Human Development and Deprivation in Meghalaya

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FOREWORD

The concept of human development has significantly advanced our thinking on development by shifting the focus away from economic indicators such as income or per capital GNP towards what people really have reasons to value. The premise that people are the real wealth of nations led a group of economists in early 1990s to define human development as a process of expanding people's choices and opportunities. Some aspects of human development are related to people's physical well-being, such as health, nutrition and education, and others are directly to the widening of choice and enhanced empowerment, including participation, political freedom and cultural aspects. The concept caught serious attention within a short period of time and UNDP's annual publication of Human Development Report has become an eagerly awaited ritual for the people of all spheres of life. The intellectual antecedents of this new development paradigm may be traced to the ideas of Aristotle and Immanuel Kant, which is parallel to the ideas of Adam Smith, Robert Malthus and John Stuart Mill. But for a long time policy–makers seemed to forget this simple, yet profound truth. They were caught up with the rise and fall of national incomes and often lost sight of the real end of development - people's well-being.

The new development paradigm views human development as a process - not as an event. Hence, it is felt necessary to review the economies, nations, states or regions time to time in the light of holistic concepts and methodologies, development largely by a number of economists, social scientists, development practitioners and intellectuals of different spheres of life across the globe under the banner of UNDP

India and her states are no way exceptions in this regard. There are two major concerns in this regard. First is the poor rate of success over decades in translating India's economic achievements into a decent level of human development. Second is that the quality of life has become increasingly uneven across the states, regions, communities, genders etc.

The present study seeks to address some of the issues of development trajectory of the state of Meghalaya keeping people's welfare and aspirations at the centre and hence, perhaps, is the first of this kind for the State. It is a serious effort to focus and examine the path of progress in Meghalaya during the past few decades in terms of human development indicators. I personally appreciate the initiative of the authors in a situation when the initiative for the publication of Meghalaya State Human Development Report: is yet to be undertaken. Attempts have been made in this study to construct human development indices for the State as a whole as well as for all the seven districts of Meghalaya on the basis of primary data collected from 1020 households. The study reveals the significant divergence in human development and deprivation that exists over seven districts of the State. It also presents a clear picture of relative position of the State in the country in terms of a number of economic and social parameters. It points out how Meghalaya is biased in favour of urban settlements at the cost of rural areas. There is an attempt to identify the sectors and areas, which needs immediate attention of the government and policy–makers.

I commend this book for wider dissemination, intense discussion and constructive debate on the issues revealed by the authors in this book. That, I hope, would result in the form of some strong and credible policy initiatives towards evolving an inclusive and stable political economy, which will ensure quality growth, job opportunities and balanced human development for Meghalaya in future.

Dated 5th March 2007

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PREFACE

Meghalaya is one of the smallest States in India and the third biggest State in the North-Eastern Region. It is predominantly a tribal State. According to 2001 Census the State had a population of 23.06 lakhs, which was about 6.0 per cent of the total population of the region and 0.2 per cent of the population of the country. It had population density of 103 persons per sq. km, sex ratio of 975 and literacy rate of 63.3 per cent. Nearly 20 per cent of the population lived in urban areas.

Although the State has predominantly an agricultural economy and 63 per cent of her work force engaged in agriculture, its contribution to SDP was only 33 per cent as against 55 per cent by the tertiary sector. The extent of industrialization had been very low and slow in the State. There were about two hundred registered small scale industrial units. The growth of per capita net SDP in the past decade was quite low and it stood at Rs. 9003 in 2000 at 1993-94 (constant) prices when 34 per cent of people were below poverty line.

The State in comparison to all India situations performed better in respect of sanitation facilities, female and urban literacy, reduction of urban poverty, employment generation, reduction in incidence of unemployment, rural infant mortality, gender disparity and human development but lagged in road connectivity to villages, construction of quality houses, supply of safe drinking water, electricity consumption, per capita SDP, reduction of rural-urban disparity, rural and male literacy, rural poverty and urban infant mortality. Relative rank of Meghalaya among the States and Union Territories over time improved in respects of urban literacy and urban Human Development

Index (HDI) but deteriorated in per capita SDP and per capita consumption expenditure, poverty, rural literacy, infant mortality and rural HDI. The HDI improved both in rural and urban areas during 1981-91 but not quite significantly as compared to other States in India. Though rural-urban and male-female gap declined during the period it could not be contained satisfactorily. The State was biased in favour of urban areas and female population.

There is also widespread variation across all the seven districts within the State of Meghalaya in various socio–economic indicators such as literacy, infant mortality, per capita income and expenditure, poverty, infrastructure, human development, etc. The State has inadequate health facilities. The growth of per capita Net District Domestic Product in the State is quite low. Amenities like *pucca* houses, sanitation, safe drinking water, electricity, medical facilities, etc. are inadequate and most of the amenities are far away from the households. Per capita monthly income and consumption expenditure are as low as Rs. 650 and Rs. 498 respectively. There are mainly three sources of income, i.e. agriculture, service and daily wages. About 36 per cent of the total income come from agriculture, 35 per cent from service, 15 per cent from wages and the rest 14 per cent from various other sources including business, handloom and handicrafts, etc. People devote about 62 per cent of their expenditure on food items. The literacy index is as high as 0.683 in the State. Infant mortality index is as low as 0.012. Income and expenditure indices are as low as 0.480 and 0.313 respectively. HDI is as low as 0.406.

The study has been divided into six chapters in all. The first chapter is mainly an introductory one that has not only introduced the problem but also made an attempt to explain the concept of human development, its measurement in historical perspectives and its superiority over other development measures. This chapter also includes the review of literatures on human development, the methodology of data collection and analysis and a brief report on global scenario on human development. The second chapter is devoted to a brief description about Meghalaya and her economy. Analysis of relative status and growth of development/human development in

Meghalaya and its comparison with that of the country in general and some leading States and Union Territories in particular using secondary data are made in the third chapter. The fourth chapter is devoted to disparities of development in Meghalaya across her seven districts using various socio-economic indicators including human development index. The entire analysis of disparities in the fourth chapter is based on secondary sources of data. The primary data collected for the State are analyzed in the fifth chapter to show the extent of unevenness that exists in the State. Human development of various districts in the State as constructed using primary data is also compared. Summary of the findings of the study and some policies based on the findings are recommended in the sixth chapter.

The conclusions of the present work is based on the data collected for a major research project undertaken in the Department of Economics, North-Eastern Hill University, Shillong, Meghalaya with financial support from the University Grants Commission, New Delhi. We express our sincere thanks and deep sense of appreciation to the authorities of UGC for their financial support for undertaking the said project without which it would have not been possible to bring the work in its present form. We are thankful to the authorities of North-Eastern Hill University, Shillong for providing all sorts of infrastructural facilities for carrying out the work. We would also like to express our sincere appreciation and thanks to all the colleagues, administrative staff and students in the Department of Economics, NEHU for theirs keen interest and sustained support during the period of undertaking the work. Many individuals consulted during data analysis and writing of the manuscript provided invaluable information, material and suggestions. We sincerely thank every one of them. Particularly we are thankful to Prof. S.K. Mishra, Prof. B. Mishra and Dr. S. Umdor. Last but not the least all those who were involved in carrying out the work directly or indirectly deserve special thanks.

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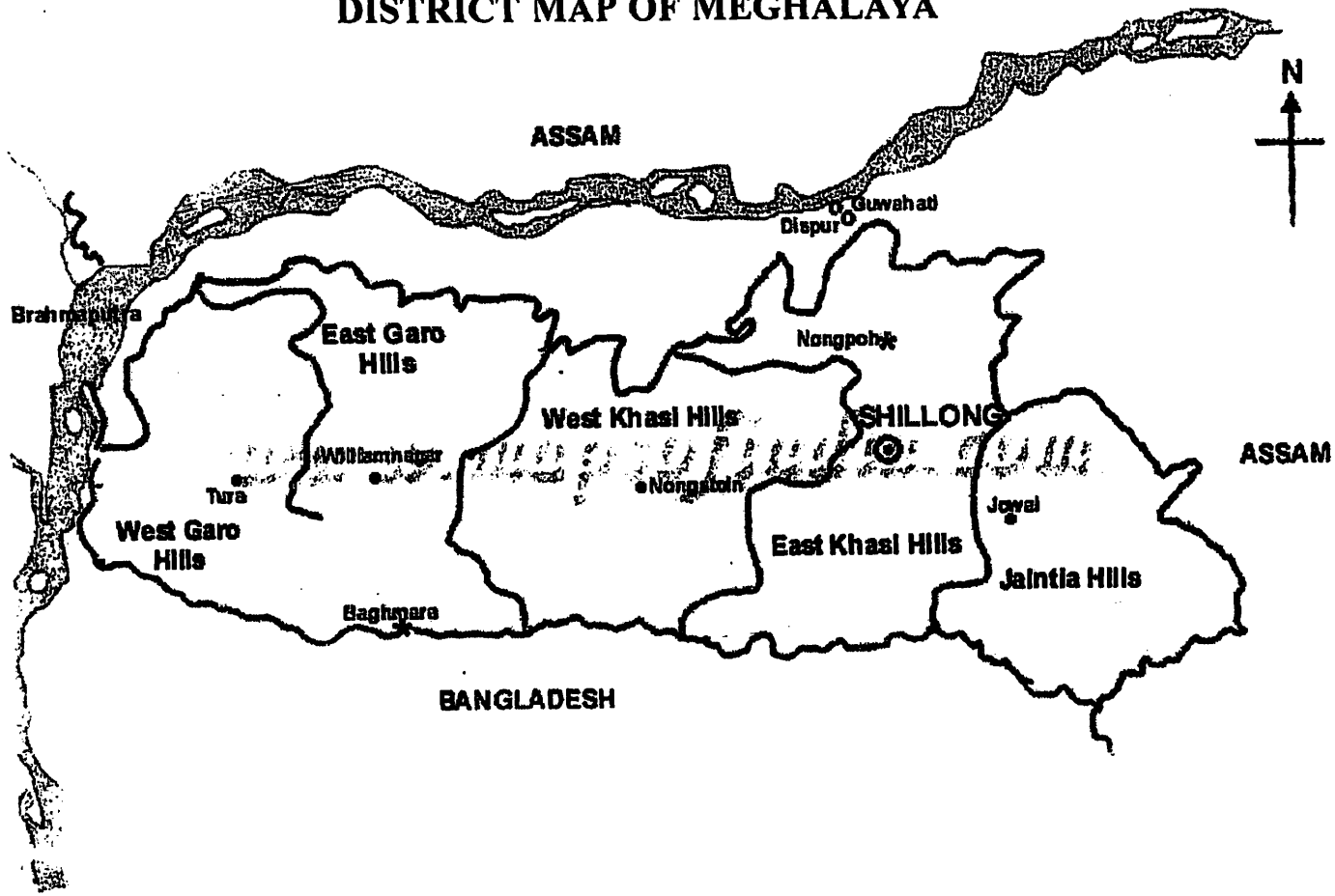


1

INTRODUCTION TO HUMAN DEVELOPMENT

INTRODUCTION

Human wealth is the real wealth of a nation. It is commonly known as human capital. It is human beings who produce goods and services for the welfare of themselves. The development and growth of a nation, thus, directly depends upon the proper utilization of these human resources. To utilize these resources, there is a need to convert human beings into human resources. Since the basic objective of development of a nation is to improve the welfare of the people, every nation is required to strive hard not only to increase her wealth and productive resources but also to ensure better standard of living of her citizens by providing them with adequate food, clothing, house, medical facilities, education, etc. In fact the governments of various nations at different levels have been taking initiatives to create an enabling environment for their people to enjoy healthy, long, and creative lives. However, technical considerations of the means to achieve human development and the use of statistical aggregates to measure national income and its growth have at times obscured the fact that the primary objective of development is to benefit people. There are two reasons for this. First, national income figures, though useful for many purposes, do not reveal the composition of income or the real beneficiaries. Second, people often value achievements

that do not show up at all, or not immediately, in higher measured income or growth figures. What is more important and to be reflected in a measure of development are better nutrition and health services, greater access to knowledge, more secured livelihoods, better working conditions, security against crime and physical violence, satisfying leisure hours, and a sense of participation of the people in the economic, cultural and political activities of their communities. Of course, people want higher incomes as one of their options but income is not the sum total of human life and it is not the end in itself. Hence, the concept of human development emerges.

The human development approach of looking at development differs from the conventional approaches to economic growth, human capital formation, human resource development, human welfare and basic human needs. The following arguments help us in understanding the same:

1. GNP growth is treated as being necessary but not sufficient for human development. Human progress may be lacking in some societies despite rapid GNP growth or high per capita income levels unless some additional steps are undertaken to improve the same.
2. Theories of human capital formation and human resource development view human beings primarily as means rather than as ends. They are concerned only with the supply side, with human beings as instruments for furthering commodity production. It is true that human beings are the active agents of all production and wealth creation but they are also the ultimate ends and beneficiaries of this process. Thus, the concept of human capital formation (or human resource development) captures only one side of human development, but not in its entirety.
3. Human welfare approaches look at human beings more as the beneficiaries of the development process than as participants in it. They emphasize only the distributive policies rather than production structures.
4. The basic needs approach usually concentrates on the bundle of goods and services such as food, shelter, clothing, healthcare

and water that deprived population group needs. It focuses on the provision of these goods and services rather than on the issue of human choices.

Recent development experience has once again underlined the need for paying a close attention to the link between economic growth and human development for a variety of reasons as mentioned below:

1. Many fast-growing developing countries are discovering that their high GNP growth rates have failed to reduce the socio-economic deprivation of substantial sections of their population.
2. Even industrial nations are realizing that high income is no protection against the rapid spread of such problems as drugs, alcoholism, AIDS, homelessness, violence and the breakdown of family relations.
3. At the same time, some low-income countries have demonstrated that it is possible to achieve high levels of human development if they skillfully use the available means to expand basic human capabilities.
4. Human development efforts in many developing countries have been severely squeezed by the economic crisis of the 1980's and the ensuing adjustment programmes.

Recent development experience is thus a powerful reminder that the expansion of output and wealth is only a means. The end of development is the welfare of human beings. Therefore, the means to the ultimate end should become the central focus of development analysis and planning. To ensure that the development planning is directed towards people's needs, there is a need to first create a database on improved social statistics and new development measures. To cater to this need the concept of human development and its measurement through a measure called Human Development Index (HDI) was therefore introduced for the first time in the Human Development Report in 1990 by UNDP. This measure of development that combines indicators of national income, life expectancy and educational attainment gives a composite measure of human progress. This index has become so important and useful that it has since then been used

very widely by the governments of various nations for planning purposes. Various scholars and organizations have undertaken a number of research studies using this index in order to focus the magnitude of human development of various sections of society in different countries. This has helped a lot in formulating plans for improving the life of the neglected sections of the society. However, not a single study has been undertaken in this regard in the State of Meghalaya. Neither any scholar has attempted to highlight the human development status of the State as a whole using secondary data nor has any one made any survey of any section of the society in Meghalaya for measuring their human development. Therefore a proposal was submitted to UGC in this regard to sanction a major project to undertake an extensive study on Human Development in Meghalaya and the present work is based on the data collected for the said project.

CONCEPT OF HUMAN DEVELOPMENT

The concept of human development as a process of enlarging people's choices was defined in the first report on Human Development published by UNDP in 1990. In principle, these choices of people can be infinite and can change over time. But, at all levels of development, the three essential choices are for people to lead a healthy and long life, to acquire knowledge and to have access to the resources needed for a decent standard of living. If these essential choices are not available, many other opportunities remain inaccessible. But human development does not end there. Additional choices, highly valued by many people, range from political, economic and social freedom to opportunities for being creative and productive and enjoying self-respect and guaranteed human rights.

Human development has two sides: (1) the formation of human capabilities such as improved health, knowledge and skills and (2) the use of theirs acquired capabilities for productive purposes, leisure or for being active in cultural, social and political affairs. If the scales of human development do not finely balance the two sides, considerable human frustration may result. According to this sense of human development, income is clearly one of the options that people would

like to have, albeit an important one. But it is not the sum total of lives. Development must, therefore, be more than just the expansion of income and wealth. Its focus must be on people (HDR, 1990). The 1991 HDR elaborates the concept of human development along the following lines: People must be at the centre of human development. Development has to be woven around people, not people around development. It has to be development of the people, by the people and for the people.

[*When we talk of 'Development of the People' we mean that every society must invest in education, health, nutrition and social well-being of its people, so that they can play their full role in the country's economic, political and social life. In the age of liberalization and globalization of the national economy when more emphasis is now being placed on the market and technological progress, the development of human beings will make an increasingly critical contribution to economic success. 'Development by the People' requires that people through appropriate structures of decision-making, must participate fully in the planning and implementation of development strategies. These strategies should provide sufficient opportunities for income and employment growth, so that human capabilities are properly used and human creativity is given its fullest expression. 'Development for the People' signifies that development must satisfy everyone's needs, and provide opportunities for all so that it becomes truly human-oriented. This would also include provision for essential safety nets.*]

Previous concepts of development have often given exclusive attention to economic growth on the assumption that the benefits of growth would trickle down to various sections of the society. But our past experience does not support this hypothesis much. Higher growth rate in an economy has not necessarily brought out higher degree of welfare for every section of the society. Growth needs to be translated into improvements in people's lives. Economic growth is not the end of human development. It is one of the important means. Thus, human development and economic growth are closely connected. People contribute to economic growth, and growth contributes to human beings (HDR, 1992).

Human development also encompasses elements that constitute the critical issues of gender and development. There are four major elements in the concept of human development such as productivity, equity, sustainability and empowerment. As far as productivity is concerned people must be enabled to increase their productivity and to participate fully in the process of income generation and remunerative employment to achieve higher economic growth, which is a subset of human development models. Productivity is not the only means to achieve welfare in a society. People must have access to equal opportunities. All barriers to economic and political opportunities must be eliminated so that people can participate in, and benefit from, these opportunities. These benefits also need to be distributed over generations. Access to opportunities must be ensured not only for the present generation but for future generations as well. All forms of capital such as physical, human and environmental should be replenished. Besides, empowerment is a necessity as regards human development is concerned. People must participate fully in the decision making process that can shape their lives. Human development is impossible without gender equality. As long as women are excluded from the development process, development will remain weak and lopsided (HDR, 1995).

Development should increase people's choices with two caveats. First, while enhancing the choices of one individual or a section of a society, should not restrict the choices of another. This calls for equity in human relationships. Second, while improving the lives of the present generation should not mortgage the choices of future generations (HDR, 1991). In other words, the development process must be sustainable. The concept of human development has gone beyond its basic premises to emphasize the sustainability of the development process. It not only puts the people at the centre of the development process but also advocates protection of the opportunities of future generations and respecting the natural systems on which all life system depends. Sustainable human development addresses both equity within the generation and among the generations enabling all generations, present and future, to make the best use of their capabilities.

The issue of sustainability has three dimensions such as capacity, environment and institutions. If the development process does not create institutions fully supportive of people's rights, it cannot be sustainable in the long run. Human development thus emphasizes strengthening the institutions of both government and civil society so that the entire development process becomes internally sustainable (HDR, 1995). Human development is not a concept separated from sustainable development but it can help to rescue 'sustainable development' from the misconception that it involves only the environmental dimension of development. All these approaches have emphasized the need for people–centered development, with concerns for human empowerment, participation, gender equality, equitable growth, poverty reduction and long-term sustainability (HDR, 1998). According to Haq, "the defining difference between the economic growth and the human development schools is that the first focuses exclusively on the expansion of only one choice, i.e., income while the second embraces the enlargement of all human choices whether economic, social, cultural or political" (Haq, 1976).

There are at least six reasons for which we talk and aspire for human development and poverty eradication. First, it is an end in itself; indeed it is the whole purpose of development. Second, it contributes to higher productivity. Third, it lowers re-productivity and therefore controls population growth. Fourth, poverty reduction reduces degradation of environment from soil erosion, deforestation and desertification. Fifth, the growth of a civil society and democracy leads to greater social stability. Lastly, its political appeal is that not only it reduces civil disturbances but also acts as a means to political stability (Streeten, 1995).

MEASUREMENT OF HDI AND ITS USE

What does the HDI include? How is it measured? These are some the few questions which need to be addressed first. The HDI is a composite index of three basic components of human development, viz., longevity, knowledge and standard of living. Longevity is measured by life expectancy. Knowledge is measured by a combination of adult literacy having two-thirds weight and mean years of schooling

with one-third weight. Standard of living is measured by purchasing power, based on real GDP per capita adjusted for the local cost of living (purchasing power parity, or PPP).

The question then arises: Why do we take only these three components to measure human development? In any system of measuring and monitoring human development, the ideal could have been to reflect all aspects of human development to obtain as comprehensive a picture as possible. One of the probable reasons would be lack of data, which imposes some limits on its measurements. Secondly, comprehensiveness is not always and entirely desirable. Too many indicators could produce a perplexing picture, perhaps distracting policy makers from its thrust. Moreover, some indicators might overlap with existing indicators. Infant mortality, for example, is already reflected in life expectancy. Thus, arbitrary inclusion of more indicator variables would not solve the purpose for which the index is constructed. The crucial issue has therefore been on emphasis on the policy variables (HDR, 1990).

The next question then arises: How to combine these three indicators measured in three different units? The breakthrough for the HDI, however, was to find a common measuring rod for the socio-economic distance traveled. The HDI sets a minimum and a maximum for each dimension and then shows where each country stands in relation to these scales. It is expressed in terms of a numerical value between 0 and 1. Income above the average world income is adjusted using a progressively higher discount rate. The scores for the three dimensions are then averaged in an overall index.

SUPERIORITY OF HDI OVER OTHER MEASURES

There are several reasons why the Human Development Index is a better measure of development than the average income measure. According to Streeten, "*First, income distribution is much more skewed than the literacy and life expectancy, which is reflected in more weight to the very few very high incomes. Literacy has a maximum of 100 percent. Life expectancy in a life span of 100 years, in spite of all the progress in medical knowledge has not been extended. This means,*

second, that a high average tells us something about the distribution, though clearly not everything. Since the non-poor have access to public services before the poor, reductions in infant mortality etc., are indications of improvements for the poor. Third, many would argue that an upward move in HDI is an improvement in welfare, which cannot be said of any increase in income. Fourth, there is surely much less scope for relative deprivation in the social indicators than in income. Fifth, reducing inequality among nations measured through human development index is feasible and more practicable than reducing international income gaps. Sixth, impact measures like the HDI, distinguish between goods and anti-bads (like filters that reduce pollution), which only bring us back to zero. But, the chief advantage of the HDI is political: it focuses attention on important social sectors, policies, and achievements, which are not caught by the income measure. The main criticism, however, is that the system of weighting is arbitrary" (Streeten, 1995: 24-25).

Since the introduction of the measure of HDI in 1990, three supplementary indices have also been developed to highlight particular aspects of human development (HDI, 2002). They are as follows: (1) Human Poverty Index (HPI), (2) Gender-related Development Index (GDI), and (3) Gender Empowerment Measure (GEM).

MEASUREMENT OF HDI IN HISTORICAL PERSPECTIVES

The Human Development Report, 1990 proposed the human development index (HDI), a new measure of development, composed of three dimensions (indicators) such as life expectancy, education and income. For each of these three dimensions, the report identified minimum achievements, viz., the lowest national life expectancy, the lowest national level of adult literacy and the lowest national level of per capita income. It also established a maximum or desirable level of attainment for each of these dimensions.

The HDI was constructed in three steps: The first step was to define a country's measure of deprivation for each of the three basic indicators, viz., life expectancy (X_1), literacy (X_2) and per capita GDP (X_3). Maximum and minimum values were identified for the actual

values of each of the three variables. The deprivation measure then placed the country in the 0-1 range defined by the difference between the maximum and the minimum. Thus I_{ij} was the deprivation indicator for the j^{th} country with respect to i^{th} variable, and is calculated as follows:

$$I_{ij} = \frac{Max(X_{ij}) - X_{ij}}{Max(X_{ij}) - Min(X_{ij})}$$

The second step was to define an average deprivation indicator, (I_j) by taking a simple average of the three indicators as given below:

$$I_j = \frac{1}{3}\sum_{i=1}^{3} I_{ij}$$

The third step was to measure the HDI as one minus the average deprivation index:

$$(HDI)_j = (1 - I_j)$$

The HDI attracted a lot of attention among policy makers, development professionals, academics, the press and the people. Many criticisms have been raised against the construction and robustness of the index. As a result of these criticisms some improvements were brought out in its construction in the subsequent report published in 1991. The original HDI as stated earlier included three key components such as longevity, knowledge and income. Longevity was measured by life expectancy. Imperfect as it is, this is the accepted and most readily available measure. For measuring educational achievement the knowledge variable, 'adult literacy' was taken into consideration. But in the subsequent report (1991) two knowledge variables such as adult literacy and years of schooling were combined to produce a synthetic measure of educational achievement by assigning weights to the two components as follows:

$$E = a_1(Literacy) + a_2(Years\ of\ Schooling)$$

where E, a_1, a_2 refer to educational achievement and respective weights of literacy and mean years of schooling. These weights were assumed

as $a_1 = {}^2/_3$ and $a_2 = {}^1/_3$ in the 1991 report (whereas the same were taken as $a_1 = 1$ and $a_2 = 0$ in the 1990 report).

The other modification of the 1991 report in HDI is the treatment of income. The 1990 HDI was based on the premise of diminishing returns from income. Using the logarithm of income and giving a zero weight to income above the poverty line reflected this fact. However, in 1991 the method was revised by using the well-known and frequently used formula of Atkinson for measuring utility of income as follows:

$$W(Y) = \frac{1}{1-\varepsilon}(Y^{1-\varepsilon})$$

where W(Y) is the utility or well-being derived from income, and the parameter ϵ measures the extent of diminishing returns. It is the elasticity of the marginal utility of income with respect to income. If $\epsilon = 0$ there is no diminishing returns. If ϵ approaches 1, the equation becomes:

$$W(Y) = Log(Y)$$

The modification adopted in the HDI of 1991 is to let the value of ϵ rise slowly as income rises. For this purpose, the full range of income was divided into multiples of the poverty line income (Y^*). Thus, most countries were falling in the income range between 0 to Y^*, some between Y^* to $2Y^*$, even fewer between $2Y^*$ to $3Y^*$ and so on. For all countries for which $Y < Y^*$ (the poor countries), ϵ was set equal to 0 meaning thereby that there was no diminishing returns. For income between Y^* and $2Y^*$, ϵ was set equal to ½. For income between $2Y^*$ and $3Y^*$, it was set at ${}^2/_3$ and so on. In general, if $\alpha Y^* \leq Y \leq (\alpha+1)Y^*$, then $\epsilon = \alpha/(\alpha+1)$ where á stands for constants such as 1, 2, 3, 4, etc. to be multiplied with poverty line income to determine various ranges of income where a country falls according to its level of income. Thus,

$$W(Y) = Log(Y) \qquad \text{for } 0 < Y \leq Y^*$$

$$= Y^* + 2(Y - Y^*)^{1/2} \qquad \text{for } Y^* \leq Y \leq 2Y^*$$

$$= Y^* + 2(Y^*)^{1/2} + 3(Y - 2Y^*)^{1/3} \qquad \text{for } 2Y^* \leq Y \leq 3Y^*$$

$$= Y^* + 2(Y^*)^{1/2} + 3(Y^*)^{1/3} + 4(Y - 3Y^*)^{1/4} \qquad \text{for } 3Y^* \leq Y \leq 4Y^* \text{ and so on.}$$

So, the higher the income relative to the poverty level, the more sharply the diminishing returns affects the contribution of income to human development. Income above the poverty line thus has a marginal effect, but not a full dollar-for-dollar effect. This marginal effect is enough, however, to differentiate significantly among industrial countries. The original HDI formulation (HDR 1990), by comparison, was:

$$W(Y) = Log(Y) \text{ for } 0 < Y \leq Y^*$$

$$W(Y) = Log(Y^*) \text{ for } Y > Y^*$$

The revision thus does not take ϵ=1, but allows it to vary between 0 and 1 (HDR, 1991).

The calculation of HDI for 1994 was again made different from that of the previous years. Maximum and minimum values were fixed for the four basic variables such as life expectancy (85.0 and 25.0 years), adult literacy (100% and 0%), mean years of schooling (15 and 0 years) and income (PPP$ 40,000 and PPP$ 200). For income, the threshold value was taken to be the global average real GDP per capita of PPP$ 5,120. Multiples of income beyond the threshold was discounted using a progressively higher rate (HDR, 1994).

Since the publication of the Human Development Report, 1994, two changes have been brought out in the construction of HDI relating to variables and minimum and maximum values. First, the variable of mean years of schooling has been replaced by the combined primary, secondary and tertiary enrolment ratios mainly because the formula for calculating mean years of schooling is complex and has enormous data requirement. Second, the minimum value of income has been revised from PPP$200 to PPP$100. This revision has been made

because in the construction of the gender-related development index (GDI) for different countries, the minimum observed value of female income of PPP$100 has been used as a lower goal post. It is necessary to use this fixed minimum for construction of the overall HDI to maintain consistency between the construction of the HDI and that of the GDI and to ensure comparability between the two indices. For the HDI, the revision is only marginal and it has little effect on HDI values. For any component of the HDI, individual indices are computed according to the general formula:

$$Index = \frac{X_i - Min(X_i)}{Max(X_i) - Min(X_i)}$$

For the construction of the dimension indices maximum and minimum values have been fixed as shown in Table 1.1.

TABLE 1.1
DIMENSION INDICES

Indicators	Value	
	Maximum	Minimum
Life Expectancy at Birth (Years)	85	25
Adult Literacy Rate (%)	100	0
Combined Gross Enrolment Ratio (%)	100	0
GDP Per Capita (PPP US $)	40,000	100

Source: HDR 2005, UNDP.

Over the years the Human Development Report has been using a particular formula known as Atkinson formula in constructing the income (GDP) index. The basic approach in the treatment of income has been driven by the fact that achieving a respectable level of human development does not require unlimited income. To reflect this, income has always been discounted in calculating the HDI. To calculate the

discounted value of the maximum income of PPP$ 40,000 which falls between the income range of $6Y^*$ and $7Y^*$the following formula (constructed before 1999) was used:

$$W(Y) = Y^* + 2(Y^*)^{1/2} + 3(Y^*)^{1/3} + 4(Y^*)^{1/4} + 5(Y^*)^{1/5} + 6(Y^*)^{1/6} + 7(40000 - 6Y^*)^{1/7}$$
$$= 6311 \{\text{PPP US \$}\}$$

The main problem with this formula is that it discounts the income above the threshold level very heavily, penalizing the countries in which income exceeds the threshold level. It reduces the PPP$ 34,000 between the threshold and maximum level of income to a mere PPP$ 321. In many cases income loses its relevance as a proxy for all dimensions of human development other than a long and healthy life and knowledge. To overcome this problem the HDR, 1999 brought out a thorough review of the treatment of income and suggested its improvements. Putting the methodology on a more solid analytical foundation by introducing the formula as shown below made the refinement:

$$W(Y) = \frac{Log(Y) - Log\{Min(Y)\}}{Log\{Max(Y)\} - Log\{Min(Y)\}}$$

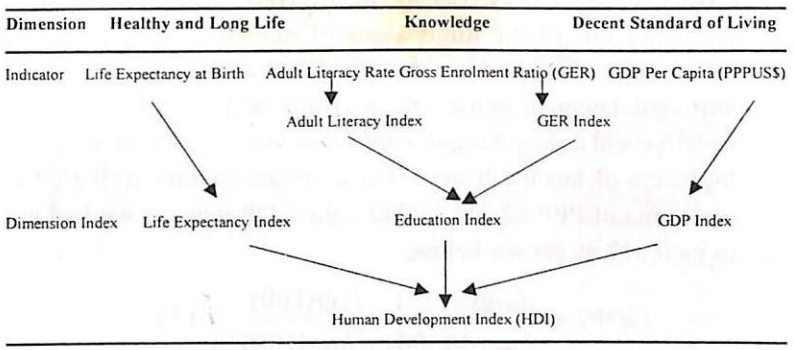
There are several advantages to this formula. First, it does not discount income as severely as the formula used earlier. Second, it discounts all income, not just the income above a certain level. Third, the asymptote starts quite late, so middle-income countries are not penalized unduly; moreover, as income rises further in these countries, they continue to receive recognition for their increasing income as a potential means for further human development (HDR, 1999).

Subsequently Anand and Sen, 1993, 1995, 2000 and Chaubey 2002 suggested further modifications to the UNDP formula but these are yet to be popularized. Anand and Sen suggested the following two forms for rectification of the transformation adopted by UNDP (Anand and Sen 1995 and 2000):

$$W = Y \qquad \text{for } Y \leq Y^*$$

$$W = Y^* + Y^* \{\log(Y/Y^*)\} \qquad \text{for } Y \geq Y^*$$

The diagram given below offers a clear overview of how the human development index is constructed (HDR 2001):



. ***Calculation of Indices in UNDP Report***

1. **Life Expectancy Index (LEI):** The life expectancy index measures the relative achievement of a country in life expectancy at birth. The life expectancy index of a sample country having life expectancy of 72.7 yrs at birth for the year 2007 is calculated to be 0.795 as shown below:

$$\text{Life Expectancy Index: } LEI = \frac{72.7 - 25}{85 - 25} = 0.795$$

2. **Education Index (EI):** The education index measures a country's relative achievement in both adult literacy and combined primary, secondary and tertiary gross enrolment. First, an index for adult literacy gross enrolment is calculated. Then these two indices are combined to create the education index, with two-thirds weight given to adult literacy and one-third weight to combined gross enrolment. For a sample country with an adult literacy rate of 98.3% and a combined enrolment ratio of 79.9% in 2007, the education index is calculated to be 0.922 as shown below:

$$\text{Adult Literacy Index: } ALI = \frac{98.3 - 0}{100 - 0} = 0.983$$

$$\text{Gross Enrolment Index: } GEI = \frac{79.9 - 0}{100 - 0} = 0.799$$

Education Index: $EI = \frac{2}{3}(ALI) + \frac{1}{3}(GEI) = \frac{2}{3}(0.983) + \frac{1}{3}(0.799) = 0.922$

3. **GDP Index (GDPI)**: - The GDP index is calculated using adjusted GDP per capita (PPP US $). In the HDI income serves as a surrogate for all the dimensions of human development not reflected in a long and healthy life and in knowledge. Income is adjusted because achieving a respectable level of human development does not require unlimited income. Accordingly, the logarithm of income is used. For a sample country with a GDP per capita of PPP $2,215 in 2007, the GDP index is worked out to be 0.517 as shown below:

$$GDPI = \frac{Log(2215) - Log(100)}{Log(40000) - Log(100)} = 0.517$$

4. **Human Development Index (HDI)**: - Once the individual indices are calculated determining the HDI is straightforward. It is a simple average of Life Expectancy Index (LEI), Education Index (EI) and GDP Index (GDPI):

$$HDI = \frac{1}{3}(LEI + EI + GDPI)$$

$$= \frac{1}{3}(0.795 + 0.922 + 0.517) = 0.745$$

The National Human Development Report is an attempt to map the state of human development in India (NHDR, 2002). A major objective of the NHDR is to bring about a certain conceptual and methodological consensus on the use of human development approach in the country in general, and the framework for identifying indicators and building composite human development indices at the State level, in particular. The work is expected to guide similar initiatives at sub-State level in future. It seeks to put together indicators and composite indices to evaluate development process in terms of 'ex-post incomes' rather than only in terms of available 'means' of 'inputs'. The report, recognizing the broad based consensus that exists on the three critical dimensions of well-being, focuses on identifying the various contextually relevant indicators on each of them. These dimensions of well-being are related to the following (Table 1.2):

- *Longevity*: the ability to live long and healthy life;
- *Education*: the ability to read, write and acquire knowledge; and
- *Command over resources*: the ability to enjoy a decent standard of living and have a socially meaningful life.

TABLE 1.2
INDICATORS OF HDI AND GEI IN UNDP AND NHD REPORTS

Attainments	UNDP Indicators	NHDR Indicators
Longevity	Life Expectancy at Birth	Life Expectancy at Age 1 and Infant Mortality Rate
Education	Adult Literacy Rate combined with Enrolment Ratio	Literacy Rate 7 + and Intensity of Formal Education
Economic (command over resources)	Real GDP Per capita in PPP$	Per Capita Real Consumption Expenditure adjusted for Inequality; (Worker–Population Ratio in case of Gender Equality Index)

Source: HDR, 2005, UNDP.

The various indicators of these attainments and composite indices capture the process of development and the well being of the people from two perspectives. The first is the 'conglomerate perspective', which captures advances, made by the society as a whole and the second is the 'deprivation perspective' that assesses the status of the deprived in a society. Both these perspectives are needed to adequately understand the process of development in any society (NHDR 2001: 10).

Composite Indices in NHD Report

A composite index of diverse indicators, though it is conceptually and methodologically difficult to put together, has been considered as a useful tool in policy planning in India. It is believed to help in facilitating comparisons with other composite measures. It is expected to help in a meaningful comparison of the human development status across the States. It is, therefore, felt necessary to have core indices that are

functionally decomposable at State and sub-State levels. Keeping these points in view the NHDR included a core set of indices from among the identified indicators that reflect, in some sense, the common concerns, social values and development priorities of all the States in India which permitted a meaningful comparison of the human development status across the States. The other concern that are to be reflected in the indices relates to their amenability to inter-temporal and inter-spatial analyses, as well as their sensitivity to tracking developmental changes at more frequent interval of time. The latter implies, making use of such indicators that are sensitive to capturing changes, for instance, on an annual basis, as against using only those indicators that primarily capture the accumulated attainments on each of the identified dimensions of well-being that is included in the summary measure. Such a consideration is important when the objective is to have composite human development indices where frequent or yearly changes are not on account of changes only in the income variable. This is not the case with the HDI of UNDP, which is presented annually in the human development reports. In their case the yearly changes in the value of the index is mostly on account of changes in the indicators that are sensitive to tracking gradual but continuous changes in such aspect of well-being that have conventionally been captured, largely, through the slow moving indicators like life expectancy at birth or even literacy rates.

While taking note of the social valuation and development priorities of India, the scaling and weighting of diverse indicators into a composite index has been done keeping in view the objectives for which the composite indices are being built. In scaling the diverse indicators, the main consideration has been to make attainments on each of them comparable and at the same time ensuring that the selection of end points, i.e., the maximum and the minimum values on the scale for each indicator are such that they support inter-temporal comparison for a reasonable period of time starting from 1980. The scaling norms that have been selected are expected to remain valid at least till 2020, at a reasonably improved pace of human development. While selecting the norms, the attainments of the best performing

State on the concerned indicators and the comparable international norms are also kept in mind.

The issue of weights to combine the identified indicators on each of the three dimensions of well-being is of course debatable. The report has adopted a predominantly normative approach, as against a purely empirical basis of deriving weights to club different indicators. Conceptually, there are good reasons to suggest that different aspects of well-being have to be co-realizable for an individual to have a meaningful sense of well-being in today's context. It follows that attainments on each aspect of well-being are equally important and hence should be equally weighted. Thus both in HDI as well as in HPI composite measures reflecting health, educational and economic attainments/deprivation have been equally weighted. However, within the composite measure on educational and health attainment, based on a sensitivity analysis, indicators with somewhat distinct attributes have been clubbed using unequal weights so as to reflect appropriately the country's context, development priorities and the desired policy focus. Accordingly, in case of the composite index on health attainment, life expectancy has been given a 65 per cent weight as against only 35 per cent for infant mortality rate. Similarly, in case of the composite index on educational attainment, while literacy rate has been given a weight of 35 per cent, the indicator capturing intensity of formal education (based on current enrolment rates in successive classes at school level) has been assigned 65 percent. In case of indicator on economic attainment namely, inequality adjusted per capita consumption expenditure, an adjustment for inflation over the period had been made to make it amenable to inter-temporal and inter-spatial comparisons. As a result, the composite indices are capable of tracking development across the States and over the period of time for which they have been estimated.

Calculation of HDI in NHD Report

The formulae used for constructing human development index is as follows:

$$HDI_j = \frac{1}{3}\sum_{i=1}^{3} X_i$$

$$\text{Where } X_i = \frac{X_{ij} - X_i^*}{X_i^{**} - X_i^*}$$

HDI is measured for the j[th] State and X_{ij} refers to attainment of the j[th] State on the i[th] indicator; X_i^{**} and X_i^* are the scaling maximum and minimum norms, such that:

$$X_2 = 0.35E_1 + 0.65E_2$$

$$X_3 = 0.65H_1 + 0.35H_2$$

where X_1 refers to expenditure index based on inflation and inequality adjusted per capita consumption expenditure, X_2 refers to composite index on educational attainment and X_3 refers to composite index on health attainment; E_1 is literacy index based on literacy rate for the age group 7 years and above, E_2 is formal education index based on adjusted intensity of formal education, H_1 is life expectancy index based on life expectancy at age one and H_2 is infant mortality index based on infant mortality rate (IMR). In case of IMR the reciprocal of the indicator has been used.

Constructing Development Radars in NHD Report

The different indicators included in the development radars have been scaled and normalized to take a value on a scale ranging from 0 to 5. "As a result, on each indicator including the IMR and poverty ratio, where the reciprocal of the indicator has been used, and the scaled least achievement corresponds to 0 whereas the best achievement is closer to 5. In undertaking the said scaling procedure, desirable norms had to be adopted for the chosen indicators" (NHDR 2002: 133). In some cases the norms are self selecting, as for instance, is the case with access to safe drinking water or literacy rate and in some others like per capita consumption expenditure or even infant mortality rate, there is an element of value judgment. In case of the inflation adjusted per capita consumption expenditure (at 1983 prices)

the maximum has been pegged at Rs. 500 per capita per month. For poverty the minimum has been kept at 5 per cent such that it corresponds to a value of 5 on a scale of 0.5 on the radar. In all other cases the scaling norms are as per Table 1.3:

TABLE 1.3

GOAL POSTS FOR CONSTRUCTING HDI IN NHD REPORT

Indicators	Scaling Norms for HDI	
	Minimum	Maximum
Per Capita Monthly Consumption Expenditure (Rs.)	65	325
Literacy Rate for 7+ Years	0	100
Adjusted Intensity of Formal Education (Estimated)	0	7
Life Expectancy at Age 1 (Years)	50	80
Infant Mortality Rate	20 per 1000	-

Source: NHDR 2001, Planning Commission, New Delhi.

LITERATURE ON HUMAN DEVELOPMENT

Literature on human development is vast and varied. When some literatures dealt on the concept of human development while some others dealt on the methods of measurement, construction of HDI for various States and Sub-States, and for different sections of the society. An attempt has been made in the following paragraphs of the current chapter to present a comprehensive review of literature on those aspects.

There have been numerous efforts over time to remedy the defects of traditional measure of development and to create composite indicators that could serve as either complements or alternatives to this. Basically, such composite indicators fall into either of the following two groups: (1) those that seek to measure development in terms of a 'normal' or 'optimal' pattern of interaction among social, economic and political factors and (2) those that measure development in terms of 'quality of life'. The perception of development shifted

from economic development to socio-economic development with an emphasis on poverty. Now the shift is towards human development that puts more emphasis on the widening of human choices than on the expansion of commodities and wealth. The outcome is the Human Development Index.

The United Research Institute on Social Development (UNRISD) carried out one of the major studies on composite indicator in 1970. The study was concerned with the selection of the most appropriate indicators of development and an analysis of the relationship between these indicators at different levels of development. The result was the construction of a Composite Social Development Index (Todaro, 1991: 101). The index attempted to measure the development of health, nutrition, housing, income distribution, as well as other aspects of cultural and social development. A great deal of works were also undertaken to compile a set of social indicators by various agencies including the AID (1970), UN (1975), OECD (1976) and UNESCO (1977).

Some studies based on Basic-Needs-Approach to development focused on the alleviation of poverty through a variety of measures other than merely redistribution of incremental output (I.L.O., 1977). Such a focus shifted attention to how much was being produced, in what ways, for whom and with what impact. The essential basic needs were considered to cover six areas such as nutrition, basic education, health, sanitation, water supply and housing and related infrastructure.

The importance of education and health as dimensions of well-being was highlighted in a "Physical Quality of Life Index" (PQLI) developed by Morris (1979). The PQLI has three component measures: life expectancy at birth, infant mortality and literacy. In comparison with some other comprehensive measures of development, the PQLI has two major attractions: (i) its simplicity and (ii) its focus on outputs (direct measures of well-being) rather than inputs (indirect measures such as per capita intake of calories or years of schooling) (Sewall, 1979).

The 'social indicator' had itself been used very loosely to encompass a whole range of human, economic, social, cultural and political indicators. The need to supplement the GNP as an indicator of economic development had become confused with a search for indicators of other aspects of development as well as for an indicator of the 'quality of life'. The latter concept had generally been taken to cover concepts such as security, peace, and equality of opportunity, participation, and personal satisfaction, all of which presented difficult measurement problems. It had never been clear whether the search was for an alternative to GNP, or a complement or a supplement (Streeten and Jolly, 1981: 56). Despite considerable research on composite indices, no one came close to developing a rational weighting system. Instead of attempting to develop a composite index of basic needs, a useful alternative could have been to narrow the range of indicators from six to one or two, which correlated highly with basic needs development (Streeten and Jolly, 1981: 64).

Another study that sought to measure development in terms of a pattern of interaction among social, economic and political factors was that made by Adelman and Morris, which classified 74 developing countries according to 41 variables (Adelman and Morris, 1973). The major criticism of the study is that they sought to measure development in terms of structural change rather than in terms of human development. They also had the implicit assumption that developing countries must develop along the lines of the developed countries. The choice of indicator suggests that usually the emphasis is on measuring inputs whereas the stress should have been on measuring outputs (Todaro, 1991: 102 quoted from Adelman and Morris, 1973).

Allen C. Kelley in one of his article challenged the usefulness of the conceptual framework of "human development" as specifically represented in the HDI and also illustrated the sensitivity of this measure to plausible refinements, and argued that it offered only limited insights beyond those obtained by small modifications to simple measures of economic output (Kelley 1991).

A. K. Shiva Kumar made an attempt to construct the HDI by using UNDP's methodology for 17 Indian States and ranked them

(Shiva Kumar, 1991). He made an interesting comparison of the rankings of the states of India with the rankings of the countries appeared in the report of UNDP. The absence of disaggregated data on health and life expectancy for the union territories and the North Eastern States of India prevented him in the computation of the HDI for these regions.

J.B.G. Tilak by applying the methodology of UNDP constructed human development indices for 17 major states in India; made inter-state comparisons and compared the states with other countries of the world (Tilak, 1991). He claimed that the UNDP methodology is replicable and can be advantageously used in making intra-country comparisons in human development, rather than relying on conventional measures of development like income. With respect to Indian states, his analysis revealed that while there is high correlation between human development and economic growth, poverty and human development are not so correlated.

K.L. Dalal in his edited volume brought together contributions made at a National Symposium held in New Delhi in March 1991 and reflections on human development as conceived by the UNDP report from the Indian perspective (Dalal, 1991). The contributors were leading personalities with vast experience and knowledge of political affairs, science, economics, education and culture, business and industry and administration. The common consensus of the symposium was that Indian Development goals have been in tune with the Human Development Report. There has however been a significant failure in implementation of well-constructed policies. The discussion of the symposium considered lack of political will and administrative inefficiency as major causes of the failures in implementation even when agreed targets were none too ambitious.

In one of his paper, L.C. Jain, drew upon his life-long experience and knowledge of rural and village industries and proposed a three pronged course corrections: (a) Area planning should replace the current pre-occupation with sectoral planning. (b) Financial control should shift from expenditure targets to investment targets, and (d) Voluntary agencies and non-government organizations should be given a more active role (Jain, 1991).

M. Desai in one of his paper traced the intellectual origins of the HDR in the recent literature on poverty, entitlements and capability (Desai, 1991). The paper also dealt in particular with the Human Development Index and explained its rationale and its future revisions.

The NHDR compiled the HDI, GDI, and HPI for the entire country including North-Eastern States. However, the data for NE States were prepared by taking the data of Assam as a representative one (NHDR, 1991). This report basically aimed at creating an extensive State level database covering 70 indicators, in most cases, in terms of gender and rural break-up covering the period from 1981-83 to 1991-93 (two points of time) using Census data of 2001. The report revealed that there was considerable differences in the level of attainments of people on various aspects of well-being, depending on their place of residence (rural or urban), the sex of the person, and the social group or the segment of the population (SC/ST/others) that the person belongs. In general, most indicators showed a lower level of attainments for women, SC, ST and rural people. At the national level urban areas had done better in terms of human development in comparison to rural areas. Particularly in case of North-Eastern States, the attainments on shelter and accessibility to safe water were relatively poor. This was also, by and large, true of their urban areas except in case of Sikkim.

Anand and Ravallion in their article focused on the role of private incomes and public services within the Human Development approach in attaining some very basic human capabilities and also tried to explore their implications for development policy (Anand and Ravallion 1993) They believed that the cross-country evidence offered some provisional support for the view that at least for basic health; the main channels by which growth promotes human development in a typical developing country are through its impact on income poverty and the public provisioning of health services. To them average income matters, but only in so far as it reduces poverty and finances key social services. This conclusion has an important policy implication: if social expenditures and the reduction in income poverty are the main forces driving human development, rather than economic growth per se,

then policy intervention can play a role in promoting human development independently of the promotion of aggregate affluence. In this connection they cited the example of Sri Lanka that achieved impressive social outcomes for their income level.

A. K. Shiva Kumar in his work revealed that states like Haryana and Punjab despite being relatively high-income states were facing the problem of serious gender inequality in basic capabilities (Shiva Kumar, 1996). The study also revealed that there were 13 countries in the world that had a lower value of GDI than that of the states like Bihar and Uttar Pradesh which points to the seriousness of the problem of human development at the global level.

Douglas A. Hicks in his work proposed a method to incorporate a concern for distributional inequalities of income, education, and longevity into the framework of the Human Development Index (HDI), as it was designed by the UNDP (Hicks, 1997). He constructed Gini coefficients, for a set of 20 developing countries, measuring inequalities in annual income, educational attainment, and life-span attainment. These calculations were combined with data from the HDI to produce an Inequality-Adjusted Human Development Index.

Vyasulu and Vani used district level secondary data of the state of Karnataka to measure the status of human development of the state using HDI (Vyasulu and Vani, 1997). They constructed a set of six indices subject to data limitation. In spite of the varieties of HDI, the rankings of the districts were found to be more or less stable. But there was a high degree of variation within each state reflecting greater intra-state disparity in development. While making concluding remarks they suggested that sustained political support to an across-the-board improvement in each district was essential if the HDI was to show improvement.

Zaidi and Salam in their study on human development using UNDP methodology tried to enumerate and correlate various indices denoting life expectancy, educational attainment and real GDP per capita to other parameters of the economies of 15 states of India for finding out the causes of varying values of these indicators in different states (Zaidi and Salam, 1998). The study revealed that public expenditure

has a more close association with educational attainment than it has with life expectancy as the latter is influenced by multiplicity of factors like heredity, race, climatic and environmental factors apart from public expenditures on health, nutrition and sanitation etc. A high literacy rate is a necessary but not sufficient condition for economic growth. Though literacy rate was highest in Kerala in 1991, the state was ranked in the 6th position among these 15 States in the combined enrolment ratio. They observed that in spite of the significant role of higher education in economic growth the state government spent more on the universalisation of education for political reasons.

Viswanathan in her study tried to highlight some of the facts relating to data on human development in Madhya Pradesh published by the Government of Madhya Pradesh (Viswanathan, 1999). According to her there was a lot of variation in the methodology used in the report as compared to the one used in UNDP report. There was also a major difficulty in the comparisons of data of HDI over time that was equally applicable to all the Indian States. Though the State published the report on human development, it did not make any analysis of the data contained in the report to draw any conclusion. The data tell us that higher incomes do not always yield human development, and that higher human development does not always mean equal benefit to men and women.

The NCAER conducted a survey of 33,000 rural households during 1994 to create a Human Development Profile of India (NCAER, 1999). The profile was based on the findings of the multi-purpose survey spread over 1,765 villages belonging to 195 districts in 15 largest Indian States and the North East. The states were grouped in such a way as to represent different regions of the country. Accordingly the seven states of N.E. Region were clubbed into one group. The report revealed astounding data. Although relative differentials existed, absolute deprivation was high in most parts of rural India. For example, about half the population of rural India was illiterate and suffered from capability poverty; about 40 per cent had extremely low incomes. About 8 per cent of household income was spent on health and primary education alone. A meager of 43 per cent households had domestic

lightening, 25 per cent had access to tap water and only 33 per cent utilized the public distribution system. Among the social groups, the poor spent disproportionately large amounts on health and education. For example, those who were below poverty line spent as much as 19 per cent of their annual income on health care alone and another 7 per cent on primary education.

National Institute of Rural Development at Hyderabad conducted a study on human development of rural people in major states of India for selected years i.e., 1961, 1971, 1981 and 1987-88 adopting the methodology followed in Human Development Report 1991 (N.I.R.D. 1999). The institute worked out the composite indices based on educational standards, life expectancy and per capita monthly expenditure at 1960-61 prices. HDI adjusted for expenditure inequalities and gender sensitive HDI were also computed. These three series of HDI revealed the following:

1. HD scores had gone up in all the states over time on all the three HDI series.
2. The poverty-stricken states like Bihar and U.P was at the lower rung and Gujarat made considerable progress on HDI. Despite the good strides made by these states in terms of HDI, their performance in terms of reduction of poverty incidence was only moderate.
3. The ranking of States on HDI changed significantly during the last three decades. However, during the 1980's the rank order of the States on HDI was preserved.
4. The inter-State variation for the expenditure inequalities adjusted HDI was less compared to the unadjusted one. For the states with higher incidence of poverty like Orissa, Bihar and West Bengal the difference between the two series were moderate.
5. Gender sensitive indices of human development revealed that in 14 States except Kerala and Karnataka, gender discrimination was conspicuous. Over time it had been on the decline in many states more so, in Kerala, Andhra Pradesh and Punjab. The gender sensitive indices pointed out glaring gender biases in acute poverty States such as U.P., Orissa, M.P., Rajasthan and Bihar.

Ranis and Stewart in one of their works attempted to identify the main elements of successful performance in Human Development of developing countries and arrived at some conclusions for policy in the light of 10 years of experience in analyzing Human Development (Ranis and Stewart, 2000). Their analysis revealed that there existed a range of ways of achieving success in Human Development, and therefore there was no unique path. One necessary condition for Human Development was stated to be high female enrolment ratio. Other important combinations of elements for success in Human Development was good growth accompanied by reasonably good distribution and social expenditure ratios; moderate growth combined with good distribution and supportive social sector performance; well prioritized social expenditures that could even be combined with poor economic growth when accompanied by relatively good distribution.

V.M. Rao made an attempt to bring out the insights provided by the human development report for the state of Karnataka (Rao, 2000). His study revealed that the State was lagging behind even in achieving what was regarded as minimum essential norms of human development. Its infant mortality rate in 1997 in rural areas was as high as 63 per cent and life expectancy at birth (1991-95) was 62.5per cent. There was also glaring differences between rural and urban Karnataka. Its life expectancy level was only a shade better than Bihar but much worse than Kerala which had life expectancy of 72.9per cent. Given the glaring weakness in education and health in Karnataka it was only to be expected that the women in the state would lag behind in development. He concluded that Karnataka could do better in human development if it could make effective use of its capabilities. According to him, there was a need for paying attention to the production base and the institutional structure of the economy in order to improve human development in the state. The state also required urgent attention on decentralization through active participatory rural institutions.

Ghanshyam Mahanty conducted some studies based on the UNDP's perspective measures of human development with an alternative set of indicators for the districts of Andhra Pradesh for the

years 1982-83, 1987-88 and 1992-93 using five different methods of index such as (a) Ranking (b) Indexing (c) Standard Score (d) Development Index (e) Principal Component Index (Mahanty, 2000). He found that while the pattern of human development was relatively stagnant, some districts were lagging behind. He also highlighted the importance of agriculture for both regional and human development. To him regional imbalance impaired human development. He concluded his study by making a statement that the State needed to initiate a comprehensive human development programme aimed at lessening the mal-development process and moderating its extremes.

S. Anand and A. Sen in one of their works analyzed the importance of income component of the HDI as an indirect indicator of some capabilities not well reflected directly or indirectly in the measures of longevity and education. They also re-examined the way this component can be ever more effectively used for which it is needed, particularly through corrections for inequalities and what can be learned from the experiences and experiments in previous HDR (Anand and Sen 2000).

P.K. Chaubey, in one of his paper addressed a serious lapse in the construction of human development index of UNDP in its income component and he suggested an appropriate alternative (Chaubey, 2002).

A. K. Nongkynrih, in his book in the interest of the Khatar Socio Organisation tried to present the socio-economic reality of Khatar Shnong consisting of 40 villages in Meghalaya. The study revealed that incidence of poverty was very high and the level of attainments of people on various other aspects of well-being was low. He, however, did not go into the details of the methodology, measure and status of human development of the people in the area (Nongkynrih, 2003).

R.H. Dholakia, in his paper examined the trends in regional disparity in India's economic and human development over the past two decades (Dholakia, 2003). The Indian regional data suggested a two-way causality between human development and economic development. The structure of the relationship varied over time when

human development indicators were the cause and PCI was the effect, but in the reverse causality case, the structure of the equations was found to be stable over time. Moreover, HDI positively influenced PCI with a lag of about eight years, whereas PCI affected the HDI within two years. He argued: that the Central Institutions need not be unduly concerned about regional imbalance in human development since it was decreasing over time. It is the income or economic development that requires more attention where the regional disparity has been stubborn and almost constant over the past two decades.

The Human Development Report, (2003) devoted for the first time an entire chapter to the North-East India. The report for the N.E. Region that was prepared by National Council of Applied Economic Research, New Delhi under the sponsorship of UNDP busted some popular myths, particularly on literacy rates and the status of women. It reported that the Northeast had still a long way to go as far as human development was concerned. The report identified several factors that had contributed the depressing and dismal situation in the region. The entire region was marked by "intense pressure on agricultural land, low per capita income, a low profile of health care services and low consumer expenditure levels". While identifying yawning gap between urban and rural areas in human development, the report said that educational, health care and other welfare services were heavily concentrated in the urban areas. The incidence of rural poverty was far greater in the North East. More than 39 per cent of the rural population was living below the poverty line. Though the region achieved significant progress in literacy, it has been "marred" by rural-urban disparities, inter-district variations and a high dropout rate in schools. Barring Manipur, the dropout rate in schools exceeded 60 per cent. A striking feature of the health sector was that there was a wide inter-state disparity. For instance, while Mizoram had just a single nurse for every 22,000 persons, it was 5353 persons in case of Assam. Contrary to popular perceptions, the status of women in the region was far from being on an equal footing with that of men.

A. Bose presented a report in one of his paper about an intellectual cocktail at a retreat in Goa on 'Critical Reflections on State Human

Development Reports (SHDR)' organized by the UNDP along with the Planning Commission in December 2003 (Bose, 2004). He reported that several participants highlighted shocking regional disparities in Maharashtra, which one would not have expected in such a progressive State. Infant mortality rate was reported to be a better indicator of human development than that of life expectancy.

Vijayabhaskar *et al.* in one of their paper highlighted the key findings of the Human Development Report of the state of Tamil Nadu and critically examined its various dimensions (Vijayabhaskar, *et al.* 2004). In many respects, Tamil Nadu was found to have achieved higher levels of human development compared to most States in India. The relatively high growth rate of the economy and above average per capita income had obviously contributed to it. The state had registered considerable progress in both literacy levels and reduction in population growth. Poverty levels both in urban and rural areas too had declined from above national average to below national average. Work participation rate too had increased and was one of the highest in the country. However, some indicators had offset such positive trends. Most striking in this regard was the widespread inter-district variations in human development achievements. Apart from regional variations there were significant intra-regional differences across gender and caste. There had also been a high level of inequality measured through consumption index within the state.

A number of studies were also undertaken to examine the link between human development and economic growth. Some studies confirmed the positive relationship between the two using time-series data for developing nations (HDR, 1996; Ranis *et al.*, 2000). More recently, interest has focused on the two-way relationship between the processes of expansion of people's choices and opportunities and that of economic prosperity of a nation. Advances in growth theory and human capital literature and thereby, basic needs as well as capability approaches have shown the complexities and variety of synergies in which the economic prosperity and level of human development can affect each other (Ranis and Stewart, 2000).

Attempts have been made to explore the links between investments in human development and attaining sustained economic growth. Strong complementarities between them emerged in some study (Muysken *et al.*, 2003). Two theoretical stands are often regarded in this context. First is the stand of neoliberal paradigm of so-called *Washington Consensus* which has been encouraging economic growth as a prerequisite for investment in human development. Their view is that human development may be postponed until economic resource expansion makes it affordable (Willamson, 1993; World Bank, 1995; Ravallion, 1997). The other stand, originated from White (1999), Ranis *et al.* (2000), Boozer *et al.* (2003) and advanced by Ranis and Stewart (2005) and Mabsout (2006), strongly viewed that a virtuous cycle can only be achieved through a consistent strategy promoting both objectives simultaneously and supporting key issues such as social expenditure, female literacy, equity in income distribution and investment are taken care. The latter stand identifies a fundamental two-way links between economic growth and human development, suggesting that human development can be promoted directly or indirectly via policies and programmes which promote income growth.

Previous researches on the two-way links between economic growth and human development have focused mainly on how they are associated and also how public policies play a crucial role to translate economic progress into human development. However, the literature that examined the contribution of human development in furthering economic growth is surprisingly limited. The following few paragraphs substantiates to these facts.

The links and causality between human development and economic growth has been of crucial importance in UNDP literature. A systematic documentation of the role of economic growth in enhancement of human development was found in the Seventh Human Development Report, which drew a new dimension in categorizing the quality of growth, and contributed immensely to set a holistic view on growth performance of any nation. HDR (1996) recognized that human development and economic growth are closely connected. There are evidences, which established that economic growth alone

might not be able to benefit everyone of the society. However, for long-run sustainable welfare of the people a meaningful and uninterrupted economic growth has been inevitable – a most important means in this regard.

Several empirical researches have been conducted in this regard. Anand and Ravallion (1993) viewed development indicators or social outcomes as aggregate of individual capabilities and found that GNP and life expectancy are significantly and positively correlated. The relationship is predominantly mediated through (i) direct rise of the income of the poor and (ii) the effect of growth on public spending – GNP *per se* explains almost nothing.

Aturupane *et al.* (1994) observed from their empirical work that economic growth is negatively related to infant mortality rate, however, could explain hardly 28 per cent of the infant mortality variance.

Taking three income decomposed health aggregates – life expectancy, infant mortality and perinatal mortality Bidani and Ravallion (1995) found that overall per capita health spending has a positive effect on life expectancy at birth and infant mortality rate of the poor only. Further, increased basic schooling increases average life expectancy of the nation through its effects on the life expectancy of the poor. However, in case of prenatal mortality the per capita public spending affects both and non-poor.

Chakraborty (1997) criticized the findings of earlier scholars as they suffered seriously from methodological errors and suggested the usage of non-parametric approaches to re-examine the relationship. Her empirical findings suggest that dependency of life expectancy on income is tethered to time and space. Hence, income explains life expectancy only below a certain range and that range is moving up over time. But there are some outliers – below that line life expectancies are unaffected by incomes. She concluded with the note that effectiveness of public action depends on the coverage of public services rather than on the public expenditures. Well-targeted public policies are often successful to improve the living condition of the poor in short-run; however, growth-based strategies are necessary in long run.

White (1999) presented a path-breaking graph to summarize the on-going debate on this issue between UNDP and World Bank and concluded while some policies are win-win, others are not; given the knowledge on which policy brings about what outcome, not much can be said about the effectiveness of each. According to him, the policies advocated by the World Bank and IMF is not always for 'broad-based' or 'pro-poor' growth.

Boozer *et al.* (2003) explored the dual relationship between economic growth and human development. They urged that economic growth is just a means of human development while human development reinforces economic growth.

Drawing attention on a series of advanced studies in human capital theory, basic needs as well as welfare approach, Ranis and Stewart (2005) viewed that in most cases economic growth and human development run parallel. Tracing two alternative chains from their previous contributions such as Ranis *et al.* (2000) and Ranis and Stewart (2000) they outlined two chains: from economic growth to human development and from human development to economic growth. For them, most of the developing countries are within the vicious cycle mode – below average human development and economic growth and few in the other realms – lopsided realities where growth and human development are not coherent. The countries with lopsided development experiences, according to them, tend to fall over time into either a vicious or virtuous cycle. Their findings suggest strongly that neither lopsided situation is sustainable over periods. Both types refer to unstable equilibriums. Decent human development with low expansion of economic opportunities can cause serious fiscal constraints, which is likely to create balance of payment crisis while *economic growth first strategy* can reach limits of domestic supply of skilled labour and political instability.

Turning to Welfare Approach, Berry (2005) attempted to establish the relationship between economic progress and human welfare. Highlighting different setbacks to achieve a positive association between the two, he argued that causes of failure for economic growth to provide proportional poverty reduction and those of per capita

income growth to provide higher satisfaction/happiness vary substantially within societies. Relative income and employment stability has been stressed to establish the links. Citing the examples of Latin American countries, he opined that worsening income distribution over periods in growth and even, in no growth situations is most prominent cause of failure in this regard.

Lucas (1988 and 1990) viewed that higher the level of education of workforce, the higher is the overall productivity of capital. This happens because the more educated are more likely to innovate which improves overall productivity. Studies of Psacharopolous (1994), Behrman (1995) and Strauss and Thomas (1995) indicated that additional years of education of workers increase their earnings while the rate of return of educational attainment vary significantly on the level and quality of education.

Under the purview of endogenous growth theory there are several studies that recognized a clear association between the indicators of economic and human/social development. Studies of 1990s documented the high association between the educational attainment of labour force and total factor productivity. According to Romar (1994) education plays a key role in contributing R&D and via interactive learning, which in turn promote growth of output and total factor productivity. Gylfason (1999: 101-105) established several high correlations on health, education, income distribution, and per capita income.

In recent endogenous growth model, Schaper (2003) found that investment in education is able to enhance economic growth and income equality, depending upon the way of financing it. Studies revealed that improved health and nutrition affect directly on labour productivity – especially in poor economies. Cornia and Stewart (1995) observed that calorie intake of labour force determines the productivity of both farm and non-farm sectors.

Muysken *et al.* (2003) investigated optimal health expenditure and consumption by adding a health accumulation function to the Cass-Koopmans optimal-growth model. Their finding suggests that poor countries with bad health condition should allocate more resources

to overcome this deficiency. A healthy population may contribute more to growth than a fast-growing capital stock. Physical capital and quality of labour are complements rather than substitutes. The quality of labour force depends on their health condition. Economies will only develop successfully if both inputs meet high standards. Bloom et al. (2004) confirmed that at the aggregate level also, health has shown to be an important input in economic growth.

In the context of India empirical studies on the causality between economic and human development have been attempted to establish in both ways. Few scholars found that economic growth determines the level of human development, however, others argued for reverse causality.

Dholakia (1985: 112-118) tested both the hypotheses of neoclassical school: a higher human capital formation would lead to higher growth of the TFP in a region and of human capital approach: human capital base of a region plays an important role in determining the growth of output and TFP using data from 15 major states for the period 1961-71. However, Indian data could not support any of these hypotheses even at 10 per cent level of significance.

Geeta Rani (1995) found that economic progress in India is one of the important factors that determine the level of human development. Zaidi and Salam (1998) reported a high positive correlation between NSDP per capita and enrolment in higher education. Kurian (2000) documented that advanced states in India are better off in both aspects. They are characterised by better demography and social development, higher per capita income, lower poverty, higher resource flow and private investment.

Dholakia (2003) found that human development indicators positively influence income with a lag of about eight years, whereas, income per capita affects the other within two years.

Using Indian mortality statistics World Bank (2004) documented that both household living standards and national income levels have a positive effect on the reduction of infant (under age 1) mortality. This result is for Indian infant mortality in five years preceding 1998-99.

In another attempt, Bhalotra (2006) arrived at the result that unconditional growth elasticity of under-5 mortality in India is about -0.7, which means that a 10 per cent increase in per capita income is associated with a 7 per cent reduction in mortality. This result corresponds to the under-5 mortality statistics of 14 major Indian states for the period from 1970 to 1994.

Sarkar, *et al.* along with three other colleagues estimated human development index, human poverty index and gender development index for the scheduled tribes of ten major States in India and made international comparison with some of the poorer counties of the world (Sarkar *et al.*, 2006). Due to non-availability of data, they did not construct HDI for the scheduled tribes (STs) of North-Eastern States but presented data of these States on some of the indicators such as literacy, infant mortality, anaemia among women, vaccination against measles and undernourished children. They found the HDI and HPI for STs in India to be around 30 per cent lower than the corresponding figures for all-India indices. While highlighting the grave situation of deprivation they reported HDI of STs in Orissa to be as low as 0.260 and ST population below poverty line being as high as 92 per cent. For southern Orissa, the infant mortality rate for STs was reported to be as high as 125 and higher than the average for Sub-Saharan Africa. They also stated that Meghalaya in spite of being one of the oldest States in the North-Eastern Region could not match with the performance of Mizoram and Nagaland probably because of the non-responsiveness of State government to the problem of underdevelopment and deprivation.

Thus, the review of literature on human development reveals that a large number of studies were undertaken in India and abroad on various aspects of human development. Some studies dealt with defining the concept of development, human development and their measurement for various nations and sub-nations while some others dealt either in the development of new methodology of construction of human development index or refinement of the older methods. There were studies relating to debates on the selection of variables to be included in human development index and weights to be assigned

to different variables under consideration. While some studies dealt with disparities of human development between rural and urban areas and between male and female while others concentrated on trend of human development. There were some studies that concentrated on finding the two-way relation between human development and economic growth of nations. There were evidences/findings of the impact of economic growth on human development and *vice versa* with different time lags. Some scholars also tried to examine the link between poverty and human development. The factors responsible for low level of human development were also identified in some studies. While some authors prescribed for increased allocation of resources on social sectors for improving human development while some others put emphasis on the aspects of the implementation of programmes relating to social sectors development. There were some authors who believed that high growth could lead to high human development while some others opined for achieving high growth through the achievement of high human development. There were also some studies, which argued in favor of a balanced path of development that combines the strategies of growth and human development with appropriate weights.

The Planning Commission, Government of India through NCAER, New Delhi prepared National Human Development Reports for the years 1981, 1991 and 2001. Human development indices were constructed for all the States and Union territories of India for the years 1981 and 1991. But in 2001 report the same index was constructed for major States only due to non-availability of required data for smaller States and Union Territories. After 1991, no study has been undertaken on human development in Meghalaya, neither by any individual author nor by any Institution. Therefore the present work was undertaken with the hope that it will not only generate up to date data on human development for the State of Meghalaya but also help the State Government in formulating plans for the development of the State.

HUMAN DEVELOPMENT SCENARIO AT THE GLOBAL LEVEL

As mentioned in the earlier paragraphs before 1990 people used

to equate human welfare with material wealth by being mesmerized by the rise and fall of national incomes. It was only in the first *Human Development Report* (1990) in which it was stated that the basic objective of development "is to create an enabling environment in which people can enjoy long, healthy and creative lives." The same vision even after long 16 years of publication of the first report retains a powerful resonance. The ultimate yardstick for measuring progress has since then been people's quality of life and every year one report is published by UNDP in this regard for about 177 countries.

Analysis of the human development reports reveal that over the past decades there have been unprecedented increases in material wealth and prosperity across the world. At the same time these increases have been very uneven, with vast numbers of people not participating in progress. Mass poverty, deeply entrenched inequality and lack of political empowerment contribute to deny a large share of the world's population the freedom to make real choices. Moreover, GDP is still measured in a way that does not take into account environmental degradation and the depletion of natural resources. The HDI measured by UNDP for various nations provides a composite measure of only three dimensions of human development: living a long and healthy life, being educated and having a decent standard of living. The index is not in any sense a comprehensive measure of human development. It does not, for example, include important indicators such as respect for human rights and democracy. What it does provide is a broadened prism for viewing human progress and the complex relationship between income and well-being.

The Human Development Report of 2006, which refers to the data for the year 2004, highlights the very large gaps in well-being and life chances that continue to divide our increasingly interconnected world. Enthusiasts who emphasize the positive aspects of globalization sometimes get carried away. They increasingly use the language of the global village to describe the new order. But when viewed through the lens of human development the global village appears deeply divided between the streets of the haves and those of the have-nots. The average person in Norway (at the top of the HDI league, i.e., 0.965)

and the average person in countries such as Niger (at the bottom, i.e., 0.311) certainly live in different human development districts of the global village. People in Norway are more than 40 times wealthier than people in Niger. They live almost twice as long. And they enjoy near universal enrolment for primary, secondary and tertiary education, compared with an enrolment rate of 21per cent in Niger. For the 31 countries in the low human development category (HDI being less than 0.500)—a group with 9per cent of the world's people—life expectancy at birth is 46 years, or 32 years less than in high human development countries.

The HDI underlines another core theme that has run through the *Human Development Reports* since its inception. On an average, human development indicators tend to rise and fall with income. That finding is hardly surprising. Very low average incomes and high levels of income poverty contribute to the lack of substantive freedoms in the world, robbing people of the ability to achieve adequate nutrition, treat illness or gain an education. The HDI reflects the positive association between income on one side and health and education on the other: people in richer countries tend to be healthier and to have more educational opportunities.

It also draws attention to the fact that some countries are far better than others at converting wealth into opportunities for health and education. Some countries have an HDI rank far below their income rank, while others invert this relationship. For example, Viet Nam remains quite poor (per capita GDP US$ 2745) but has a much higher HDI ranking (109th rank with HDI value 0.709) than many countries with higher per capita incomes. Conversely, Bahrain has an average income (US$ 20,758) almost twice the level in Chile but despite recent progress, both are having the same HDI value of 0.859 because it under performs on education and literacy. In Sub-Saharan Africa, Tanzania has an average income (US$ 674) one-third that in Angola but a similar HDI rank (162nd) —an outcome that reflects the high human cost of conflict in Angola. Governments often look at the HDI as an instrument for assessing their performance against that of neighboring countries. Competition for human development is a healthy

rivalry— more healthy, it might be argued, than competition on GDP. However, there has been something of a tendency for governments to neglect more pressing questions, including the underlying reasons for large discrepancies between the national position in global income tables and in HDI rank. In some cases, as in Southern Africa, these discrepancies can be traced to specific problems (such as HIV/AIDS). In many others they can be traced to domestic policy failures in providing opportunities for health and education.

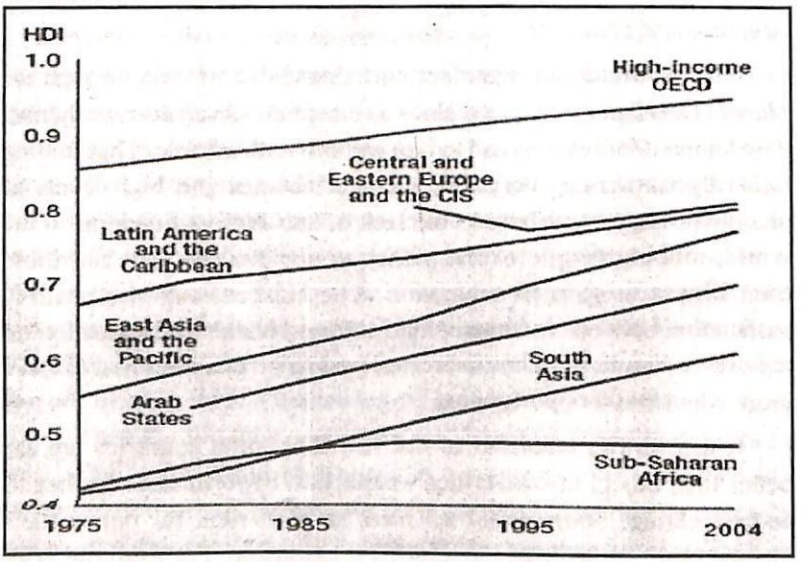


FIG. 1.1 *REGION-WISE TREND OF HDI IN THE WORLD*

The HDI is a less effective measure of cross-country performance at the top end of the league table. Near universal literacy and educational enrolment, allied to upper limits on life expectancy tend to equalize scores among countries. But even here the index highlights some discrepancies between income and overall HDI rank. For example, the United States, whose citizens are on average the second richest in the world after Luxembourg, stands six places lower in its HDI rank than its income rank. One reason is that average life expectancy is almost three years less than in Sweden— a country with an average

income that is one-fourth lower. Within the high human development group Chile and Cuba enjoys HDI ranks far above their income ranks. As with any index that aggregates data across several areas of achievement, the HDI is subject to constant adjustment in the light of shifts in statistical reporting systems. In some cases these shifts can affect a country's ranking in either a positive or negative direction, regardless of underlying performance. HDI for the year 2004 demonstrates the problem. Several countries have seen their HDI scores drop not because of a change in underlying performance, but because of a change in reporting systems for education. By definition the school enrolment data used in the HDI should not include adult education. However, some 32 countries have in the past included adult education when reporting school enrolment. For the year 2004 those countries changed data reporting to correct the anomaly. The new data sets are now more uniform and more accurate. But the change has had an adverse effect on the HDI rank of several countries, including Argentina, Belgium, Brazil, Paraguay, Peru and the United Kingdom. For Brazil the decline in the HDI rank—from 63 to 69—is almost entirely a result of the change in statistical reporting rather than any real deterioration in education performance. Similar outcomes can be observed for other countries in the group. Human development trends—the HDI and beyond Human development trends tell an important story. Since the mid-1970s almost all regions have been progressively increasing their HDI score. East Asia and South Asia have accelerated progress since 1990. Central and Eastern Europe and the Commonwealth of Independent States (CIS), following a catastrophic decline in the first half of the 1990s, has also recovered strongly and regained the level before the reversal. The major exception is Sub-Saharan Africa. Since 1990 it has stagnated, partly because of economic reversal but principally because of the catastrophic effect of HIV/AIDS on life expectancy. Eighteen countries have a lower HDI score today than in 1990—most in Sub-Saharan Africa. Today 28 of the 31 low human development countries are in Sub-Saharan Africa. This underlines the supreme importance for the Millennium Development Goals of national efforts and global partnerships to

overcome the enormous inherited disadvantage faced by people in Africa today. Progress in human development is sometimes taken as evidence of convergence between the developed and the developing world. In broad terms, that picture is accurate: there has been a steady improvement in human development indicators for the developing world over several decades. But convergence is taking place at very different rates in different regions—and from different starting points.

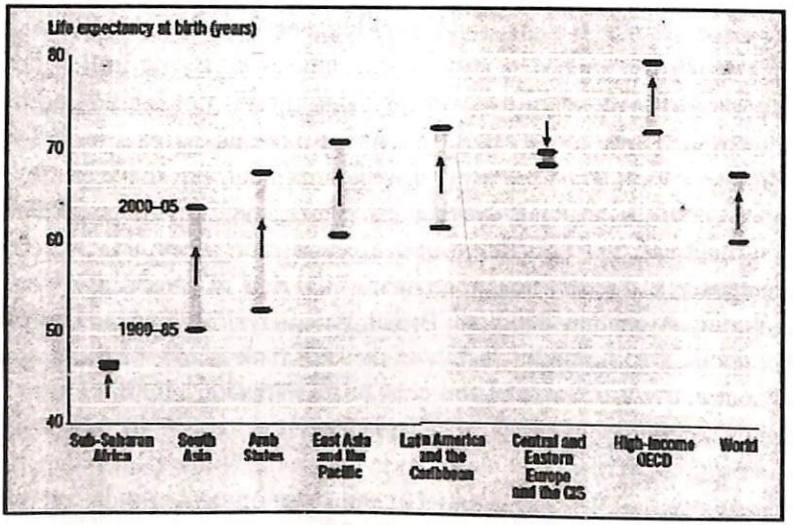


FIG. 1.2 *REGION-WISE TREND OF LIFE EXPECTANCY IN THE WORLD*

Inequalities in human development remain large, and for a large group of countries divergence is the order of the day. This can be illustrated by reference to some of the core indicators that underpin the HDI. Life expectancy over the past three decades in developing countries as a group has been converging on developed countries. Their average life expectancy at birth has increased by nine years, compared with seven in high-income countries. The exception again is Sub- Saharan Africa. For the region as a whole life expectancy today is lower than it was three decades ago—and even this headline story understates the problem. Several countries in Southern Africa have suffered catastrophic reversals: 20 years in Botswana, 16 in

Swaziland and 13 in Lesotho and Zambia. These demographic HIV/AIDS has thrown human development into reverse gear across a large group of countries. More than 39 million people are infected with HIV, the virus that causes AIDS, and 3 million died of the disease in 2005 alone. Falling life expectancy has been one of the most visible impacts of HIV/AIDS on the human development index (HDI). Less visible has been the feminization of the disease and the consequences for gender equity. In Sub-Saharan Africa, the epicenter of the crisis, infection rates have been growing far more rapidly for women than for men. Women now account for 57 per cent of HIV infections in the region, and young African women (ages 15–24) are now three times more likely to become infected than men. The pandemic is shaping the demographic structure of many African countries. Women have a greater probability of contracting the infection—and are more likely to die from it earlier in life. In Southern Africa this is reversing the standard life expectancy pattern for men and women. On current trends average life expectancy in Botswana, Lesotho, South Africa and Swaziland will be two years less for women than for men by 2005–10, compared with seven years more in 1990–95. Part of the gender bias in HIV/AIDS death rates can be traced to early marriage or sexual unions that increase the exposure of young women and girls to risk. Even so, evidence from 11 countries studied in detail by the Joint United Nations Programme on HIV/AIDS shows a decline in eight countries in the proportion of people having sex before age 15 and an increase in the use of condoms. The figures for treatment are also moving in the right direction: use of antiretroviral drugs in Sub-Saharan Africa expanded from 100,000 people in 2003 to 810,000 at the end of 2005. But only about one person in every six of the 4.7 million in need of treatment now receives it. And coverage rates range broadly from more than 80 per cent in Botswana to 4 per cent in Angola. South Africa alone accounts for about a quarter of those receiving treatment. Does gender bias also skew prevention and treatment? The evidence is mixed. Unequal power relationships can disadvantage women and young girls in prevention because they are able to exercise less control over decision-making. Educational

disadvantage is also a factor. Because school is an important site for education on HIV/AIDS, gender disparities in school attendance disadvantage girls. Current evidence does not point to systematic bias in treatment. In Ethiopia and Ghana women account for a smaller share of treatment than predicted on the basis of infection rates, but in South Africa and Tanzania they account for a larger share. Like men, women in Sub-Saharan Africa suffer from the stigma, fear and weak leadership and inadequate political participation that have held back the development of an effective response to HIV/AIDS in many countries. They also stand to gain if the goal of the Global Fund to Fight AIDS, Malaria and Tuberculosis of providing 10 million people globally with antiretroviral treatment by 2010 is attained. The commitment by the Group of Seven leading industrial countries to provide as close to universal access to treatment as possible by 2010 is important. At the same time national governments should put gender and overcoming gender inequality at the center of strategies for prevention and treatment. Reversals are greater than France's after the First World War (*HDR, 2005*). There has also been a reversal in the gender pattern of life expectancy. Across Sub-Saharan Africa women account for a rising share of HIV/AIDS infections—a trend that is dramatically lowering female relative to male life expectancy. Prevention and treatment of HIV/AIDS remain among the most important conditions for a resumption of positive human development trends across much of the region.

Survival rates for children are among the most sensitive indicators of human well-being. Here, too, there are some encouraging trends. Child mortality rates are falling: there were 2.1 million fewer deaths in 2004 than in 1990. Survival prospects are improving in all regions. Yet the 10.8 million child deaths in 2004 bear testimony to the inequality in the most basic of all life chances—the chance of staying alive. Being born on the wrong street in the global village carries with it a large risk in terms of survival prospects. For children in much of the developing world the risk differential is increasing. Child death rates in all developing regions are rising when expressed as a multiple of the rate in high-income countries. Moreover, the rate of progress in

reducing child mortality has slowed for a large group of countries. Had the rate of progress registered in the 1980s been sustained since then, there would have been 1.5 million fewer child deaths in the world in 2004. The slowdown in the reduction in child mortality rates has implications for the Millennium Development Goals. On current trends the target of cutting overall death rates by two-thirds by 2015 will be missed by some 4.4 million deaths in that year. Only three Sub-Saharan African countries are on track for achieving the goal. Perhaps more powerfully than any other indicator, child mortality demonstrates that increases in income are not equivalent to improvements in human development. Measured by wealth generation, India is one of the success stories of globalization: its GDP per capita growth has averaged 4 per cent a year since 1990. But the trend rate for reducing child mortality has slowed from 2.9 per cent a year in the 1980s to 2.2 per cent since 1990. While India has outperformed Bangladesh in economic growth and average income, Bangladesh has outperformed India in reducing child death rates, maintaining a rate of decline of 3.45 per cent since 1990. The contrasting fortune of children in India and Bangladesh when assessed on survival prospects points to the limits of wealth as a metric for measuring human development.

Progress in education is critical for human development in its own right and because of the links to health, equity and empowerment. Here, too, the progress report is one of a glass half empty and half full. Much has been achieved but large deficits remain. Illiteracy patterns today are a legacy of education deficits of the past. Since 1990 adult literacy rates have risen from 75 per cent to 82 per cent, reducing the number of illiterate people in the world by 100 million. There has been less progress in gender equity. Women still account for about two-thirds of adult illiteracy—the same as in the 1990s. Net primary enrolment ratios have increased across the developing world, and the gender equity gap in enrolment is shrinking in all regions. Set against this good news, the bad news is that 115 million children are still out of school and some 62 million of them are girls. Enrolment differences at the primary level capture an important dimension of

progress in education, but only one dimension. In a knowledge-based global economy a good quality primary education is just a first step on a ladder and not a destination. In this broader perspective the inequality in the distribution of global education opportunities remains daunting. On average a child in Burkina Faso can expect less than 4 years of education, compared with more than 15 in most high-income countries. These large educational inequalities of today are the income and health inequalities of tomorrow. Among the core challenges to be addressed is the *enrolment-completion gap*. Almost one child in five in developing countries drops out before completing primary school. In some cases high enrolment rates mask limited progress towards the acquisition of basic literacy and numeracy skills. In countries such as Chad, Malawi and Rwanda fewer than 40 per cent of the children who enroll in school complete a full primary education cycle. In rich countries more than 80 per cent of children who reach the end of primary school continue their studies at a lower secondary level. Over half go on to tertiary education. The picture is very different in Sub-Saharan Africa, where less than half of children make the transition from primary to secondary school. There are 37 countries with net secondary enrolment rates of less than 40 per cent, 26 of them in Sub-Saharan Africa.

While enrolment gaps between girls and boys are narrowing, large disparities remain at secondary and tertiary levels. The disparities reflect institutionalized gender discrimination that disadvantages women by restricting their choices and reducing their opportunities for income and employment. Because of the links between maternal education and child health, gender discrimination also holds back progress in child mortality reduction. Income poverty and distribution Income poverty has fallen in all regions since 1990, except in Sub-Saharan Africa. The share of the world's people living on less than $1 a day has fallen from 28 per cent to 21 per cent, leaving just over 1 billion people below the threshold. High economic growth in China and India has been the most powerful motor for reducing income poverty. Sub-Saharan Africa is the only region that has witnessed an increase both in the incidence of poverty and in the absolute number of poor. Some

300 million people, almost half of the region's population lives on less than $1 a day. While the world as a whole is on track for achieving the 2015 target of halving extreme income poverty, Sub-Saharan Africa is off track, as are many countries in other regions. Country-level data indicate that about 380 million people will miss the 2015 goals. Such high levels of poverty in a more prosperous global economy reflect the extreme disparities in wealth and the small shares of world income captured by the poor: The poorest 20 per cent of the world's people, roughly corresponding to the population living on less than $1 a day, account for 1.5 per cent of world income. The poorest 40 per cent, corresponding to the $2 a day poverty threshold, account for 5 per cent of world income. Nine of 10 people in high-income Organization for Economic Co-operation and Development (OECD) countries are in the top 20 per cent of the global income distribution. At the other end of the scale one person in two in Sub-Saharan Africa is in the poorest 20 per cent and the region's share of people in the bottom 20 per cent has more than doubled since 1980 (to 36 per cent of the total). Average income for the world as a whole is US$ 5533 (PPP) but 80 per cent of the world lives on less than this average. Global inequality is captured in the large gap between average and median incomes ($1700 in 2000). The world's 500 richest people have an income of more than $100 billion, not taking into account asset wealth. That exceeds the combined incomes of the poorest 416 million. Wealth accumulation at the top of the global income distribution has been more impressive than poverty reduction at the bottom. The 2004 World Wealth Report prepared by Merrill Lynch projects that the financial asset wealth of 7.7 million "high net worth individuals" reached $28 trillion in 2003, with projected growth to $41 trillion by 2008. Globalization has given rise to a protracted debate over the precise direction of trends in global income distribution. What is sometimes lost sight of is the sheer depth of inequality and the associated potential for greater equity to accelerate poverty reduction. Measured in 2000 purchasing power parity (PPP) terms, the gap between the incomes of the poorest 20 per cent of the world's population and the $1 a day poverty line amounts to about $300 billion.

That figure appears large, but it is less than 2 per cent of the income of the world's wealthiest 10 per cent. Achieving greater equity in world income distribution through inclusive and broad-based national growth strategies, backed by international action through aid, trade and technology transfer is one of the keys to bringing the 2015 goals for income poverty within reach.

The HDI provides a snapshot of average national performance in human development. However, averages can obscure large disparities within countries. Inequalities based on income, wealth, gender, race and other forms of inherited disadvantage, as well as location, can make national averages a misleading indicator for human well-being. Can the HDI be used to capture inequalities in human development within countries? Research undertaken for the HDR 2006 addressed this question by attempting to disaggregate national HDI scores by income quintiles. The exercise covered 13 developing countries and two developed countries—Finland and the United States— with sufficient data available. The construction of HDI scores for different income groups within countries poses technical challenges. Standardized household income surveys and Demographic and Health Surveys make it possible to generate data for the index at different points in the income distribution. But problems in data availability and comparability make it difficult to construct indexes that are comparable across countries. An added problem is that the data required for the construction of HDI scores by income group are not available for many high-income countries. Despite these problems the construction of internationally comparable HDI scores based on national income groups has the potential to provide a powerful instrument for understanding the dimensions of capability deprivation. The HDI by income group points to stark inequalities in human development. For Burkina Faso, Madagascar and Zambia the HDI score for the richest 20 per cent is about twice that for the poorest 20 per cent. The observed gaps in Bolivia, Nicaragua and South Africa are also very large. HDI disparities by income between rich and poor in high-income countries are smaller, partly because income differentials translate less emphatically into life expectancy differences and basic education

outcome. Even so, the United States displays significant HDI disparities by income group. Beyond the domestic rankings, cross-country comparisons highlight the inequality of human development. The richest 20 per cent of the people in Bolivia have a ranking that would place them in the high human development league, alongside Poland, while the poorest 20 per cent would rank at a level comparable to the average for Pakistan. The two groups are separated by 97 places on the global HDI ranking. For Nicaragua the HDI gap between the richest and the poorest 20 per cent is 87 places in the global league. In South Africa the richest 20 per cent have an HDI rank 101 places above the poorest 20 per cent. In Indonesia human development stretches from a level comparable to that of the Czech Republic for the richest 20 per cent to that of Cambodia for the poorest 20 per cent. While the richest 20 per cent in the United States (followed by Finland) would top the list of human development achievements, the poorest quintile in the United States achieves only a rank of 50. The HDI by income group provides an aggregate indicator of some important dimensions of well-being. Behind it are some very stark inequalities in capabilities and life chances linked to income inequalities. These can be highlighted by reference to household survey data for some of the countries covered by the research exercise. Children born into the poorest 20 per cent of the income distribution in countries such as Bolivia, Indonesia and South Africa face a risk of dying before their fifth birthday that is about four times higher than for children born into the richest 20 per cent. School completion rates also vary, with gender inequalities interacting with wealth-based disparities. Both girls and boys in the poorest 20 per cent of the income distribution in Burkina Faso are far less likely to complete primary school than their high-income counterparts, though the disparity between girls and boys is equally marked. These large variations in life chances based on inherited markers for advantage and disadvantage point to the need for public policies that equalizes choice and opportunity by extending substantive freedoms. Apart from the moral imperative to overcome extreme disparities in these areas, inequalities have important implications for the Millennium Development Goals. Consider the target of reducing child mortality rates by two thirds. Poor households, with child death

rates that are typically two to three times the national average, account for a disproportionate share of overall child deaths. In Nicaragua and Peru, for example, about 40 per cent of child deaths occur in the poorest 20 per cent of households. Policies to reduce death rates among the poor have the potential to accelerate progress towards the target, though in most countries child mortality inequalities are widening: death rates among the poor are falling on average at less than half the rate among the rich.

Looking beyond household income, disaggregating the HDI can capture inequalities at various levels. In many countries it reveals large differences among regions. Kenya has an HDI that ranges from 0.75 in Nairobi (almost on par with Turkey) to 0.29 in Turkana, a pastoral area in the north of the country. If Turkana were a country, it would be off the current HDI scale by a considerable margin, reflecting the region's recurrent droughts, poor access to health and water infrastructure and high malnutrition rates. Rural-urban differences interact with regional disparities. In China urban Shanghai would rank 24 in the global HDI league, just above Greece, while rural Guizhou Province would rank alongside Botswana. For some countries the HDI reveals very large inequalities based on group membership. An example is Guatemala, where human development opportunities are heavily skewed against indigenous groups. Q'eqchi have an HDI rank on par with Cameroon and 32 places below the rank for *ladinos* (roughly equivalent to Indonesia).

Income inequality raises important questions rooted in normative ideas about social justice and fairness in all societies. Because income distribution patterns directly affect opportunities for nutrition, health and education, income inequality is also intimately related to wider inequalities in capability and in some cases to absolute deprivation. Regional variations in income inequality are large. The Gini coefficient, a measure of inequality calibrated on a scale from 0 (perfect equality) to 100 (perfect inequality), ranges from 33 in South Asia to 57 in Latin America and to more than 70 in Sub-Saharan Africa. While caution has to be exercised in cross-regional comparisons, these regional differences are associated with large variations in the income

shares of the richest and poorest 20 per cent. They also reflect the gap between average income and median income, which widens with inequality. In a highly unequal country like Mexico the median income is only 51 per cent of the average. For Viet Nam, where income distribution is more equitable, the median rises to 77 per cent of the average. Why does income distribution matter for poverty reduction? In a mechanical sense the rate of income poverty reduction in a country is a function of two things: the rate of economic growth and the share of any increment in growth captured by the poor. Other things being equal, the larger the share of income captured by the poor, the more efficient the country is in converting growth into poverty reduction. Holding income distribution patterns constant and projecting current growth rates into the future, it would take three decades for the median household in poverty to cross the poverty line in Mexico. Doubling the share of the poor in future income growth would cut this time horizon by half. For Kenya the time horizon would be reduced by 17 years, from 2030 to 2013—a transition that would bring the country within touching distance of an otherwise unattainable Millennium Development Goal target of halving income poverty. As the examples show, distribution matters because it affects the rate at which economic growth converts into poverty reduction (the growth elasticity of poverty). Thus every 1 per cent increase in growth reduces poverty by about 1.5 per cent in Viet Nam—twice the 0.75 per cent in Mexico. The good news is that extreme inequality is not an immutable fact of life. Over the past five years Brazil, one of the world's most unequal countries, has combined strong economic performance with a decline in income inequality (according to national sources, the Gini index has come down from 56 in 2001 to 54 in 2004) and poverty. Economic growth has created employment and increased real wages. And a large social welfare programme, Bolsa Familia has provided financial transfers to 7 million families living in extreme or moderate poverty to support nutrition, health and education, creating benefits today and assets for the future. As underlined by the HDI by income quintiles for the United States, it is also important in some of the world's richest countries. Over the past quarter century the gap between the bottom of the US income distribution and the middle and

top has widened dramatically. Between 1980 and 2004 the income of the richest one per cent of households (average incomes of more than $721,000 in 2004) rose 135 per cent. Over the same period real manufacturing wages declined by one per cent. The share of national income of the richest one per cent doubled to 16 per cent over the same period. In other words, the fruits of the productivity gains that has driven growth in the United States have been heavily skewed towards the wealthiest sections of society. Does rising inequality restrict opportunity? One way of addressing that question is to measure the influence of the earning power of parents on the future earnings of their offspring. In countries with low inequality—such as Denmark and Norway—parental income explains about 20 per cent of the earnings of offspring. For the United States—and for the United Kingdom— that figure rises to more than 50 per cent. Within any one country high levels of inequality in income and opportunity are a constraint on human development. Apart from their adverse implications for economic dynamism, growth and social cohesion, they limit the conversion of growth into human development. The same applies at a global level, where the increasingly visible divides that separate the haves and the have-nots. One of the central human development challenges in the decades ahead is to diminish the tolerance for extreme inequalities that have characterized globalization since the early 1990s and to ensure that the rising tide of prosperity extends opportunities for the many, and not just the privileged few.

Compared to developed countries of the world India is lagging behind in all the aspects of human development (Fig. 1.3). When India has a per capita GDP of US$ 3139, the corresponding figure in Norway is $38,454 (Table 1.4). Even some of the neighboring countries like Mauritius, China and Sri Lanka have surpassed India in this regard. The neighboring countries that are lagging behind in respect of per capita GDP are Myanmar, Nepal, Bangladesh, Bhutan, and Pakistan. Life expectancy at birth in India is as low as 63.6 as against highest life expectancy of 82.2 in Japan. Both Sri Lanka and China are much ahead of India in respect of life expectancy. These two neighboring countries have also literacy rates of more than 90 percent

as against 61 per cent in India and about 99 percent in many developed countries. As a result of these India is lagging behind many countries and its HDI rank is 126 in the world as against 63 in Mauritius, 81 in China and 93 in Sri Lanka.

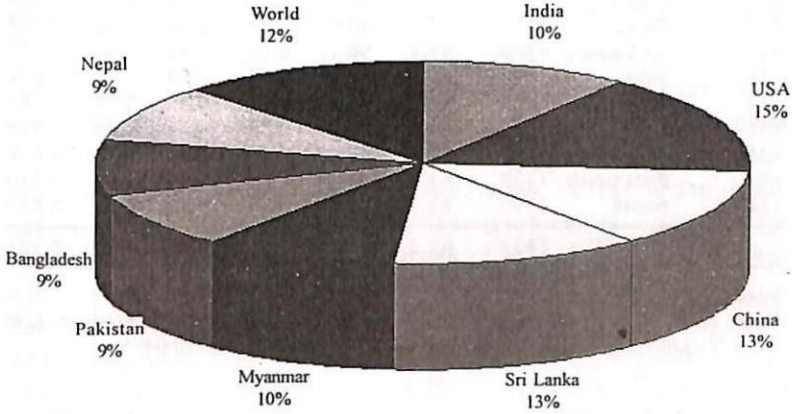


FIG. 1.3 *HDI IN INDIA AND OTHER COUNTRIES*

Growth of human development as reflected through HDI is linear in various countries of the world including India. Some of the neighboring countries like China and Sri Lanka are moving faster than India (Table 1.5 and Fig. 1.4). The countries that are neighbors to India but having slower growth than India are Nepal, Bangladesh and Pakistan.

TABLE 1.4

HUMAN DEVELOPMENT AT THE GLOBAL LEVEL

HDI Rank	Country	GDP Per Capita (PPP US$)	LE at Birth	Literacy	Index			
					GDP	LE	EDN	HD
1	Norway	38,454	79.6	99.0	0.99	0.91	0.99	0.965
7	Japan	29,251	82.2	99.0	0.95	0.95	0.94	0.949
8	USA	39,676	77.5	99.0	1.00	0.88	0.97	0.948
18	U.K	30,821	78.5	99.0	0.96	0.89	0.97	0.940

(Contd...)

HDI Rank	Country	GDP Per Capita (PPP US$)	LE at Birth	Literacy	Index			
					GDP	LE	EDN	HD
63	Mauritius	12,027	72.4	84.4	0.80	0.79	0.81	0.800
81	China	5896	71.9	90.9	0.68	0.78	0.84	0.768
93	Sri Lanka	4390	74.3	90.7	0.63	0.82	0.81	0.755
126	India	3139	63.6	61.0	0.58	0.64	0.61	0.611
130	Myanmar	1027	60.5	89.9	0.39	0.59	0.76	0.581
134	Pakistan	2225	63.4	49.9	0.52	0.64	0.46	0.539
135	Bhutan	1969	63.4	47.0	0.50	0.64	0.48	0.538
137	Bangladesh	1870	63.3	-	0.49	0.64	0.46	0.530
138	Nepal	1490	62.1	48.6	0.45	0.62	0.51	0.527
	WORLD	8833	67.3	-	0.75	0.71	0.77	0.741

Source: HDR 2006, UNDP.

Note: GDPI, LE, EDN, and HD are indices of Gross Domestic Product, Life Expectancy, Education and Human Development, respectively.

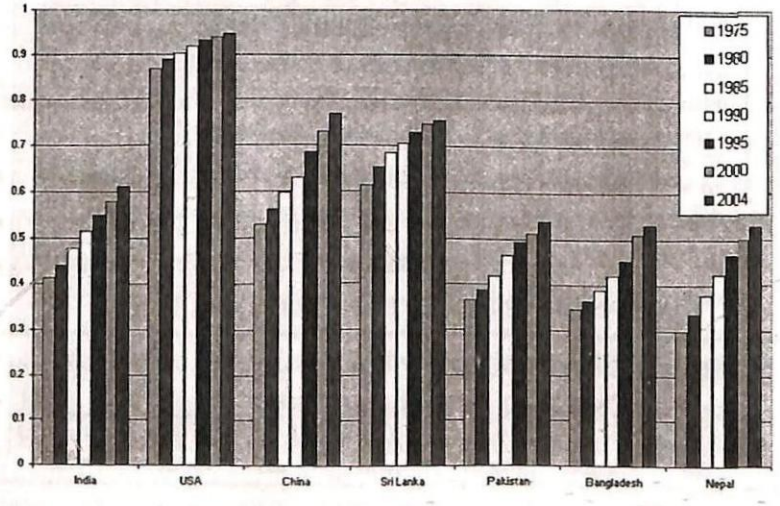


FIG. 1.4 *GLOBAL TREND OF HDI*

TABLE 1.5

TREND OF HDI AT THE GLOBAL LEVEL

HDI Rank in 2004	Country	Year						
		1975	1980	1985	1990	1995	2000	2004
1	Norway	0.868	0.888	0.898	0.912	0.936	0.956	0.965
7	Japan	0.859	0.884	0.897	0.914	0.927	0.939	0.949
8	USA	0.868	0.889	0.902	0.917	0.930	0.940	0.948
18	U.K.	0.851	0.859	0.868	0.889	0.927	0.939	0.940
63	Mauritius		0.661	0.692	0.726	0.749	0.779	0.800
81	China	0.527	0.560	0.596	0.628	0.685	0.730	0.768
93	Sri Lanka	0.612	0.653	0.684	0.706	0.729	0.747	0.755
126	India	0.413	0.439	0.477	0.515	0.548	0.577	0.611
134	Pakistan	0.365	0.388	0.420	0.463	0.493	0.511	0.539
137	Bangladesh	0.347	0.366	0.391	0.422	0.454	0.510	0.530
138	Nepal	0.299	0.336	0.378	0.425	0.467	0.500	0.527

Source: HDR 2006, UNDP.

METHODOLOGY

Both secondary and primary data were used for undertaking the present work. As regards secondary data, reports of Directorate of Economics and Statistics, Government of Meghalaya, National Human Developments Reports, Census Reports and National Family Health Survey Reports were consulted. According to 2001 Census, the Meghalaya State has 7 districts, 39 blocks and 5780 villages with a total population of 23,06,069. Primary data were collected using stratified random sampling technique in the year 2005. Seventeen Blocks were selected in the first stage of sampling by taking 44 per cent (approximately) of Blocks from all the seven districts. In the second stage 85 villages were selected by taking 5 villages from each selected block. In the third stage 1020 households were selected by taking 12 households from each selected village (for details see Appendix). The data so collected mainly relating to number of males, females and children in a household, number of births and deaths, educational level of the members in the household, their income and

expenditure, etc were obtained using questionnaires by direct interview method. The data were analyzed by constructing individual index of education, health and expenditure variables and human development index based on the formulae used by the National Human Development Report.

The formulae as mentioned below are used for measuring human development of Meghalaya and her seven districts:

$$HDI_j = \frac{1}{3}\sum_{i=1}^{3} X_i$$

where Expenditure Index: $X_1 = \dfrac{Log(X_{ij}) - Min\{Log(X_i)\}}{Max\{Log(X_i)\} - Min\{Log(X_i)\}}$

Other Indices on literacy (E_1), formal education (E_2), life expectancy (H_1), and infant mortality (H_2) are estimated using the following formula:

$$E_1, E_1, H_1, \text{ or } H_2 \text{ Index} = \frac{X_{ij} - Min(X_i)}{Max(X_i) - Min(X_i)}$$

Where X_{ij} refers to attainment of the j^{th} observation on the i^{th} indicator.

Education Index: $X_2 = 0.35E_1 + 0.65E_2$

Health Index: $X_3 = 0.65H_1 + 0.35H_2$

Where X_1 refers to consumption expenditure index based on inequality adjusted (using Gini Ratio) per capita consumption expenditure, X_2 refers to composite index on educational attainment and X_3 refers to composite index on health attainment; E_1 is literacy index based on literacy rate for the age group 7 years and above, E_2 is formal education index based on adjusted intensity of formal education, H_1 is life expectancy index based on life expectancy at age one and H_2 is infant mortality index based on infant mortality rate (IMR). In case of IMR the reciprocal of the indicator is used. The scaling norms (minimum and maximum) used for each indictor such as consumption expenditure, literacy rate, formal education, life expectancy and infant mortality are (65, 325), (0, 100), (0, 7), (50, 80) and (20 per 1000) respectively.

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