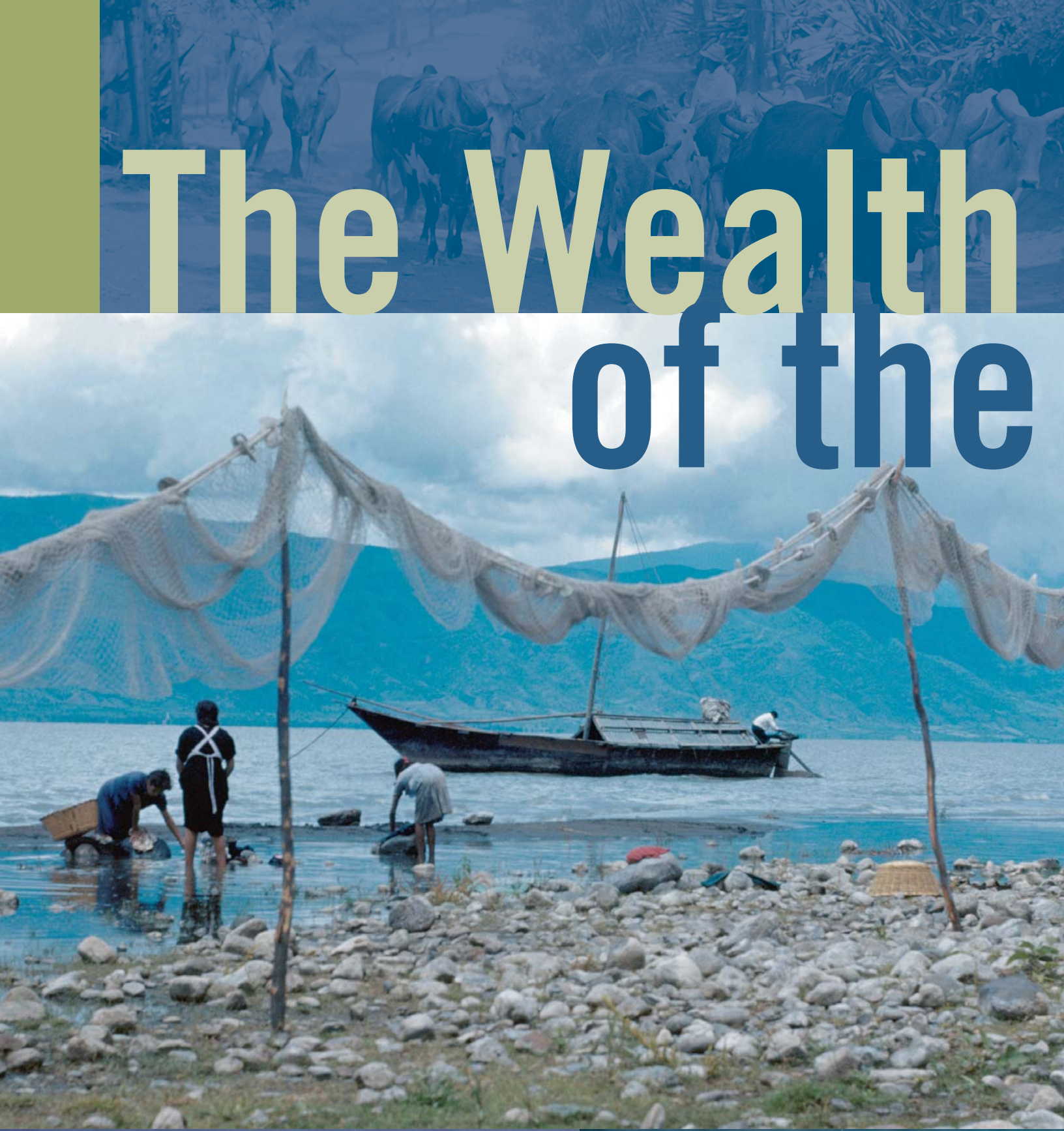
The Wealth of the



PART I

Poor

For many of the 1.2 billion people living in severe poverty, nature has always been a daily lifeline—an asset for those with few other material assets.

CHAPTER 1

NATURE, POWER, AND POVERTY

ECOSYSTEMS ARE—OR CAN BE—THE WEALTH OF THE POOR. For many of the 1.1 billion people living in severe poverty, nature is a daily lifeline—an asset for those with few other material means. This is especially true for the rural poor, who comprise three-quarters of all poor households worldwide. Harvests from forests, fisheries, and farm fields are a primary source of rural income, and a fall-back when other sources of employment falter. But programs to reduce poverty often fail to account for the important link between environment and the livelihoods of the rural poor. As a consequence, the full potential of ecosystems as a wealth-creating asset for the poor—not just a survival mechanism—has yet to be effectively tapped.

The thesis of *World Resources 2005* is that income from ecosystems—what we call *environmental income*—can act as a fundamental stepping stone in the economic empowerment of the rural poor. This requires that the poor manage ecosystems so that they support stable productivity over time. Productive ecosystems are the basis of a sustainable income stream from nature.

But for the poor to tap that income, they must be able to reap the benefits of their good stewardship. Unfortunately, the poor are rarely in such a position of power over natural resources. An array of governance failures typically intervene: lack of legal ownership and access to ecosystems, political marginalization, and exclusion from the decisions that affect how these ecosystems are managed. Without addressing these failures, there is little chance of using the economic potential of ecosystems to reduce rural poverty.

Making governance more friendly to the poor means tackling issues of property rights, access to information and decision-making, adequate representation, institutional transparency, and fairness in sharing the costs and benefits of resource management. These are all aspects of *democratic governance*—decision-making that respects the rights and needs of those who depend on resources. For the poor, democratic governance is the door to equity and one of the building blocks of sustainability.

This fusion of ecosystem management and good governance is also necessary to achieve the Millennium Development Goals, the set of eight goals adopted by the international community in 2000 to address world poverty. As the foundation of rural livelihoods, ecosystems are central to real progress toward the health, nutrition, sanitation, and environmental targets embedded in the Millennium Development Goals. Indeed, without empowering the poor to responsibly manage their environment for economic gain, we cannot effectively attend to rural poverty in its many dimensions. *(See Box 1.1.)*

The goal of this report is to highlight the vital role of ecosystems and their governance—of nature and power—in poverty reduction. The report's central question is: Who controls ecosystems, and how can this control be reconfigured to allow the poor to use their natural assets as sustainable sources of wealth creation, vehicles of political empowerment, and avenues of integration into the national and global economies?

Linking Ecosystems, Governance, and Poverty

Ecosystem management, democratic governance, and poverty reduction are each essential elements of sustainable economic growth. Moreover, these elements are inextricably linked. More than 1.3 billion people depend on fisheries, forests, and agriculture for employment—close to half of all jobs worldwide (FAO 2004:169-174). This dependence of livelihoods on natural systems is nowhere more important than among the rural poor (MA 2005:7, 48). *(See Table 1.1.)* In Africa, more than seven in ten poor people live in rural regions, with most engaged in resource-dependent activities, such as small-scale farming, livestock production, fishing, hunting, artisanal mining, and logging (IFAD 2001:15). This small-scale production accounts for a significant percentage of the GDP of many African nations (Kura et al. 2004:36-39; IFPRI 2004:2).

Making wise choices about the use of natural resources and the distribution of environmental benefits and costs is central to maximizing the contribution that a nation's resource endowment makes to social and economic development. Many of the poorest regions of the world are, however, also the least democratic. That means much of their resource wealth is typically diverted from the public good through corruption, mismanagement, and political patronage. It is no coincidence that fundamental democratic principles such as transparency, public participation, accountability, and the separation of legislative, judicial, and executive powers are often absent in developing countries where poverty is greatest.

Many people in developing countries are thus not only poor, they are voiceless. Dependent directly on natural resources, they have little say in how those resources are used, but suffer the consequences when the decisions are corrupt and the use is destructive. For example, rural peoples' livelihoods are often in direct conflict with extractive industries such as large-scale fishing, logging, or mining, but they have little say in resolving that conflict. Access to decision-makers—government bureaucrats, lawmakers, or the courts—is typically for the powerful, not the poor.

Rectifying this imbalance means supporting democratic practices. History shows, however, that efforts to promote democratic principles in a vacuum rarely succeed. To take root, they must engage citizens, and they must deliver on matters that are immediate and important to citizens. As the source of livelihoods, the environment is arguably the most

DEFINING ECOSYSTEMS AND GOVERNANCE

An ecosystem is a community of interacting organisms and the physical environment they live in. We know ecosystems as the forests, grasslands, wetlands, deserts, coral reefs, rivers, estuaries, and other living environments that surround us. They also include the farms, pastures, and rangelands—collectively known as agroecosystems—that feed us. They are the earth's living engines of production, providing the goods and services—air, food, fiber, water, aesthetics, and spiritual values—that make life possible for rich and poor alike.

In *World Resources 2000-2001: People and Ecosystems—The Fraying Web of Life,* we explored the threats to global ecosystems and stressed the need to adopt an "ecosystem approach" to environmental management. *View the report online at http://www.wri.org*

Governance is the exercise of authority—the decisions, regulations, and enforcement that determine how we will act and who will benefit. It encompasses the laws, institutions (such as government agencies or village councils), and decision-making processes that embody this authority. **Democratic governance** implies the participation of those who are governed in the decision-making process—either directly, through representatives, or both.

In *World Resources 2002-2004: Decisions for the Earth—Balance, Voice, and Power,* we showed how the conditions and quality of governance influence our environmental decisions, and stressed that good governance that ensures adequate representation, access to information, and public participation is crucial to the sustainable and equitable management of ecosystems. *View the report online at http://www.wri.org*

In *World Resources 2005,* we argue that prudent ecosystem management, enabled by pro-poor governance, can reduce poverty. Without attention to poverty, the goal of sustainable development recedes beyond reach.

important issue that democracy must deliver on in the developing world. Put differently, the environment is not only a powerful tool for promoting democratic reform, but good environmental governance is fundamental to strengthening and consolidating democracy. Democratic institutions, in turn, are an important factor supporting strong economic growth (Kaufmann et al. 1999:18).

This emphasis on good governance and environment is particularly relevant when addressing poverty. The case studies in this report and the experiences of an increasing number of villages and communities in many nations suggest that efforts to promote sustainable livelihoods among the poor are more successful when they simultaneously promote ecosystem stewardship and democratic governance. For that reason, a number of development agencies and nongovernmental organizations (NGOs) are beginning to focus on this integration of environment and governance.

In spite of increasing interest in this integration, its application to the alleviation of poverty is still new. Success will demand a new openness to go beyond traditional economic development strategies, or at least to add a more deliberate recognition of the linkages among nature, power, and poverty.

The Persistence of Poverty

The persistence of global poverty is both disturbing and humbling. Policymakers have long recognized the moral and practical need to address the substantial number of people who lack basic amenities such as adequate nutrition, housing, education, or opportunity. But decades of piecemeal efforts have brought only limited success. *(See Box 1.1.)*

More than a half century of persistent efforts by the World Bank and others have not altered the stubborn reality of rural poverty, and the gap between rich and poor is widening.

—World Bank Strategy for Rural Development, 2003

Ending world poverty first become a stated goal of politicians from industrialized countries in the 1940s, when U.S. President Franklin Roosevelt stated his desire to extend "freedom from want" not only to the people of the United States, but to people in every nation (Roosevelt 1941). The United Nations Charter, crafted in the same era, explicitly acknowledged the need to promote "social progress and better standards of life" across the globe (UN 1945). Almost 60 years later, at the United Nations Millennium Summit in 2000, more than 100 heads of state committed to reach the eight Millennium Development Goals (UN General Assembly 2001:55).

These commitments confirm the simple fact that poverty remains an obstacle to the development aspirations of most

Continues on page 10

BOX 1.1 THE DIMENSIONS OF POVERTY

What is Poverty?

DEFINING AND MEASURING POVERTY ARE essential to any discussion of poverty reduction. Definitions of poverty have traditionally focused only on material—and specifically monetary—measures of well-being. But key concepts behind poverty have evolved considerably in recent years. Today, a more holistic, multi-dimensional perception of poverty has emerged, drawn from interviews with the poor themselves. Definitions of poverty have expanded to include the social and psychological burdens of daily survival on the bottom rungs of society. This broader conception is described by Amartya Sen as a lack of capabilities that enable a person to live a life he or she values, encompassing such domains as income, health, education, empowerment, and human rights (Sen 1999:87-98).

As researchers and policymakers struggle to understand these complexities, they have begun to use "participatory assessments" to let the poor speak in their own voice and identify their own priorities. The authors of the *Voices of the Poor* series interviewed 60,000 poor people in 60 countries in one of the better-known assessments (Narayan et al. 2000a, 2000b, 2002). Complex descriptions of the "ill-being" associated with poverty emerged, with dimensions other than material deprivation given strong significance.

Such studies make it clear that, in addition to being without financial resources, being poor often means suffering sickness, chronic pain, or exhaustion. It means enduring difficult social relations, sometimes facing exclusion from the community or family. Poverty also translates into insecurity and powerlessness, a lack of access to information and institutions, and often a lack of self-confidence and voice. Psychological suffering is also associated, in the form of humiliation, anguish, grief, and worry (Narayan et al. 2000b:37-38).

These varying aspects of poverty tend to be self-reinforcing, making it all the more difficult to move out of poverty and construct a stable life. It is hard to plan ahead or to seize new opportunities when you are exhausted, stressed, or hungry. In addition, the poor often live in dangerous and degraded environments, since that is all they can afford. They are thus the most vulnerable to violence, crime, and natural and economic catastrophes (Narayan et al. 2000a:72, 84-88).

Finally, living in poverty often means facing a truncated view of the future. The poor are often averse to risk, having suffered from mistakes or false expectations in the past and lacking assets to fall back on. Whereas those with means can save for emergencies and plan for the future, the poor do not have that luxury. A poor person's planning horizon—how far ahead they can plan or foresee—is often determined by when food will run out. It may be as soon as the end of the day. This element of poverty—the lack of ability to reasonably plan for the long term—has real significance for anything related to ecosystem management, which works over extended periods of time, often yielding benefits in the future.

Quantifying Poverty

Poverty estimates are usually constructed from household survey data. The head of a household is typically asked about income and consumption levels, and these are used as the measure of well-being (World Bank 2001:17). Most governments have established national "poverty lines" by compiling and pricing a basket of goods meant to reflect the basic human necessities, such as food, clothing, and housing. Many countries have a "food" or "absolute" poverty line calculated from a food basket representing minimum nutritional requirements, and a "basic needs" line that is slightly higher (Deaton 2004:3-4; Coudouel et al. 2002:34).

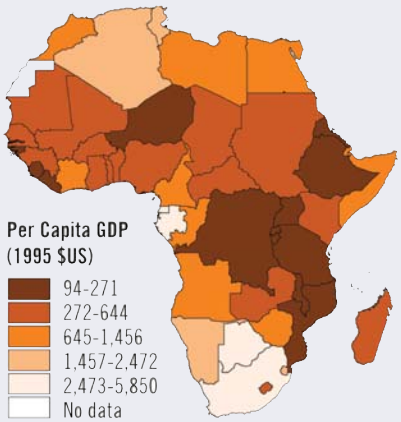
In 1990, the World Bank began using the measure of $1 per day as an official "international poverty line," meant to roughly approx-

PROFILING HOUSEHOLDS IN BOLIVIA, 1999-2003	
Population of Bolivia	8.8 million
Number of Bolivians Living on Less than $1 a Day	1.3 million
Number of Bolivians Living Below the Basic Needs Poverty Line	5.1 million
Percent of Urban Population Living Below the Poverty Line	39
Percent of Rural Population Living Below the Poverty Line	91
Percent of Poor Bolivians Living in Rural Areas	59
Percent of Total Spending Accounted for by the Poorest 20%	4
Percent of Total Spending Accounted for by the Richest 20%	49
Percent of Rural Households in Lowest Income Decile with Electricity	5
Percent of Rural Households in Highest Income Decile with Electricity	46
Percent of Rural Households Using Dung for Cooking	6
Percent of Adults Who Are Literate	87
Percent of Poor Rural Children Attending School	83
Percent of Poor Rural Children Working	51

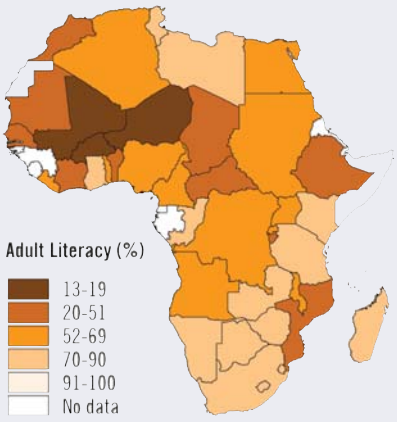
Sources: Demographic and Health Surveys, 2005; UNESCO 2004; World Bank 2002, 2004a

THE MANY MEASURES OF POVERTY

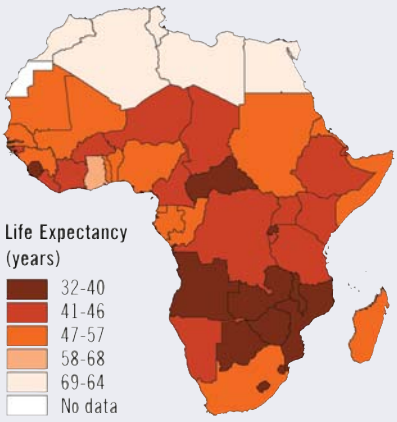
Per Capita GDP



Adult Literacy Rate



Life Expectancy



Well-being can be measured using indicators other than income poverty. Three maps of Africa show country-by-country variations in the three indicators used by the United Nations Development Programme to annually measure human development: adult literacy, life expectancy at birth, and gross domestic product per capita.

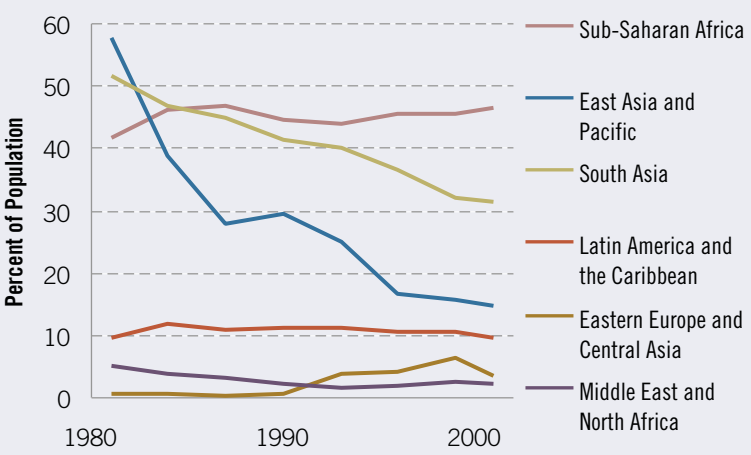
Sources: World Bank 2004a; United Nations Population Division 2003; UNESCO 2004

imate the poverty lines of low-income countries (Ravallion et al. 1991; World Bank 1990:27). This measure remains controversial, but has provided a starting point for international comparison and for important poverty initiatives, including the United Nations' Millennium Development Goals.

The World Bank's most recent estimate is that some 1.1 billion people lived below the $1 per day line in 2001. About 46 percent of the population of Sub-Saharan Africa and 31 percent of South Asians live on less than a dollar a day (Chen and Ravallion 2004:1, 30). These numbers have not been static; the distribution of world poverty has changed significantly over the last quarter-century, due in large part to a dramatic drop in the number of poor people in East Asia. Chen and Ravallion broadly estimate that between 1981 and 2001, the number of people living below $1 per day in China declined by over 400 million, while in the rest of the world, the number rose from 850 to 880 million. The number of poor in Sub-Saharan Africa almost doubled over this period (Chen and Ravallion 2004:17, 20). In addition, many more people around the world live only slightly above the $1 per day line, suffering many of the symptoms of $1 per day poverty. Some 2.7 billion—almost half the world population—live on less than $2 per day (Chen and Ravallion 2004:16).

As useful as these aggregate numbers are, they tend to mask some important elements of the poverty landscape. For example, not all the poor fall into a single category—some are poorer than others. The depth and distribution of material poverty in different countries can be extremely varied. Weighing how far below the poverty line households fall—their "poverty gap," or gap between household income and the national poverty line—offers a useful measure of the depth of a nation's poverty (World Bank 2001:320).

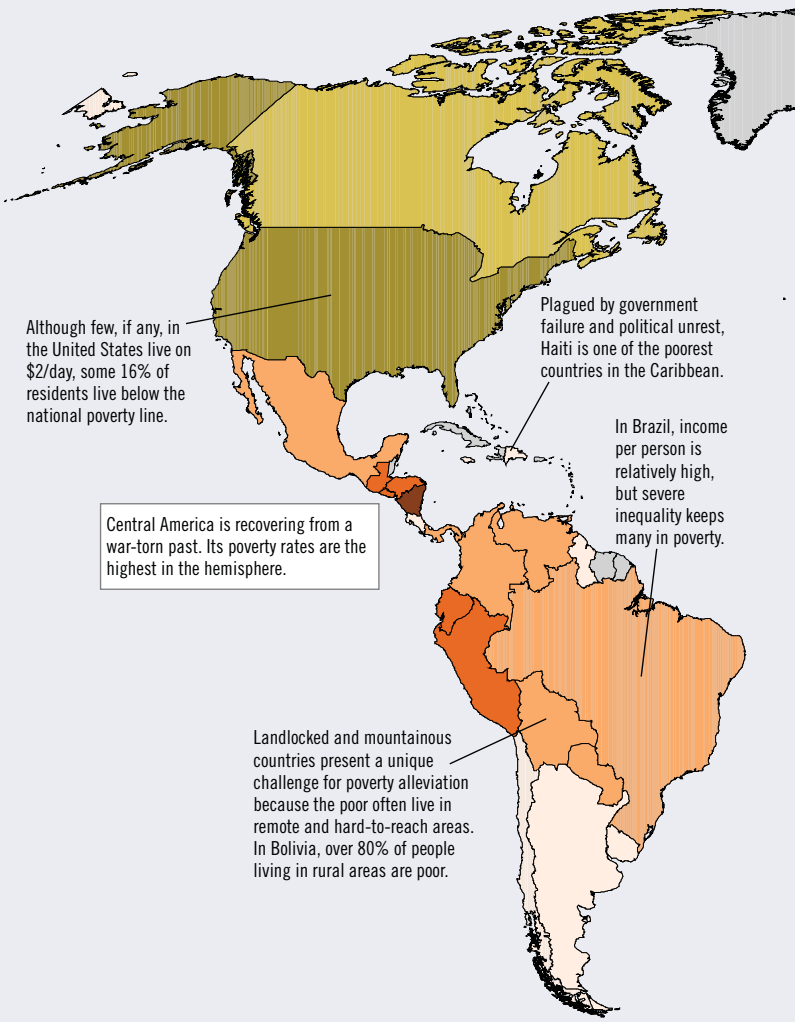
PERCENT OF POPULATION LIVING ON $1 PER DAY, 1981-2001



Sources: Chen and Ravallion 2004:30; World Bank 2004b

BOX 1.1 THE DIMENSIONS OF POVERTY

LIVING ON $2 PER DAY



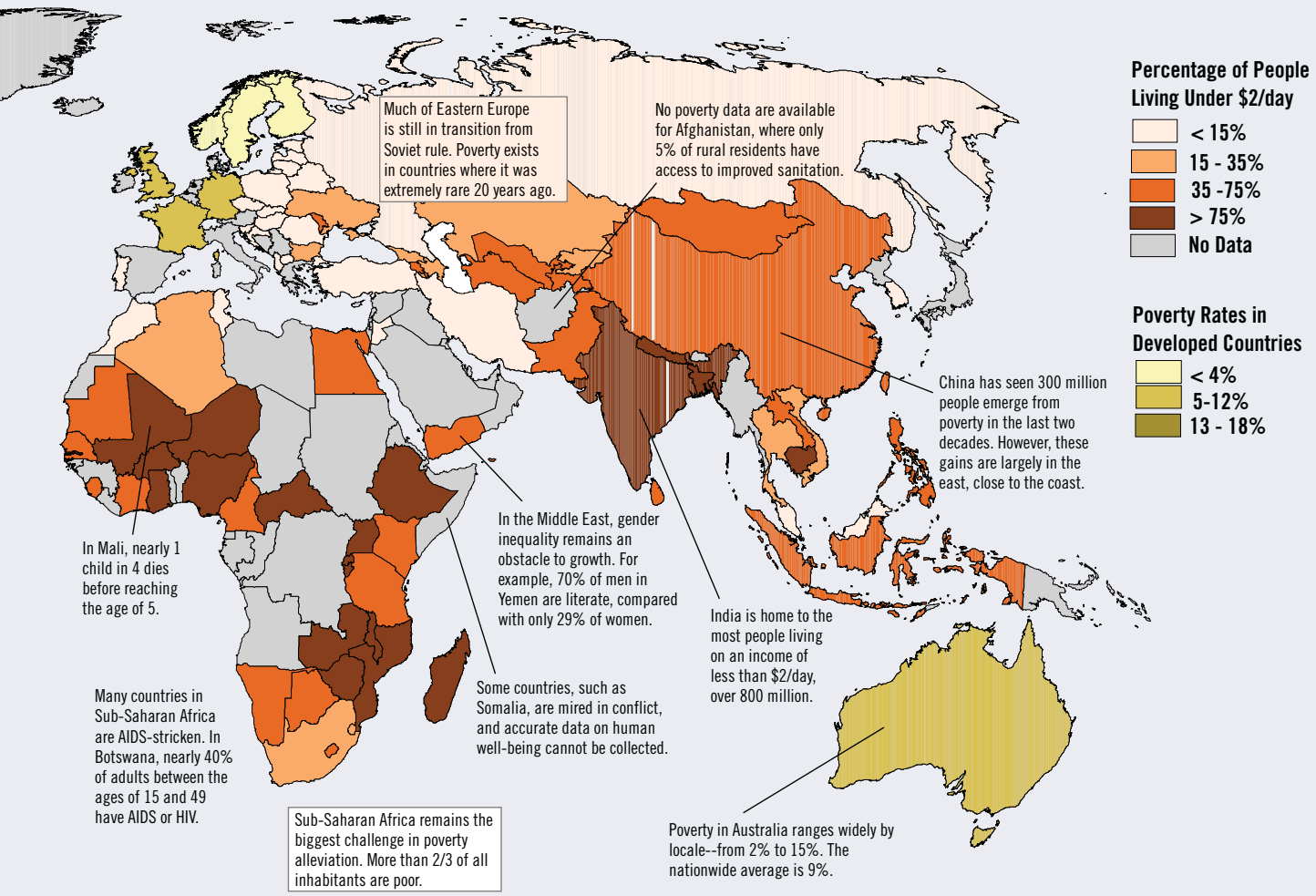
Sources: Chen and Ravallion 2004:29-30; Kryger 2005; Ritakallio 2002; UNAIDS 2004:191; UNESCO 2004; UNICEF 2004; UNICEF 2005:25; World Bank 2004a

Another variation on the standard poverty line looks at "relative poverty" by assessing the proportion of a country's population that lives at less than one-third the national consumption average. When this measure is applied, the poverty numbers for Sub-Saharan Africa and South Asia stay relatively similar to those calculated using national poverty lines. But the numbers in other regions soar, rising to 51 percent in Latin America and the Caribbean, and 26 percent in Europe and Central Asia (Hulme et al. 2001:18).

Still another way to measure poverty is to assess whether a household's total assets—cash, property, livestock, transport, and other possessions—fall below a critical level (Barrett and Swallow 2003:9). This approach is consistent with the perceptions of the poor themselves. When poor people are asked about their material concerns, they tend to focus not just on income, but on their lack of assets in general and the insecurity this brings (Narayan et al. 2000b:49).

Because poverty has so many dimensions, monetary measures are not the only, nor necessarily the best, way to count the poor. For example, the conventional household survey approach does not reveal disparities within households, and hence has no way of measuring income or consumption poverty among women, who often hold lower status. Education and health statistics, on the other hand, can be used to get a better perspective on many aspects of poverty, including those that are gender-related (World Bank 2001:27). Life expectancy, child mortality, the incidence of child stunting, literacy rates, and school enrollment are some of the more commonly used nonmonetary indicators. In an effort to address some of the gaps left by money-based assessments, analysts have developed a number of indices that measure multiple dimensions of poverty.The best known is the UN Development Programme's Human Development Index (HDI), a weighted index that includes education, life expectancy, and per-capita GDP (UNDP 2004:139).

For more information, see Data Table 4, "Income Distribution and Poverty."



$1 AND $2 PER DAY POVERTY TRENDS, 1981-2001

	NUMBER OF PEOPLE (MILLIONS)						REGIONAL
	LIVING ON $1 PER DAY			LIVING ON $2 PER DAY			POPULATION 2001
	1981	2001	Change since 1981	1981	2001	Change since 1981	(MILLIONS)
East Asia and Pacific	796	271	-66%	1,170	864	-26%	1,823
Eastern Europe and Central Asia	3	18	468%	20	94	363%	474
Latin America and the Caribbean	36	50	40%	99	128	30%	518
Middle East and North Africa	9	7	-22%	52	70	35%	300
South Asia	475	431	-9%	821	1,064	30%	1,378
Sub-Saharan Africa	164	316	93%	288	516	79%	673
Global Total	**1,482**	**1,093**	**-26%**	**2,450**	**2,736**	**12%**	**6,127**

Sources: Chen and Ravallion 2004.

nations. It goes without saying that poverty levies heavy personal costs on the poor themselves. It robs families of security, opportunity, and health. In so doing, it also robs nations of the potential contributions these families could make to economic growth, social well-being, and political stability. Poverty thus squanders a nation's human capital. It acts as a drag on economic development, requiring substantial state expenditures to address (UNDP 1996:5). Poverty also undermines national security by promoting disaffection and magnifying class and political divisions within society, increasing migration, and potentially contributing to international terrorism (Sachs 2003:27). When combined with other driving forces, it also can exacerbate local and global environmental problems, contributing to unsustainable land and resource use (ASB 2003:2; Duraiappah 1998:2177). Given this list of ills, it is clearly in the self-interest of every nation to confront poverty.

And, indeed, nations have made some progress in combating poverty. The percentage of people suffering severe poverty—those who live on incomes of roughly $1 per day (1993 prices)—has fallen from 40 percent of the world's population in 1981 to 21 percent in 2001. This means that the number of impoverished people has dropped by an estimated 400 million—from roughly 1.5 to 1.1 billion—over 20 years, in spite of a 1.6 billion rise in world population during that period, most of which took place in poor nations (Chen and Ravallion 2004:31). *(See Box 1.1.)*

This positive development is, however, largely the result of rising incomes in China and India. The populations in these nations are so large that improvements in their poverty rates can easily influence world poverty totals. For example, China's robust economic growth, coupled with de-collectivization of agriculture, stronger property rights, and other policy changes, resulted in a substantial drop in the number of people in profound poverty, particularly in the early 1980s and mid-1990s. In fact, China's accomplishments alone accounted for much of the global progress against poverty in the last 20 years (Dollar 2004:31; Chen and Ravallion 2004:18).

There are other success stories as well. The poverty rate in Vietnam dropped sharply over five years—from 58 percent in 1992 to 37 percent in 1998—on the strength of its economic growth and pro-poor policies (Glewwe et al. 2000:39; Kakwani 2004:6). In just eleven years—from 1987 to 1998—Chile succeeded in cutting its poverty rate in half (World Bank 2001a:5). The rate of primary-school completion in the developing world rose from 73 percent to 81 percent during the 1990s (Bruns et al. 2003:3). Over the past 40 years, life expectancy in developing countries has increased by 20 years—about as much as was achieved in all of human history prior to the middle of the twentieth century, although this is being sharply eroded by the AIDS epidemic today (Goldin et al 2002:iii; WHO 2004:5).

These successes notwithstanding, poverty is very much present in the world today. In fact, in many countries poverty continues to worsen. Between 1981 and 2001, the number of people living on less than $1 per day in Sub-Saharan Africa doubled from 164 million to 313 million people. In Latin America and the Caribbean it climbed from 36 million to 50 million (Chen and Ravallion 2004:31). The percentage of people living on less than $2 per day in Eastern Europe and Central Asia rose from 2 percent in 1981 to 20 percent in 2001, largely as a result of the collapse of communism in those regions (Chen and Ravallion 2004:19). The scourge of AIDS adds to the problem, particularly in Africa, where the disease is wiping out many of the

TABLE 1.1 ECOSYSTEMS BRING JOBS

Percent of Global Workforce Employed in Agriculture, Fisheries, and Forestry, 2001

Region/Country	Percent of Active Workforce
WORLD	44
DEVELOPED COUNTRIES	7
DEVELOPING COUNTRIES	54
ASIA AND PACIFIC	60
Cambodia	70
China	67
India	59
Nepal	93
LATIN AMERICA AND THE CARIBBEAN	19
Bolivia	44
Guatemala	45
Haiti	62
NEAR EAST AND NORTH AFRICA	33
Afghanistan	67
Turkey	45
Yemen	50
SUB-SAHARAN AFRICA	62
Burkina Faso	92
Ethiopia	82
Niger	88
Tanzania	80
COUNTRIES IN TRANSITION	15
Albania	48
Azerbaijan	26
Tajikistan	33

Source: FAO 2004:169-174, Table A4

gains against poverty made over the last few decades (Wines and LaFraniere 2004:1; WHO 2004). Even in China, the incidence of poverty increased during the late 1990s as the nation's torrid pace of economic growth slowed for a few years (Kakwani 2004:6).

To be sure, progress against poverty has been held back in many poor nations by a lack of economic growth. Experience shows that such growth is an important component of large-scale poverty alleviation. Over the last two decades, however, economic growth has often not kept pace with population growth in the poorest countries. From 1981 to 2001, per capita GDP dropped in 43 percent of developing nations (Hufbauer 2003:31, 33, 35). This lack of economic growth is particularly acute in rural areas, compounded by the political weakness of these areas and consequent underinvestment in rural development. For example, from 1999-2002, the World Bank directed just 25 percent of its total lending toward rural areas, in spite of the predominance of poverty there (World Bank 2003:10-11).

Growth Alone is Not Enough

Even where there is economic growth, many poor people are left behind. Economic growth alone does not necessarily translate to poverty reduction. In Latin America, for instance, the number of people in poverty has increased in the last decade even as the GDP per capita has increased, indicating that economic inequality has intensified (Chen and Ravallion 2004:31; World Bank 2005:24).

We all know the basic facts. Half the people in the world live on less than $2 a day. A fifth live on less than $1 a day. Over the next three decades, two billion more people will be added to the global population—97 percent of them in developing countries, most of them born into poverty.

—James D. Wolfensohn, President, World Bank, Oct. 3, 2004

In China, too, the nation's growing wealth has by-passed many families, with the benefits often captured by rapidly industrializing regions and cities, and missing many rural residents. One result has been a widening of the income gap between urban and rural areas over the last two decades, as well as greater growth and poverty reduction in China's coastal provinces where the engine of economic growth runs hottest (Ravallion and Chen 2004:15-16, 25). Moreover, the rural poor often suffer the environmental costs of China's industrialization and rapid growth disproportionately. Highly polluting industries have routinely relocated from cities to China's rural areas to avoid clean-up costs, leaving a legacy of water and air pollution that many rural residents are too poor to escape (Yardley 2004:1). All too often, such inequalities in income and vulnerability among groups are exacerbated by rapid economic growth, with the poor falling further behind (Kakwani 2004:6).

Perhaps the most striking examples of the difficulty of spreading the benefits of growth equitably occur in the indus-

REDUCING INEQUALITIES REDUCES POVERTY

Working toward economic equity—toward a more equal distribution of economic benefits within a nation—is a powerful means to fight poverty. It is a necessary complement to strategies that expand the national economy, so that some of the benefits of growth make their way to those in the lowest income bracket. Even when economic growth is slow, policies that more equally distribute economic gains can help reduce poverty, as shown by the success of Jordan in lowering its poverty rate from 1992-1997.

In 1989, following a currency devaluation, Jordan suffered an economic crisis that increased the poverty rate sixfold. At the same time, the nation's level of economic inequality—the difference between the incomes of the rich and the poor—increased dramatically as well, prompting a significant rethinking of economic strategy among government policymakers (Shaban et al. 2001:iv).

Beginning in 1991, Jordan changed its spending policies to increase the proportion of economic benefits flowing to the lowest income sector. One of the most effective changes was the gradual replacement of general food subsides, from which richer families benefited most, with direct cash payments to poor families only (Shaban et al. 2001:iv, 15-20). This reprogramming reduced the nation's economic inequality, with the gap between the wealthiest segment of Jordanian society and the poorest narrowing over the next six years (Shaban et al. 2001:viii, 10-13).

Subsequent analysis showed that it was this reduction of inequality that helped Jordan reduce its poverty rate from 14.4 percent in 1992 to 11.7 percent in 1997, even though the nation experienced little or no economic growth during this period (Shaban et al. 2001:viii, 7). In addition, those who remained poor were not as far below the poverty line, and extreme poverty had declined (Shaban et al. 2001:8). The reduction in inequality was driven by a greater percentage of government expenditures being captured by the poor. Had this trend toward reduced inequality been accompanied by genuine economic growth, Jordan's poverty rate would likely have dropped even more.

JORDAN: LESS INEQUALITY, LESS POVERTY

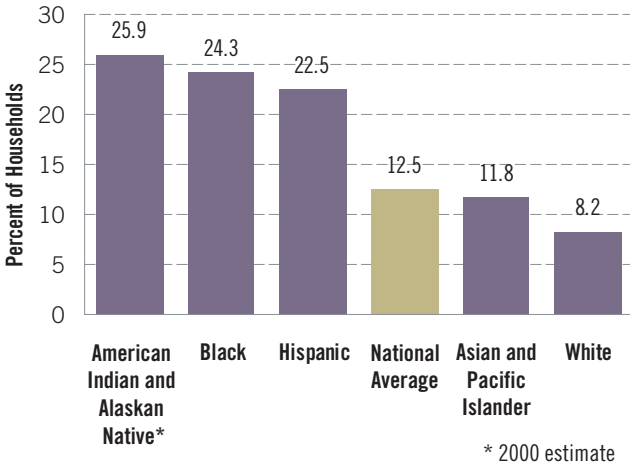
	1992	1997
Percent of Population in Poverty[1]:	14.4	11.7
Level of Inequality (Gini Index[2])	0.40	0.36

[1] Annual per capita consumption is below 314 JD or US $443 at 1997 prices.

[2] The Gini index is scaled between 0.0 and 1.0; 0.0 indicates perfect equality and 1.0 indicates perfect inequality.

Source: Shaban et al. 2001:10,12

FIGURE 1.1 UNITED STATES HOUSEHOLDS FALLING BELOW THE NATIONAL POVERTY LINE, 2003



Source: DeNavas-Walt et al. 2004:10; United States Census Bureau 2001:7

trialized world, where poverty persists in spite of the general affluence of the population. In the United States, the number of poor has risen steadily since 2000, reaching almost 36 million people in 2003—some 1.3 million more than in 2002. Historically marginalized groups such as Native Americans, African Americans, and Hispanics continue to suffer significantly higher rates of poverty. For example, 24.4 percent of African Americans fell below the poverty line in 2003, compared to the national rate of 12.5 percent. Among Native Americans and Hispanics, poverty rates were 23 percent and 22.5 percent, respectively (DeNavas-Walt et al. 2004:10). *(See Figure 1.1.)*

In general, research shows that to benefit the poor most, economic growth must be coupled with policies that reduce inequalities and improve how income is distributed in a society (Kakwani 2004:6). Where dependence of the poor on natural resources is high, as it is in most developing nations, these policies must necessarily involve the environment. And they must translate to governance practices that increase the poor's access to vital natural resources and their ability to govern those resources so that they share in the income from them.

Environment Matters to the Poor

The link between environment and poverty reduction is strong. Since the Rio Earth Summit in 1992, the importance of a sound environment to sustainable livelihoods has been widely acknowledged, particularly for the rural poor in Africa, Asia, and Latin America (UN 1992; UN 2002:2). Income derived

WHY FOCUS ON RURAL RATHER THAN URBAN POVERTY?

Although poverty in urban areas is substantial and increasing, global poverty is still predominantly a rural phenomenon. Some 75 percent of the poor live in rural areas despite the global trend toward urbanization. Even in 20 years, 60 percent of the poor are expected to live outside of cities (IFAD 2001:15). Providing a route out of poverty for these rural residents will remain a priority for national governments and the international community for decades to come (Reed 2001:13; World Bank 2003:1).

In addition, while urban ecosystems such as parks, waterways, and green spaces provide important services, it is rural ecosystems that provide the bulk of the goods and services on which humans depend for survival. The forest areas, fisheries, grasslands, agricultural fields, and rivers that provision both urban and rural residents, be they poor or rich, exist primarily in rural areas, and this is where most ecosystem governance and management occurs.

However, even as we focus on rural ecosystems and the rural poor, we recognize the intimate connection between the urban and rural spheres. Much urban poverty, for example, begins as rural poverty, exported from the countryside through rural-to-urban migration. Working for a healthier rural economy thus helps address urban poverty too, by lessening this migration. At the same time, the rural and urban economies are deeply intertwined, particularly through the flow of remittances from the city back to family members in the country. In fact, being able to tap into such remittances is often one of the dividing lines between poverty and sufficiency, and modern rural economies could hardly function without this net flow of income out of urban areas. In the end, then, we realize that addressing rural poverty has an important urban dimension as well. Urban and rural poverty can never be completely disentwined.

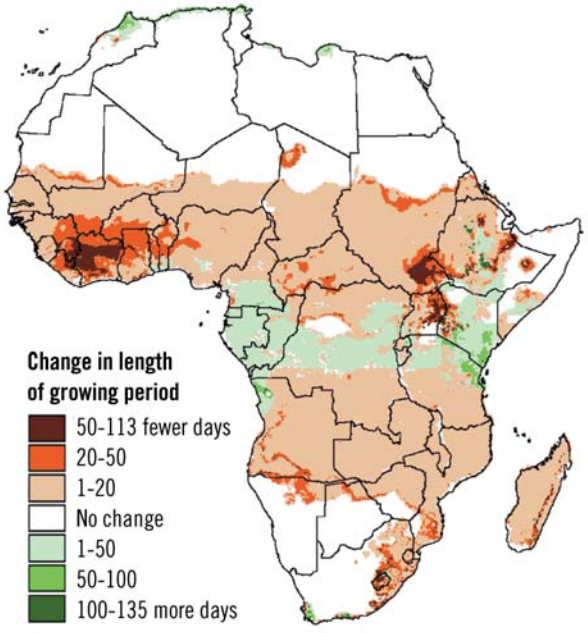
URBAN-RURAL COMPARISONS

	VIETNAM		INDIA		ZIMBABWE	
	Urban	Rural	Urban	Rural	Urban	Rural
Percent Below Poverty Line	7	36	25	30	8	48
Under-Five Mortality (per 1,000 live births)	16	36	63	104	69	100
Access to Improved Sanitation (percent of households)	84	26	58	18	69	51
Median Years of Schooling (men)	8.5	6	8.3	4.6	8.8	4.9

Sources: Macro International 2000; ORC Macro 2000; ORC Macro 2003; UNICEF 2005; World Bank 2004

FIGURE 1.2 CLIMATE CHANGE AND FOOD SECURITY

Changes in Projected Growing Season, 2000-2050



Source: Thornton et al. 2002:89

from the environment is a major constituent of the livelihoods of the rural poor, and this direct dependence on nature does not appear to be decreasing.

The environment is also a source of vulnerability. Environmental factors contribute substantially to the burden of ill-health the poor suffer. In addition, low-income families are especially vulnerable to natural disasters and environment-related risks such as the growing impacts of global climate change. As these environment-poverty links have become clear, major development institutions and donors have begun to make the environment a more central feature of their efforts to tackle poverty (USAID et al. 2002; Duraiappah 2004; UK DFID et al. 2002; UK DFID 1999; UNDP and EC 1999; World Bank 2001b).

Natural Resources Play a Vital Role in the Livelihoods of the Poor

Poor rural families make use of a variety of sources of income and subsistence activities to make their livings. Many of these are directly based on nature—like small-scale farming and livestock-rearing, fishing, hunting, and collecting of firewood, herbs, or other natural products. These may be sold for cash or used directly for food, heat, building materials, or innumerable other household needs. This "environmental income" is added to other income sources such as wage labor and remittances sent from family members who have emigrated. The decline of natural systems through soil depletion, deforestation, overexploitation, and pollution represents a direct threat to nature-based income and is a contributor to increasing poverty. *(See Chapter 2 for a thorough discussion of how ecosystems contribute to the livelihoods of the poor.)*

Common Pool Natural Resources Are a Key Source of Subsistence

The poor make extensive use of goods collected from lands or waters over which no one individual has exclusive rights—resources known generally as common pool resources (CPRs) or simply the "commons" (Jodha 1986:1169; Ostrom 1990:30). Common pool resources exist in many different ecosystems and under a variety of public or community ownership regimes. Typical examples include village pastures, state or community forests, waste lands, coastal waters, rivers, lakes, village ponds, and the like (Jodha 1986:1169).

Materials gleaned from CPRs consist of a wide range of items for personal use and sale including food, fodder, fuel, fiber, small timber, manure, bamboos, medicinal plants, oils, and building materials for houses and furniture. Fish, shellfish, seaweed, and other items harvested from coastal waters, rivers, and other aquatic environments are also of major importance to the poor. Nearly all rural families—both rich and poor—benefit from CPR income, but it is particularly important to landless households, for whom it provides a major fraction of total income. Researchers estimate that common pool resources provide about 12 percent of household income to poor households in India—worth about $5 billion a year, or double the amount of development aid that India receives (Beck and Nesmith 2001:119).

When access to common pool resources is unrestricted, as it is often is, it is difficult to keep them from being overexploited. Degradation of open access resources in the form of overfishing, deforestation, and overgrazing is an increasing burden on the poor—a trend that leads away from wealth.

Natural Resources Are Vital Social Safety Nets During Lean Times

Natural resources play a key role as a subsistence source of last resort in times of economic decline and when other food supplies are constrained. In southeastern Ghana, for example, recession and drought in 1982 and 1983 coincided with the normal lean season—the time before harvest when food supplies are naturally low. During this lean season, the poorest households depended on the "bush" for 20 percent of their food intake, compared to the highest income bracket, for which the bush provided only 2 percent of the household food intake. Women and children in particular relied on wild products such as roots, fibers, leaves, bark, fruit, seeds, nuts, insects, and sap. Men also hunted and trapped small mammals, reptiles, and birds (Dei 1992:67).

Environmental Factors Add to the Health Burden of the Poor

Environmental risks such as unclean water, exposure to indoor air pollution, insect-borne diseases, and pesticides account for almost a quarter of the global burden of disease, and an even

Continues on page 16

BOX 1.2 LIFE ON A DOLLAR A DAY

TO BE OFFICIALLY POOR IN INTERNATIONAL TERMS is to live below the World Bank's poverty line of US$1 per day. In actuality, the incomes of poor people vary by nation and by region, but by definition always add up to less than what is needed to make ends meet. To be poor is to have to choose among a range of necessities, not all of which you can afford. Food, shelter, health care, clothes, fuel, transportation, and tools or equipment needed for work are all basic expenditures vying for the limited family budget. Social obligations such as weddings, funerals, and gifts add to these basic needs. With little means and many needs, what do you spend your income on?

The Necessities

Food is the primary and immediate concern, and by far the major expense, for poor households. Studies show that the poorer the household, the greater the percentage of income spent on food. This is in spite of the fact that the poor often grow some of their own food. In Tanzania, the average rural household survived on just 32 cents a day in 2001, with 21 cents—65 percent—going for food (National Bureau of Statistics of Tanzania 2002:68-70). Food spending among the poor shows similar patterns in other regions: food purchases account for 60 percent of household spending in rural Morocco ($0.37/day) (World Bank 2001:4, Table 5) and 75 percent ($0.50/day) in Georgia (Yemtsov 1999:15, Table 5, 42). By comparison, a family in the United States spends an average of 14 percent of the household budget on food (U.S. Dept. of Labor 2004:4).

With food accounting for so large a share of daily finances, other critical necessities must receive proportionately less—often only pennies a day. Housing and the fuel or electricity to heat and cook with, for example, account for only 12 percent of spending among Argentina's poor (Lee 2000:8, Table 2). Health care, another priority for low-income families, receives only three cents of every dollar spent by Morocco's rural poor, the same amount spent in rural Georgia (World Bank 2001:9, Table 17; Yemtsov 1999:15, Table 5). Clothing and transportation costs account for a similarly small share of the daily dollar.

WHAT CAN YOU BUY FOR A DOLLAR?

Country	$1 buys
Bangladesh (Chittagong)	1 Dozen Eggs
Kenya	8 Cups of Milk
Ghana	2 1/3 Bottles of Palm Oil
Ghana	4 1/3 Bottles of Coke
Philippines	4/5 of a Big Mac
USA	1/3 of a Starbucks Tall Latte
Uganda	1/46 of a Bicycle
Bangladesh	1/3 of a Sari
Ghana	1 1/2 Pairs Rubber Sandals
Bangladesh	7 Bars of Soap
Ghana	87 Tablets of Penicillin
India (Andhra Pradesh)	1/2 Unit of Blood for a Transfusion
USA	1/150 of the Average Daily Cost of Nursing Home Care
Tanzania (Nzanza)	1/3 of a Liter of Pesticide
Ghana	4 1/3 Rolls of Toilet Paper
Ecuador (Quito)	1/500 of a Washing Machine
India (Andhra Pradesh)	2-3 Pieces Bamboo for Building
Uganda (Mbale)	1/1500 of the Cost of Building a New Home
India (Mumbai)	1/3 of a Regular Price Evening Movie Ticket

A family of four interviewed in rural Bangladesh calculated that they spent roughly 80 cents a day on food and fuel, allowing them to buy and cook two meals of rice and beans, as well as an occasional piece of meat. Medical costs came to 3.3 cents a day ($12 per year), mainly on medicines for the husband's coughs and colds. Other family expenses included 4.1 cents per day on clothes ($15 per year), 1.6 cents on school books ($6 per year), and 2.2 cents ($8 per year) visiting and giving presents to relatives. Family health and food costs thus accounted for more than 90 percent of the household's basic expenses (Rutherford 2002:10).

What You Can't Afford

When income does not fully cover even daily necessities, everything else becomes a luxury. Thus there are a great many things that the poor cannot afford to buy. Tools, materials, and upkeep for income-generating assets like transportation or farm equipment are all expenses that are routinely left out of the family budget. To cover gifts, dowries, and funerals—expenses at the heart of many social structures and customs—the poor must often sell what little land or livestock assets they have (Narayan et al. 2000a:149-150). Furniture, stylish clothing, or appliances—all items taken more or less for granted in the developed world—are largely an extravagance. Investments in hard assets or insurance to cushion against future hardships are even more difficult to afford. With no insurance or provision for emergencies, an already marginal income becomes an even more precarious foundation for the future.

Poverty often means not being able to take advantage of opportunities and investments that are open to others with more secure incomes. Education is a good example. Although the benefit of an education can dramatically increase a child's chance of leaving poverty, a poor family's budget does not always permit this. School costs can include tuition, supplies, and the loss of labor that the child could have contributed had he or she stayed home (Narayan et al. 2000b:242-244). Other investments that require savings or start-up capital are also out of reach, such as launching a small business, buying fertilizer or a fishing boat, or advertising to reach a wider market. Lacking such investment ability, the poor are often confined to subsistence activities and low-value wage labor that make it hard to get ahead.

WHAT THE RURAL POOR SPEND IN MOROCCO

Daily Per Capita Expenditures of Rural, Low-Income Individuals in Morocco 1998/99 (US$)

	Amount Spent	% of Total
Food	$0.35	61.4
Housing	$0.13	22.8
Clothing	$0.02	3.2
Health	$0.02	3.2
Transport and Communications	$0.01	2.5
Leisure	$0.01	1.8
Other	$0.03	5.1
TOTAL	**$0.57**	**100**

Adapted from World Bank 2001:9, Table 17

greater proportion of the health burden of the poor (Cairncross et al. 2003:2; Lvovsky 2001:1). The poor are far more likely to be exposed to environmental health risks than the rich by virtue of where they live. They also have much less access to good health care, making their exposure more damaging. In turn, poor health is an important obstacle to greater income and a contributor to diminished well-being in every dimension of life. *(See Box 1.3.)*

Climate Change Adds to the Vulnerability of the Poor

The adverse impacts of climate change will be most striking in developing nations—and particularly among the poor—both because of their high dependence on natural resources and their limited capacity to adapt to a changing climate. Water scarcity is already a major problem for the world's poor, and changes in rainfall and temperature associated with climate change will likely make this worse. Even without climate change, the number of people impacted by water scarcity is projected to increase from 1.7 billion today to 5 billion by 2025 (IPCC 2001:9).

In addition, crop yields are expected to decline in most tropical and sub-tropical regions as rainfall and temperature patterns change with a changing climate (IPCC 2001:84). *(See Figure 1.2.)* A recent report by the Food and Agriculture Organization estimates that developing nations may experience an 11 percent decrease in lands suitable for rainfed agriculture by 2080 due to climate change (FAO 2005:2). There is also some evidence that disease vectors such as malaria-bearing mosquitoes will spread more widely (IPCC 2001:455). At the same time, global warming may bring an increase in severe weather events like cyclones and torrential rains. The inadequate construction and exposed locations of poor people's dwellings often makes them the most likely victims of such natural disasters.

Nature as an Economic Stepping Stone

Nature has always been a route to wealth, at least for a few. Profit from harvesting timber and fish stocks, from converting grasslands to farm fields, and from exploiting oil, gas, and mineral reserves has created personal fortunes, inspired stock markets, and powered the growth trajectories of nations for centuries. But this scale of natural resource wealth has been amassed mostly through unsustainable means, and the benefits have largely accrued to the powerful. It is the powerful who generally control resource access through land ownership or concessions for logging, fishing, or mining on state lands; who command the capital to make investments; and who can negotiate the government regulatory regimes that direct the use of natural resources. The poor, by contrast, have reaped precious little of the total wealth extracted from nature. But that can change.

Natural Resources Are a Key Determinant of Rural Wealth

Even though they do not currently capture most of the wealth created by natural systems, the livelihoods of the poor are built around these systems. Indeed, natural resources are the fundamental building block of most rural livelihoods in developing nations, and not just during lean times. Chapter 2 offers many examples of the environmental income that both the poor and rich derive from nature.

The ability to efficiently tap the productivity of ecosystems is often one of the most significant determinates of household income. For example, studies show that the key variable explaining income levels for rural households in Uganda is access to land and livestock. In Ugandan villages near Lake Victoria, the key variable explaining wealth is access to fishing boats and gear. Income-wise, these are found to be even more important than other wealth-associated factors such as access to education (Ellis and Bahiigwa 2003:1003).

Beyond Subsistence: Natural Endowments as Capital for the Poor

Ecosystem goods and services—the natural products and processes that ecosystems generate—are often the only significant assets the poor have access to. These natural endowments, if managed efficiently, can provide a capital base—a foundation for greater economic viability, and a stepping stone beyond mere subsistence. Yet the potential of these assets is often overlooked.

Typical commercial evaluation of natural resources tends to undervalue the total array of ecosystem goods and services, which includes not just the crops, lumber, fish, and forage that are the usual focus of exploitation, but also a wide variety of other collectibles, agroforestry products, small-scale aquaculture products, as well as services such as maintenance of soil fertility, flood control, and recreation (Lampietti and Dixon 1995:1-3; Pagiola et al. 2004:15-19). One of the consequences of the difficulty of assigning a monetary value to ecosystem benefits is that it has led to the systematic undervaluation of the assets of the poor and the underestimation of the potential benefits of improved environmental management.

But the potential for strategic management of ecosystems to raise the incomes of the poor is real. In fact, good ecosystem management can become one of the engines of rural economic growth more generally. Experience shows that the poor use several strategies to make their ecosystem assets a stepping stone out of poverty.

Restoring Productivity

Where ecosystems are degraded, it limits their potential as a source of environmental income. Many communities have found that restoring the productivity of local forests, pastures, or fisheries has the opposite effect, raising local incomes substantially. Often this entails a community effort to more carefully control the use of common property areas and even private lands. For example, the village of Sukhomajri in Haryana, India, has gained widespread recognition for its success in raising village incomes through community efforts to restore and maintain the productivity of local forests and farmland. Careful land management and rainwater harvesting produced large gains in agricultural production, tree density, and available water, increasing annual household incomes by 50 percent in five years (Agarwal and Narain 1999:16).

Many other watershed management projects in India have also reported benefits to village residents, including poor families who do not own land. In the Adgaon watershed in Maharashtra, annual days of employment (wage labor) per worker increased from 75 days at the project's inception to over 200 days after restoration was complete. In Mendhwan Village, laborers found eight months of agricultural work per year after four years of watershed management, compared with only three months before the community began its restoration and management project (Kerr et al. 2002:56).

Marketing Niche Products and Services

One common way to translate ecosystem assets into economic gain is to create or take advantage of niche markets for nontimber forest products, such as bamboo, mushrooms, herbs, and other collectibles. In Nam Pheng village in northwestern Laos, villagers began a cooperative effort in 1996 to expand the market for bitter bamboo and cardamom. They created a coordinated management plan for sustainable harvest of these traditional products, improved the harvest technology, and established a marketing group to both increase sales and obtain higher prices for their wares. By 2001 a day's harvest of bitter bamboo brought ten times the wages of slash-and-burn cultivation, which had been the villagers' main livelihood activity (Morris 2002:10-24). *(See Table 1.2.)*

TABLE 1.2 BITTER BAMBOO AND CARDAMOM VS. OTHER INCOME SOURCES

NAM PHENG VILLAGE, LAO PDR

Income Activity	Income Per Day of Labor (in Lao Kip)
Collection and Sale of Bitter Bamboo	13,500-19,600
Collection and Sale of Cardamom	11,200
Heavy Labor: Road Construction	20,000
Heavy Labor: Agriculture	20,000
Collection and Sale of Fuelwood	17,000
Light Labor: Agriculture	10,000
Slash and Burn Cultivation	1,500

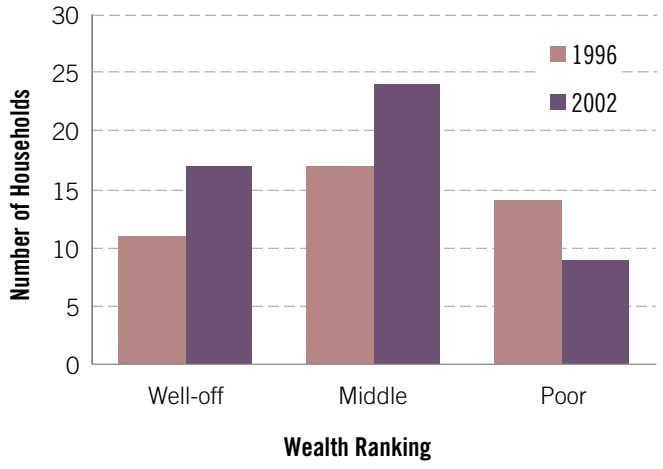
Note: 1000 Lao Kip = US$0.13

Source: Morris 2002:14

By 2002, harvesting bitter bamboo and cardamom provided the main source of income for most villagers and the community had made considerable progress toward higher incomes and more secure livelihoods. *(See Figure 1.3.)* The village poverty rate had fallen by more than half, food security had increased, and the mortality rate for children under five had fallen to zero. In addition, enough community funds from the joint marketing group had been raised to build a school, prompting school enrollment to double, with more than half of the students being girls. While the income potential from bamboo and cardamom is not unlimited, it has clearly provided a stepping stone to larger capital investments, such as livestock, and allowed villagers to diversify their income sources. It has also brought villagers an appreciation of the forest as an economic asset, providing an incentive for long-term care of the forest ecosystem (Morris 2002:10-24).

In addition to marketing forest products like bamboo, poor households can find substantial income marketing ecosystem services, such as recreation. In Namibia, communities have successfully tapped the ecotourism trade built around viewing and hunting the area's springbok, wildebeest, elephants, giraffes, and other animal populations. To accomplish this, the communities have formed legally constituted "conservancies" to regulate the hunting, sightseeing, camping, and other activities that affect local wildlife. The conservancies have generated direct benefits ranging from jobs and training to cash and meat payouts to community members. In 2004, total community

FIGURE 1.3 A TREND TOWARD WEALTH, Nam Pheng Village, Lao PDR



Well-off: Permanent house, equipment, and accessories (e.g., truck, TV/VCR); enough money and rice for one year; some livestock; and enough labor.

Middle: Semi-permanent house (i.e., thatched grass roof, stripped bamboo walls), insufficient money or rice for half the year, few livestock, and enough labor.

Poor: Temporary house (bamboo or small trees for beams and pillars), insufficient rice for entire year, no livestock, and insufficient labor.

Source: Morris 2002:17

benefits reached N$14.1 million (US$2.5 million) in value. Studies have documented that, over the course of 10 years, the conservancies have enhanced the livelihood security of local people while spurring major recoveries in wildlife populations (WWF and Rossing Foundation 2004:v-vi; Vaughan et al. 2003:18-19).

Capturing a Greater Share of the Natural Resource Value

Maximizing environmental income involves not only improved resource management or creation of new markets for nontraditional or underexploited products. It also requires greater attention to marketing traditional products such as fish, so that more of the revenue generated is captured by the fishers themselves in the form of higher prices for their harvests. In Kayar, a community along the coast of Senegal, local fishers worked together to regulate their fish catch, with the idea of stabilizing the catch and insuring a good price at market (Lenselink 2002:43). By limiting the quantity of fish each boat owner could deliver to market each day, they successfully raised fish prices to the point that fishers had surplus income to save. At the same time, fish stocks were better managed by limiting the number of fishers allowed in a given area, the number of fishing trips allowed per day, and the kinds of permissible fishing gear (Lenselink 2002:43; Siegel and Diouf 2004:4, 6). The Kayar fishers made economics and ecosystem management work hand in hand. (*See the case studies in Chapter 5 for other examples of how communities have used better ecosystem management to improve their economic prosperity and reduce poverty.)*

The examples described above involved a different understanding of nature's wealth from the conventional view of large-scale extraction—a different view of what natural wealth is, how it can best be tapped, and who is to benefit from it.

Ecosystem Management as a Basis for Agriculture Growth, Rural Diversification, and General Economic Growth

Making ecosystems work as an economic asset for the poor should be seen not as an isolated goal but part of a larger strategy for rural development. Utilizing the natural assets of the poor is not a "silver bullet" for poverty reduction that can single-handedly bring wealth to poor families. It is rather part of a general transition of rural economies from subsistence to wealth accumulation, working first to support a more profitable small-scale agriculture and natural resource economy—the current mainstays of rural livelihoods—and eventually to build a complementary rural industrial and service economy (World Bank 2003:xix-xxvi).

Agriculture is a particularly important piece of the rural poverty equation. There is a well-established connection between improvements in small-scale agriculture and poverty reduction. One study in Africa found that a 10 percent increase in crop yields led to a 9 percent decrease in the number of people living on $1 per day (Irz et al. 2001 in World Bank 2003:xix). Indeed, rapid agricultural growth is considered a primary avenue for poverty alleviation (Smith and Urey 2002:71). From the 1960s to the1980s, the Green Revolution's use of modern seeds and fertilizers, irrigation, better credit, roads, and technical assistance helped bring this kind of rapid agricultural growth to many rural areas, with a corresponding reduction in poverty. For example, from 1965 to 1991—the period of greatest Green Revolution gains—rural poverty rates in India declined from 54 percent of the population to 37 percent (Smith and Urey 2002:17).

But spreading the Green Revolution's success to the poor families and the marginal lands it has by-passed will require something more than the technocratic approach of those earlier

decades. It will also require good ecosystem management by the poor that helps build and retain soil fertility and allows small farmers to harvest and efficiently use water resources. Failure to take this approach has resulted in fertility loss, salinization, and overdrafting of groundwater on many of the Green Revolution farms—environmental problems that have begun to erode productivity gains in many areas (Smith and Urey 2002:10).

Sustained agricultural growth, augmented by other forms of environmental income, from forest products to forage to aquaculture, can help many poor rural families to create an asset base that allows them to begin the transition away from sole dependence on farming and nature-based activities. Research shows that as growth proceeds, agriculture eventually begins to play a less crucial role in the overall development process and subsequently declines as a share of economic output (Timmer 1988:276, 279). Rural residents begin to depend more on rural industry and so-called "off-farm" income, which provide an additional and quicker route out of poverty to complement agriculture.

But even as rural economies slowly diversify, nature will still play an important role. Many rural industries—such as local processing of agriculture or fishing products, crafts production, and ecotourism—will themselves be indirectly dependent on natural resources. They will thus benefit from a sound approach to ecosystem management. For example, when the shrimp-processing company Aqualma was established in 2000 in a remote corner of Madagascar, it brought permanent jobs to 1,200 rural workers, most of whom had never held a wage-paying job. But Aqualma's future relies entirely on sound fishing practices that insure a continuing shrimp supply. In other words, a good relationship to ecosystems and environmental income supports many dimensions of rural growth and is beneficial at several points in the economic evolution of the rural poor from subsistence to wealth (World Bank 2003:xxii).

Better Governance Is Vital for Higher Incomes

Maximizing environmental income for the poor requires changes in the governance of natural resources. The need for such changes is pressing because the poor are at a great disadvantage when it comes to controlling natural resources or the decisions surrounding them. They often lack legal ownership or tenure over land and resources, which restricts their access and makes their homes and livelihoods insecure. They also suffer from a lack of voice in decision-making processes, cutting them out of the decision-making loop. Natural-resource corruption falls harder on the poor as well, who may be the victims of bribe-demanding bureaucrats or illegal logging and fishing facilitated by corrupt officials who look the other way. The poor are also subject to a variety of policies—such as taxes and various regulations—that are effectively anti-poor.

These governance burdens make it hard for poor families to plan effectively, to make investments that might allow them to profit from their assets or skills, or to work together effectively to manage common areas or create markets for their products. In other words, governance burdens quickly translate to economic obstacles.

Tenure Security is a Primary Obstacle

Ownership and access are the most fundamental keys to the wealth of nature. Unfortunately, many poor people do not own the land or fishing grounds they rely on for environmental income. This lack of secure tenure makes them vulnerable to being dispossessed of their homes and livelihoods, or, if they rent homes or land, subject to sometimes exorbitant rent payments.

The importance of tenure—or the lack of it—to the ability to tap nature's wealth can't be stressed too much. The rights to exploit, sell, or bar others from using a resource—the bundle of rights associated with tenure or ownership—are essential to legal commerce. Ownership also provides an incentive to manage ecosystems sustainably by assuring that an owner will be able to capture the benefits of long-term investments like soil improvements, tree planting, or restricting fishing seasons to keep fish stocks viable.

Tenure issues affecting the poor involve not only private ownership of land, but also the use of common lands. Many areas

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Box 1.3 HEALTH, ENVIRONMENT, AND POVERTY

GOOD HEALTH IS A BASIC COMPONENT OF HUMAN well-being and a necessity for earning a livelihood. Unfortunately, the poor are much more vulnerable to ill health, and ill health is itself an important factor in reinforcing the poverty cycle. The health vulnerability of the poor has many facets, with environmental exposure being one of these faces.

Health as an Asset

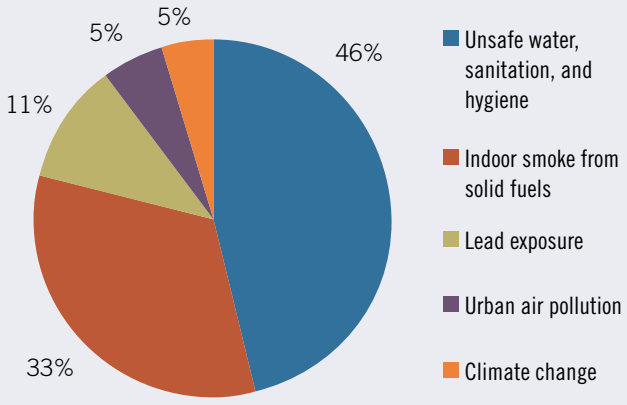
Good health is among the most valuable assets the poor possess. Not only is good health essential to almost any income-generating activity, but most of the other assets of the poor—such as livestock and farmland—yield few returns without the physical capacity to maintain or use them (Barrett and McPeak 2003:8; Lawson 2004:20). Individuals who are sick or disabled are less likely to be hired for wage work, may have difficulty working effectively, and will often be paid less for their services (Narayan et al. 2000:96).

Ill health is not just the lack of an asset, but a negative asset. Having a household member fall ill can destroy a poor family's standard of living. Household and village-level studies show that the illness of a key income-earner—a so-called "health shock"—is one of the leading causes of a household's decline into abiding poverty (Krishna 2004:11; Lawson 2004:3). The immediate loss of income is only the start: health bills can mount quickly and create an urgent need for cash, and since the poor possess few liquid assets that can be used for such emergencies, they may have to sell land or items central to sustaining their livelihoods. Families facing a health shock very often fall into substantial debt, from which they can only emerge with difficulty. One common coping strategy is to pull children out of school and send them to work, depriving them of training they will need in the future to keep themselves out of poverty (Narayan et al. 2000:98).

THE HIGH PRICE OF ILL HEALTH

Serious back problems required a hospital stay for Susan, a poor Kenyan farmer. Even before purchasing medicines, Susan's hospital bill cost her US$27 (2,100 Kenyan shillings). She sold her only 2 goats, her bean crop from the previous year, kitchen utensils, and her few pieces of furniture to raise the money. Even if her back recovers, Susan has been reduced to destitution, and will be hard-pressed to earn a livelihood. Her friends remain as her only source of help in the future (Hamilton 2003:21).

DALYs ATTRIBUTED TO ENVIRONMENTAL HEALTH RISKS



The Disability-Adjusted Life Year (DALY) is a statistical measure of the human costs of sickness in terms of the number of healthy years lost to illness and disability (Ezzati et al. 2004: 2142-3). Time spent in poor health will translate into a loss of income, making the DALY a helpful measure of the impact of health hazards upon the livelihoods of the poor.

Source: Ezzati et al. 2004:2144-45

Elevated Risk of the Poor

The poor are more likely to suffer serious illness during their lifetime. They tend to live in higher-risk areas, with greater exposures to pollution, disease agents, and natural hazards such as floods. They also tend to work more dangerous jobs and have less access to services than the wealthy. Once ill, they face greater challenges in receiving adequate care. A shortage of trained health personnel and gaps in clinics and hospitals may mean that the poor must travel substantial distances and wait in long lines to receive treatment, particularly in rural areas (Narayan et al. 2000:72, 95; World Bank 2004:135).

Corruption in the public health care sector is also widely reported among the poor in the developing world. Patients may be forced to pay for services and medicines that should be free, and are turned away or given inferior care if they cannot afford to pay (Narayan et al. 2000:102;World Bank 2001:83). In Pakistan, a survey found that 96 percent of patients reported some type of corruption associated with visiting the local hospital, such as having to pay extra for beds, X-rays, tests, or medicines (Transparency International 2002:22). As a result, the public health care system is often the last resort of the poor, and many avoid using it at all (Narayan et al. 2000:100; Narayan and Petesch 2002:33-34).

Hunger

Malnutrition is the leading health risk among the poor, accounting for 1 in 15 deaths globally (WHO 2002:54). Of the 1.1 billion people living below the "dollar-a-day" threshold, 780 million suffer from chronic hunger (FAO et al. 2002:8). Because they are often marginalized in society, women and female children in particular may eat last and eat less than the principal breadwinner in the family. Undernourishment of women and children alone accounts for almost 10 percent of the global burden of disease (WHO 2002:54; Economist 2004:68).

Hunger is not only an outcome of poverty but a prime cause for remaining in poverty. Chronically hungry people are less productive at whatever labor they are able to obtain, and thus find it harder to accumulate the financial capital they need to take them out of poverty (FAO et al. 2002:10). The effects of poverty reach across generations as well. Children suffering from malnutrition may suffer physical stunting and impeded cognitive development, and are more susceptible to other forms of disease, both during youth and later in life. An estimated 40-60 percent of children in developing countries suffer from iron deficiencies severe enough to impede cognitive development (Economist 2004:68; WHO 2001:7-8). These disabilities are likely to limit their capacity to generate income in the future, extending the cycle of poverty for yet another generation (FAO 2002:10; WHO 2002:53).

Environmental Health

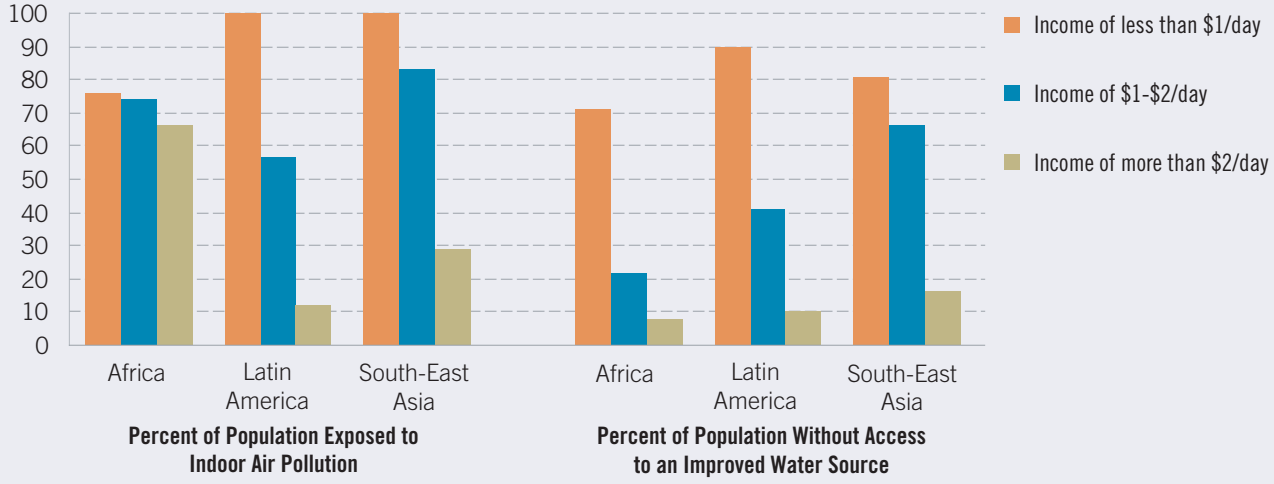
Environmental hazards comprise a significant portion of the health risks facing the poor. By one estimate, environmental causes account for 21 percent of the overall burden of disease worldwide (the combination of days spent sick and deaths due to sickness) (WHO 2002 in Cairncross et al. 2003:2). Acute respiratory infections and diarrhea rank among the highest contributors to the disease burden in the developing world, and these are mostly diseases of the poor (WHO 2002:83).

A disproportionate share of environmental health risk is borne by the very young. Although children under five constitute just 10 percent of the world's population, they suffer 40 percent of the environment-related burden of disease. Diarrhea, caused by unclean water and inadequate sanitation, is responsible for the deaths of an estimated 1.8 million people worldwide each year, 1.6 million of which are children under five (Gordon et al. 2004:14).

Respiratory ailments are caused in large part from exposure to high levels of indoor smoke from cooking with dung, wood, or other biomass fuels. More than half the world's population—3.5 billion people—currently depend on such fuels as their main energy source (Desai 2004:vii). Analysis by the International Energy Agency shows that this dependence will likely increase in the years ahead, with an additional 200 million people—most of them poor—relying on these fuels by 2030 (IEA 2002:30).

THE POOR ARE MORE VULNERABLE TO HEALTH RISKS

Environmental risk factors in countries with high adult and childhood mortality



Source: Blakely 2004:1990, 1992, 2003

Box 1.3 HEALTH, ENVIRONMENT, AND POVERTY

Indoor air pollution is linked to over 1.6 million deaths a year, 500,000 of them in India alone. More than half of those who die of respiratory infections related to indoor air pollution are children under the age of five (Warwick and Doig 2003:2). In urban areas, ambient air pollution from auto exhaust, industrial smoke stacks, dust, and other particulates is also a significant health risk. Ambient air pollution causes some 800,000 deaths a year, most of them in the developing world (WHO 2002:69).

Looking to the future, climate change comprises a considerable environmental health risk, since it can intensify existing environmental health threats. Vector-borne diseases such as malaria, dengue fever, schistosomiasis, and Chagas disease could expand their ranges as temperature and rainfall patterns change. Mosquitoes are among the first organisms to expand their range when climate conditions become favorable, so cases of malaria and dengue fever may increase their already heavy toll among the poor (WRI et al.1998:70). Diarrheal organisms are also sensitive to changes in temperature and humidity, with the health risk they pose increasing as average temperatures rise. A study in Peru found that hospital admissions for diarrhea increased as much as 12 percent for every 1 degree C increase in temperature (McMichael et al. 2003:215). On a broader scale, the World Health Organization estimates that in 2000, climate change was responsible for 2.4 percent of all cases of diarrhea and 2 percent of all cases of malaria worldwide (WHO 2002:72).

The Scourge of AIDS

AIDS poses one of the most potent health threats to poor households. High rates of infection are common in many of the poorest nations in Africa and Asia, and the disease has begun to ravage rural household economies in many areas. When AIDS strikes a family member—particularly a key wage-earner—it administers the kind of health shock that often drives the family into profound poverty. In the Tanzanian village of Kagabiro, households with an AIDS patient spent between 29 and 43 percent of household labor on AIDS-related duties—time that previously was available for earning money (Tibaijuka 1997 in Stover and Bollinger 1999:5). A study in Côte d'IVoire found that when a family member with AIDS died or moved away for treatment, average consumption in the family fell by as much as 44 percent the following year due to loss of income (Bechu 1998 in Stover and Bollinger 1999:4). Research on AIDS-afflicted families in rural Ethiopia found that the average cost of medical treatment, funeral, and mourning expenses amounted to several times the average household income (Demeke 1993 in Stover and Bollinger 1999:4).

AIDS also has profound effects on food security. In eastern Africa, AIDS-related labor shortages have led to lower crop yields, smaller amounts of land being cultivated, and a move from cash crops to subsistence crops, as the rural agricultural economy retrenches.

under state ownership provide the resource base for poor communities, but these communities often have no legal basis for their use of common pool resources. In many instances, these resources—whether they are forests, grazing areas, or fishing grounds—have been governed locally for centuries under traditional forms of "communal tenure," in which resources are owned in common by a group of individuals, such as a village or tribe.

Unfortunately, such customary arrangements are often not legally recognized, and conflicts between communal tenure and modern state-recognized ownership frequently threaten rural livelihoods. State recognition of such traditional ownership arrangements or new power-sharing agreements between local communities and the state that grant specific rights to use and profit from the state commons are often important ingredients in successful efforts to tap the wealth of natural systems (Meinzen-Dick and Di Gregorio 2004:1-2).

Lack of Voice, Participation, and Representation

When important decisions about local resources are made, the poor are rarely heard or their interests represented. Often these decisions, such as the awarding of a timber concession on state forest land that may be occupied by poor households, are made in the state capitol or in venues far removed from rural life. Even if they could make it to these decision-making venues, the poor—and other rural residents as well—would still be unlikely to find a seat at the table. The right for local resource users to participate in resource decisions is still a relatively new concept in most areas and often not embodied in law. Language barriers, ignorance of their legal rights, and a lack of full information about how resource decisions are likely to affect them are also potent obstacles to the participation of the poor. Lack of money, of political connections, and of lawyers or other advocates that can articulate their needs are all sources of political isolation and marginalization (WRI et al. 2003:44-64).

The Wealthy Dominate the Economic Machinery

Wealthier landowners and traders tend to dominate the resources and economic tools necessary to turn natural resources to wealth. In addition to owning more and better land, livestock, farm machinery, boats, or other assets directly relevant to profiting from ecosystems, the rich also tend to have greater access to resources like irrigation water, seed, fertilizers, pest control, and labor (Narayan and Petesch 2002:58-59, 188; Narayan et al. 2000:49-50; Kerr et al. 2002:61). The wealthy also have easier access to credit, which is a key constraint for the poor wishing to improve their ecosystem assets by planting trees, undertaking soil or water conservation projects, or developing new products or markets.

These advantages are often magnified by the dense and interlinked social networks in rural areas, which tend to reinforce the near-monopoly position enjoyed by some wealthier families, leaving poorer families with fewer options and sometimes all-or-nothing choices (Bardhan 1991:240). For instance, surveys from West Bengal, India, found that laborers tied to their landlords through credit were less likely to take part in group bargaining and agitation for raising rural wages. These indentured workers felt it was a choice between a low wage or no job at all—a cycle of dependence that can be self-perpetuating (Bardhan 1991:240).

Capture of State-Owned Natural Resources by the Elite—Facilitated by Corruption

In many cases, state-owned resources like forests and fisheries are opened to exploitation by granting individuals or companies concessional leases or harvest licenses. The wealthy are much more likely to be able to take advantage of these. In Bangladesh, the government leases rights to fish in state-owned water bodies for a period of one to three years through a public auctioning system that generates considerable revenue for the state. Unfortunately, poor fishermen can rarely afford to bid, so the licenses are purchased by rich investors known as "waterlords." These entrepreneurs hire fishermen as daily laborers at low wages, keeping most of the profits for themselves. This has led, in effect, to the institutionalized exploitation of the fishermen by a small rural elite (Béné 2003:964). In other instances, lease holders will exclude the poor altogether from their concession, even though they may have traditionally lived on and collected from these lands.

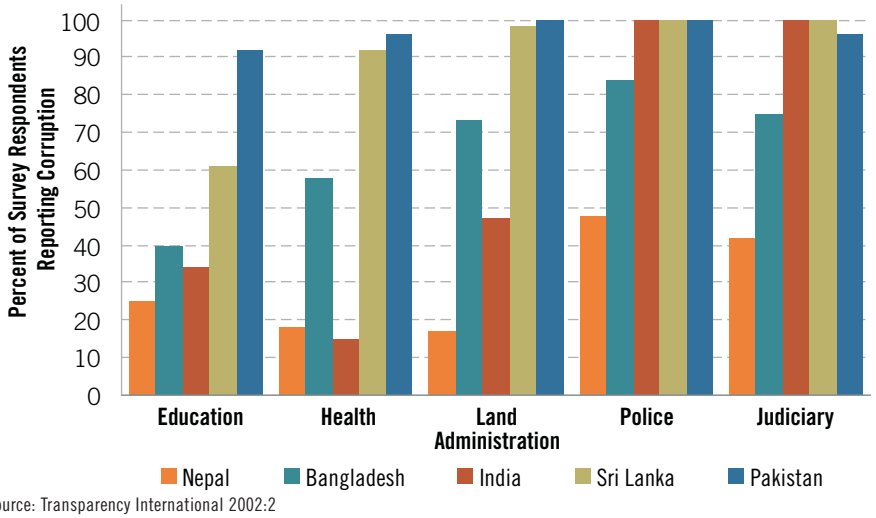
This problem of the capture of state resources by the elite is worsened by corruption, political patronage, and sweetheart deals for insiders. Such corruption and favoritism often focuses on natural resource concessions in remote areas far from official concern and public scrutiny—precisely those areas inhabited by the poor. In 2001, Bob Hasan, Indonesia's former Minister of Industry and Trade, was sentenced to prison for forest-related graft worth $75 million. For years, the timber magnate and close associate of former President Suharto dominated Indonesia's lucrative plywood trade, at one point controlling nearly 60 percent of world tropical plywood exports (Borsuk 2003:1; Barr 1998:2, 30).

Apart from its role in enabling the elite capture of state resources, corruption also stands as a fundamental obstacle to the sustainable management of resources and thus another way in which the natural assets of the poor are diminished. Illegal logging and fishing are prime causes of the depletion of common pool resources that the poor depend on, short-circuiting effective state management of ecosystems and undermining customary management arrangements at the village or tribal level as well (WRI et al. 2003:36-38). *(See Figure 1.4.)* Demands by local officials for bribes or other considerations for access to resources place a special burden on the poor and encourage low-income families to themselves engage in illegal logging, fishing, and other unsustainable resource uses. At a national level, corruption acts as a drag on the economy, behaving essentially as a tax on legitimate businesses. Research shows that corruption suppresses national economic growth—one of the main requirements for effective and widespread poverty reduction (Thomas et al. 2000:144-150).

Anti-Poor Taxes and Regulations Work Against Economic Empowerment

In many countries, natural resource-related activities such as timber extraction, fishing, grazing, small-scale agriculture, and water use are subject to controls and taxes that are regressive with respect to the poor. In China, grain farmers—many of whom are poor—until recently were obliged to sell

FIGURE 1.4 CORRUPTION BY SECTOR IN SOUTH ASIA, 2002



Source: Transparency International 2002:2

the government a fixed quota of their production at below-market prices, essentially lowering their potential income (Ravallion and Chen 2004:21-22). In Uganda, households face a confusing array of resource-related taxes, which often appear arbitrary to rural families. These include taxes on activities as diverse as smoking fish, growing maize, and slaughtering cows or goats (Ellis and Bahiigwa 2003:1008-1009). Around Lake Chad in central Africa, fishery fees are levied by three distinct groups: by traditional authorities, by the central government, and by soldiers (Béné 2003:970). Such overlapping fees discourage low-income families from engaging in market transactions that would help them generate returns from their access to natural resources.

In addition, well-intentioned environmental regulations are sometimes introduced in a draconian way that hurts the poor. For example, there is evidence that China's 1998 ban on tree felling in the upper watersheds of the Yangtze and Yellow River Basins has had very negative impacts on some poor households. The ban was meant to restore the health of the watersheds and avoid repeating the disastrous floods on the Yangtze that had occurred earlier that year. However, expansion of the logging ban beyond state-owned forests into private and collectively owned land has cost numerous jobs and restricted local communities' access to forest products in these areas (Xu et al. 2002:6, 8). In Mali, a 1986 forest law banned bush fires, made felling of certain species illegal without Forest Department permission, and made wood-saving stoves compulsory. In response, the wood trade was forced underground, and poor people unable to pay fines levied against them had their livestock confiscated (Benjaminsen 2000:97, 99-100).

The Environment as a Route to Democratic Governance

The environment provides a powerful tool to promote democratic reform. Particularly among the poor, it offers a unique opening for localizing and building demand for democratic practices because of its connection with livelihoods. In turn, good environmental governance is essential to developing, strengthening, and consolidating democracy in the world's poorest nations because it is a prerequisite for the poor to realize greater income from the environment.

Counteracting the bias against the poor that is embedded in government policies, institutions, and laws will require significant political change. That in turn demands greater access by the poor to true participation, accurate information, and fair representation. The environment itself provides one effective route for this needed transition to democratic decision-making. In countless communities in Africa, Asia, and Latin America, control over and use of natural resources are matters of everyday survival. These are governance issues with immediate bearing. The prospect of more equitable decisions about land and resources gives the ideals of democracy personal relevance to the poor. And it provides a motive for the kind of public activism that brings political change.

There are many examples of poor people organizing around environmental issues to prompt government action, gain rights, or call attention to gross inequities. The 1980s saw poor fishermen in the Indian state of Kerala organize to demand a seasonal ban on industrial trawlers that directly competed with local fishers and reduced their catch. Using tactics such as public fasts, road blocks, and marches against the government, the fishers became a political force that eventually coaxed fisheries managers to adopt a three-month seasonal ban on trawlers (Kurien 1992:238, 242-243). In Brazil's Amazon region, rubber tappers joined forces with the Indigenous People's Union to form the Alliance of Forest Peoples in the mid-1980s, demanding greater recognition of their resource rights. By 1995, their efforts had gained widespread support and the government designated some 900,000 ha of rainforest as Extractive Reserves (Brown and Rosendo 2000: 216).

Although initially the Green Belt Movement's tree planting activities did not address issues of democracy and peace, it soon became clear that responsible governance of the environment was impossible without democratic space. Therefore, the tree became a symbol for the democratic struggle in Kenya. Citizens were mobilized to challenge widespread abuses of power, corruption, and environmental mismanagement….

—Wangari Muta Maathai, Kenyan Environmental Activist and 2004 Nobel Peace Prize Winner, from her Nobel Laureate Lecture

Civil society in general has used the environment to great effect to push the process of democratization in regimes where civil liberties had been restricted. During the turn towards democracy in Chile and East Asia in the 1980s, and Eastern Europe in the 1990s, protests led by environment-focused civil society groups played an important role (McNeill 2000:347-348, WRI et al. 2003:67). For example, WAHLI, a prominent Indonesian environmental group, was one of the few NGOs tolerated by the Suharto government in the 1980s (Steele 2005).

The power of the environment as a stage for social action arose for two reasons. First, environmental problems were serious and were widely known, and second, environmental protests were seen—at least initially—as less overtly "political"

and hence were more tolerated by government authorities. This ability for the environmental movement to maneuver where other civil society groups have not been given as much latitude is now manifesting in China, where activity by environmental NGOs is increasing (Economy 2005:1).

Linking Environment and Governance in the Global Poverty Fight

More than ever, national governments, international institutions, and donors are focused on poverty reduction. But their efforts have often given limited attention to the role of healthy ecosystems in providing sustainable livelihoods, and equally limited attention to the importance of environmental governance in empowering the poor. The models of economic growth that nations continue to rely on for poverty reduction—job creation through increased industrialization, intensified large-scale agriculture, industrial fishing fleets, and so on—do not fully appreciate the realities of rural livelihoods.

For example, these strategies miss the fundamental fact that if ecosystems decline through poor governance, the assets of the poor decline with them. Findings from the recently concluded Millennium Ecosystem Assessment—a five-year effort to survey the condition of global ecosystems—confirm that the burden of environmental decline already falls heaviest on the poor (MA 2005:2). This often results in an immediate drop in living standards—a descent into greater poverty. This in turn precipitates migration from rural areas to urban slums or a resort to unsustainable environmental practices—overfishing, deforestation, or depletion of soil nutrients—for bare survival's sake. For this reason alone—simply to prevent an *increase* in poverty—greater attention to ecosystem management and governance practices that serve the poor is vital. The promise that environment can be one of the engines of rural growth is all the more reason to keep environment as a focal point in poverty reduction efforts.

Refocusing the Millennium Development Goals

One way to increase the profile of environment and governance in poverty reduction is to make them more dynamic players in the global effort to achieve the Millennium Development Goals (MDGs). The MDGs represent a new commitment by the world community to concentrate on poverty alleviation. Nations have endorsed a limited set of universally accepted goals and time-bound targets, and have promised to measure progress toward these goals and hold the community of nations accountable. Goal 7 of the MDGs recognizes the connection between environmental sustainability and poverty reduction, with a specific commitment to "[i]ntegrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources" (UN General Assembly 2001).

Unfortunately, this sustainable development target is the least specific and the least understood by nations of all the MDG targets, making it easy to pass over in favor of targets that are simpler to understand and measure, such as the provision of safe drinking water, or the reduction of infant mortality. In addition, no specific measures of governance (with the exception of measuring the tenure security of urban slum dwellers) are included in the sustainable development target, so the essential tie between a healthier environment and the governance of natural resources is missing.

Furthermore, the idea that the sustainable development goal is basic to the achievement of all the other goals and central to lasting progress against poverty is acknowledged in the MDG structure, but it is not elaborated in a way that guides nations to act or gives them adequate measures of how well they are integrating sustainable development principles in their work to meet the other MDGs (UNDP 2005:3-5). Addressing these important lacks requires clearer guidance on the links between ecosystems, governance, and each MDG, as well as an expanded slate of indicators that better encompasses the governance dimension of these goals.

Refocusing Poverty Reduction Strategies

Much the same kind of criticism can be made of the process that developing countries are using to design their national efforts to reduce poverty. Guided by the World Bank, poor nations are drawing up formal plans—called *poverty reduction strategy papers*, or PRSPs—that describe how they envision creating the conditions for growth and social development that will raise incomes and lower national poverty rates (Bojö and Reddy 2003:3).

PRSPs themselves represent a significant step toward pro-poor development. They arose out of the realization that the structural economic reforms recommended in earlier decades by the International Monetary Fund and the World Bank—polices such as market liberalization and an emphasis on export-oriented trade—have not yet produced enough growth in many poor nations to result in sufficient progress against poverty (Reed 2004:7-9). Therefore the Bank and the IMF have encouraged poor nations to draw up their own blueprints for poverty reduction through a process of national consultation. Being self-generated, it is hoped these strategies will better engage poor nations' poverty efforts and provide a guide for development aid from the World Bank and wealthy nations (IMF 2004:3).

Just as with the Millennium Development Goals, however, the initial attempts at poverty reduction strategies have taken little note of the centrality of ecosystems in the lives of the poor and the need to enhance the ability of the poor to govern them as sustainable sources of income. For example, a survey of initial PRSPs in 11 West African nations showed that they paid little attention to the small-scale fishing sector, even though this sector provides one of the major sources of livelihoods for the poor in the region and is faced with a declining resource base (FAO 2002:iv). More generally, analysis has shown that environmental concerns are often poorly mainstreamed in PRSPs.

This is beginning to change as PRSPs mature from draft to final versions (Bojö et al. 2004:xii). For example, Cambodia's

poverty plan emphasizes the importance of increasing environmental income through community forestry and small-scale fisheries management, as well as better market access for small farmers (Cambodia PRSP 2002:53, 60-61). Still, few PRSPs contain quantified, time-bound targets for improved environmental conditions or better resource management (Bojö et al. 2004:xii).

Since PRSPs provide a national roadmap to poverty reduction, it is particularly important that they do a better job of highlighting the role of natural resources in rural development and prioritizing the need to strengthen local capacity to manage ecosystems. This means they must grapple with the issue of how best to devolve control over natural resources to local communities in a way that empowers the poor rather than simply transferring power to local elites. PRSPs must also adopt a long-term perspective that identifies lasting poverty reduction with sustainability, rather than focusing totally on short-term economic growth. Typically, PRSPs do not reflect long-term strategic thinking about the environment (Bojö and Reddy 2003:1, 9) or the consequences of possible environmental change from climate instability, land use change, pollution, population, or other forces.

From Vulnerability to Wealth

Progress on incorporating ecosystems and governance into the Millennium Development Goals and the PRSP process is only a first step in the effort to make the environment a way out of poverty, rather than another source of vulnerability for the poor. Completing this transition will require much more. It will demand local institutions that are accessible to the poor and empowered to manage local ecosystems; secure tenure that gives the poor a legal stake in good resource management; and viable models to commercialize nature-based products and services, including access to credit, transportation, and marketing savvy. And it will demand scientific guidance and technical help to optimize ecosystem management at low cost, and to ensure that local uses of nature do not threaten ecosystems at larger geographical scales and are consistent with national environmental goals. Facilitating this must be pro-poor political change that increases the accountability of government officials and service providers to the poor, and recognizes the potential role of the poor in national economic growth.

The chapters that follow expand on these themes, providing examples of the vital role that nature can play in poverty alleviation if governance, economic, and management factors are aligned. In doing so, it shows how both social and environmental goals depend on each other for their achievement and must be pursued simultaneously. *World Resources 2005: The Wealth of the Poor* is not only an exploration of the power of nature to provide sustainable livelihoods and support rural growth that increases the incomes and options of the poor. It is equally an exploration of the power of nature as a means toward democratic change and greater social equity.

BOX 1.4 POVERTY AND GOVERNANCE IN A GLOBAL FRAME

MANY OF THE OBSTACLES THE POOR FACE IN turning their natural assets into wealth manifest themselves at the local and national levels. But these governance and economic obstacles often have their roots in policies and practices at the global level. The arenas of international trade, development aid, and international finance and investment influence global poverty trends, in as much as they influence the broad economic and political setting that poor people find themselves in.

Over the past five years, the controversy over the benefits and dangers of globalization has highlighted the power of international policies to affect poverty. This influence can be positive: inflows of capital, goods, and services to developing countries exceeded US$2.5 trillion in 2003 (World Bank 2005). Several East Asian countries like China, Korea, and Taiwan have used export-oriented trade to spur the economic growth that helped many of their citizens escape poverty. China has also attracted large quantities of foreign direct investment, another growth accelerant. Remittances that immigrants to industrialized countries send back home provide a vital source of funds for many developing nations. In addition, industrialized countries provide significant amounts of technical assistance and foreign aid to developing countries—more than US$76 billion in 2003 (World Bank 2005).

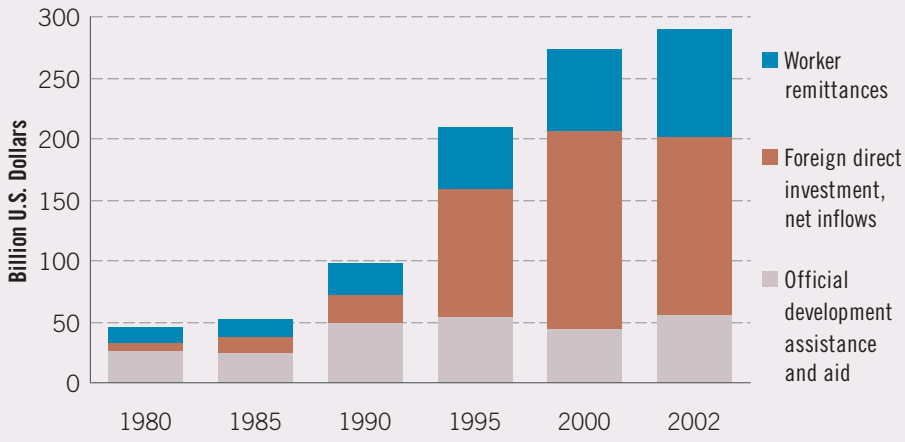
But the fact remains that just as national power is generally controlled by a limited group of powerful individuals and companies, international economics and politics are also dominated by a limited group of wealthier countries. Even when benefits to poor countries do occur, they tend to be restricted to a few countries with the ability to compete in the global marketplace. In 2003 only ten percent of all exports from developing countries originated in the 61 nations classified as "Low Income" by the World Bank (World Bank 2005).

The resulting inequality in global power can exacerbate the causes of rural poverty, dampen growth in developing nation economies, or encourage models of development that may be less effective at reducing poverty. This is why decisions made in industrialized countries are the focus of so much attention in the worldwide debate over poverty reduction.

RICH COUNTRIES DOMINATE GLOBAL EXPORTS

Source: World Bank 2005

FINANCIAL FLOWS TO DEVELOPING COUNTRIES, 1980-2002

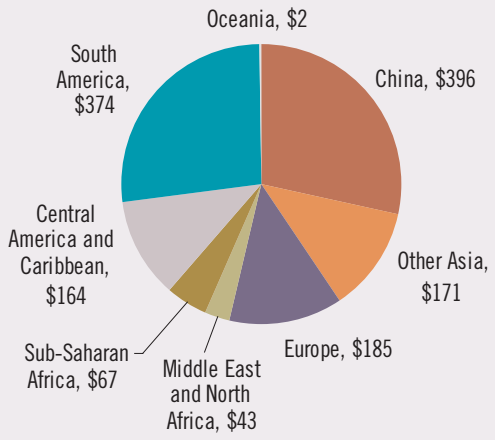


Source: World Bank 2005

Capital inflows can act as a growth accelerant to developing economies. They typically take one of three forms: (1) Official aid includes grant and loans by governments and international institutions to developing countries to promote economic development and welfare; (2) foreign direct investment (FDI) is private investment in a foreign economy to obtain an ownership interest in an enterprise; (3) Worker's remittances include the transfer of earned wages by migrant workers to their home country.

FOREIGN DIRECT INVESTMENT IN LOW- AND MIDDLE-INCOME COUNTRIES, 1993-2002

Total Investment in Billion US Dollars



Source: World Bank 2005

The Effects of Private Investment Are Mixed

Foreign direct investment (FDI)—the acquisition of an ownership interest in a private enterprise—became the dominant route for money flowing from rich to poor countries after the liberalization of global financial markets in the 1970s (Oxfam 2002:11, 15). In 2002 the overseas investments of 64,000 corporations supported 53 million jobs worldwide (UNCTAD 2003:4).

Private investment does not necessarily benefit the poor, however. In the past decade, 80 percent of the private investment in developing countries has gone to just 15 countries—and they are not the world's poorest countries (World Bank 2005). In 2003, for example, the 50 least-developed countries received only 4 percent of private investment to developing countries (UNCTAD 2004:48; World Bank 2005). The investment environment in poor countries is often unattractive, for they lack the economic stability, coherent legal system, and physical infrastructure that investors seek.

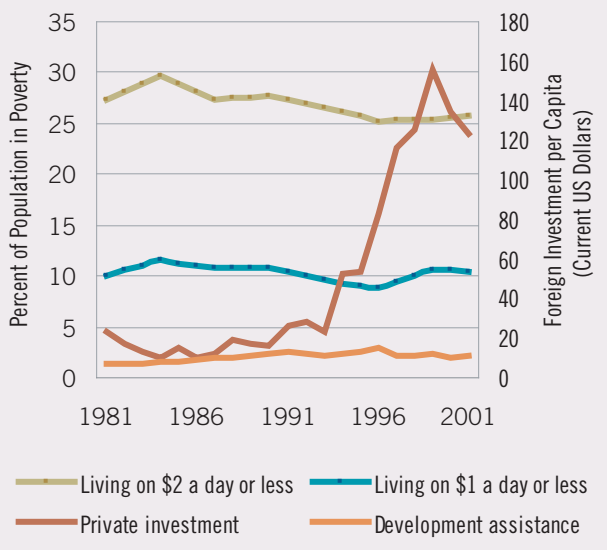
In addition, FDI is typically channeled into infrastructure and larger-scale investments, rather than small or medium-scale enterprises that might benefit the poor. Thus FDI investments may help the poor in the long term, but have not been proven to reduce poverty in the near term. In Latin America, foreign private investment has increased sixfold since 1981 due to expansion in the oil, gas, timber, water, and mining sectors. However, the percentage of the population living below the poverty line has not changed significantly, and the absolute number of poor people in Latin America actually increased from 200 million in 1990 to 225 million in 2003 (World Bank 2004; FAO 2004).

Private investment can help developing nations acquire capital to fund domestic projects, receive new technology and skills, and improve productivity. Without proper regulations, however, it can also increase economic volatility if investors lose interest and pull out. Economic volatility has historically hurt the poor. Since the 1970s, wages have declined in developing countries during economic contractions without expanding to previous levels during periods of growth. An analysis of 32 developing countries experiencing currency crises shows a total wage loss of $545 billion between 1980 and 1998; subsequent recoveries only offset about one-third of this loss (Oxfam 2002:33-36).

International Aid Can Miss Its Target

The international community plays an important role in providing technical and financial support to developing countries. From 1998 to 2003, official development assistance increased by more than one-third, to US$76 billion (World Bank 2005). There has been a concerted effort by donors in the last decade to focus more on poverty reduction in the broadest sense, and most aid agencies are now actively working to support the Millennium Development Goals (MDGs).

TRENDS IN INVESTMENT AND POVERTY RATES, LATIN AMERICA AND THE CARIBBEAN, 1981-2001



Source: World Bank 2004, 2005

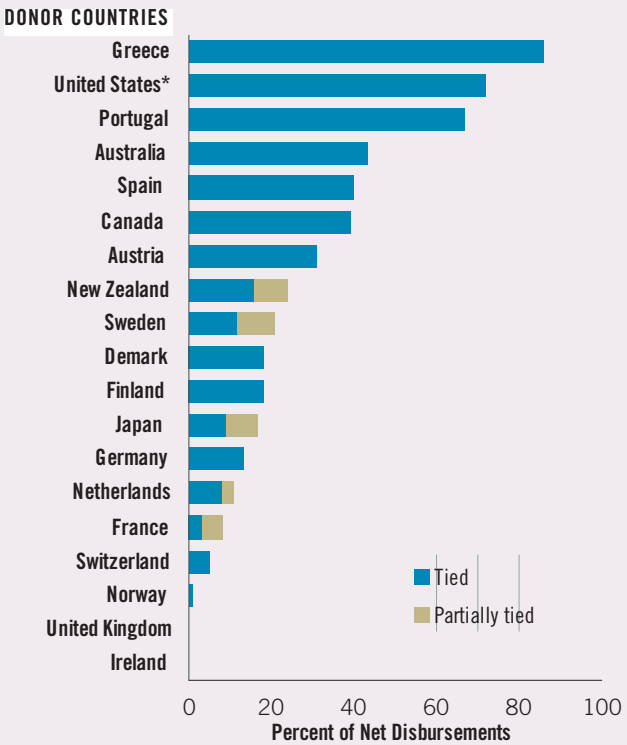
BOX 1.4 POVERTY AND GOVERNANCE IN A GLOBAL FRAME

Accompanying this move towards a greater poverty focus has been a shift by donors away from funding individual projects and toward more programmatic support. While this is a welcome development, many countries still formally "tie" their aid, requiring it to be used to purchase goods or professional services from the donor country. This has been estimated to reduce aid effectiveness by roughly 25 percent compared to untied aid (World Bank 2005).

Technical assistance (TA) is earmarked in many aid packages to provide countries with the knowledge to utilize aid effectively; in 2003 it accounted for more than 25 percent of all aid transfers. While TA can build capacity in developed countries, it can also divert much-needed funds away from their intended recipients. For example, records from the United Kingdom Department for International Development reveal that the 34 largest recipients of its TA contracts are private firms in developed countries (Greenhill and Watt 2005:22).

There has been an ongoing international campaign to reduce the debt that many low-income countries have accumulated over the years. Some debt relief has been forthcoming, but many argue that more is needed (UNDP 2003:14-15, 49). Advocates of development assistance worry, however, that aid agencies measure debt relief in a way that exaggerates its importance relative to other types of aid, since it does not represent actual monetary transfers to a country or contribute directly to poverty reduction (Greenhill and Watt 2005:20).

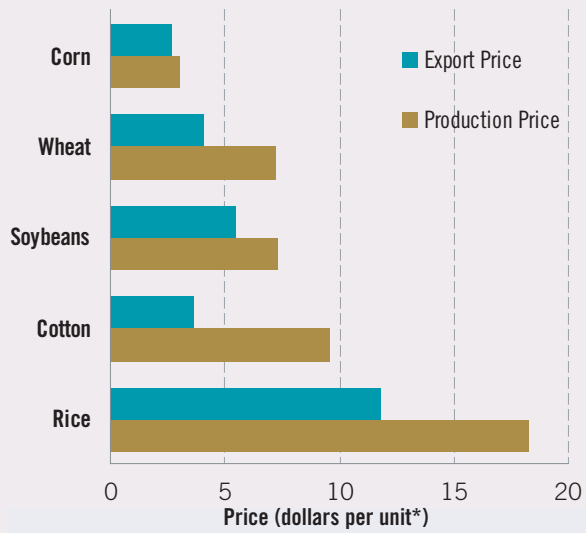
CONDITIONALITY OF DEVELOPMENT AID, 2002



* Data are from 1996.

Source: United Nations Millennium Project 2004

U.S. AGRICULTURAL PRICE SUPPORTS, 2002



*Corn, wheat, soybeans: bushel; cotton: pound; rice: hundredweight

Source: Environmental Working Group 2005; World Bank 2005

Agricultural Trade Policy Favors Industrialized Countries

The world's existing trading system puts most developing countries at a disadvantage. Agricultural products, which make up the main exports of many developing countries, still face heavy tariffs in rich countries. It has been estimated that developing countries would gain well over US$100 billion a year from trade liberalization resulting in reduced tariffs—much more than they receive in current aid flows (Anderson 2004:14-15, 49).

At the same time, rich countries often subsidize their own farmers and the agricultural products they sell abroad. These subsidies enable the products to be sold on world markets at prices below the cost of production. Such "dumping" practices deprive developing countries of vital export markets and suppress world agricultural commodity prices (Murphy et al. 2004:2-5).

Agricultural subsidies are currently high on the agenda of the World Trade Organization (WTO), which provides a forum for

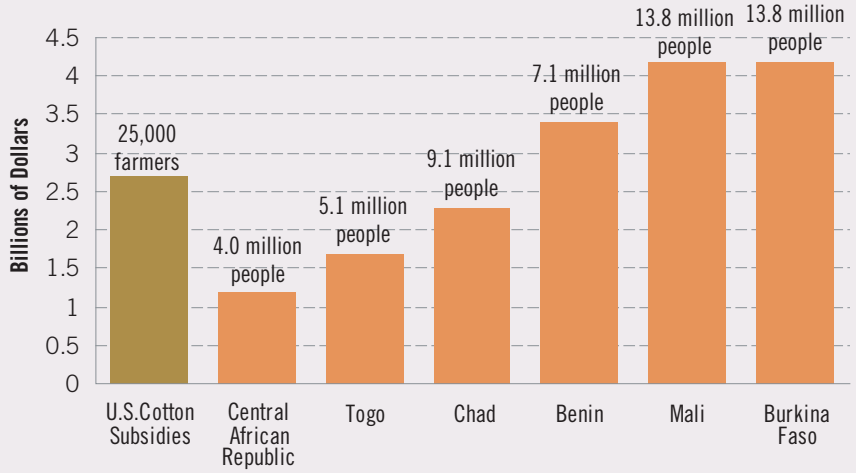
AFRICAN COUNTRIES' DEPENDENCE ON SINGLE-COMMODITY EXPORTS

		PERCENT SHARE OF		
Country	Commodity	Gross National Income	Total Merchandise Exports	Total Agricultural Exports
Malawi	Tobacco leaves	23.8	59	74
Sao Tome and Principe	Cocoa beans	16.9	69	97
Burundi	Coffee	7.2	75	83
Kenya	Tea	6.5	26	42
Guinea-Bissau	Cashew nuts	6.3	48	91
Chad	Cotton	5.7	37	71
Ethiopia	Coffee	5.4	62	69
Burkina Faso	Cotton	4.9	39	77

Source: FAO 2002

Many developing nations depend heavily on agricultural exports. These nations are susceptible to fluctuations in prices for the commodities they export, and are hurt by subsidies and dumping in these markets by developed nations.

FAIR TRADE?
U.S. COTTON SUBSIDIES AND THE GROSS DOMESTIC PRODUCT OF SELECTED COTTON-EXPORTING COUNTRIES, 2003



Source: Environmental Working Group 2005

Annual subsidies for 142,000 cotton growers in the United States have averaged $3 billion in recent years. Eighty-five percent of these subsidies go to 25,000 farmers. This is roughly comparable in size to the entire economy of some African countries dependent on cotton exports. Country populations in 2003 are shown above each bar.

negotiating global trade agreements. The WTO offers some advantages for developing countries in that each country has an equal vote, so developing countries comprise the largest group. Still, the world's largest trading nations have historically dominated the WTO's trade negotiations. That may be starting to shift, as shown by the coordinated action taken by developing nations at the WTO's meeting in Cancun in 2003, where they refused to back down from their demands (CAFOD 2003).

Nonetheless, wealthy nations continue to hold enormous trade advantages. Using export credit agencies, they invest millions of dollars each year to build markets for their own exports (Maurer 2003:13). They also pursue bilateral trade agreements with individual or small groups of developing nations. In bilateral negotiations with strong trading powers such as the United States or the European Union, developing countries have a much weaker negotiating position than at the WTO.