 1000 live births in 2000) and this slowing down may thwart the National Population Policy's aim to reduce the NMR to below 30 by 2010. Given that infanthood death, as mentioned, makes up over 70 percent of the under-five mortality rate, a reduction in the neo-natal mortality rate would greatly help to reduce both the infant and under-five mortality rates and help bring the country closer to meeting the targets to reduce these rates by two-thirds by 2015.

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[16] It may be better to measure under-5 mortality rate between the ages of one and five, instead of zero to five for it to be a more meaningful indicator.

A study on the causes of neonatal death that was conducted by the Society for Education, Action and Research in Community Health, (SEARCH) in Gadchiroli, Maharashtra had the following results to report: Neonatal sepsis (NNS), including septicemia and pneumonia emerged as the most common causes, figuring in 52 percent of the neonatal deaths, followed by birth asphyxia (20 percent) and pre-maturity (15 percent). This profile presents the primary causes of neonatal deaths in an area of high neonatal mortality (51 per 1,000 live births) a poor rural population, where tetanus deaths were no longer a problem (State of India's Newborns, 2004). It is also probable that many neonatal deaths result from maternal malnutrition and post-delivery complications, but this data is not readily available. The available data indicates that in poor states, IMR is almost double when the mother has not received tetanus shots during pregnancy (World Bank, 2004).[17]The infant mortality rate is also almost halved when a mother receives antenatal care (ANC).

According to NFHS II, only 65.4 percent of pregnant women received at least one antenatal checkup. Only 43.8 percent of the women received the recommended three or more checkups and only one-third of the women were examined in the first trimester. There are large interstate variations in ANC coverage. While over 90 percent of women received one or more checkups in Kerala, Tamil Nadu and Andhra Pradesh, in Bihar and Uttar Pradesh it was as low as 36.3 and 34.6 percent respectively. Additionally, NFHS II data also show that NMR was 50 percent less if the birth interval was 2-4 years compared to that if the interval was less than two years (36 and 71 per 1,000 live births, respectively). Birth spacing, therefore, reduces the risk of neonatal mortality.

Professional medical attention at birth also significantly reduces NMR and the IMR. Close to two-thirds of women deliver at home and only 42 percent of women give birth under the care of a skilled birth attendant (State of India's Newborns, 2004). This not only increases the mortality rates of infants and children, but contributes to high maternal mortality rates as well.

There is a positive association in poor and non-poor states between the proportion of underweight children aged 0-35 months and under-five mortality rate. As mentioned earlier, poor nutrition can result from premature termination of exclusive breastfeeding to supplementary, but inadequate feeding. In 1998-99, about 37 million children – almost one half of children aged 0-35 months— were chronically undernourished or stunted (NFHS II). Malnourished children are at higher risk for illness and infections, which can lead to higher rates of mortality.

Child immunization is critical in reducing infant and child mortality. The fact that there is a separate MDG for child immunization against measles underscores the importance of immunization. In 1998-99, only 50.7 percent of children had received the

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[17] Neonatal tetanus is a major global public health problem, with an estimated 500,000 incidences each year. Neonatal tetanus, the most common form of tetanus in developing countries, is caused by contamination of the umbilical stump when it is cut by a non-sterile instrument or when dung is applied to the cord. To protect the newborn, women should receive at least two doses of tetanus toxoid vaccine at least four weeks apart (www.who.int/vaccines/en/neotetanus.shtml).

measles vaccine and an underwhelming 42 percent of children had had a complete set of vaccinations (NFHS II).[18] Measles immunization rates have increased slowly, from 42 percent in 1992-93 to 51 percent in 1998-99. Measles vaccination fell in Madhya Pradesh, Rajasthan and Assam over the same six-year period. Tetanus immunization rates for children vary widely across India, with only 16 percent of one-year olds vaccinated in northern Bihar in 1998-99, as opposed to 100 percent immunization rate in eastern Maharashtra (NFHS II).

Maternal Mortality

According to WHO estimates for 2000, of the 529,000 maternal deaths globally each year, 136,000 or about 26 percent of them occur in India. Maternal mortality rates are extremely high, with 407 deaths per 100,000 births in 1998 (Table 1). [19] As with other indicators, there is wide interstate variation in MMR. According to the Registrar General of India, in 1997, the variations were ranging from 29 deaths (per 100,000 births) in Gujarat, to an astounding 707 deaths in Uttar Pradesh, followed by 670 deaths in Rajasthan and 498 in Madhya Pradesh. The pace of decline of MMR has been slow and it seems very unlikely that India will meet this MDG if progress continues at its current rate. Between 1997 and 1998, there was actually an *increase* in MMR in eight major states.[20] Given population growth, the absolute number of women dying due to childbirth has increased.

Programs for maternal health have been in existence since the 1960s, with the establishment of primary health centers (PHCs) and sub-centers. International agencies, such as the WHO, the World Bank and UNICEF have all tried their hand at improving maternal health (and obviously decreasing MMR) but, for a number of reasons, including lack of awareness programs and ANC, poor strategies devised by poor management capacity, these schemes failed. Strategies for reducing MMR in the 1980s and 1990s have, for the most part, focused mainly on improving antenatal care, traditional birth attendant training and tetanus immunization. In the early to mid 1990s, it was recognized that improving emergency obstetrical care (EmOC) could be more effective in reducing maternal mortality, but this essential component of maternal care too has not been implemented well and hence has not produced any significant results.

The most common causes of maternal deaths in India are hemorrhage, anemia, puerpetal sepsis, obstructed labor, abortion, and hypertensive disease of pregnancy (State of India's Newborns, 2004). Examining the risk factors for maternal mortality, researchers have identified the following: mother's age below 20, illiteracy, delivery by an unskilled person, poor socio-economic status and lack of antenatal care. Though less commonly identified, other factors include: bad obstetric history, anemia, and maternal complications and diseases.

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[18] Vaccinations include BCG, DPT (3 doses), Polio (3 doses), measles.

[19] For comparison, the average maternal mortality rate for high-income OECD countries was 12 (per 100,000 births) in 1995 and for developing countries it was 463. (HDR, 2003)

[20] Andhra Pradesh, Assam, Bihar, Kerala, Orissa, Punjab, Tamil Nadu and West Bengal all witnessed increases in MMR between 1997 and 1998.

Public spending on health:

India's public spending (federal, state and local governments) in the health sector is a mere 0.9 percent of its GDP. With the exception of Indonesia, Pakistan and Nepal, India spends less than other Asian countries. India also spends significantly less than the three-percent average that developing countries spend on health as a percentage of GDP.[21] In terms of health outcomes, it is recognized that preventative care, which includes child immunization and communicable disease control, is more effective than curative, or hospital care. Public spending on preventative measures, such as immunizations, is also found to be more pro-poor than hospital services. In India, most of the public expenditure on health is spent on hospital health services and relatively little is spent on preventative care. Between 1981 and 1999, government spending on public health in most states declined, while the share of spending on medical, or hospital services increased (World Bank, 2004).[22]

In terms of coverage of health centers, in 1998, there were 137,006 sub-centers, 23,179 PHCs and 2,913 community health centers in India. There were 665,639 hospital beds or 6.9 hospital beds per 10,000 persons. Based on data collected by the NFHS II, in terms of population coverage, only 13 percent of rural residents had access to a primary health center, 33 percent had access to a sub-center, 9.6 had access to a hospital and 28.3 percent had access to a dispensary or clinic (Bajpai and Goyal, 2004).[23]

Even in existing hospitals and PHCs, there are problems with facilities and service delivery. Difficulties arise with doctor and paramedic absenteeism, poor physical infrastructure and cleanliness of hospitals and centers. Lack of oversight and accountability along with low public spending on primary health, for the most part, has lead to these problems.

In 1994, the *Rogi Kalyan Samiti* (Patient Welfare Committee) Project was set up in Madhya Pradesh with the concept of managing public hospitals through community participation to improve the efficiency and quality of services. The RKS model is a local response to problems, uses a needs-based approach and its General Body is comprised of local government officials, political leaders, people's representatives, donors, professionals, and community leaders. The General Body is responsible for policy formulation and decision-making, and the Executive Body (elected by the General Body) is responsible for implementation. The RKS is not deemed as a government agency, but is seen almost as an NGO with the freedom to determine user fees on the basis of local circumstances. The use of any money generated from these fees is determined by the RKS committees, and is not deposited in the state exchequer. (World Bank Case Studies, 2004). It is essentially a model for decentralized hospital management.

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[21] High-income countries spend an average of five percent of GDP on health.

[22] The share of spending on public health did not decline in Maharashtra, Tamil Nadu and Kerala (World Bank, 2004).

[23] Relative to health coverage in India, 28.36 percent of Chinese villages had health clinics in 1998. In 2000, however, this had decreased to 22.8 percent (UNDP, 2004).

The RKS concept has since been standardized by the state government of Madhya Pradesh and has been replicated in 43 district hospitals, 57 civil hospitals and 321 community health centers. Along the same vein, an econometric study of over 1,500 villages, based on a nationwide survey of 33,230 households in 1994, found that under-five mortality rates were significantly lower in states where health services had been significantly decentralized relative to states where no decentralization had occurred (Mahal et al, 2001).[24]

Disease

India accounts for almost a quarter of Tuberculosis (TB) cases in the world, with 2 million cases of this completely curable disease occurring on average per year in the country. TB causes more deaths annually in India – 421,000 deaths per year—than malaria, hepatitis, meningitis, nutritional deficiencies, sexually transmitted diseases, leprosy, and tropical diseases combined (WHO, 1999). Ineffective plans of the past for treating TB have been replaced by a revised plan, which puts into place the WHO's recommended Directly Observed Treatment, Short Course (DOTS) program. With wide-spread implementation over the years, this intervention program has increased successful treatment of TB cases from three out of 10 cases in 1993 to eight out of 10 in 2001 (Khatri and Frieden, 2002). However, with rising rates of HIV infection, the number of TB cases is likely to rise, as people with HIV are more susceptible to TB (Narayan et al, 2003). In 2001, it was estimated that 0.79 percent of the adult population (age 15-49) was living with HIV/AIDS and that 170,000 children (age 0-14) were living with the disease as well. There were 2.09 malaria cases and 946 malaria-related deaths in 2000.

Water and Sanitation

Millions of people in India suffer from waterborne diseases as a result of lack of access to safe drinking water. People with access to safe drinking water, as defined by the Census of India, are those who have a tap or a hand pump or tube well located within or outside a residence (HDR 2001). Given this rather loose definition, one must think about the incidence and frequency of water testing, along with what is deemed "safe." Issues of quality, as well as quantity and access, must be considered. Data from the NSS 54th round obtained in 1998 indicated that only 29 percent of rural households cleaned water in some way before drinking. In urban areas, 35.5 percent of households used methods to clean water used for drinking (Census of India, 2001)

The Government's Plan aims to ensure that all villages have sustained access to potable drinking water by 2007. This is more ambitious than the MDG target value for this measure, which translates into 80.5 percent of rural population with access to improved water by 2015. Since 1990, the proportion of population with sustained access to an improved water source has been increasing in both rural and urban areas and if the

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[24] States in this study where decentralization had occurred were: Gujarat, Maharashtra, Kerala, Karnataka and West Bengal. The study controlled for mean household income, income inequality, access to transport and availability of health infrastructure.

rate of improvement is sustained, it is likely that India as a whole will meet, if not surpass the goal of halving the proportion of people without sustainable access to safe drinking water by 2015 (MDG 7, target 10). In 1990, 61 percent of the rural population had sustained access to an improved water source, and by 2000, this was up to 79 percent. In states such as Madhya Pradesh and Rajasthan, access to safe water in rural areas is below the national average. The proportion of the urban population with sustained access to improved water grew from 88 percent in 1990 to 95 percent in 2000. These numbers are encouraging, as they indicate that India is on the way to providing access to water to all of its residents. However, whether this water is safe to drink is another matter which merits consideration. Testing water quality, particularly in areas which experience frequent outbreaks of waterborne disease, is a key part in determining the proportion of people who have access to water that is safe to drink. Local governments could respond to problems of poor water quality by a) making people aware of the dangers of drinking the water, and, if infrastructure is not in place to clean the water, b) offering solutions to the problem, such as boiling, filtering or chemically treating water prior to drinking.

Diseases such as typhoid, cholera, dysentery and hepatitis are more likely to be contracted under poor sanitary conditions, which abound when human excreta is not properly disposed of. Although there has been significant improvement on access to sanitation in urban areas— from 44 percent in 1990 to 61 percent in 2000—millions still live without basic sanitation facilities. Children living in areas with poor sanitation regularly fall sick with diarrhea, among other illnesses. If a child is already in a weakened, malnourished state, he/she may die from such sickness. Areas lacking sanitation infrastructure, such as city slums and rural regions, have higher incidences of poverty and disease. In rural areas, less than one quarter of residents nationwide had access to improved sanitation in 2001. In Madhya Pradesh, both rural and urban areas improved sanitation access rates, but these were still below the national average.

Improving water and sanitation infrastructure could help reduce the burden of disease in India, particularly in segments of the poorer population, as improvements would serve as preventive disease measures. Millions of people fall sick every year from illnesses that could be averted, and relying on curative measures can be costlier and less efficient and effective than preventative ones. Curative measures are also much more plausible for the better-off to undertake, rather than the poor, and thus have a pro-rich tilt, although an illness can drain any family of resources. Sickness of a family member can set an already-poor family spinning deeper into poverty, not to mention an epidemic that can have widespread effects on larger swathes of the population.

Progress and Challenges Ahead

India is poised to meet a tremendous part of the MDG challenge—to halve the proportion of people living below poverty line between 1990 and 2015. This is a major step towards poverty eradication, not just in India but in the South Asian region and in the world as a whole. Since India's economic reforms were launched in 1991, the economy has sustained an annual average growth of over six percent. In the west and south of India, growth rates have been comparable to those of Southeast and East Asian

tigers in their prime. Even though it was a drought year when agriculture recorded a negative 5.2 percent growth, overall GDP growth in 2002-03 was over four percent and in 2003-04 it was placed at 8.5 percent, supported by a turnaround in agriculture. India's strong economic growth has succeeded in lifting people out of poverty, but there is much further to go to eradicate poverty from the country.

Even though India is on track to meet this important goal, over one quarter of its population, or over a quarter million people, were suffering from extreme poverty in India in 1999-00. Poverty levels actually increased in Madhya Pradesh and this state, as well as Bihar, Orissa and Assam are unlikely to meet MDG targets if they were set at the state level. On the other hand, poverty reduction has been on track in Rajasthan and in Uttar Pradesh.[25] Together, the states of Madhya Pradesh, Rajasthan and Uttar Pradesh make up almost 30 percent of the country's population and account for as many poor. Progress in these states, on the poverty goal and on other goals as well, can bring the entire nation closer to meeting the MDGs. This underscores the importance of setting state-level goals, as a small number of them can tip the scales in either direction.

India's advancement towards the goals on health, education and hunger has been less spectacular than progress on poverty reduction. In India, almost one half of all children, and over 50 percent of the entire population, suffer from malnourishment. There is a large gap between consumption poverty and hunger poverty levels. Some of the states that rank low on consumption poverty, such as Gujarat, rank high on hunger poverty, while states that rank high on consumption poverty, such as Uttar Pradesh have low levels of hunger poverty. Hence, a reduction in consumption poverty is not synonymous with eradication of hunger. Among other things, hunger eradication may depend on agricultural productivity, local availability of food, and the like. Although there has been improvement on reducing hunger poverty, if the pace of hunger reduction is not speeded up, India will probably not meet the second target of the first MDG: to halve the proportion of people suffering from hunger between 1990 and 2015.

Progress on the targets to reduce child and infant mortality has been made in India, but the country is not likely to meet the goal of reducing these rates by two-thirds between 1990 and 2015 if reductions continue at their current rate. In 2001, the under-five mortality rate was 93 (per 1000 live births), down from 123 in 1990. It is estimated that about 1.7 million children die in India before reaching their first birthday and 70 percent of under-5 deaths occur within the first year. These high rates of infant and under-5 mortality represent a great waste of human potential and also translate into higher fertility rates, which breed more dependence and higher levels of poverty. Together, Uttar Pradesh, Madhya Pradesh, Bihar and Rajasthan account for slightly over half of all infant deaths in India. Given that these states also have higher fertility and population growth rates than others, they face an even greater challenge in reducing IMRs. Recently though, Madhya Pradesh has made headway on IMR reduction, as a larger proportion of women are receiving antenatal care.

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[25] In Uttar Pradesh, there was an increase in the incidence of urban poverty, but a large decline in rural poverty levels.

Maternal mortality rates in India are high and though they showed a decline, albeit sluggishly, between 1991 and 1998, the decreasing trend seems to have stagnated, if not reversed. Between 1998 and 1999, MMRs increased in eight states and the India-wide ratio fell by only one point to 407 deaths per 100,000 births. This is worrisome, as it indicates that India is not only off track to meet the goal of reducing MMR by three quarters between 1990 and 2015, but that the situation may even be worsening.

The pace of progress towards achieving universal primary education needs to be stepped up in order to achieve the MDG target of 100 percent completion of primary school. Literacy rates have certainly improved since 1990, but only slightly. Over half of India's children were enrolled in primary school in 1999-00.[26] Primary completion rates are also low, as only about 61 percent of children completed primary school education in 1999-00. Gender and class disparity is still prevalent in literacy rates, as male literacy rates continue to be higher than female literacy rates and literacy rates of scheduled castes and tribes were lower than other segments of the population.

India is making impressive strides to provide access to water in both the rural and urban areas of the country. In fact, it seems that the goal to halve the proportion of people without access to safe drinking water by 2015 will be surpassed. However, the issue of quality of water that residents have access to needs to be addressed. There should be standards for what is considered "safe" water, as waterborne diseases abound, and can and should be prevented. Lack of proper sanitation and poor or clogged drainage systems can be breeding grounds for disease as well. While the MDG on sanitation is likely to be met in urban areas, advancement towards the goal in rural areas is off-track.

Achieving the Millennium Development Goals by 2015: Interventions for Success

Poverty

Though India's accomplishment in poverty reduction is striking, much remains to be done. Over a quarter million people still live below the poverty line and the vast majority of the poor live in rural areas. India is primarily rural; less than 30 percent of its population resides in urban areas. Agriculture contributes 27 percent to the country's GDP and employs more than 60 percent of the workforce. While a number of conditions determine how much the poor share in the country's growth, the extent to which growth stems from the rural areas, particularly agriculture, is the key. However, growth in the agricultural sector has been lagging behind. In the 1990s, industry grew at an average of almost 7 percent, while growth rates in the agricultural sector fluctuated and grew at only about 3 percent per year on average (Panda et al 1999). At the same time, household expenditure per capita in rural areas stagnated (Datt, 1999). There are many reasons for these outcomes, and among others, one of them is historical and geographical marginalization.

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[26] This is the net enrolment rate. The gross enrolment rate for the same year was 95 percent.

China, the only other billion-plus country of the world has seen its economy grow at an average rate of 9.4 percent between 1979 and 2003. The country also saw a dramatic decline in poverty rates over the decade of the 1990s. Poverty rates in rural areas dropped from 31.1 percent to 10.9 percent. However, China's economic growth is now slowing and in the wake of the dramatic catching-up period, extreme rural poverty is back on the rise (Woo et al, 2004). The economic gains from the surging economy in China were certainly instrumental in poverty alleviation, just as they have been in India.

Much like the poor in India, China's rural poor too live in geographically isolated areas where there are low levels of rainfall and the farming community has to work on land with poor soil conditions. Woo et al (2004) argue that poverty alleviation measures must be region-specific. For example, while the establishment of Special Economic Zones (SEZs) in the coastal provinces led to high levels of foreign direct investment inflows and high economic growth as a consequence, however, as expected, when SEZs were allowed to be opened in the hinterland provinces, the results were not the same.

Any poverty reduction program in India, like in China, must be region, location and circumstance-specific. A plan for strengthening rural development and promoting agricultural growth should be an integral part of a poverty eradication program in India. The plan of course would call for improvements in the areas of education, health, water and sanitation. These measures, as they relate to the MDGs, will be discussed in the subsequent section. Other ingredients of such a plan include:

Increased focus on irrigation: Of the 182.7 million hectares[27] of land used for crop cultivation in India, only about 50 million hectares is currently irrigated, leaving the rest to be totally dependent on monsoon rains. Available water supplies are often used inefficiently, resulting in soil erosion, nutrient depletion, land degradation, and depletion of water tables. This creates a vicious circle of poverty, land degradation and low productivity. Increased availability of small-scale water management technologies will significantly help small-scale farmers. Community-based watershed development projects have also demonstrated excellent results, but need to be scaled up. Extending irrigation facilities on a much larger scale is vital. Since the majority of Indian agriculture is rain-fed, it is highly vulnerable to drought and climate variability that has disastrous economic and health impacts. Climate forecasting, farm income and weather insurance, and improved disaster planning can help reduce these impacts.

Increased expenditure in agricultural research and development: The Indian government currently spends 0.46 percent of its agricultural GDP on agricultural R&D, compared to about 1.5 percent for developing countries as a whole and about 3 percent in a developed country, such as the U.S. The adaptation of high-yielding variety seeds to local conditions brought about the tremendous success of the Green Revolution of the 1960s. Investment in agricultural R&D has been shown to be among the top contributors to poverty alleviation in rural areas (Fan et al 2000, Datt and Ravaillion 1998, Desai, Namboodiri 1997 and Chhabilendra 2001). In Punjab, during the Green Revolution period, for example, the Punjab Agricultural University (PAU) played a critical role in this area.

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[27] This represents the largest acreage of cropland in the world.

Researchers at the University modified and further developed the Mexican dwarf wheat varieties and the Philippine high yielding rice varieties to suit local conditions and requirements. Since 1962, PAU has released 38 high yielding varieties of wheat and 19 varieties of rice.

Capacity expansion in agricultural universities: The agricultural research organizations in India need to develop suitable and pragmatic research agendas, especially keeping the north Indian states in view.

Diversification of crops: In order for the farming community's income levels to be raised, it is essential to the extent that local conditions like the soil, climate, and water availability permits that production of cash crops, and fruits and vegetables be encouraged.

Revamping of the agricultural extension system to assist farmers in adopting new technologies: Improved and expanded agricultural extension programs are needed to speed up the adoption of new technologies for modern agriculture.

Building up rural infrastructure: One of the great liabilities of India as a whole, and of rural India in particular is the disastrous state of physical infrastructure. The comparison of the Gangetic states and the others is enormous. In every infrastructure dimension, the northern interior states are in dreadful condition whether one looks at per capita power consumption, proportion of unsurfaced roads to total road length, or availability of telephone lines. Of course, these differences did not emerge suddenly, but rather have a long legacy. The differences are likely to grow further unless much higher public investments are made along with adequate policy reforms. Fan, Hazell and Thorat (2000) show that in order to reduce rural poverty, the Indian government should give highest priority to investments on a much larger scale in rural roads, agricultural research and education. Their study concludes that these types of investments not only have much larger poverty impacts per rupee spent than any other government investment, but also generate higher productivity growth. Rural India needs a new social contract, in which there will be reliable infrastructure provided at commercial prices rather than given for free[28]. The Government's commitment, both at the National and State level should be that every village will be assured access to clean drinking water, a road to the regional market, reliable power supply and minimal telephone service, but that every village will be responsible for covering the commercial costs of those services on a normal user-fee basis. In this regard, we will discuss the idea of life-line tariffs later in the paper.

Emphasis on agro-processing and rural industrialization: In terms of rural industrialization, the first order of business should be to promote, on a large scale, agro based industries. Agro based industries may be any set of production activities that involve all post-harvest operations of crops from farm to the market, such as, cleaning, grading, packaging storage, transportation, marketing. It may also include processing of agricultural/horticultural/forestry products including fruits and vegetables, flowers and

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[28] Mechanisms need to be put in place such that the population below the poverty line is provided water and electricity free of cost.

aromatic/medicinal plants/herbs and the like. The development of agro based industries can help to realize the various linkages or inter-relationships between industry and agriculture. If the agro based industries are promoted widely, it will help reduce regional imbalances, and also generate employment opportunities on a large scale for the rural masses. Rural areas could potentially become large platforms for milk processing units and dairy-based industries, exporting fruits and vegetables, industries preparing byproducts of apples, mango, pomegranate, guava, and custard apple, and farmers should be encouraged to grow cashew, tamarind, and citrus fruits, among others.

Health

India needs to step up its efforts dramatically to meet the MDGs on health. Infant, under-five and maternal mortality rates are high and have not shown sufficient reduction over the last decade to put the country on track to meet the corresponding MDG targets. India's primary health care system is dysfunctional. High infant and maternal mortality rates are among the many negative outcomes of the system that has failed to deliver basic health services to the poor. Reforms in the primary health care system are needed to put India on course to achieve the MDG targets on health. In addition, increased public investment in health is critical, along with better control and oversight of the primary health care centers (PHCs) and the sub-centers.

Among the many problems plaguing India's health care system is lack of coverage, particularly in the rural areas. Based on data from the NFHS II, only 13 percent of rural residents had access to a PHC, 33 percent had access to a sub-center, 9.6 had access to a hospital and 28.3 percent had access to a dispensary or clinic. Increasing the number of health centers would increase access to health centers, thus addressing the issue of quantity. The issue of quality, however, needs to be considered as well.

Even in existing hospitals and PHCs, there are problems with facilities and services and delivery. Widespread doctor and paramedic absenteeism, poor physical infrastructure, lack of medicines and medical equipments are among the difficulties that arise in PHCs and sub-centers. These issues, along with lack of access, can lead people to seek medical help outside of the public health system. In 2000, of the total expenditure on health, over 80 percent were out of pocket expenses. In Uttar Pradesh, Bihar, Rajasthan and Punjab, the average private expenditure on health was over 200 percent of annual per capita consumption (Bajpai and Goyal, 2004).

Lack of accountability and oversight can lead to many of the problems in services and delivery. Decentralization could put the onus of oversight on local communities, for example, making doctors answerable to them and not to the state government officials is likely to lead to much better results. Kerala's health care sector has been rather decentralized since the mid-1990s, and the responsibility of health care centers has devolved to the local governments and councils of the areas they service. Though the salaries of employees in these centers were paid by the state, the workers came under direct supervision of local government bodies. In their study of four districts in Kerala, Naryana and Kurup (2000) found that the transfer of authority to local government bodies

in general had resulted in greater flow of funds to these bodies, more autonomy over spending decisions, faster project implementation, less corruption, and greater advocacy of preventative and curative care and provision of family planning services through PHCs. Mahal et al (2001) found that under-five mortality rates were significantly lower in states where health services had been significantly decentralized, relative to states where no decentralization had occurred.

As discussed earlier, in Madhya Pradesh, the *Rogi Kalyan Samiti* (Patient Welfare Committee) Project was set up with the concept of managing public hospitals through community participation to improve efficiency and quality of services. It is seen as a model for decentralized hospital management and has been replicated in several district and civil hospitals and community health centers in the state.

India dramatically under-invests in health care. Its public spending (federal, state and local governments) in the health sector is a mere 0.9 percent of its GDP, significantly less than the three-percent average spent by developing countries. Increased spending should be accompanied by reform that focuses on decentralization, which can lead to greater accountability of the doctors and clinics to local communities. Health, along with education, need to become India's top priorities. Low levels of education, along with ill health and high death rates lead to increased fertility rates and higher levels of dependence. In regards to health, public spending needs to be increased, particularly in areas of preventative care, such as immunizations, disease control and prenatal and antenatal care.

To reduce infant and under-5 mortality rates, special attention should be focused on the following areas:

-Provision of prenatal and antenatal care
-Institutional delivery or delivery by a skilled birth attendant
-Immunizations of infants and mothers
-Targeted supplemental nutrition programs for infants and expectant and lactating mothers
-Education programs that empower women with knowledge on issues such as nutrition and hygiene, and
-Access to safe drinking water and improved sanitation

In order to reduce the high MMR in India in general, and for states like U.P. in particular, (where it is estimated to be as high as 707 deaths per 100,000 live births) we believe can be brought down decisively through a package of relatively low-cost interventions, including:

 * Training of personnel at sub-centers and the PHCs to perform emergency obstetrical procedures, especially c-sections.

* Providing ANMs/mid-wives and doctors in PHCs with cell phones for improved communications and a emergency ambulance service to bring mothers in complicated labor to the health facilities in time

* Putting together wide-ranging awareness programs, and

* Provisioning surgical equipment (surgical kits, autoclaves, basic operating theaters, with power and running water, etc.) in each of the sub-centers and PHCs.

Taken together, the above mentioned interventions, at modest cost, can help make a breakthrough in India in gender equity, public health, and of course mother's survival.

India has yet to take the necessary steps needed to fight HIV/AIDS. While two of India's great generic drug companies, Ranbaxy and Cipla, are busy sending AIDS drugs to Africa, very few Indians dying of AIDS have the benefit of such drugs in India! It is expected that with rising rates of HIV infection, the number of TB cases are likely to increase as well. Those infected with HIV are more susceptible to other diseases, particularly TB.

Education

India is off track to meet the MDG targets on education. Primary enrolment rates in the country are 52.5 percent—a far cry from the 100 percent MD goal of 100 percent enrolment by 2015. In 2000, the primary completion rate was 61.4 percent. Gender disparity in literacy and enrolment rates, though lessening, continues to be an issue and must be addressed if India is to meet the MDG target to eliminate gender disparity in education by 2015. Additionally, there is wide ranging disparity in urban/rural literacy rates. Though literacy rates of scheduled castes and tribes are improving, the gap needs to be narrowed even further to promote equal levels of education and development for all socio-economic classes.

India has done well to ensure that the vast majority of children have primary schools located nearby. Over 90 percent of children have a school located within one kilometer of their residence. In the last ten years, the government has launched two large scale programs—the District Primary Education Program (DPEP) and the Sarva Shiksha Abhiyan (SSA)—with the goals of universalizing elementary education. Both programs focus on administrative decentralization and community participation to institute accountability within the school system. Under both programs, physical access to schools has greatly increased. DPEP has seen increased school enrolments, especially of girls, and more so in the historically more backward states.

Going by the government data, of the 200 million children in the 6-14 year age group in India, about 59 million are still out of school. Of the rest who are currently in school, four out of every ten children starting school will drop out before completing primary school. Apart from enrollment and drop-out issues, the other key problem in the education system today is that of quality. Recent community based surveys done in 28

cities and eight rural districts in the country find that not more than 30 percent of the school children in the 6-14 year age-group, in an educationally well developed state like Maharashtra, can read simple text fluently or do basic math. Therefore, in terms of quality of education provided, the system underperforms critically. Weak teacher motivations, their apathy towards teaching and high teacher truancy plague the system.

High rates of teacher absenteeism and lack of motivation are endemic in the Indian school system. Teacher availability, particularly in rural areas, continues to be low, as do teacher-pupil ratios. These problems, in addition to those of poor infrastructure, lack of supplies and poor sanitary conditions in schools can deter children from wanting to attend school and serve as disincentives for parents to send their children to school. The low quality of the school system contributes to parental apathy towards actually sending their children to school even when most parents recognize the importance of education as a means to social and economic mobility for their children and have strong educational aspirations for their children.

One intervention that has worked in increasing enrolment and retention rates in schools is the provision of midday meals. The program, first introduced in Tamil Nadu, has been successful there over time. Positive results from the introduction of midday meals have been seen in other states as well. A recent study of three Indian states finds a positive relationship between enrolments and attendance and provision of free meals (Dreze and Goyal, 2003). The scheme thus not only has the potential to boost enrolments, but also improve daily attendance of students. This reduces both drop-out rates as well as waste in the school system. By ending 'school hunger,' a reason for many children to be out of school and their indifferent response to educational activities when in school, midday meal schemes can improve learning outcomes. Moreover, they also take care of nutritional needs of children. Midday meal schemes can also become part of the strategy to reduce the gender gap in education, as they seem to increase female enrolment more than male enrolment. Given the interconnectedness of health and education, provision of midday meals can have spillover effects in both areas (Bajpai and Goyal, 2004).

In 2001-02, India spent about 4 percent of its GDP on education (GOI, Department of Education). Expenditure on education has been rising over the years, but is still lower than the targeted expenditure of the National Common Minimum Program's pledge to increase it to 6 percent of GDP in phases. As a proportion of government expenditure on all sectors of education, about half was spent on primary education in 2000. India needs to step up investment in education. While the increase that the government is proposing is encouraging, it falls short of what is necessary. As with the health scenario, increased spending is necessary to effect change, but should be accompanied by reform. Decentralization can lead to better control and oversight and ultimately, to accountability of teachers to communities, particularly in rural areas.

Concluding remarks:

On its current economic trajectory, India will achieve some of the eight Millennium Development Goals, but will miss many of the others. The good news is that India is making great strides with regard to the first of the Millennium Development Goals: reducing extreme poverty. With India's GNP increasing at between 6 and 8 percentage points per year, the proportion of the Indian population living in extreme poverty has been falling sharply since economic reforms began in 1991. Even though there is an active debate about the "exact" measure of extreme poverty, all indicators suggest rapid progress, enough on the current trajectory so that the headcount poverty rate in 2015 will be less than half of the rate in 1990, as called for by the Millennium Development Goals.

At the same time, India is likely to miss several of the other goals, related to hunger, IMR, under-5, and MMR, disease, and the physical environment. The proportion of children in India who are chronically undernourished remains very high. So too does the MMR and IMR. And the goal of environmental sustainability is not being achieved, as parts of India are suffering from worsening crises of water, soils, and deforestation.

Economic growth, by itself, will not solve these crises. What India requires is a significant increase of targeted investments in clinics, schools, nutrition programs, disease control, irrigation, rural electrification, rural roads, and other basic investments, especially in rural India, but India's budgetary allocations are inadequate. We must mention in this context that it is very encouraging to find that the union budget for 2005-06 does allocate higher public spending in the areas of health, education, rural development, irrigation and agricultural research[29].

The key challenge for India is to find new sources of financing for these priority investments. We can identify at least three options for increased financing. First, India should move away from its current wasteful subsidy system, in which items such as water, electricity, and fertilizer are provided at highly subsidized rates (or for free!), but with most of the subsidy being taken up by the richer farmers. The result is a very expensive subsidy system where most of the benefits fail to reach the poor farmers. In place of this approach, we recommend "life-line tariffs," in which all of India's below poverty line rural citizens would be ensured a fixed, but limited, amount of water, electricity, and fertilizer at zero price, to ensure that every family can at least meet its basic needs. Above that fixed amount, families would be charged a proper tariff to cover the costs of supplying those services in amounts in excess of basic needs. This strategy – free access to meet basic needs, and an unsubsidized price for amounts above the basic needs – would save vast sums of money for the budget, and yet still ensure that the poor have guaranteed free access to meet their essential needs. The saving on subsidies could then be used to increase investments in priority areas (irrigation, electricity, clinics, and so forth).

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[29] Union budget for 2005-06 presented to the Indian Parliament on February 28, 2005.

Second, India should hasten the process of disinvestment in the public sector and the proceeds of disinvestment should be earmarked for raising public investments in the areas of primary health, primary education, drinking water, and power in the rural areas.

Third, India should appeal to international donors for increased development assistance, in the form of grants rather than loans. India currently receives around $1.4 billion in official development aid, or a mere $1.40 per Indian. This level of aid is far below what other countries at India's income level receive. We would argue that given India's economic and social needs, the donors should be prepared to assist India on the scale of around $10 billion per year (or $10 per Indian). It may seem impossible that India could actually mobilize such a large sum, but it is feasible since the donors, especially the European donors and Japan as well, are on the verge of significant increases in development assistance. India would be a worthy and trusted beneficiary. India should identify two or three budgetary funds (e.g. for health, education, and rural water supplies) to which the donors would be asked to contribute in larger amounts, something along the lines of $ one billion in foreign assistance committed in 2004 to the Sarva Shiksha Abhiyan (education for all scheme) by IDA, DFID and others. If a similar Sarva Swasthya Abhiyan (health for all scheme) were to be put together, it is very likely to be assisted by the donors.

If India continues increasing its budgetary spending in health, education, and rural infrastructure, as it has done in the 2005-06 budget, it would be possible to save the lives of vast numbers of mothers who will die in childbirth and infants who will die before their first birthday. It would also be possible to raise food yields of India's poor farmers very substantially (perhaps a doubling within the next five years in many parts of India). India's growing water and environmental crises could also be addressed through more sophisticated irrigation technologies and more efficient uses of scarce water resources.

Perhaps most importantly, India should "plan for success." The Planning Commission should ensure that current programs as well as the next Five-Year Plan are built around achieving the Millennium Development Goals. Indeed, not only the Union Government, but every state and even every district, should base their investment programs around achieving the Millennium Development Goals. Governments at all levels should be held accountable for achieving these goals. If these steps are taken, India can finally banish extreme poverty.

Table 1: Progress towards achieving the MDGs in India

Indicator	Year	Value	Year	Value	On-track value*	Linearly projected 2015 value	MDG target value	Status
Proportion of population below poverty line (%)	1990	37.5	1999-2000	26.1	30	9	18.75	On-track
Undernourished people as % of total population	1990	62.2	1999-2000	53	49.8	39.2	31.1	Off-track
Proportion of undernourished children	1990	54.8	1998	47	46.1	29.6	27.4	Off-track
Literacy rate of 15-24 year olds	1990	64.3	2001	73.3	N.A.	84.7	None	N.A.
Ratio of girls to boys in primary education	1990	0.71	2000	0.77	0.83	.86	1	Off-track
Ratio of girls to boys in secondary education	1991	0.64	2001	0.68	.79	.73	1	Off-track
Under-five mortality rate (per 1000 live births)	1990	123	2001	93	87	54.8	41	Off-track
Infant mortality rate (per 1000 live births)	1990	80	2001	66	56.7	48.1	27	Off-track
Maternal mortality ratio (per 100,000 live births)	1991	437	1998	407	332	405	109	Off-track
Population with sustainable access to an improved water source, rural (%)	1990	61	2000	79	69	100	80.5	On-track
Population with sustainable access to an improved water source, urban (%)	1990	88	2000	95	90	100	94	On-track
Population with access to sanitation, urban (%)	1990	44	2000	61	55	86.5	72	On-track
Population with access to sanitation, rural (%)	1991	9.46	2001	21.91	39.3	55	72	Off-track

*The on-track value is a linear projection that reflects where the country should have been, for the last year of available data, in order to meet the MDG target value.

Source: Human Development Report, 2003; World Development Indicators, 2003; Economic Survey of India, 2002-03; The World Bank, 2004; authors' calculations.

Table 2: Statewise Number and Percentage of People Below Poverty Line, 1993-94 and 1999-00 (in lakh)

Major States	1993/94		1999-00	
	Number of persons	Percent	Number of persons	Percent
Andhra Pradesh	153.97	22.19	119.01	15.77
Assam	96.36	40.86	94.55	36.09
Gujarat	105.19	24.21	67.89	14.07
Haryana	43.88	25.05	17.34	8.74
Karnataka	156.48	33.16	104.4	20.04
Kerala	76.41	25.43	41.04	12.72
Maharashtra	305.22	36.86	227.99	25.02
Punjab	25.11	11.77	14.49	6.16
Tamil Nadu	202.1	35.03	130.48	21.12
West Bengal	254.56	35.66	N.A.	27.02
Bihar	493.35	54.96	425.64	42.6
Madyha Pradesh	298.52	42.52	298.54	37.43
Rajasthan	128.5	27.41	81.83	15.28
Uttar Pradesh	604.46	40.85	213.49	31.15
Orissa	160.6	48.56	169.09	47.15
All-India	3203.68	35.97	2602.5	26.1
Note: 1 lakh = 100,000				
Source: Planning Commission, based on National Sample Survey (NSS) data.				

Table 3: Number and Percentage of People Below Poverty Line, 1993-94 and 1999-00 by Urban and Rural Areas in Selected States (in '000)

States	Headcount ratio rural		Headcount ratio urban		Headcount ratio total	
	1993-94	1999-00	1993-94	1999-00	1993-94	1999-00
Assam	51.08	53.41	32.13	25.91	45.96	47.94
Bihar	60.94	51.49	39.41	44.11	58.1	50.51
Madyha Pradesh	29.95	32.93	41.44	38.89	32.29	34.41
Rajasthan	19.27	11.39	26.45	15.72	20.92	12.4
Uttar Pradesh	34.03	25.5	30.4	31.75	33.3	26.8
Orissa	55.52	56.27	35.94	41.92	52.82	54.14
All-India[1]	37.47	31.86	28.6	24.58	35.19	29.92

1 15-States, weighted average

Note: This table uses revised estimates of the NSS data. In 1999-00, the reference period was changed in the NSS and Sundaram and Tendulkar (2003) have attempted to end the controversy by making 1993-94 and 1999-00 results comparable. In presenting their data, they have disaggregated urban and rural poverty in the early and late 1990s, which is useful and therefore presented here.

Source: Sundaram and Tendulkar, 2003.

Table - 4

Literacy   and   Infant   Mortality   Rates

	Literacy Rate *			Female	Literacy	Rate	Infant	Mortality	Rate **
STATES	1981	1991	2001	1981	1991	2001	1981	1991	1997
Andhra Pradesh	34.10	44.10	61.11	23.30	32.70	51.17	86	71	63
Bihar	30.30	38.50	47.53	15.80	22.90	33.57	118	73	71
Gujarat	49.90	61.30	69.97	36.90	48.60	58.60	116	67	62
Haryana	41.70	55.90	68.59	25.80	40.70	56.31	101	75	68
Karnataka	43.90	56.00	67.04	31.70	44.30	57.45	69	73	53
Kerala	78.90	89.80	90.92	73.40	86.20	87.86	37	17	12
Madhya Pradesh	32.20	44.20	64.11	18.00	28.90	50.28	142	104	94
Maharashtra	53.50	64.90	77.27	39.60	52.30	67.51	79	59	47
Orissa	38.80	49.10	63.61	24.00	34.70	50.97	135	115	96
Punjab	46.40	58.50	69.95	38.40	50.40	63.55	81	56	51
Rajasthan	28.40	38.60	61.03	13.40	20.40	44.34	108	90	85
Tamil Nadu	52.60	62.30	73.47	39.40	51.30	64.55	91	58	53
Uttar Pradesh	31.40	41.60	57.36	16.30	25.30	42.98	150	98	85
West Bengal	46.30	57.70	69.22	34.40	46.60	60.22	91	65	55
Max. / Min.	**2.78**	**2.33**	**1.91**	**5.48**	**4.23**	**2.62**	**4.05**	**6.76**	**8.00**
All – state average	**43.46**	**54.46**	**67.23**	**30.74**	**41.81**	**56.38**	**100**	**73**	**64**
Standard Deviation	**13.25**	**13.62**	**10.02**	**15.45**	**16.89**	**12.99**	**30.66**	**24.17**	**22.12**

* percent of population of seven years and older.

 ** per thousand live births.

 Source: 1. World Bank - India - Policies to Reduce Poverty and Accelerate Sustainable Development - Jan 31st, 2000.

          2. Census of India - Provisional Population Tables - 2001.

Table 5: Maternal Mortality Rate, 1997 and 1998

States	1997	1998
Andhra Pradesh	154	159
Assam	401	409
Bihar	451	452
Gujarat	29	28
Haryana	105	103
Karnataka	195	195
Kerala	195	198
Madhya Pradesh	498	498
Maharashtra	135	135
Orissa	361	367
Punjab	196	199
Rajasthan	677	670
Tamil Nadu	76	79
Uttar Pradesh	707	707
West Bengal	264	266
All India	408	407

Note: Maternal Mortality Ratio is number of maternal deaths in the age group 15-49 years per 100,000 live births.
Source: Compendium of India's Fertility and Mortality Indicators 1971-1997, RGI 1999. From the National Human Development Report, 2001.

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