CHAPTER II – DIAGNOSIS OF POVERTY, GROWTH AND POVERTY REDUCTION

1. Defining Poverty and Its Locations

The MDGs embody a broad-based view of economic and human development, one in which success includes not only a rise in per capita incomes but also a reduction in non-income dimension of poverty, including improved health, education, access to basic infrastructure such as water and sanitation, and increased and equal opportunities for marginalized groups in society. The progress should accrue with full gender equity. The MDGs also recognize that successful economic development must be environmentally sustainable and built upon strategies for protecting vital ecosystems.

This broad conception of poverty is important analytically, since there is no single economic measure that captures people's living conditions or level of "human development." Household monetary income is important, to be sure, since it provides the resources that enable households to purchase consumption goods to satisfy many basic needs (especially for food, clothing, and shelter) and to invest for the future. However, lack of household income does not constitute the sole source of poverty, since many services contributing to human development are publicly provided, and can be in short supply even if private household income is adequate. Public services such as primary health care (including reproductive health), primary education, and basic infrastructure such as water, sanitation, roads, and power, can be just as important, or even more important, for living standards as monetary income. Similarly, environmental services can have a large direct effect on human well being, and often require public as well as private provision. Thus, the safety of the air and water, the reliability of the climate, the risks of flooding, and the loss of biodiversity, are problems that cannot be met by private household income alone. Thus, any proper measure of poverty must extend beyond household income, to include the provision of public services, including social services, basic infrastructure, and environmental services.

For these reasons, this report distinguishes between three forms of poverty, all of which we place under the umbrella of "human poverty": (1) income poverty, as typically defined by lack of private household income (so-called "dollar-a-day" poverty); (2) social service poverty, including the lack of public provision of education, health, water and other services; (3) environmental poverty, including the lack of, or degradation of, core environmental resources needed for human well-being.[3] This report stresses the links among all three forms of poverty, as described in more detail in the next section.

A. Where are the MDGs off-track? Where is poverty most severe?

Given the MDGs' broad conception of poverty and ambition to reduce the suffering of the world's poorest people, our first step is to outline where poverty is most severe and where the Goals are currently least likely to be met. Here we outline the countries furthest off track from achieving the goals, the countries suffering from the most severe conditions of poverty, and the sub-national regions suffering from the most severe poverty.

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[3] We note that this use of the term "human poverty" is more expansive than the typical use of the term in, for instance, Human Development Reports, where it refers to non-income poverty. Here human poverty refers to all three forms of income and non-income poverty, the latter include social service poverty and environmental poverty.

i. MDG Top Priorities

In order for the MDGs to provide a useful reference for policy, they must be evaluated at the country level (A country-level approach to the MDGs is crucial for the reasons outlined in Box II.1.). To that end, for the *Human Development Report 2003* the Millennium Project secretariat helped to identify the poorest countries making the least amount of progress towards the MDGs. The results of this exercise are presented in Map II.1, which outlines the "top priority" and "high priority" countries that need the greatest progress if they are to achieve the Goals. top priority refers to countries where levels of poverty are highest across the MDG targets and where progress is stagnant or reversing. high priority refers to the less desperate but still critical situations where countries are either not quite as poor but making little progress or just as poor as their top priority counterparts but making slightly faster progress.

To construct Map II.1, a goal-by-goal assessment was conducted to identify top priority and high priority countries for each MDG. Top priority countries are those with high levels of human poverty in 1990 and slow progress or negative results during the decade of the 1990s[4] high priority countries are those with high levels of human poverty in 1990 but slightly more progress, though still insufficient to achieve the Goal; or countries with moderate levels of poverty in 1990 but slow progress or negative results during the 1990s. For country-level Goal-by-Goal assessments the reader is referred to Chapter 2 of the HDR 2003.
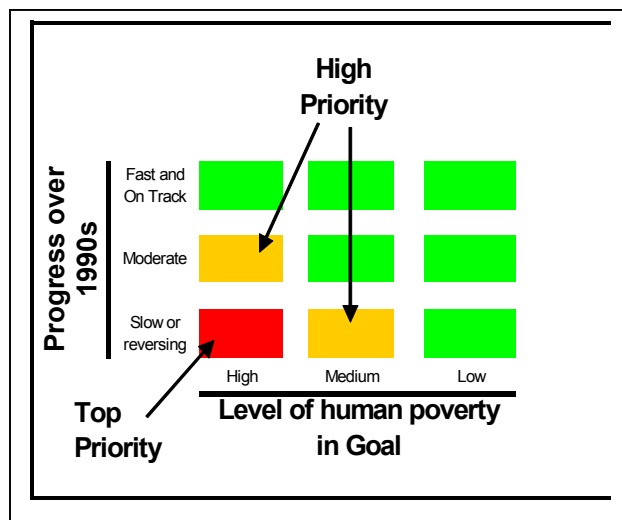
To identify the *overall* top priority countries shown in the map, we included those countries that were top priority on at least three Goals or for at least half of the Goals for which they have data, with a minimum of three data points. If data are available for only two goals, the country is top priority in both. To identify *overall* high priority countries, we counted those that do not fall into the top priority category but are top or high priority for at least three Goals, those that are top priority for two Goals, and those that are top or high priority for at least half of the Goals for which they have data, with a minimum of three data points. If data are available for only two Goals, they are top or high priority in both. Importantly, for 32 countries there were insufficient data to make reliable assessments.

Notably, of the 31 top Priority Countries – those where levels of poverty are high and from 1990 to (for most data) 2000 progress was slow or non-existent – only 4 are outside of Sub-Saharan Africa: Afghanistan, Haiti, Iraq, and Tajikistan. It is clear Sub-Saharan Africa needs to be the primary focus for urgent efforts to achieve the MDGs. Importantly, most of the countries of Sub-Saharan Africa not in the top priority grouping are included in the high priority category, which also includes India, Oman, Yemen, and geographically isolated countries in central Asia, such as

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[4] In some cases, the indicators are not precisely for the 1990-2000 period. For example, progress in the income poverty and child mortality indicators are measured across 1990-2001. Progress in the hunger indicator is measured from 1990-92 to 1998-2000.

Kazakhstan and Mongolia. Thus Map II.1 presents a clear picture of the regions where urgent action is required to achieve the MDGs.

Box II.1: Why the MDGs Need to be Country-Level Goals

Since the MDGs were first established, there has been some ambiguity regarding whether the Goals should be interpreted at the global, regional, or national level. For instance, should the headline Goal of cutting the proportion of people living on less than a dollar a day by 2015 aim to cut the proportion in half worldwide? Should it aim to cut the proportion in half by geographic region? Or should it aim to cut the proportion in half in each country? Those in favor of a global MDG interpretation suggest that this is the best way to measure progress for all of humanity, avoiding artificial averages caused by national boundaries. Meanwhile, those in favor of a regional MDG interpretation argue that it allows enough granularity to show regional variations in progress, such as the general MDG stagnation in Sub-Saharan Africa and slow progress in South Asia, without burdening developing countries with unrealistic expectations.

To be useful for policy, the MDGs can only be interpreted as country-level goals, for a number of reasons:

- First, global measures of progress do not help to guide policy. Since a third of the world's population lives in two countries, China and India, if those countries continue to sustain their current progress rates in poverty reduction then they alone will provide enough aggregate momentum for the world to achieve the Goals. While progress in China and India is to be lauded, declaring global victory through these two countries alone would amount to a betrayal of the hundreds of millions of the world's poorest people living in Sub-Saharan Africa, Latin America and the rest of Asia. It is the poor people living in places with no overall progress whom the MDGs are really meant to help.

- Second, while regional aggregates highlight conditions in particularly challenged regions such as Sub-Saharan Africa, they mask national successes and failures. Within a region, standout countries of remarkable success would gain little credit if other countries continued to see no improvements in poverty reduction. Conversely, countries making no progress would be pulled up by the success of others in their region. These issues are considerable in Sub-Saharan Africa, which has 47 countries.

- Third, measuring progress at any level of cross-country aggregation is inconsistent with the fact that intergovernmental policies are decided at the country-level. The MDGs *must* be interpreted as national goals because the international system is based on the principle of state sovereignty, with inter-governmental processes – including development assistance mechanisms such as Poverty Reduction Strategy Papers, debt relief, and trade negotiations – decided by countries. Likewise investment frameworks and priorities – including decisions to decentralize decision-making to the community level – are set nationally, so this is the level with the greatest source of traction for poverty reduction. Practically speaking, countries will only achieve the MDGs when national governments are committed to making the necessary social investments in their citizens and when they receive adequate support to do so from the international system. Moreover, aggregation is at odds with the principles of country ownership that underpin national poverty reduction strategies and the Monterrey Consensus, the latter of which stressed the responsibilities of national governments to implement good governance towards poverty reduction.

Box II.1: Why the MDGs Need to be Country-Level Goals (continued)

The concern typically voiced about country-level MDGs is that they might not reflect government priorities or that they are not "realistic" and simply too ambitious. Given the availability of applicable technologies, the commitments of rich countries to Goal 8, the commitments of all UN member nations to the MDGs in general, and the fact that we still have 12 years to reach the MDG deadline, it is too soon to discard the MDGs as country-level impossibilities. Often implicit in the world "realistic" is the suggestion that MDGs are not achievable on current trajectories. But the MDGs are explicitly aimed at breaking the current trends of poverty. Systemic change is needed, as are high aspirations. Low-income countries are often reluctant to commit to the MDGs not because they don't want to cut poverty in half by 2015 or because they don't want to reduce child mortality by two thirds, but because they don't think they will have the donors' support – in aid, trade, and debt relief – needed to achieve the Goals. Achieving the Goals will require committed actions from all sides.

Map II.1: The MDG top priority and high priority Countries
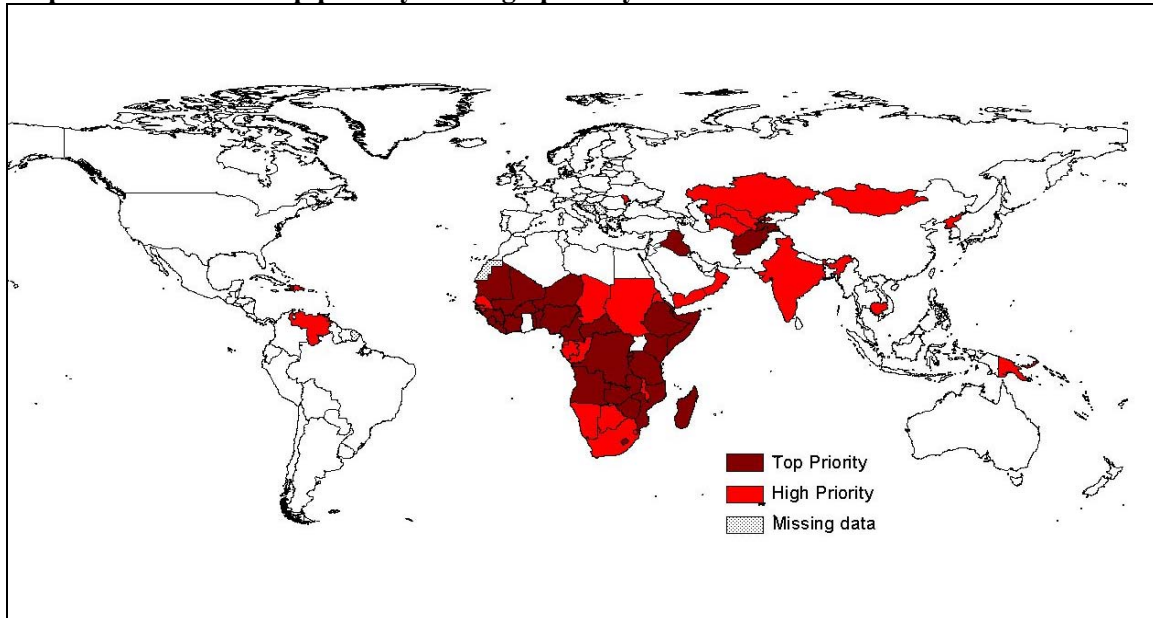
Source: excerpted from the Human Development Report 2003, p.44; prepared in collaboration with the Millennium Project secretariat.

The top priority and high priority categories should be interpreted carefully. The underlying data for individual Goals are often measured imprecisely, and some country classifications will change as data improve. Many of the countries – such as Kyrgyzstan and Pakistan – in the "other" category would probably be top or high priority countries if the underlying data were more complete. Moreover, imperfections in the data mean that many of the world's poorest places, particularly those that have suffered major downturns since 2000, are not captured. The joint emphasis on levels and changes also risks masking the places where poverty levels remain extremely high, even if some indicators have recently improved significantly. Furthermore, the national categories do not capture sub-national variations in poverty. Map II.1 does not capture, for example, the areas of extreme poverty in Central America, the Andean region of South America, or in Southeast Asia. These places need important attention of the international community as well.

ii. Countries with the Most Extreme Levels of Human Poverty
To capture the notion of human poverty from another angle, Map II.2 presents an assessment of
current *levels* of deprivation around the world. Since there is no ideal way to measure poverty, an
MDG-oriented approach needs to look at several dimensions. Therefore, to construct this map we
evaluated the following key indicators that directly affect well-being:
1. Malnutrition (children underweight for height),
2. Grain yields per hectare,
3. Access to clean water,
4. Access to sanitation services,
5. Literacy rates,
6. Primary education completion rates,
7. Gender equality in primary and secondary school, and
8. Infant mortality rates.

Importantly, we do not include any measure of income poverty in this set of indicators. We then
identified cut-off points for each indicator in order to identify countries with high average levels
of poverty in each.[5] By aggregating these indicators one can identify countries suffering from
"Extreme human poverty" and those suffering from "High human poverty." While this approach
clearly relies on discretion in identifying cut-offs and indicators to include, it does provide a sense
of which countries are the world's poorest, independent of rates of progress.

Map II.2: Countries with Extreme Human Poverty
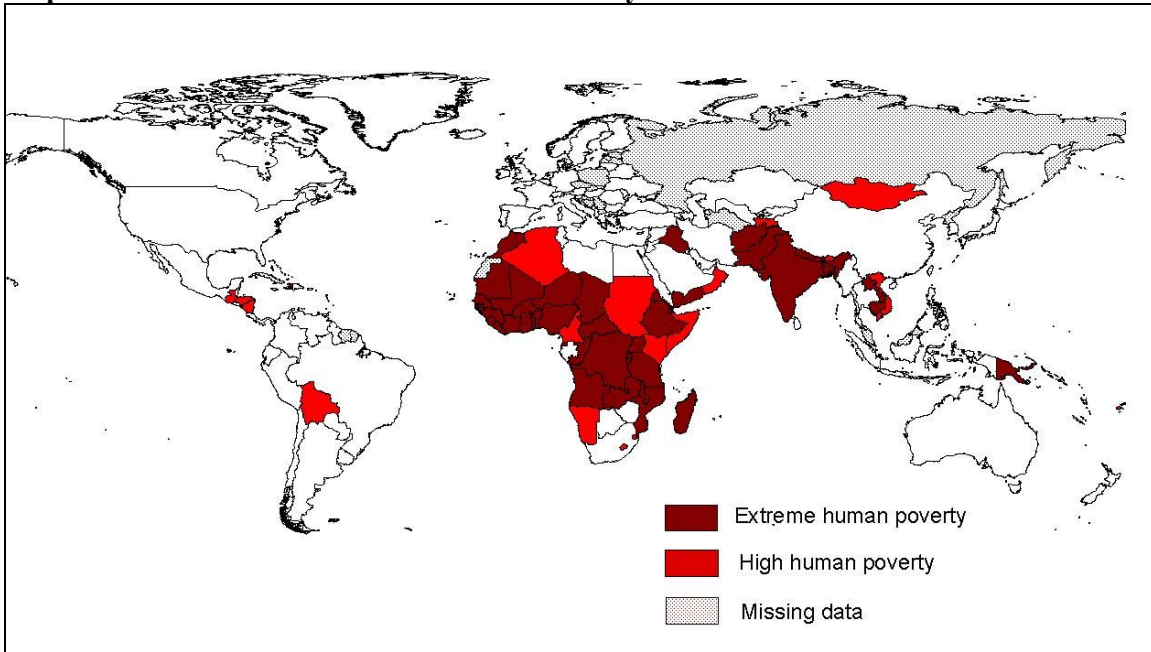
Source: World Bank, *World Development Indicators 2003*; Task Force calculations

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[5] The cut-offs used were as follows, with all data from the most recent year available in WDI 2003. (1)
Malnutrition prevalence, weight for age, in percent children under 5: 20%; (2) Cereal yield, in kg per
hectare: 1750; (3) Access to improved water source, in percent of population: 50%; (4) Access to improved
sanitation facilities, in percent of population: 50%; (5) Illiteracy rate among adults age 15 and above, in
percentage: 30%; (6) Primary education completion rate (total), in percent of relevant age group: 75%; (7)
Ratio of girls to boys in primary and secondary education: 90%; (8) Infant mortality rate, deaths per 1,000
live births: 100.

Nonetheless, the degree of overlap between Map II.1 and Map II.2 is striking. It is generally the world's poorest countries that are not making progress towards the MDGs. We return to this point in more detail in chapter III of this report. For now, it is important to note the countries shaded in Map II.2 that are *not* shaded in Map II.1, i.e., non-"Priority" countries that still have extremely high levels of human poverty. In the Central American region of Map II.2, Guatemala, Honduras and Nicaragua are all shaded gray to represent their high levels of human poverty, as is Bolivia in South America. In North Africa, Morocco is shaded in dark for its extreme poverty, while its neighbor Algeria is noted as having high overall poverty. In Sub-Saharan Africa, both Ghana and Uganda are still at levels of extreme poverty, despite their progress over the 1990s. In South Asia, Pakistan is noted for its extreme poverty and Bangladesh for its high poverty. In East Asia, Lao PDR and Papua New Guinea both suffer from extreme poverty, the latter also being a high priority for MDG progress.

It is also worth noting the countries that are shaded in Map II.1 but *not* in Map II.2. These are the places that are high priority on the MDGs because they have significant poverty levels and are not currently on track to achieve all the Goals, but their overall poverty levels are actually not as severe as those in the poorest countries. This includes the Dominican Republic, Kazakhstan, Swaziland, Uzbekistan, and Venezuela. Importantly, it also includes Botswana, South Africa, and Zimbabwe. These countries all need to make urgent progress to achieve the MDGs, but the overall extent of poverty is generally less severe than in their African neighbors.

iii. The Poorest Places, Rather than Countries
While the MDGs need to be taken seriously at the country-level, country-level measures of any indicator may be very coarse, hiding significant variations within countries. They take averages across populations of varying sizes, comparing for example an average for the 1 billion people in India to the average for the 1.5 million people in Botswana. A better set of indicators needs to provide much more granular information to show variations within countries and where communities are poor. In developing a more detailed understanding of poverty, one can begin to assess more carefully the factors – including policies, geography, and demographics – that might be causing different outcomes both within and across countries.

Developing a sub-national map of global poverty represents a host of serious technical challenges that have not yet been overcome. Most efforts to map poverty sub-nationally have focused on developing spatially-referenced income measures that can be matched with population census data. Despite major recent technical advances in this approach, it does not lend itself to comparison across countries due to country-specific differences in consumption and income measures. To that end, one of this Task Force's major research efforts so far has been to develop a new dataset and approach for measuring sub-national variations in poverty around the world. In collaboration with the Center for International Earth Science Information Networks (CIESIN) at Columbia University, the Task Force has collected and standardized data from dozens of relevant survey and census data sources around the world to develop a highly comprehensive assessment of sub-national poverty indicators.

Unlike previous approaches to poverty mapping, however, the Task Force has not looked at income or consumption poverty but has instead looked at poverty outcomes to measure "absolute poverty." Specifically, the Task Force and CIESIN have identified two core measures of human poverty that are commonly collected at a sub-national level around the world: infant mortality and malnutrition. Both of these measures are closely linked to income levels in any event (see, for example, Figure II.1 which graphs national income against infant mortality across countries), but since they do not suffer from the same issues of comparing income and consumption across countries, in many ways they provide a cleaner estimate of human poverty outcomes.[6]
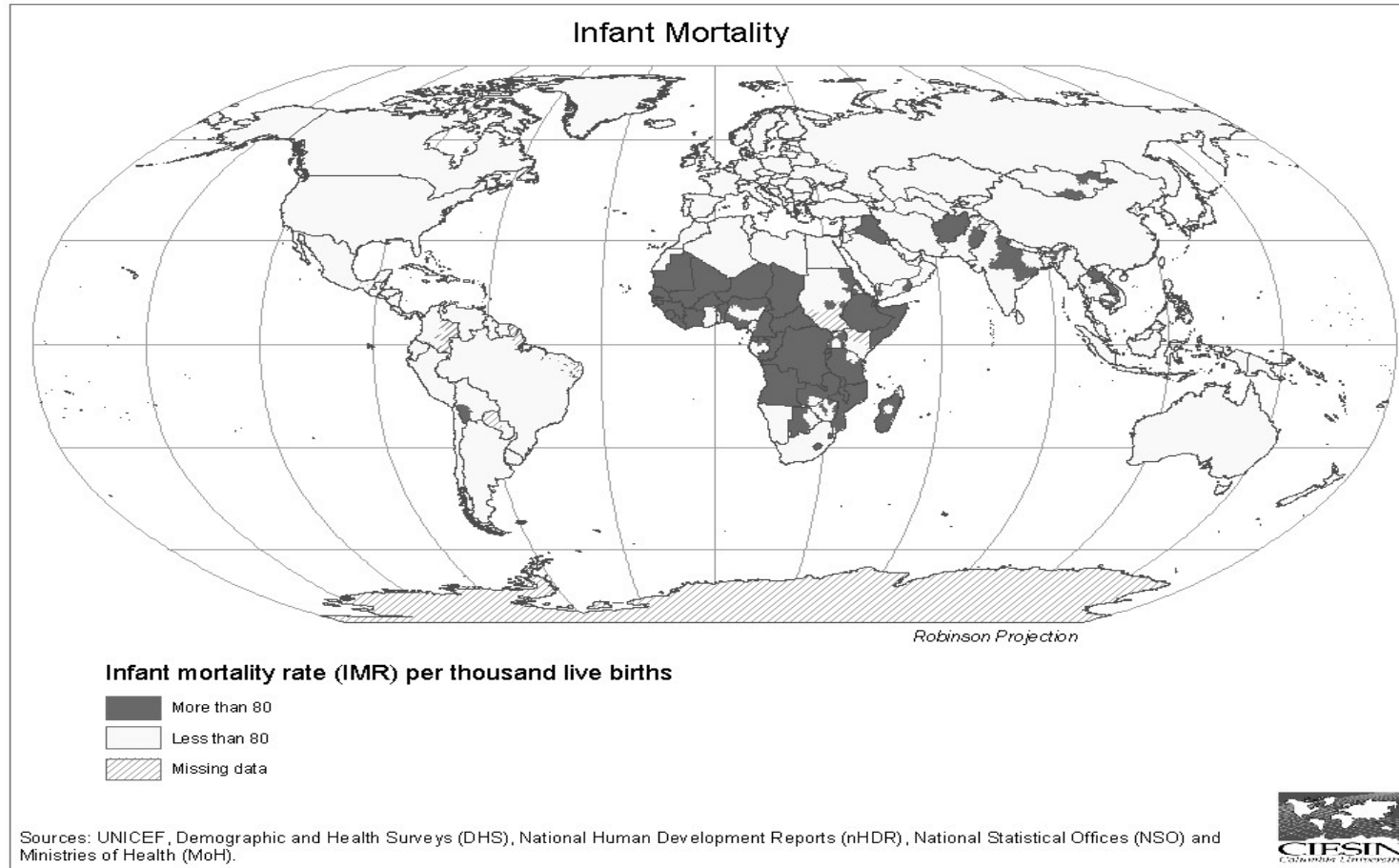

Figure II.1: Infant Mortality versus GNI per capita
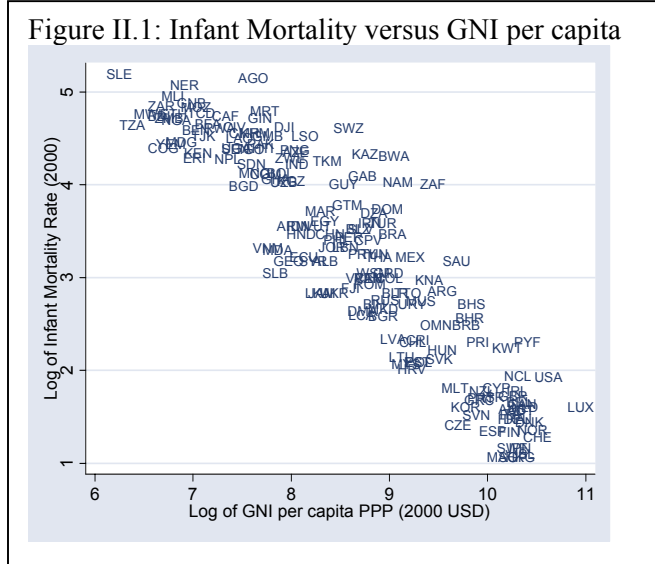
Even with the additional resolution provided by the sub-national maps, the picture of absolute poverty in Maps II.3, II.4, and II.5 below remains remarkably consistent with that of Map II.2. The infant mortality map, which is benchmarked to the year 2000, shows that most of Sub-Saharan Africa has the highest levels of infant mortality in the world (shaded regions indicate more than 80 infants dying before age one out of every 1,000 live births), along with Afghanistan, Iraq, large portions of northern India, and the southern and eastern regions of Mongolia. Notably the infant mortality levels in the southwestern corner of Bolivia are extremely high. Although Brazil has very large numbers of poor people, only a very small number of the country's easternmost districts show up for their high infant mortality levels. These literally show up as dots on the map because Brazil has some of the world's most sophisticated regional data indicators.

The sub-national malnutrition map, which is also benchmarked to approximately 2000, has even more places shaded than the infant mortality map. This partially reflects the choice of cut-off, 20 percent of children measured as underweight for age, and also partially reflects the likely anthropometric bias against south Asia that is inherent in this measure. All current hunger indicators suffer from significant weaknesses, so we do not visit that discussion here. We do, however, note that Guatemala and Honduras both show up on this map with high malnutrition rates, as does much of southeast Asia, including Indonesia and Vietnam.

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[6] These are the two indicators for which results are ready at this time. A measure of maternal education was attempted but not used in these maps due to problems with data sparseness. An estimate of persistent night-time lights in the year 2000 was also attempted as a proxy for access to electricity. Results for these and similar indicators remain experimental and should hopefully have major advances completed in time for the Task Force's final report in 2004. Locating communities with high poverty levels is valuable particularly for targeting efforts to improve social indicators which are more sharply differentiated by economic status.

Map II.3 Sub-national Infant Mortality Rate

Infant Mortality

Robinson Projection

Infant mortality rate (IMR) per thousand live births

- More than 80
- Less than 80
- Missing data

Sources: UNICEF, Demographic and Health Surveys (DHS), National Human Development Reports (nHDR), National Statistical Offices (NSO) and Ministries of Health (MoH).

CIESIN
Columbia University

Map II.4 Sub-national Malnutrition

Malnutrition

Robinson Projection

Percentage of children underweight

- More than 20
- Less than 20
- Missing data

Sources: UNICEF, Demographic and Health Surveys (DHS), African Nutrition Database Initiative (ANDI), and National Human Development Reports (nHDR).

CIESIN
Columbia University
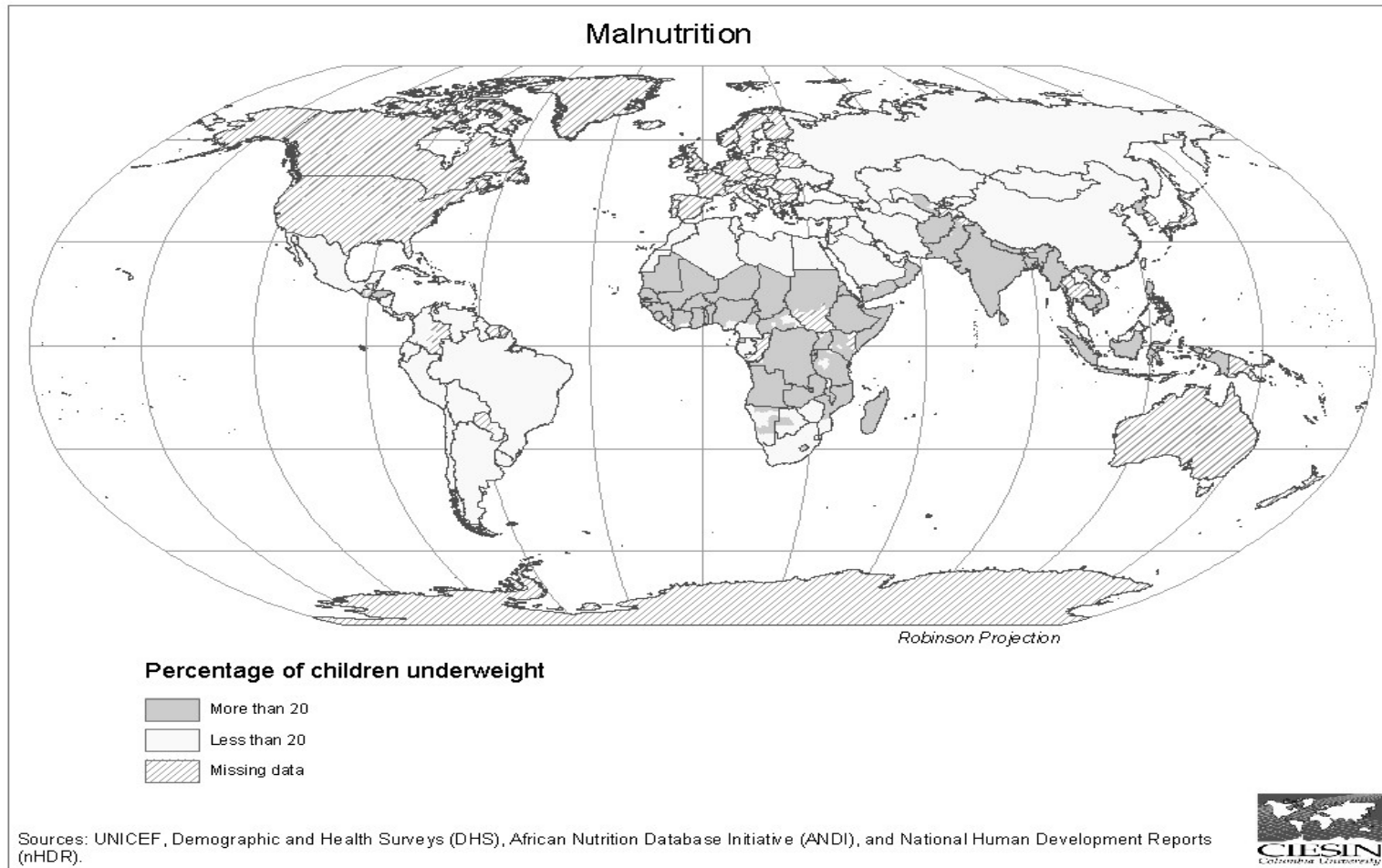
Map II.5 Sub-national Infant Mortality Rate and Malnutrition

Infant Mortality and Malnutrition

Robinson Projection

Infant mortality rate (IMR) per thousand live births and percentage of children underweight

- IMR more than 80; more than 20% underweight
- IMR more than 80; less than 20% underweight
- IMR less than 80; more than 20% underweight
- IMR less than 80; less than 20% underweight
- Missing data

Sources: UNICEF, Demographic and Health Surveys (DHS), African Nutrition Database Initiative (ANDI), National Human Development Reports (nHDR), National Statistical Offices (NSO) and Ministries of Health (MoH).

CIESIN
Columbia University

Summary

While there is variation between the specific shaded areas in Maps II.1 through II.5 and no single map should be regarded as definitive, together these maps very clearly convey where the world's human poverty is most severe and where progress is slowest. These are the places that require the most attention, support and urgent action in order to achieve the MDGs. In every map, the indicators are worst in sub-Saharan Africa, followed closely by regions in Central Asia and in South Asia, particularly India. Latin America also has countries with extreme poverty, notably Guatemala, Haiti, Honduras and sizeable parts of Bolivia. Meanwhile, several of the former Soviet countries of central Asia are struggling to make progress from low but less desperate poverty levels, and Mongolia remains persistently challenged by its poverty.

2. The Nature of Poverty Reduction

The maps above outlined two fundamental points that underscore the rest of this report. The poorest places in the world are geographically concentrated – in sub-Saharan Africa, in central and south Asia, and in certain parts of central and Latin America. Second, the very poorest places in the world are systematically not making progress in poverty reduction. This section aims to explain why poverty is so concentrated in these regions, and why so many places are stuck without real progress.

A. The Core Role of Economic Growth in Poverty Reduction

Economic growth is necessary to reduce human poverty and to achieve the Millennium Development Goals. This is for two reasons. First, economic growth is a direct input into the alleviation of income poverty. Only through overall economic growth can an impoverished country hope to reduce sharply the proportion of households below the income poverty line of $1 per day.   Second, economic growth tends to result in increased government revenues, therefore providing critical resources for increased investments in social services, infrastructure, and environmental services.
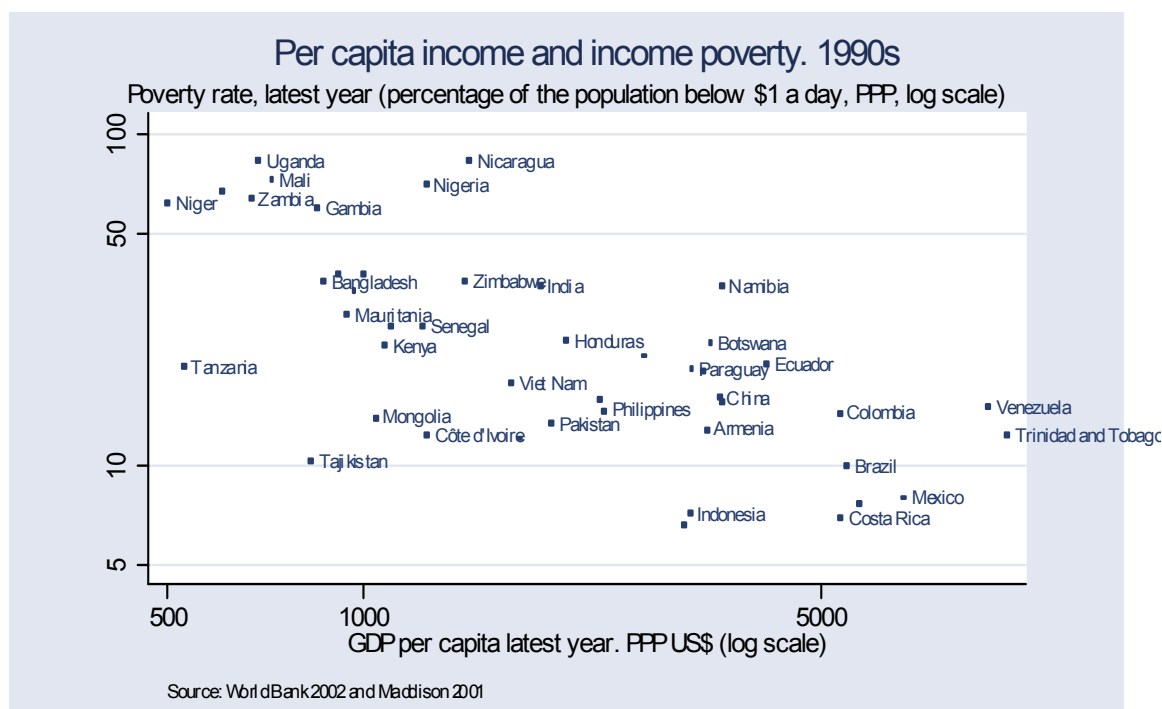
As seen in the figure above, in countries with higher incomes, a smaller proportion of people fall below the poverty line, suggesting that higher per capita income is needed to reduce poverty rates. But, importantly, countries do not fit the line perfectly, mainly because of inequalities of household income. Even though Côte d'Ivoire and Nigeria have very similar per capita incomes, Côte d'Ivoire has a much lower poverty headcount ratio because it has a more equal distribution of income. Per capita income is also closely linked with non-income poverty. Some countries (Costa Rica) have very good levels of human development for their income, while others (Nicaragua) are performing worse than others at similar levels of economic development. These differences reflect both policy choices (Costa Rica has long emphasized investments in public

education and health, while Gabon has not) and structural conditions (Gabon suffers from an extreme vulnerability to malaria transmission compared with Costa Rica). Thus the strong links between economic growth and poverty reductions are mediated both by policy choices and structural factors. Several countries with economic growth of more than 4% a year since 1990 have not advanced much in some non-income dimensions of poverty (*e.g.*, India has made little progress in reducing chronic under-nutrition).

So while economic growth is not sufficient to ensure poverty reduction, sustained economic growth is a necessary condition for sustained reductions in poverty. Thus a first question is to identify why some countries have achieved sustained economic growth in recent decades, while others have not.

B. Regions Enjoying Sustained Economic Growth

Of the world's 129 countries with at least 1 million people in 1990 and with available data for calculation, 77 saw their economies grow in per capita terms from 1980–98, but 52 saw them shrink. Map II.6 shows the regional patterns of economic growth during 1980–98 according to constant per capita GNP in purchasing-power-parity adjusted terms.[7] The growing economies include the broad regions of North America, Western Europe, Oceania, East Asia and South Asia. The declining countries are concentrated in sub-Saharan Africa, the former Soviet Union, the oil-rich Middle East, and parts of Latin America, mainly the Andes and Central America. Sub-Saharan Africa is the worst performing region in the world, with two thirds of the countries, containing three-quarters of the region's population, experiencing economic decline rather than economic growth during the period 1990-98.

Map II.6: Real GNP per capita (PPP) growth rates, 1980-98
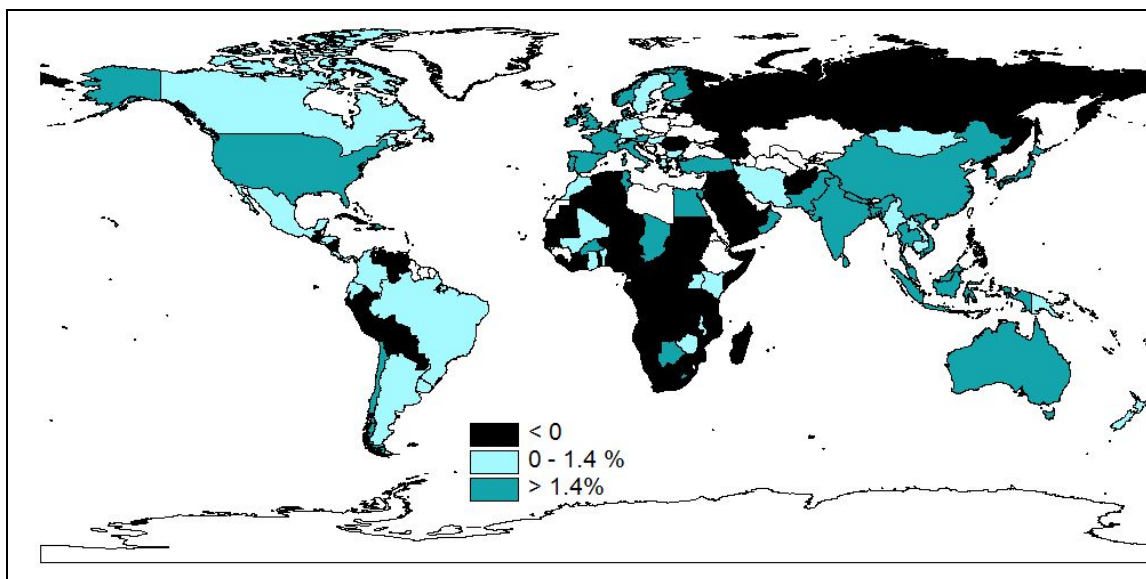
Source: Maddison (2001)

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[7] The data only cover up to 1998 because that is the most recent year for which reliable cross-country PPP measures are available. Updating the table to include GNP data for, say, 2001, would not result in a very different picture.

However, merely counting countries provides a misleading view of the tremendous reductions in world poverty around the world since 1980. Countries with large populations have tended to grow, so when economic trends are measured by numbers of people, the outcomes appear much better. Today more than 4 billion people live in countries that averaged annual real per capita GDP growth of more than 1.4% during 1980–98—including China and India, the two most populous countries.[8] This 1.4% figure provides a rough estimation of the rate of per capita economic growth required to achieve the income poverty MDG.[9]

From the viewpoint of the MDGs, approximately 1.5 billion people live in developing countries that averaged annual growth in per capita incomes of less than 0.7% during 1980–98 (that is, less than half of the indicative threshold of 1.4% per annum), including many of the poorest countries. If these countries continue to stagnate, they will not have the resources to achieve the Goals. Finding ways to achieve the Goals, especially in high-priority countries that combine widespread poverty with little or no economic growth (see chapter II), requires understanding why such countries are experiencing little or no growth while so many others are growing rapidly.

C. Why Economies Grow

While the composition of long-term determinants of economic growth forms the subject of intense debate among professional economists, two key elements of sustained modern economic growth can be identified: the Human Capital Transition and the Industrial Transition.

i. The Human Capital Transition

At the core of economic development is the rise of human capital per person. Human capital measures the productive capacities of individuals in the economy, as determined by their health, education, and labor market skills. The poorest countries face a syndrome of low human capital per person, signifying an environment of poor health and nutrition and low educational attainment. Morbidity (disease) and mortality rates are very high; life expectancy is short. In the process of development, these conditions systematically improve for the bulk of the population. Health and nutrition improve, schooling and on-the-job training increase, and morbidity and mortality rates are brought under control.

Human capital is accumulated mainly through investments in health and education, with crucial investments taking place early in a person's life. We now know that a mother's level of nutrition

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[8] Based on calculations using Maddison (2001) and World Bank, *World Development Indicators 2003*, CD-ROM.

[9] Many studies have calculated an "elasticity of poverty to average income"—the percentage decline in the headcount poverty ratio for each 1% increase in per capita income. A typical estimate in the vast econometrics literature, holding constant the distribution of income, is that the poverty rate declines by 2% for each 1% increase in average per capita income, for an elasticity of 2 (Bruno, Ravallion and Squire 1998; see also Adams 2002). This elasticity estimate suggests that cutting headcount poverty in half requires a 41% increase in per capita income. If the 41% is spread over 25 years (1990 to 2015), annual growth of 1.4% is needed. If a country must accomplish the entire 41% increase between 2003 and 2015, a much higher annual rate (2.9%) is needed. Yet even the higher rate is well within the realm of possibility for a low-income country—if preconditions for growth are in place. See: Bruno, Michael, Martin Ravallion, and Lyn Squire. 1996. "Equity and Growth in Developing Countries: Old and New Perspectives on the Policy Issues." Policy Research Working Paper 1563. World Bank, Washington, D.C. [http://www.worldbank.org/html/dec/Publications/Workpapers/wps1563-abstract.html]; Adams, Richard. 2002. "Economic Growth, Inequality and Poverty: Findings from a New Data Set." World Bank Policy Research Working Paper 2972. World Bank, Washington, DC.

during pregnancy affects her offspring's health and wellbeing during their entire lifetime. After birth, a child's lifetime productivity is likely to be determined critically by nutrition and health conditions early in life, as well as by the extent of investments made in the child's education. For these reasons, the extent to which a society invests in its children is a good indicator of its ability to rise out of extreme poverty.

One fundamental aspect of the accumulation of human capital is the demographic transition, in which a society moves from a situation of high fertility and mortality rates to a situation of low fertility and mortality rates. The transition from high to low fertility is a fundamental step in the accumulation of human capital, mainly because poor households and governments of low-income countries generally face a severe budget constraint in investing in their children. When fertility rates are high (i.e., households are having large numbers of children), then the household and the public sector generally lack the resources to invest adequately in the human capital of every child. Total investments in the human capital of the children must be spread over a large number of children, with the result that human capital investments per child are low. Moreover, it is of course typical that household investments are asymmetrical across children. Parents often invest disproportionately in their eldest child, or particularly their eldest son, leaving the remaining children with lower levels of nutrition and education, and thereby condemning them to a greatly increased likelihood of poverty. It is only when impoverished families have fewer (2-3) children that there is a significant increase in the human capital invested per child.

The tight link between the demographic transition and economic growth is suggested by comparing a global map of the Total Fertility Rate and the global map of economic growth. The Total Fertility Rate is the average number of children per woman in a society, based on the age-specific fertility rates in the population at any point of time. Aside from the special cases of the post-communist (transition) economies, almost all countries with low TFRs show positive economic growth rates, while many countries with high TFRs show negative economic growth rates. The strong association between the demographic transition and overall economic development suggests, indeed, that governments can spur poverty reduction by adopting policies to encourage the transition to lower fertility rates. Actual fertility often already exceeds desired fertility (as indicated in survey responses about intentions for recent births, desires for spacing or limitation of future births and existing levels of recourse to abortion), particularly in poor countries and families. Keeping pace with both population growth and growing demand for smaller families in poor countries will require appropriate national investments.

The TFR is itself the result of several economic, public health, cultural, and policy factors. A sound strategy of promoting the demographic transition typically requires policy actions on several fronts. According to statistical evidence as well as a vast number of studies, the TFR is determined by the following:

Child mortality rates. Countries with high child-mortality rates tend to have high TFRs. Poor households have large numbers of children in order to ensure a high probability of survival of one or more of the children. Public health interventions to reduce child mortality therefore play a vital role in reducing total fertility rates as well. Information lags must also be addressed (see Merrick 2002). Pockets of high mortality may persist longer in poor communicates and information about the changing economic benefits of different family sizes may be less immediately available. Interventions to improve access to information relevant to family size decisions can reduce the lag time to more optimal choices.

Women's literacy. Literate women are better able to plan their own fertility and have a smaller desired number of children. Illiterate women may not know the contraceptive choices available
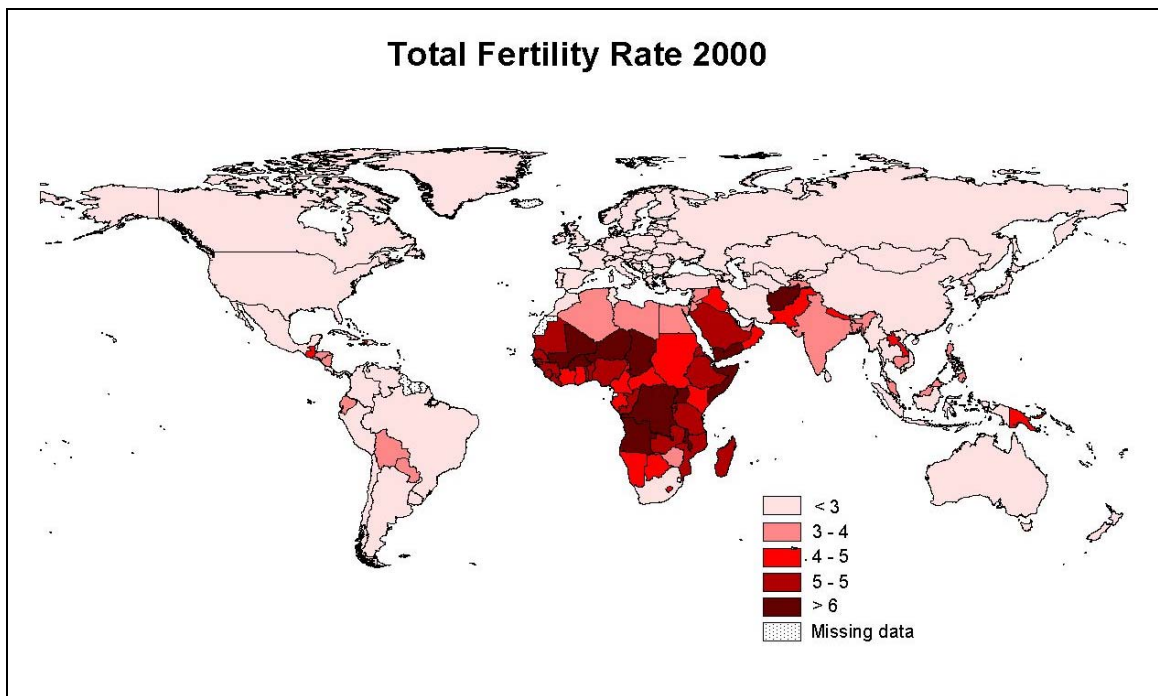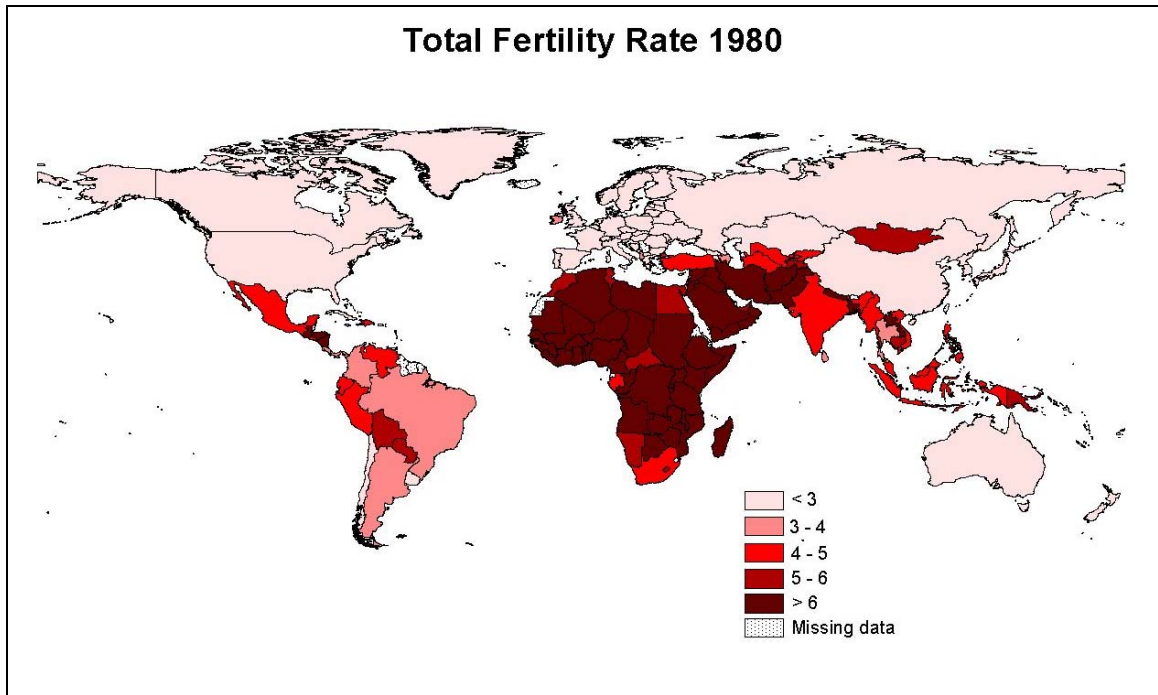
to them, or how to access family planning and reproductive health services, or may simply lack bargaining power within the household. The spread of female literacy is therefore one of the most important contributors to reduced fertility rates in poor countries.

Availability of reproductive health services. Fertility reduction depends in part on the reliable availability of contraceptives and family planning services. Direct provision of these services has therefore played an important role in many countries in speeding the transition to lower fertility rates. Service availability also facilitates birth spacing which can ameliorate intra-household allocation conflicts (even at equal family sizes), improve health and education outcomes, and allow time for information and resource accumulation to improve family welfare and aid avoidance of poverty traps. Reproductive health, as defined in the Programme of Action of the International Conference of Population and Development (UN 1995) is comprised of integrated packages for provision of family planning, safe motherhood, prevention of sexually transmitted diseases and research, data and policy formulation. In its diverse national operational implementations the broad concept of reproductive health is relevant to progress towards many MDGs.

Farm productivity. When the productivity of rural women's time is very low, children are often a net economic asset to the household. Poor children often help in farm chores, including the care of farm animals and the collection of fuel wood and water. As farm productivity rises, however, women spend more time away from the farm in peri-urban activities, and children tend to become net economic liabilities instead, as the mother's cost of supervising the children outweighs the direct economic contributions of the children. Thus, raising farm productivity (and substituting modern fuels and water supplies for traditional sources) can shift the household's preferences towards having fewer children.

Map II.7 and Map II.8: Total Fertility Rates, 1980 and 2000

Total Fertility Rate 1980

Legend:
- < 3
- 3 - 4
- 4 - 5
- 5 - 6
- > 6
- Missing data

Total Fertility Rate 2000

Legend:
- < 3
- 3 - 4
- 4 - 5
- 5 - 5
- > 6
- Missing data

<u>Promotion of women's rights</u>. Gender equity generally plays an important role in reducing total fertility rates. When women are empowered to pursue their own careers outside of the farm, they tend to choose having a fewer number of children as well. Therefore, social and economic

policies (for example, microfinance programs for women) that empower women and that protect their human rights, can play a direct role in reducing the total fertility rates as well. One of the greatest barriers to the human capital transition is the denial of basic human rights to a significant part of the population, and this applies broadly to women.

The pace of demographic transition and additional population factors (*e.g.*, distribution, migration, age structure) affect the prospects for poverty reduction in multiple and complex ways. Population operates as a scale effect with possible positive implications (*e.g.*, for market development and realization of production economies) and negative implications (*e.g.*, resource dilution, increase in absolute levels of resource needs). It also interacts dynamically, setting constraints and conditions for the diverse components of development captured by the MDGs.

In addition to the demographic transition, the human capital transition depends on scaling up the investments in health, nutrition, and education in the population. Most of these investments are publicly provided, at least for the poorest members of a society. They also have synergies among one another: improving health and education requires related interventions in schooling, family planning, health care, nutrition and water and sanitation. Controlling diarrhoea and measles not only improves health, it also reduces malnutrition. Malnutrition severely undermines a person's capacity to learn and grow, and so has important implications for education and the development of a productive workforce. But control of diarrhoea is affected by improved water and sanitation—as well as by hygienic behaviour fostered by education.

Thus, increasing the capacity of the state to manage and to finance key social investments is critical to success of the human capital transition. Our analytical findings described later put an enormous stress on one basic financial truth: many poor countries are simply too poor to mobilize sufficient resources to meet the basic social needs in the areas of health, nutrition, and education. In order for such countries to succeed in achieving the MDGs, there needs to be a significant increase in official development assistance from donors.

ii.   The Industrial Transition

Success—or failure—in economic growth is also closely linked to how an economy is integrated with global markets. Some forms of globalization help produce economic growth, but some do not. Success or failure is less related to a country's initial income than to the structure of its exports. When excluding the post-Soviet and fuel-exporting economies from the calculations, from 1980-98 middle-income countries achieved average annual growth of 1.6%, while low-income countries averaged –0.1%. But many low-income countries, including China and India, did extremely well.

A schematic of the global economy is presented in Map II.9, which divides the world into five categories of countries. First are the countries that demonstrate a high level of economic innovation, as measured by the number of patents per million population, shown in blue. These tend to be the high-income countries. Second are the manufacturing exporter developing countries, shown in green. These are the developing economies that had at least 50% of their exports in the manufacturing sector in 1995. Third are the fuel-exporting economies, shown in black. Fourth are the post-Soviet (or transition) economies, coloured in red. Fifth are the commodity (non-fuel) exporting developing countries, coloured beige on the map.

Map II.9: Countries Classified by Economic Structure
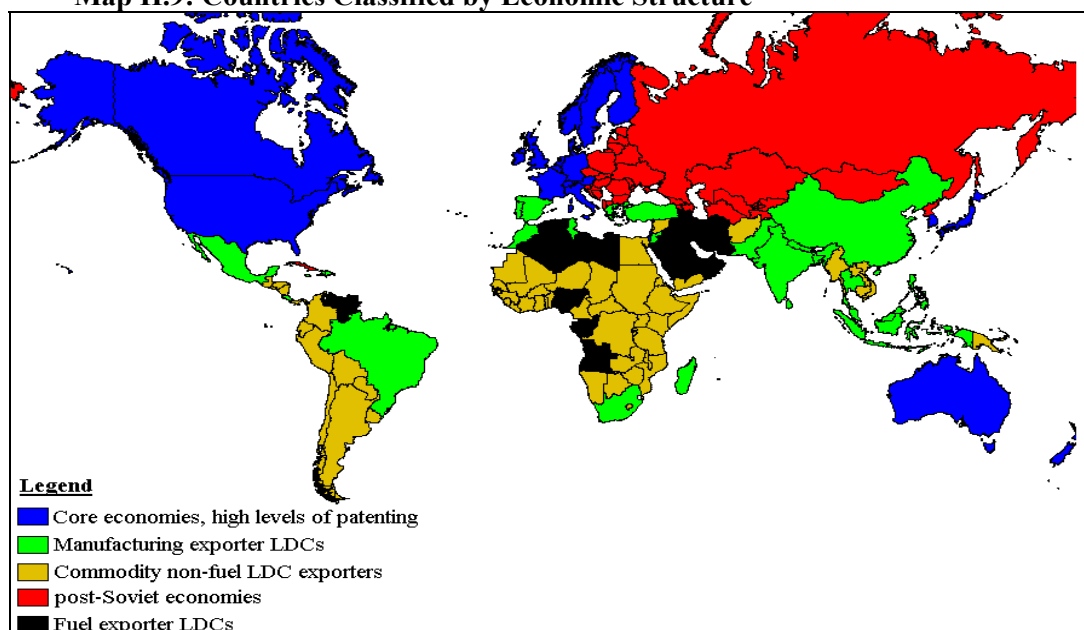
Sources: McArthur and Sachs (2002); WDI (2002); IMF (2002)

One notable element of Map II.9 is the extent to which it matches Map II.6. The darker areas in Map II.6, indicating low or negative growth, map closely to the beige (commodity-exporting), red (post-Soviet) and black (fuel-exporting) categories of Map II.9. Table II.1 breaks down the patterns of economic growth according to the same five categories. Here we see that the main problems in economic growth have come in three types of economies: the Soviet (and post-Soviet) economies that entered into economic transition in the 1990s; the oil-exporting economies, that faced a huge loss of purchasing power from their single or dominant export commodity; and the commodity exporting developing countries. Most of the commodity-exporting countries are located in sub-Saharan Africa, Latin America, and Central Asia. The innovating economies and the manufacturing exporters among the developing countries have, by and large, experienced economic growth.

Table II.1: Economic growth rates by economic structure

Group	Number of countries that grew in GDP pc (PPP) from 1980-98	Average growth in GDP pc (PPP), 1980-98
Technologically innovating economies	18 out of 18	1.7%
Soviet countries	4 out of 12	-1.7%
Fuel-exporters	2 out of 13	-1.5%
Manufacturing exporters	23 out of 24	2.7%
Commodity exporters	19 out of 41	-0.2%

Source: Maddison, Angus. 2001. *The World Economy: A Millennial Perspective.* Paris: OECD (Organization for Cooperation and Development).

These figures underscore the important link between economic structure and economic growth. The question thus becomes: what determines a country's export structure? For our purposes, it's best to put aside the post-communist economies and the fuel exporters, which are largely special

cases, and to focus on the non-fuel, non-Soviet developing countries. What has influenced whether such countries have remained primary commodity exporters, or instead have made the transition to manufacturing exporters and eventually to innovators in their own right?

Once again, there is no single answer, but rather a set of variables which condition whether countries tend to remain commodity exporters or not. The following are the most important determinants:

Trade policies. Simply put, countries that are highly protectionist in their own trade policies are unlikely to become manufacturing exporters. There are several reasons. Most importantly is that international competitiveness in manufacturing exports depends on the ability of potential exporters to buy needed inputs and capital goods at world market prices. If the potential exporting firms are unable to obtain the needed inputs from world markets, or are able to purchase them only at inflated costs (inclusive of high tariffs for example), then the firms are unlikely to achieve international competitiveness. Sachs and Warner (1995) created a measure of overall trade policy openness that is highly predictive of a country's success in becoming a manufacturing exporter.

Overall macroeconomic and business environment. International competitiveness in manufacturing depends on a business environment that is conducive to investment, whether by foreign or domestic business. When property rights are poorly defended, corruption is rampant, and policy instability is rife. In such cases, potential investors will be unwilling to commit funds to industrial projects. Similarly, when macroeconomic instability is chronic (with high inflation, or an overhang of external debt, or frequent crises in public finances), investors will be wary as well.

Geographic proximity to world markets. International competitiveness can be impeded by high transport costs, of the sort that afflict geographically remote regions (e.g. mountains, continental interiors, and remote small island economies). On the other hand, countries that are on international sea routes (e.g. Singapore), or share a border with major economies (e.g. Mexico), or that have a long coastal expanse with easy access to sea-based trade (e.g. Vietnam), are much more likely to attract export-oriented manufacturing investors.

Size of the domestic market. Many industrial sectors have important economies of scale. Such sectors require a large domestic market, or very low-cost trade proximity to world markets, in order to support a competitive industry. Similarly, some of the key infrastructure needed to support an internationally competitive industry (e.g. container port facilities, or major highways) also have important economies of scale. For this reason, industrialization is far more likely in highly populous economies, or in economies with very low transport costs to major markets. Small populations and remote economies will find it much harder to industrialize, especially on the basis of inward foreign direct investment (since potential foreign investors will shy away from these remote small markets).

Table II.2 highlights the importance of basic geography (proximity and size of markets) in recent patterns of economic growth. We expect that remote, small economies will have a much harder time sustaining economic growth than proximate, or large, economies. This is exactly what we find for the period 1980-98. We divide the non-fuel, non-Soviet economies according to population size and proximity to sea-based trade. For these purposes we consider countries to be "small" if they have a population of less than 40m in 1990. "Coastal" countries are those with more than 75% of their populations living more less 100km from the coast. The data highlight how the countries that are *both* small and non-coastal experienced negative economic growth

during 1980-98. Roughly 800 million people live in these geographically stressed economies. The table highlights the crucial fact that it was "good enough" to be either coastal or large to achieve economic growth. The worst combination is being both small and with a population far from the sea. These findings are particularly relevant for Africa, since 33 of the 53 countries counted as small and inland are located in that continent. However, the challenges of small inland economies are similar in other continents as well. Among the non-African small inland countries with data available, only 11 out of 20 grew in GDP per capita (PPP) from 1980-98.

Table II.2: Economic growth rates by population size and location

	Small Countries			Large Countries		
	Number that grew in GDP pc (PPP) from 1980-98	Average growth in GDP per capita (PPP), 1980-98	Population living in Countries that grew (1999)	Number that grew in GDP pc (PPP) from 1980-98	Average growth in GDP per capita (PPP), 1980-98	Population living in Countries that grew (1999)
Inland populations	24 out of 53	-0.2%	379m out of 799m	10 if 10	2.5%	3,087m out of 3,087m
Coastal populations	15 out of 17	1.9%	118m out of 130m	3 of 4	3.2%	341m out of 418m

Source: Maddison, Angus. 2001. *The World Economy: A Millennial Perspective*. Paris: OECD (Organization for Cooperation and Development). [http://www.theworldeconomy.org/about.htm]. March 2003.; Gallup, John, Jeffrey Sachs, and Andrew Mellinger. 2003. "Geography and Economic Development." *International Regional Science Review* 22(2):179-232.

D. Poverty Traps: When Economic Growth Fails Systematically

Sustained economic growth requires both human capital and industrial transitions, and therefore depend upon a complex set of dynamics among all the contributing factors. As an example of the links between health and economic growth, consider the average growth in per capita incomes in several dozen developing countries between 1965 and 1995, grouped by their incomes and infant mortality rates in 1965. (Infant mortality is a general proxy for overall disease levels.) In countries starting with per capita incomes below $750 (in constant 1990 PPP-adjusted dollars) and infant mortality rates above 150 per 1,000 live births, incomes grew by an average of 0.1% a year—while those with rates between 100 and 150 on average grew 1.0% a year and those with rates below 100 grew at an average rate of 3.7% a year. In countries with initial incomes of $750–1,500, those with infant mortality rates above 150 grew on average –0.7% a year, those between 100 and 150 averaged 1.1% annual growth and those below 100 3.4% annual growth (WHO 2003). Thus, even after accounting for level of initial income, countries with better health conditions were systematically more successful in achieving higher growth. Moreover, economic growth provides more resources to invest in education and health—and as noted, those investments contribute to higher growth. The maps and tables above also suggest that certain places are systematically failing to develop and pursue the conditions through which sustained economic growth can take place. These are places stuck in poverty, places where achieving the MDGs would have the greatest effect.

To understand why certain countries get stuck in poverty traps, one needs to consider a range of factors, including geography, conflict, social exclusion, disease, trade system barriers, debt overhang. Below we discuss each briefly.

i. Geography

We have already outlined that small and inland countries are more likely to become stuck at high poverty levels with slow to little progress economically or socially. This is for much the same reason as Adam Smith explained more than two centuries ago.[10] A country's ability to sustain the complex division of labour required for internationally competitive manufacturing depends on the "extent of the market". There are two ways for a country to have a large "extent of the market." The first is through a large population: countries with small populations tend to have small domestic markets. The second is through low-cost trade with world markets, recognizing that trading costs are strongly influenced by geography. Countries next to major markets (for Mexico, the United States, and for Poland, Germany) or coastal countries with easy access to low-cost ocean shipping have advantages over inland countries far from major markets or ocean ports. This is why the small inland economies face such major challenges, particularly those in Africa that are so distant from major markets.

Geographically-linked challenges can come through other forms as well. Some regions are vulnerable to climatic shocks (such as El Niño) while others are not. Some regions are vulnerable to natural disasters (earthquakes, tropical storms, volcanic eruptions, floods) while others are not. Some regions are prone to environmentally based diseases (malaria) while others are not. Some regions suffering from extreme water stress while others are not. All these geophysical constraints can weigh heavily on an economy—and require policy attention.

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[10] Adam Smith, 1776, *The Wealth of Nations.*

On the flipside, geography can be a boon as well as a bane. It is no coincidence that all the East Asian success stories of the late 20th century have access to coasts and major shipping routes—thus access to large markets can help counter the effects of small populations.

Natural resources—another manifestation of geography—can similarly provide a major boost if their financial dividends are properly managed. The best example is Botswana's diamond discoveries, where revenues invested in education and health helped a fairly tiny, landlocked country quadruple its per capita income in 25 years (though these advances have recently been hindered by a heavy HIV/AIDS burden).

While geography can pose challenges, it does not define a country's destiny. The focus on geography here highlights the need for policies tailored to each country's challenges. With proper policies even the difficulties of small markets—or poor soils, or climatic fluctuations—can be overcome. In geographically isolated countries better roads and communications can trounce many of the disadvantages of distance. In countries with small populations, integration with neighbouring countries can provide the requisite scale for markets. Moreover, rich countries can open their markets to exports from small developing countries. That is how the small or landlocked countries of Western Europe have succeeded: through the close economic integration of the European Union. If an economy is burdened by poor soils, soil nutrient supplements (through fertilizers, leguminous trees, better crop rotations and other means) are needed. And tropical diseases can be controlled through interventions such as insecticide-impregnated bednets to fight malaria. The problem is not that geophysical obstacles are insurmountable. The problem is that they are too often overlooked—and addressing them costs money.

ii. Conflict

One of the most frequently cited but weakly understood links to poverty relates to conflict. Most research shows that economic growth and wealth levels each reduce the likelihood of civil war. Figures derived from World Bank econometric models (Figure II.2) show a striking relationship between the wealth of a nation and its chances of having a civil war.[11] The figure suggests that differences in wealth are most relevant among poorer countries. A country with GDP per person of just $250 has a predicted probability of war onset (at some point over the next five years) of 15%, even if it is otherwise considered an "average" country. This probability of war reduces by half for a country with GDP of just $600 per person and is reduced by half again to below 4% for a country with income of $1250. Countries with income per person over $5000 have a less than 1% chance of experiencing civil conflicts, all else being equal.

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[11] To produce this graph I use the Collier-Hoeffler (2000) model to predict the expected probability of civil war onset conditional upon different income levels ranging from $250 to $5000. To make these predictions I hold all other variables constant at their means. The data and model used are available from Anke Hoeffler's website (icoll&hoe.zip).

Figure II.2: Probability of a New Conflict Compared to National Income Per Capita

Per Capita GDP
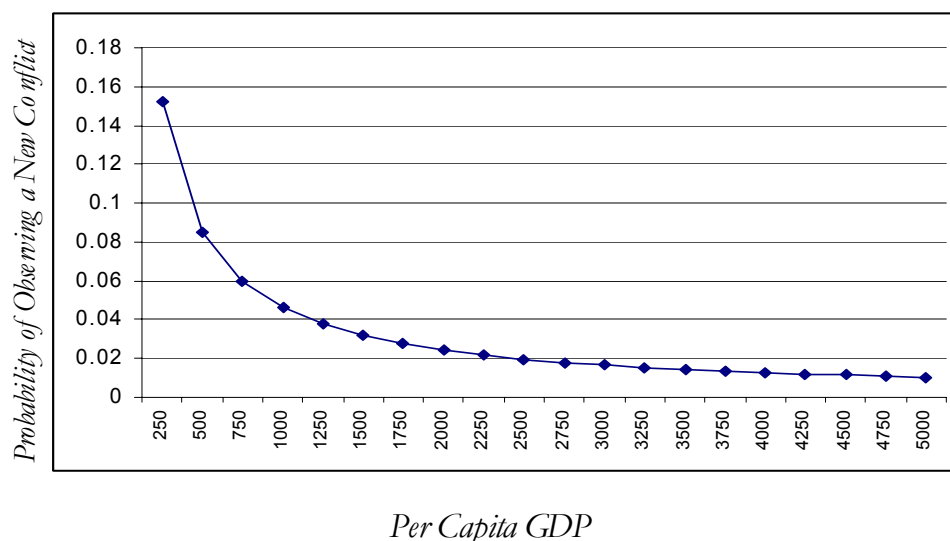
Source: Humphreys (2003), based on data and model from Collier and Hoeffler (2002)

Similar results are found in a model of genocide. That model found that poverty is a strong indicator of genocide risks: the countries most and least likely to experience instances of massive violence against ethnic or political groups at the end of the 1990s, along with indicators of per capita income are indicated in Table II.3.

Table II.3: Countries with Highest and Lowests Probabilities of Genocied or Politicide

Five Countries With Highest Predicted Probability of Genocide or Politicide			Five Countries With Lowest Predicted Probability of Genocide or Politicide		
Country	Income	Predicted Probability	Country	Income	Predicted Probability
Angola	$230	23%	Japan	$15,834	0%
Burundi	$392	9%	Italy	$13,866	0%
Rwanda	$628	6%	Austria	$17,989	0%
Uganda	$741	5%	Germany	$15,758	0%
Ethiopia	$361	3%	Switzerland	$16,261	0%

Source: *Humphreys, dependent variable from Harff (2003)*

There are various explanations for why there should be such a strong relationship between violence and poor growth performance, although research to date has done little to distinguish between them. The most common is that wealthier societies are better able to protect assets, thus making violence less attractive for would-be rebels.[12] Conversely, individuals engaged in productive economic activity may have less attraction – for economic or dispositional reasons – to the use of violence to resolve their problems. Related arguments focus on the ability of wealthier societies to engage in more effective negotiation and contract enforcement.

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[12] See for example Fearon and Laitin (2003).

Alternatively, poor economic performance may proxy for grievances and frustrations with governmental management.

Of course, the relationship between violence and poor economic performance runs in both directions. A particularly bitter consequence of violent conflict is that one episode of violence leads to greater risks for future episodes, in part through the impacts of conflict on human poverty. This produces a conflict-poverty trap: Poverty and low growth lead to a higher risk of conflict, yet conflicts in turn produce great economic costs and lower levels of growth, at least during the period of conflict. There are multiple channels through which this conflict-poverty trap operates. First, the lack of an industrial transition can link to conflict. There is some evidence that countries with weak manufacturing sectors that rely on primary commodities or natural resources are more prone to conflict. Yet conflict leads to disinvestment and the destruction of capital and increased reliance on primary commodities and natural resources. Second, conflict can be linked to lack of a human capital transition. Poor levels of human capital can lower growth and increase conflict risks, yet conflict can lead to the destruction of educational systems as well as to great losses in health through injury, maiming and the spread of diseases. Third, development policies themselves can be abandoned during conflict, when agendas are frequently abandoned, both by national governments and the international community, whose policies, if engaged at all, focus on relief.

Other, more subtle reinforcing relationships have been identified, although the evidence supporting them is weaker. One such argument is that conflict works through gender inequality: gender inequality may worsen conflict risks but conflict can also weaken women's social and political power).

iii. Misgovernance

Perhaps the most obvious factor that can lead to poverty traps is mis-governance, such as the theft of public property by those in power. The rule of law, sound property rights and public institutions all contribute to the efficient division of labor in an economy and increased returns on investments, so the absence of sound governance structure has clear implications for economic development. However, the link between governance and economic progress is far from absolute. Consider Malawi and Vietnam, for instance. Malawi actually ranks higher than Vietnam on aggregate governance measures, yet Malawi is much poorer (Kauffman et al., 2003). Not unrelated, Malawi as a low-income landlocked country has experienced general economic stagnation while Vietnam enjoys a sustained economic boom, largely since it is well located for exports along a major coastal shipping route. While governance matters for economic development, it is far from the only thing that matters.

iv. Social Exclusion

Related to misgovernance, processes of social exclusion can greatly inhibit a country's ability to grow. When income inequality is high, rich people often control the political system and simply neglect poor people, forestalling broad-based development. If governments fail to invest adequately in the health and education of their people, economic growth will not last, since economies require sufficient numbers of healthy, skilled workers. The nature of exclusion varies by country. In many places it is ethnic groups who are excluded due to long-standing rivalries. In others exclusion is structured along religious or regional lines. In many if not most, women are systematically excluded from the full benefits of social services such as health and education along with the benefits of labor market participation. Women typically suffer this exclusion amidst a high informal work burden at home and in agricultural. (See Box II.1 on the

Feminization of Poverty at the end of this chapter) Inadequate rights for women delay the human capital transition and the industrial transition.


v. Disease

Many low-income countries are burdened by endemic disease, which place enormous burdens on both countries' industrial and human capital transitions. HIV/AIDS, for instance, is now ravaging many low-income countries in Sub-Saharan Africa in particular, infecting more than 20 percent of adults in several countries. Not only does this disease affect labor forces by killing people in the otherwise most productive years of their lives, but it also places huge strains on already-poor families that need to raise orphaned children. These families, typically extremely poor to begin with, cannot afford the basic costs of nutrition, health and education that children require in order to become healthy and productive adults.

Pandemic disease can also be ecologically-based, such as malaria, which is historically the world's greatest killer, taking 1 to 3 millions lives a year, mainly children under the age of 5. This is a disease that again affects both the industrial transition and the human capital transition. In addition to lost work days due to illness, countries with high malaria prevalence tend to have populations further from the coast, partly to be at higher altitudes where the disease is less severe, thereby placing populations at greater distances from major shipping routes than they would be otherwise and raising the costs of trade. Meanwhile foreign investors avoid malarious regions, thus further limiting the chances for manufacturing exports. On the human capital side, countries with higher child mortality rates tend to have higher total fertility rates and lower levels of investment per child, so malaria has a direct negative effect on human capital accumulation.

Although many researchers have argued that malaria is like other poverty-related issues that decrease in importance with level of economic development, most do not understand the way in which the most lethal forms of malaria are linked to specific types of geographies. Map II.10 presents the results of recent research that identifies the exogenous geographic correlates of malaria transmission. Malaria is intrinsically a disease of warm environments because a key part of the life cycle of the parasite (sporogony) depends on a high ambient temperature. This is, in essence, why malaria is a disease of the tropics and the sub-tropics. Falciparum malaria requires even higher temperatures than vivax malaria. Malaria also depends on adequate conditions for mosquito breeding, mainly pools of clean water, usually due to rainfall ending up in puddles, cisterns, discarded tires, and the like. As a result, malaria has a distinct seasonality in the sub-humid tropics, where wet and dry seasons alternate, and mosquito breeding and hence malaria follows the rainy season. Additionally, the intensity of malaria transmission depends on the specific mosquito vectors that are present. All malaria is transmitted by mosquitoes of the genus anopheles. Some anopheles species, especially those in sub-Saharan Africa, show a high preference for taking their blood meals from humans (anthropophagy) as opposed to animals such as cattle. These human-biting vectors lead to much more intensive transmission of the disease.

The temperature, mosquito abundance, and vector specificity can be combined into a single measure of Malaria Ecology (ME), an ecologically-based variable that is predictive of malaria risk (Kiszewski et al., forthcoming). The basic formula for ME includes temperature, species abundance, and vector type. The underlying index is measured on a highly disaggregated sub-national level, and then is averaged for the entire country. Because ME is built upon climatological and vector conditions on a country-by-country basis, and is therefore exogenous to public health interventions and economic conditions, ME provides an ideal instrumental variable for malaria risk.

Map II.10: Global Malaria Ecology, Country-level Aggregates
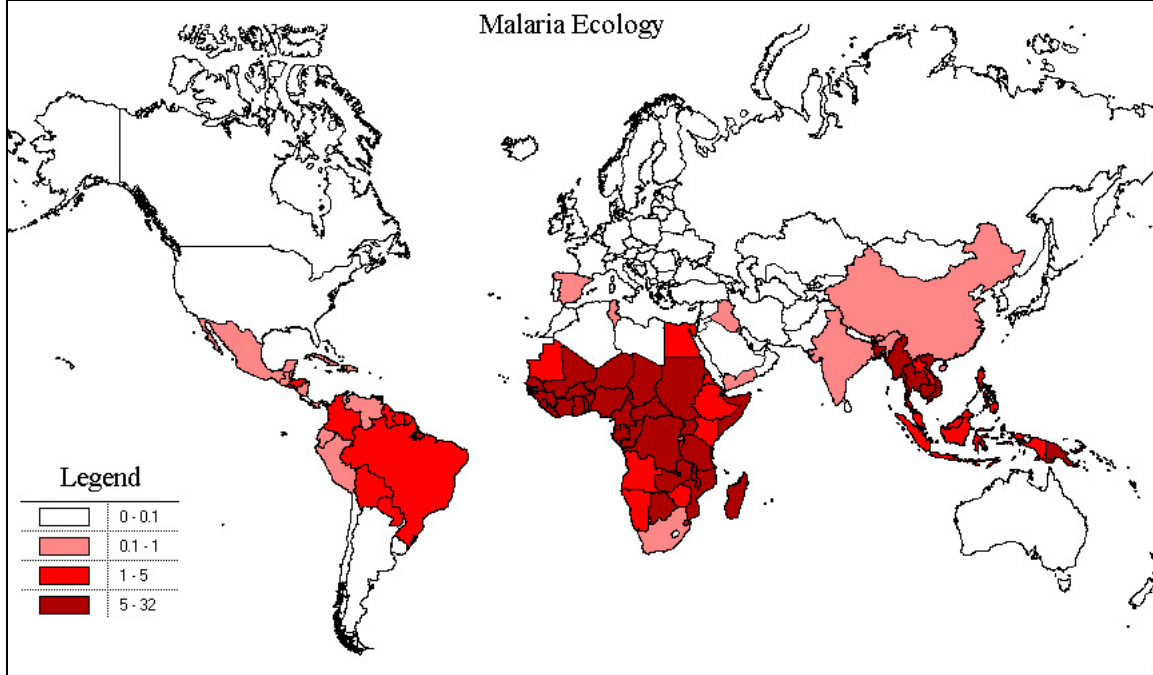
Source: Anthony Kiszewski, Jeffrey Sachs, Andrew Mellinger, Pia Malaney, Andrew Spielman, and Sonia Ehrlich."A Global Index of the Stability of Malaria Transmission Based on the Intrinsic Properties of Anopheline Mosquito Vectors," *American Journal of Tropical Medicine and Hygiene,* forthcoming.

vi. Trade System Barriers

Not all factors contributing to poverty are found at the local level. Despite dramatic increases in global trade liberalization over the past five decades, in many instances low-income countries' development is impeded by trade barriers rich countries use to protect their own markets. Unfortunately these barriers – which can take the form of tariffs, import quotas or export subsidies – tend to be imposed on exactly the products where low-income countries have a comparative advantage. The often cited reality of subsidies to European farmers of $2 a day per cow compared with 2 billion people living at less than $2 a day puts a good perspective on the issue. The low-income countries most affected by these barriers are the agricultural exporters that compete on protected world markets, such as those for cotton, sugar, and dairy products. Countries in west Africa are particularly affected by these trade constraints that present a clear barrier to economic growth. The situation is different in countries that are net food importers, such as those in east Africa. In these countries a liberalization of international trade would raise the price of important foodstuffs and have uncertain effects on domestic consumers. Barriers to manufacturing exports are also not uncommon, with many developing countries facing increasing tariff burdens for moving up the technological ladder of goods processing in their export structures.

vii. Debt

Persistent debt overhang forms another element of the international system that frequently impedes poverty reduction in low-income countries. Many of the world's poorest countries spent much of the past two decades stuck in a trap of unsustainable debt payments, where debt accumulated by previous governments or under previous economic conditions became too large

to pay after economic collapse. Amidst low savings rates, debt payment spirals have often been set in motion by fluctuations in world interest rates and commodity prices and led many low-income countries into economic crises that lead to social upheaval and prevent long-term expenditure growth in key social sectors. While debt service burdens rose, inflation-adjusted foreign assistance levels per person in the recipient countries declined. As countries entered repeated crises, debt reduction targets were set and re-set arbitrarily, rather than being based on a serious assessment of each country's needs.

Of the 60 countries that required a Paris Club restructuring of debt during 1975-96, a full two thirds were in continuing debt crisis as of early 2002 (Sachs, BPEA 2002). Only 8 countries were neither in remission nor recurrent crises at the same time: Chile, Costa Rica, Equatorial Guinea, Guatemala, Jamaica, Morocco, and Trinidad and Tobago. Notably, it was mainly the low-income rather than the middle-income countries that stayed stuck in debt crisis or debt trap. This problem of chronic debt overlaps closely with the MDG Priority countries in Map II.1: 31 of the 59 MDG top priority and high priority countries are eligible for debt relief under the Heavily Indebted Poor Countries initiative. As of September 2003, only 8 of these countries have so far reached their "completion point" of some debt relief (World Bank 2003a).

When Impediments Combine

It is important to note that some of the challenges outlined above are the product of country-level policies; some are exogenous structural challenges that can be addressed by country-level policy but require sustained effort in order to be overcome; and some are entirely out of the hands of developing country governments. It is likewise important to note that they all combine to affect different countries differently, so no one-size-fits-all explanation will be appropriate for any country. Some countries have bad governance but favorable trade geography and thus grow quickly. Others have relatively good governance but, low soil fertility, a high disease burden and no access to major markets, so they grow slowly or not at all. Some countries have adverse demographic conditions that compound the negative impacts and relations of other factors.

Nonetheless, the main reason why countries get trapped in poverty is that they have insufficient resources to overcome structural challenges and fall short of critical thresholds—in health, education and infrastructure—to achieve self-sustaining economic growth. Many of the High-Priority countries identified in this chapter fall into this category. Though good governance and sound economic policies are needed to escape the poverty trap, they are not enough. In most cases enormous structural constraints must also be overcome to reach the thresholds for sustained growth.

Thus, achieving the Millennium Development Goals in the poorest countries facing structural impediments to growth will require special investments in a wide range of sectors. Better health, education, water, sanitation, roads, ports and power are needed to reach the thresholds required for private, market-based investments. Among other things, Chad and Mali could become successful garment exporters, tourist destinations and processors of tropical agricultural products. But such activities will take off only when health, education and other key thresholds are reached. Productive investments in these sectors will require that development choices be made with an eye to their distributional impacts, so as not to reignite the north-south conflicts that have plagued both countries. In any event, because these countries are much too poor to make these investments on their own, partner countries must provide the financing for economic takeoff

Box II.1: The Feminization of Poverty

The term *feminization of poverty* refers to the differential manner in which poverty affects women. This includes the trend of increasing *incidence* as well as *severity* of women's poverty, and women's different response mechanisms to dealing with poverty. One can consider these effects through both income poverty and non-income poverty channels.

Costs of unpaid work
Poor women are frequently affected by the fact that much of their work is unpaid, and that they perform much more of this work than men. This includes household work, subsistence activities and volunteer care. While this unpaid work makes enormous contributions to households and communities, women are often adversely affected by it:

- High opportunity cost of work. Time spent on unpaid work carries a high opportunity cost, since it inhibits the opportunity to generate earnings, pursue educational opportunities, enhance skills, or engage in leisure activities. As a result, women's long-term economic outcomes are often adversely affected.

- Low health outcomes. Large unpaid work burdens often place great stress on women's outcomes. Household surveys and participatory appraisal analyses have highlighted the fact that rural women consistently cite fatigue and illness due to large work burdens.

- Inappropriate policy responses. Since unpaid work is not included in national income calculations, policy makers and planners to not consider the needs of women in national policymaking and development programming. When decision makers fail to consider the differential impact policies can have on women and men due to their different roles and responsibilities, women can suffer disproportionately.

Non-income poverty burdens on women
Many women suffer from high levels of human poverty not just because they perform so much unpaid work but also because they face additional burdens in the rest of their lives when compared to men. Some examples are outlined below:

- HIV/AIDS: The alarmingly fast increase of HIV/AIDS incidence among women around the world highlights the increasing toll this pandemic is taking on women. In 1997, 41 percent of HIV-infected adults worldwide were women. In 2002, this percentage was reported to reach 50% and even more in the poorest regions of the world. In Sub-Saharan Africa, for instance, 58% of HIV-positive adults were women in 2002 (UNAIDS 2002).

- Unequal access to education. Gender differentials in educational enrolment represent one of the main tools for measuring the feminization of poverty. The recent UNESCO report on the state of girls' education worldwide confirms the validity for addressing educational challenges in terms of women's access to capabilities (UNESCO 2003). The report shows the gender parity index of girls enrolment proportionate to boys remains particularly severe in several African countries: 0.63 in Chad and Yemen; 0.67 in Guinea-Bissau; 0.68 in Benin; 0.68 in Niger; 0.69 in Ethiopia; and 0.69 in the Central African Republic. These statistics reflect the major discrimination against girls' access to schooling that represents a major capabilities constraint for women.

- Unequal access to resources. In many countries, women are systematically denied access to basic economic and social assets. For the rural poor, land is a primary source of income; lack of ownership and inheritance right results in lack of economic independence and restricts their ability to earn incomes. In many countries women perform a majority of the agricultural work but do not possess land title.

Source: Task Force background note by Yassine Fall.