



# Defining and measuring human development

People are the real wealth of a nation. The basic objective of development is to create an enabling environment for people to enjoy long, healthy and creative lives. This may appear to be a simple truth. But it is often forgotten in the immediate concern with the accumulation of commodities and financial wealth.

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, useful though they are 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: better nutrition and health services, greater access to knowledge, more secure livelihoods, better working conditions, security against crime and physical violence, satisfying leisure hours, and a sense of participating in the economic, cultural and political activities of their communities. Of course, people also want higher incomes as one of their options. But income is not the sum total of human life.

This way of looking at human development is not really new. The idea that social arrangements must be judged by the extent to which they promote “human good” goes back at least to Aristotle. He also warned against judging societies merely by such things as income and wealth that are sought not for themselves but desired as means to other objectives. “Wealth is evidently not the good we are seeking, for it is merely useful and for the sake of something else.”

Aristotle argued for seeing “the difference between a good political arrangement and a bad one” in terms of its successes and failures in facilitating people’s ability to lead “flourishing lives”. Human beings as the real end of all activities was a recurring theme in the writings of most of the early philosophers. Emmanuel Kant observed: “So act as to treat humanity, whether in their own person or in that of any other, in every case as an end withal, never as means only.”

The same motivating concern can be found in the writings of the early leaders of quantification in economics — William Petty, Gregory King, François Quesnay, Antoine Lavoisier and Joseph Lagrange, the grandparents of GNP and GDP. It is also clear in the writings of the leading political economists — Adam Smith, David Ricardo, Robert Malthus, Karl Marx and John Stuart Mill.

But excessive preoccupation with GNP growth and national income accounts has obscured that powerful perspective, supplanting a focus on ends by an obsession with merely the means.

Recent development experience has once again underlined the need for paying

TABLE 1.1  
GNP per capita and selected social indicators

Country	GNP per capita (US\$)	Life expectancy (years)	Adult literacy (%)	Infant mortality (per 1,000 live births)
<i>Modest GNP per capita with high human development</i>				
Sri Lanka	400	71	87	32
Jamaica	940	74	82	18
Costa Rica	1,610	75	93	18
<i>High GNP per capita with modest human development</i>				
Brazil	2,020	65	78	62
Oman	5,810	57	30	40
Saudi Arabia	6,200	64	55	70

*Human development is the process of enlarging people's choices*

close attention to the link between economic growth and human development — for a variety of reasons.

- Many fast-growing developing countries are discovering that their high GNP growth rates have failed to reduce the socioeconomic deprivation of substantial sections of their population.
- 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.
- At the same time, some low-income countries have demonstrated that it is possible to achieve high levels of human development if they skilfully use the available means to expand basic human capabilities.
- Human development efforts in many developing countries have been severely squeezed by the economic crisis of the 1980s 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 must be human well-being. How to relate the means to the ultimate end should once again become the central focus of development analysis and planning.

How can economic growth be managed in the interest of the people? What alternative policies and strategies need to be pur-

sued if people, not commodities, are the principal focus of national attention? This Report addresses these issues.

## Defining human development

Human development is a process of enlarging people's choices. The most critical ones are to lead a long and healthy life, to be educated and to enjoy a decent standard of living. Additional choices include political freedom, guaranteed human rights and self-respect — what Adam Smith called the ability to mix with others without being “ashamed to appear in publick” (box 1.1).

It is sometimes suggested that income is a good proxy for all other human choices since access to income permits exercise of every other option. This is only partly true for a variety of reasons:

- Income is a means, not an end. It may be used for essential medicines or narcotic drugs. Well-being of a society depends on the uses to which income is put, not on the level of income itself.
- Country experience demonstrates several cases of high levels of human development at modest income levels and poor levels of human development at fairly high income levels.
- Present income of a country may offer little guidance to its future growth prospects. If it has already invested in its people, its potential income may be much higher than what its current income level shows, and vice versa.
- Multiplying human problems in many industrial, rich nations show that high income levels, by themselves, are no guarantee for human progress.

The simple truth is that there is no automatic link between income growth and human progress. The main preoccupation of development analysis should be how such a link can be created and reinforced.

The term *human development* here denotes both the *process* of widening people's choices and the *level* of their achieved well-being. It also helps to distinguish clearly between two sides of human development. One is the formation of human capabilities, such as improved health or knowledge. The other is the use that people make of their

### BOX 1.1

#### Human development defined

Human development is a process of enlarging people's choices. In principle, these choices can be infinite and change over time. But at all levels of development, the three essential ones are for people to lead a long and healthy life, to acquire knowledge and to have access to 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 personal self-respect and guaranteed human rights.

Human development has two sides: the formation of human capabilities — such as improved health, knowledge and skills — and the use people make of their acquired capabilities — for leisure, productive purposes or 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 concept of human development, income is clearly only one option that people would like to have, albeit an important one. But it is not the sum total of their lives. Development must, therefore, be more than just the expansion of income and wealth. Its focus must be people.

acquired capabilities, for work or leisure.

This way of looking at development differs from the conventional approaches to economic growth, human capital formation, human resource development, human welfare or basic human needs. It is necessary to delineate these differences clearly to avoid any confusion:

- GNP growth is treated here 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 taken.
- 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. True, there is a connection, for human beings *are* the active agents of all production. But human beings are more than capital goods for commodity production. 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, not its whole.
- Human welfare approaches look at human beings more as the beneficiaries of the development process than as participants in it. They emphasise distributive policies rather than production structures.
- The basic needs approach usually concentrates on the bundle of goods and services that deprived population groups need: food, shelter, clothing, health care and water. It focuses on the provision of these goods and services rather than on the issue of human choices.

Human development, by contrast, brings together the production and distribution of commodities and the expansion and use of human capabilities. It also focusses on choices — on what people should have, be and do to be able to ensure their own livelihood. Human development is, moreover, concerned not only with basic needs satisfaction but also with human development as a participatory and dynamic process. It applies equally to less developed and highly developed countries.

Human development as defined in this Report thus embraces many of the earlier approaches to human development. This broad definition makes it possible to capture better the complexity of human life — the many concerns people have and the many cultural, economic, social and political differences in people's lives throughout the world.

The broad definition also raises some questions: Does human development lend itself to measurement and quantification? Is it operational? Can it be planned and monitored?

### Measuring human development

In any system for measuring and monitoring human development, the ideal would be to include many variables, to obtain as comprehensive a picture as possible. But the current lack of relevant comparable statistics precludes that. Nor is such comprehensiveness entirely desirable. Too many indicators could produce a perplexing picture — perhaps distracting policymakers from the main overall trends. The crucial issue therefore is of emphasis.

#### *The key indicators*

This Report suggests that the measurement of human development should for the time

### What price human life?

BOX 1.2

The use of life expectancy as one of the principal indicators of human development rests on three considerations: the intrinsic value of longevity, its value in helping people pursue various goals and its association with other characteristics, such as good health and nutrition.

The importance of life expectancy relates primarily to the value people attach to living long and well. That value is easy for theorists to underestimate in countries where longevity is already high. Indeed, when life expectancy is very high, the challenge of making the lives of the old and infirm happy and worthwhile may be regarded by some as an exacting task. For the less fortunate people of the world, however, life is battered by dis-

stress, deprivation and the fear of premature death. They certainly attach a higher value to longer life expectancy.

Longevity also helps in the pursuit of some of life's other most valued goals. Living long may not be people's only objective, but their other plans and ambitions clearly depend on having a reasonable life span to develop their abilities, use their talents and carry out their plans.

A long life correlates closely with adequate nutrition, good health and education and other valued achievements. Life expectancy is thus a proxy measure for several other important variables in human development.

being focus on the three essential elements of human life — longevity, knowledge and decent living standards.

For the first component — longevity — life expectancy at birth is the indicator. The importance of life expectancy lies in the common belief that a long life is valuable in itself and in the fact that various indirect benefits (such as adequate nutrition and good health) are closely associated with higher life expectancy. This association makes life expectancy an important indicator of human development, especially in view of the present lack of comprehensive information about people's health and nutritional status (box 1.2).

For the second key component — knowledge — literacy figures are only a crude reflection of access to education, particularly to the good quality education so necessary for productive life in modern society. But literacy is a person's first step in learning and knowledge-building, so literacy figures are essential in any measurement of human development. In a more varied set of indicators, importance would also have to be attached to the outputs of higher levels of education. But for basic human development, literacy deserves the clearest emphasis.

The third key component of human development — command over resources needed for a decent living — is perhaps the most difficult to measure simply. It requires data on access to land, credit, income and other resources. But given the scarce data on many of these variables, we must for the time being make the best use of an income indicator. The most readily available income indicator — per capita income — has wide national coverage. But the presence of nontradable goods and services and the distortions from exchange rate anomalies, tariffs and taxes make per capita income data in nominal prices not very useful for international comparisons. Such data can, however, be improved by using purchasing-power-adjusted real GDP per capita figures, which provide better approximations of the relative power to buy commodities and to gain command over resources for a decent living standard.

A further consideration is that the indicator should reflect the diminishing returns to transforming income into human capabilities. In other words, people do not need excessive financial resources to ensure a decent living. This aspect was taken into account by using the logarithm of real GDP per capita for the income indicator.

All three measures of human development suffer from a common failing: they are averages that conceal wide disparities in the overall population. Different social groups have different life expectancies. There often are wide disparities in male and female literacy. And income is distributed unevenly.

The case is thus strong for making distributional corrections in one form or another (box 1.3). Such corrections are especially important for income, which can grow to enormous heights. The inequality possible in respect of life expectancy and literacy is much more limited: a person can be literate only once, and human life is finite.

Reliable and comparable estimates of inequality of income are hard to come by, however. Even the Gini coefficient, probably the most widely used measure of income inequality, is currently available for fewer than a quarter of the 130 countries in the Human Development Indicators at the end

BOX 1.3

**What national averages conceal**

Averages of per capita income often conceal widespread human deprivation. Look at Panama, Brazil, Malaysia and Costa Rica in the table below. That is the order of their ranking by GNP per capita.

If the GNP figures are corrected for variations in purchasing power in different countries, the ranking shifts somewhat — to Brazil, Panama, Malaysia and Costa Rica.

But if distributional adjustments are made using each country's Gini coefficient, the original ranking reverses to

Costa Rica, Malaysia, Brazil, Panama.

The average value of literacy, life expectancy and other indicators can be similarly adjusted. There is a great deal of technical literature on the subject, but the basic approach is simple. If inequality is seen as reducing the value of average achievement as given by an unweighted mean, that average value can be adjusted by the use of inequality measures. Such distributional corrections can make a significant difference to evaluations of country performance.

Country	GNP per capita (US\$) 1987	Real GDP per capita (PPP\$) 1987	Gini coefficient of inequality	Distribution-adjusted GDP per capita (PPP\$)
Panama	2,240	4,010	.57	1,724
Brazil	2,020	4,310	.57	1,852
Malaysia	1,810	3,850	.48	2,001
Costa Rica	1,610	3,760	.42	2,180

of this Report — and many of those estimates are far from dependable. Distributional data for life expectancy and literacy by income group are not being collected, and those available on rural-urban and male-female disparities are still too scant for international comparisons.

The conceptual and methodological problems of quantifying and measuring human development become even more complex for political freedom, personal security, interpersonal relations and the physical environment. But even if these aspects largely escape measurement now, analyses of human development must not ignore them. The correct interpretation of the data on quantifiable variables depends on also keeping in mind the more qualitative dimensions of human life. Special effort must go into developing a simple quantitative measure to capture the many aspects of human freedom.

#### *Attainments and shortfalls*

Progress in human development has two perspectives. One is attainment: what has been achieved, with greater achievements meaning better progress. The second is the continuing shortfall from a desired value or target.

In many ways the two perspectives are equivalent — the greater the attainments, the smaller the shortfalls. But they also have some substantive differences. Disappointment and dismay at low performance often originate in the belief that things could be much better, an appraisal that makes the concept of a shortfall from some acceptable level quite central. Indeed, human deprivation and poverty inevitably invoke shortfalls from some designated value, representing adequacy, acceptability or achievability.

The difference between assessing attainments and shortfalls shows up more clearly in a numerical example. Performances often are compared in percentage changes: a 10-year rise in life expectancy from 60 years to 70 years is a 17% increase, but a 10-year rise in life expectancy from 40 years to 50 years is a 25% increase. The less the attainment already achieved, the higher

the percentage value of the same absolute increase in life expectancy.

Raising a person's life expectancy from 40 years to 50 years would thus appear to be a larger achievement than going from 60 years to 70 years. In fact, raising life expectancy from the terribly low level of 40 years to 50 years is achievable through such relatively easy measures as epidemic control. But improving life expectancy from 60 years to 70 years may often be a much more difficult and more creditable accomplishment. The shortfall measure of human

BOX 1.4

#### Constructing a human development index

Human deprivation and development have many facets, so any index of human progress should incorporate a range of indicators to capture this complexity. But having too many indicators in the index would blur its focus and make it difficult to interpret and use. Hence the need for compromise — to balance the virtues of broad scope with those of retaining sensitivity to critical aspects of deprivation.

This Report has chosen three types of deprivation as the focus of attention: people's deprivation in life expectancy, literacy and income for a decent living standard. Each measure could have been further refined (especially by making distributional adjustments) if there had been adequate comparable data. But in the absence of such data, the focus here represents a move in the right direction — away from the narrow and misleading attention to only one dimension of human life, whether economic or social.

The first two indicators — life expectancy and adult literacy — are commonly used concepts. But the third — the purchasing power to buy commodities for satisfying basic needs — is not as well understood. The GNP figures typically used for international comparisons do not adequately account for national differences in purchasing power or the distorting effect of official exchange rates. To overcome these inadequacies, we use here the purchasing-power-adjusted GDP estimates developed in the International Price Comparison Project, a collaborative effort of the UN Statistical Office, the World Bank, EUROSTAT, OECD, ECE and ESCAP, now being expanded by USAID. And since there are diminishing returns in the conversion

of income into the fulfilment of human needs, the adjusted GDP per capita figures have been transformed into their logarithms.

To construct a composite index, a *minimum* value (the maximum deprivation set equal to one) and a *desirable* or *adequate* value (no deprivation set equal to zero) had to be specified for each of the three indicators.

The minimum values were chosen by taking the lowest 1987 national value for each indicator. For life expectancy at birth, the minimum value was 42 years, in Afghanistan, Ethiopia and Sierra Leone. For adult literacy, it was 12%, in Somalia. For the purchasing-power-adjusted GDP per capita, the value was \$220 (log value 2.34), in Zaire.

The values of desirable or adequate achievement were Japan's 1987 life expectancy at birth of 78 years, an adult literacy rate of 100%, and the average official "poverty line" income in nine industrial countries, adjusted by purchasing power parities, of \$4,861. The nine countries are Australia, Canada, the Federal Republic of Germany, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and the United States.

The minimum and desirable or adequate values are the end-points of a scale indexed from one to zero for each measure of deprivation. Placing a country at the appropriate point on each scale and averaging the three scales gives its average human deprivation index, which when subtracted from 1 gives the human development index (HDI). A mathematical formulation of the HDI is given in technical note 3.

progress captures this better than the attainment measure does.

Taking once again the example of life expectancy, if 80 years is the target for calculating shortfalls, a rise of life expectancy from 60 years to 70 years is a 50% reduction in shortfall — halving it from 20 years to 10 years. That is seen as a bigger achievement than the 25% reduction in shortfall (from 40 years to 30 years) when raising life expectancy from 40 years to 50 years.

The shortfall thus has two advantages over the attainment in assessing human progress. It brings out more clearly the difficulty of the tasks accomplished, and it emphasises the magnitude of the tasks that still lie ahead.

### *The human development index*

People do not isolate the different aspects of their lives. Instead, they have an overall

sense of well-being. There thus is merit in trying to construct a composite index of human development.

Past efforts to devise such an index have not come up with a fully satisfactory measure (see technical note 1). They have focussed either on income or on social indicators, without bringing them together in a composite index. Since human beings are both the means and the end of development, a composite index must capture both these aspects. This Report carries forward the search for a more appropriate index by suggesting an index that captures the three essential components of human life — longevity, knowledge and basic income for a decent living standard. Longevity and knowledge refer to the formation of human capabilities, and income is a proxy measure for the choices people have in putting their capabilities to use.

The construction of the human development index (HDI) starts with a deprivation measure (box 1.4). For life expectancy, the target is 78 years, the highest average life expectancy attained by any country. The literacy target is 100%. The income target is the logarithm of the average poverty line income of the richer countries, expressed in purchasing-power-adjusted international dollars. Human development indexes for 130 countries with more than a million people are presented in the Human Development Indicators, table 1. Those for another 32 countries with fewer than a million people are in the Human Development Indicators, table 25.

### *Country ranking by HDI and GNP*

The human development index ranks countries very differently from the way GNP per capita ranks them. The reason is that GNP per capita is only one of life's many dimensions, while the human development index captures other dimensions as well.

Sri Lanka, Chile, Costa Rica, Jamaica, Tanzania and Thailand, among others, do far better on their human development ranking than on their income ranking, showing that they have directed their economic resources more towards some aspects of human progress. But Oman, Gabon, Saudi

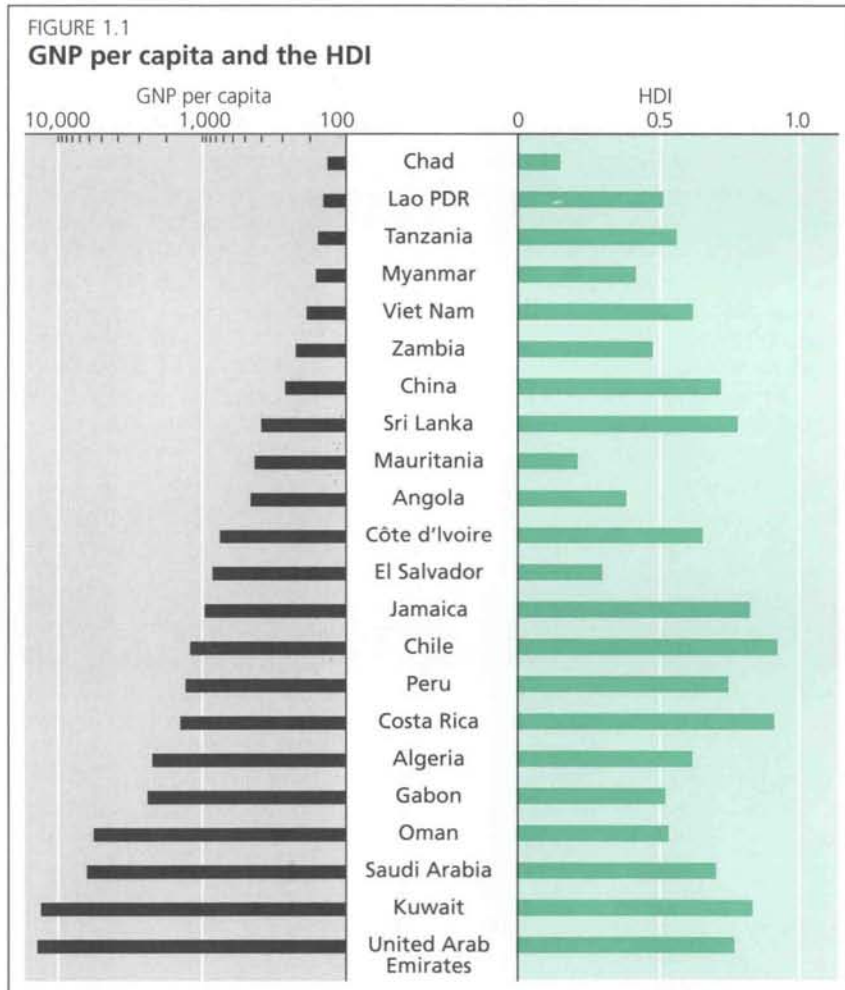
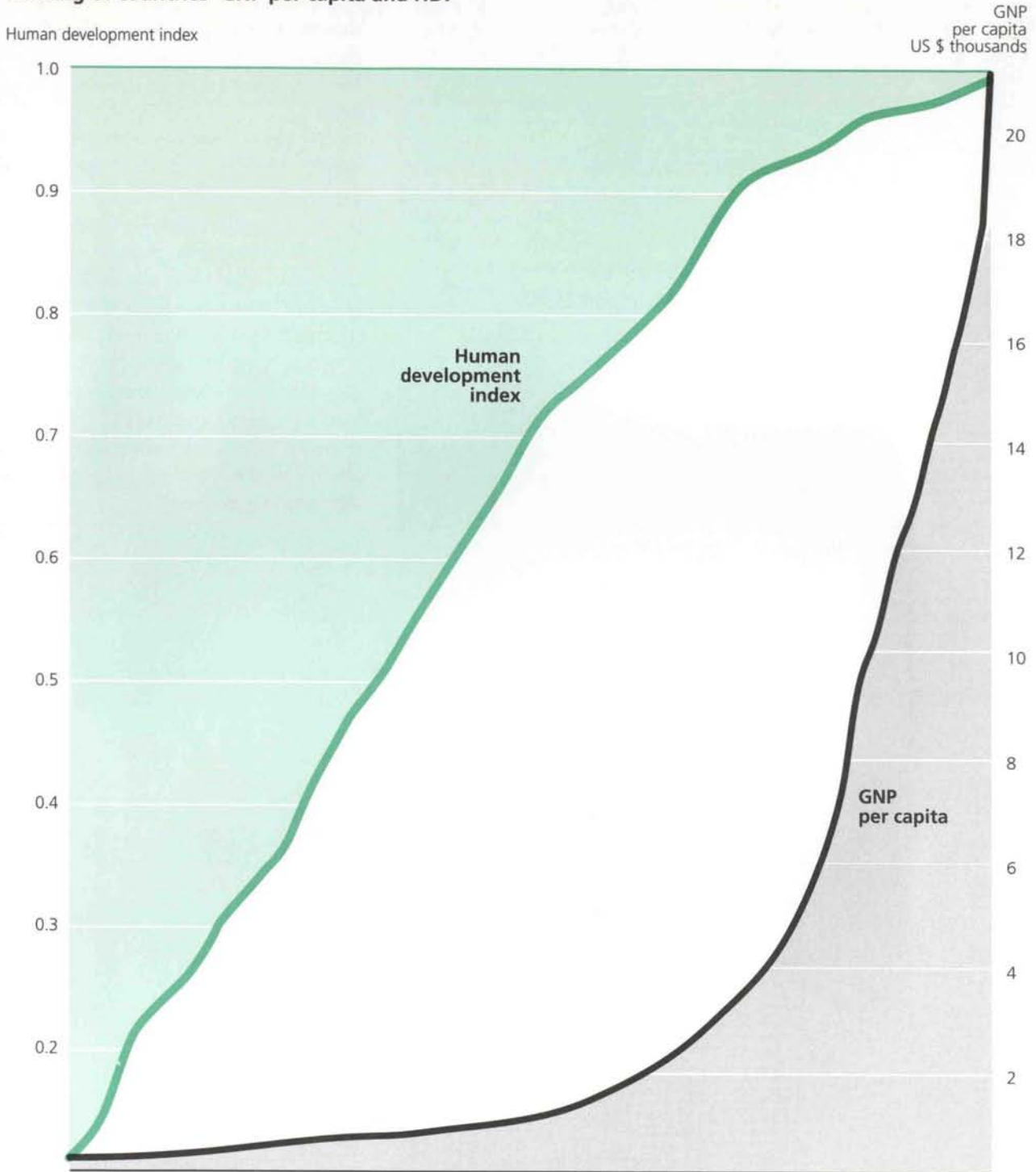


FIGURE 1.2  
**Ranking of countries' GNP per capita and HDI**



130 countries ranked by human development index (green line)  
 and by GNP per capita (black line)

The chart shows two separate distributions of countries. The upper curve represents their ranking according to the human development index while the lower curve shows their ranking according to GNP per capita. The two curves reveal that the disparity among countries is much greater in income than in human development. There is no automatic link between the level of per capita income in a country and the level of its human development.

### Freedom and human development

Human development is incomplete without human freedom. Throughout history, people have been willing to sacrifice their lives to gain national and personal liberty. We have witnessed only recently an irresistible wave of human freedom sweep across Eastern Europe, South Africa and many other parts of the world. Any index of human development should therefore give adequate weight to a society's human freedom in pursuit of material and social goals. The valuation we put on similar human development achievements in different countries will be quite different depending on whether they were accomplished in a democratic or an authoritarian framework.

While the need for qualitative judgement is clear, there is no simple quantitative measure available yet to capture the many aspects of human freedom — free elections, multiparty political systems, uncensored press, adherence to the rule of law, guarantees of free speech and so on. To some extent, however, the human development index (HDI) captures some aspects of human freedom. For example, if the suppression of people suppresses

their creativity and productivity, that would show up in income estimates or literacy levels. In addition, the human development concept, adopted in this Report, focusses on people's capabilities or, in other words, people's strength to manage their affairs — which, after all, is the essence of freedom.

For illustrative purposes, the table below shows a selection of countries (within each region) that have achieved a high level of human development (relative to other countries in the region) within a reasonably democratic political and social framework. And a cursory glance at the ranking of countries in table 1 of the Human Development Indicators, given at the end of this report, shows that countries ranking high in their HDI also have a more democratic framework — and vice versa — with some notable exceptions.

What is needed is considerable empirical work to quantify various indicators of human freedom and to explore further the link between human freedom and human development.

#### Top 15 countries in democratic human development

Country	HDI	Country	HDI
<i>Latin America and the Caribbean</i>		<i>Middle East and North Africa</i>	
Costa Rica	0.916	Turkey	0.751
Uruguay	0.916	Tunisia	0.657
Trinidad and Tobago	0.885		
Mexico	0.876	<i>Sub-Saharan Africa</i>	
Venezuela	0.861	Mauritius	0.788
Jamaica	0.824	Botswana	0.646
Colombia	0.801	Zimbabwe	0.576
<i>Asia</i>			
Malaysia	0.800		
Sri Lanka	0.789		
Thailand	0.783		

Arabia, Algeria, Mauritania, Senegal and Cameroon, among others, do considerably worse on their human development ranking than on their income ranking, showing that they have yet to translate their income into corresponding levels of human development.

To stress again an earlier point, the human development index captures a few of people's choices and leaves out many that people may value highly — economic, social and political freedom (box 1.5), and protection against violence, insecurity and discrimination, to name but a few. The HDI thus has limitations. But the virtue of broader coverage must be weighed against the inconvenience of complicating the basic picture it allows policymakers to draw. These tradeoffs pose a difficult issue that future editions of the *Human Development Report* will continue to discuss.