



WELCOME!

**Professors Jay Aronson, Bernardine Dias, Joe
Mertz and Rahul Tongia**

Fall 2007

Carnegie Mellon



Instructor Introductions

- Aronson and Mertz are main instructors for undergraduate version
- Dias and Tongia are main instructors for graduate version
- Yonina Cooper and Kevin Lamb are facilitating the Qatar version of the course
 - Lectures are being recorded because this course is being offered simultaneously in Qatar

Website

- All information you will need—including schedules, reading assignments, announcements, homework instructions, slides from lectures, contact information, links to outside sources—is available on the course website:

<http://techbridgeworld.org/tgd>

- **PLEASE TAKE THE TIME TO FAMILIARIZE YOURSELF WITH THE SITE THIS WEEK!!!**



Syllabus

- Can be found on the website in the “Course Details” section
- We aren’t going to spend much time going over the syllabus in class today, so please go to the website soon and familiarize yourself with the syllabus.
- **PLEASE REVIEW PLAGIARISM POLICY ON pp. 3-4**



Brief review of grading

- **Class Participation: 5%**
 - Overall participation (in class and online)
 - Assessment Assignment
- **Homework: 50%**
 - In-class debate 5%
 - HW 1: Capacity Building 15%
 - HW 2: Economics 15%
 - HW 3: Case Study 15%
- **Project: 45%**
 - Presentation 15%
 - Report 30%



Assessment Assignment

- Information from Rahul...



State of the World

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World's Challenges

- **Poverty**
 - Absolute v. relative (what is poverty in Sub-Saharan Africa? India? Eastern Europe? USA?)
- **Inequality (tremendous disparities at all levels have major consequences)**
- **AIDS, TB, Malaria and other health issues**
 - What is impact of AIDS socially and economically?
- **Environmental degradation**
- **Strained natural resources (too much consumption?)**
- **Gender and sex discrimination**
- **Tense geopolitical climate (a “clash of civilizations”?)**

What are the causes?

- Not enough aid from rich nations and global financial institutions?
- Too much aid from rich nations?
- Misused aid from rich nations?
- Corruption?
- Unfair global market rules that favor rich countries?
- Human nature? (nobody cares about the poor)
- Others ideas?

Measuring the State of the World

- How might we measure how well off we are?
 - As individuals
 - As communities
 - As nations
 - Globally

Some ideas (all have problems)

- Income
- GDP
- Economic Productivity
- Material Possessions
- Happiness
- Freedom
- Democracy
- Others?

Human Development Index

- Human Development Index developed in the 1980s by a Cambridge-educated Pakistani economist Mahbub ul Haq in order to overcome some of the pitfalls of focusing only on income or GDP

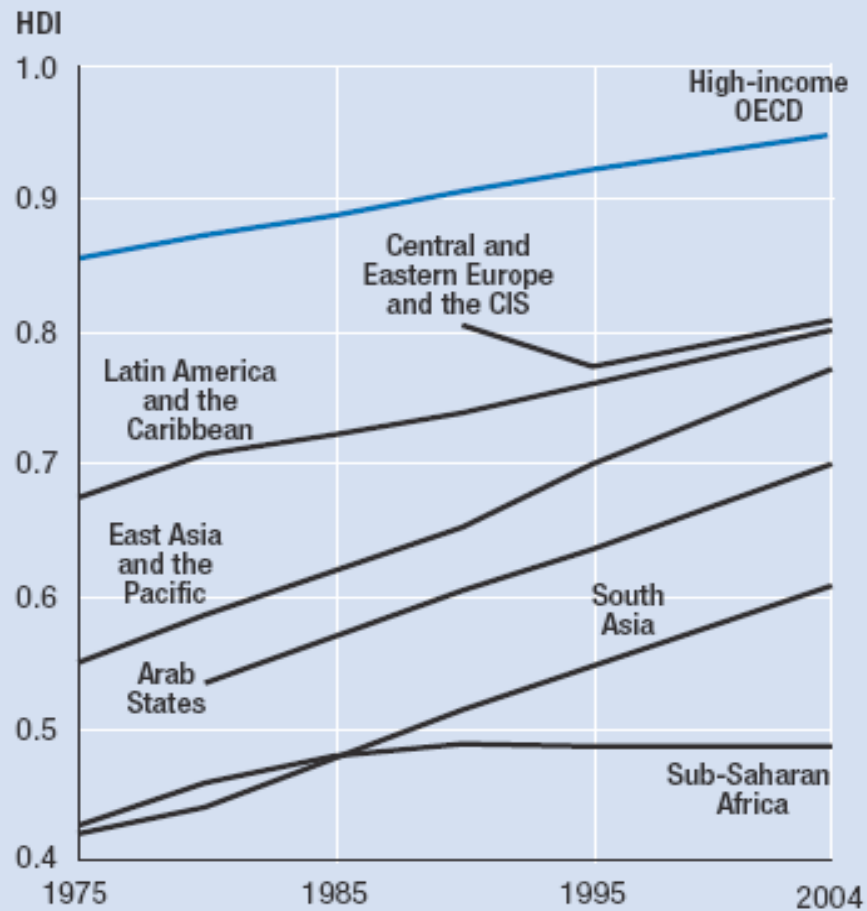
HDI, cont

- The HDI measures the average achievements in a country in three basic dimensions of human development:
 - A long and healthy life, as measured by life expectancy at birth
 - Knowledge, as measured by the adult literacy rate and the combined primary, secondary, and tertiary gross enrollment ratio
 - A decent standard of living, as measured by gross domestic product (GDP) per capita at purchasing power parity (PPP) in USD

Human Development Index

Figure 2

The human development trend—upwards but uneven



Source: Calculated based on indicator table 2.



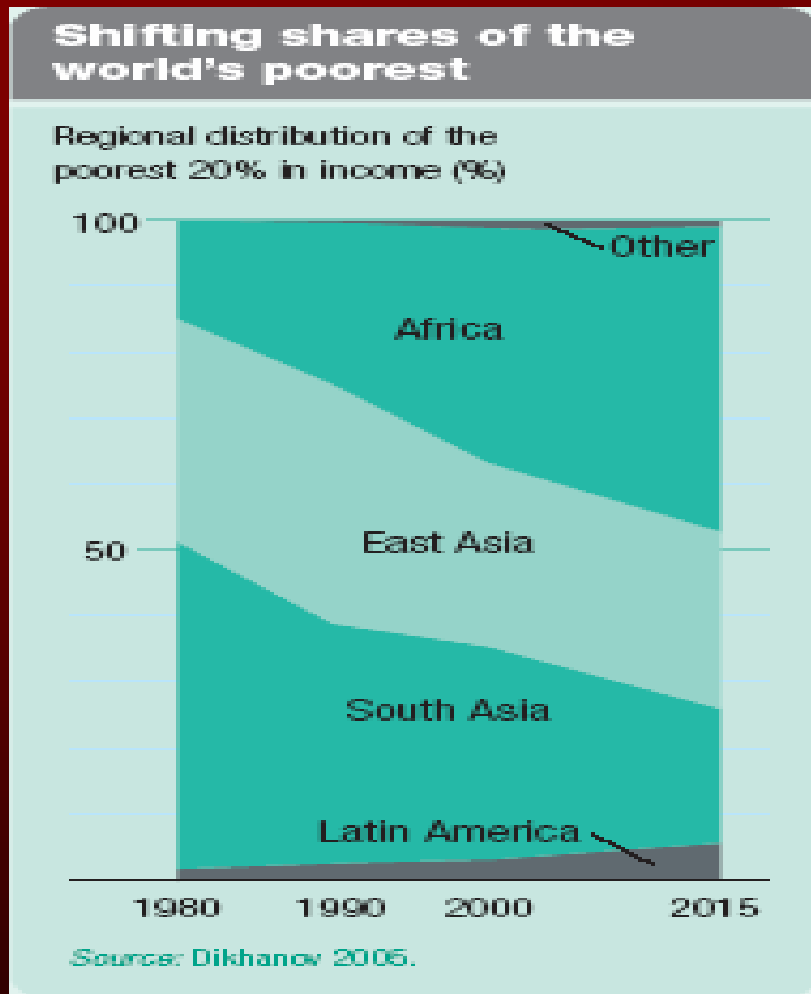
Source: HDR 2006

Uneven Progress

- Not all regions benefit equally
- Tentative progress is not always lasting
- Progress is not nearly as fast as it could be
- Tremendous variability within regions
- Too many people are still living in dire poverty:
~2.5 billion people earn less than \$2 a day (in terms of purchasing power)
- Want to know more? Visit Gapminder at:
WWW.GAPMINDER.ORG



Shifting Burdens of Poverty



- South and East Asia have made steady progress
- Latin America's share of the world's poorest is increasing
- Africa bears an increasingly large burden
- Although not shown, poverty is on the rise in Eastern and Central Europe

The Imperative

- Resources needed for human development and economic growth not always available
- Inadequate infrastructure
- Potentially useful strategies and technologies are often unknown, untested or not deployed in the developing world

Millennium Development Goals

“We will spare no effort to free our fellow men, women and children from the abject and dehumanizing conditions of extreme poverty, to which more than a billion of them are currently subjected. We are committed to making the right to development a reality for everyone and to freeing the entire human race from want.”

-- United Nations Millennium Declaration
(September 2000)

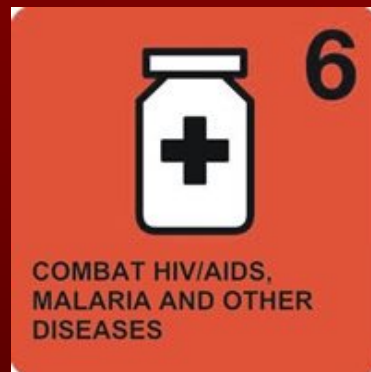


Background

- Drafted in 1999; adopted in Sept. 2000
- Designed to create measurable goals that would galvanize the global community for development
- One main reason for the creation of MGDs was realization that goals set for 2000 would not be met, so need to create a new set of goals



Millennium Development Goals



Some Critiques of MGDs

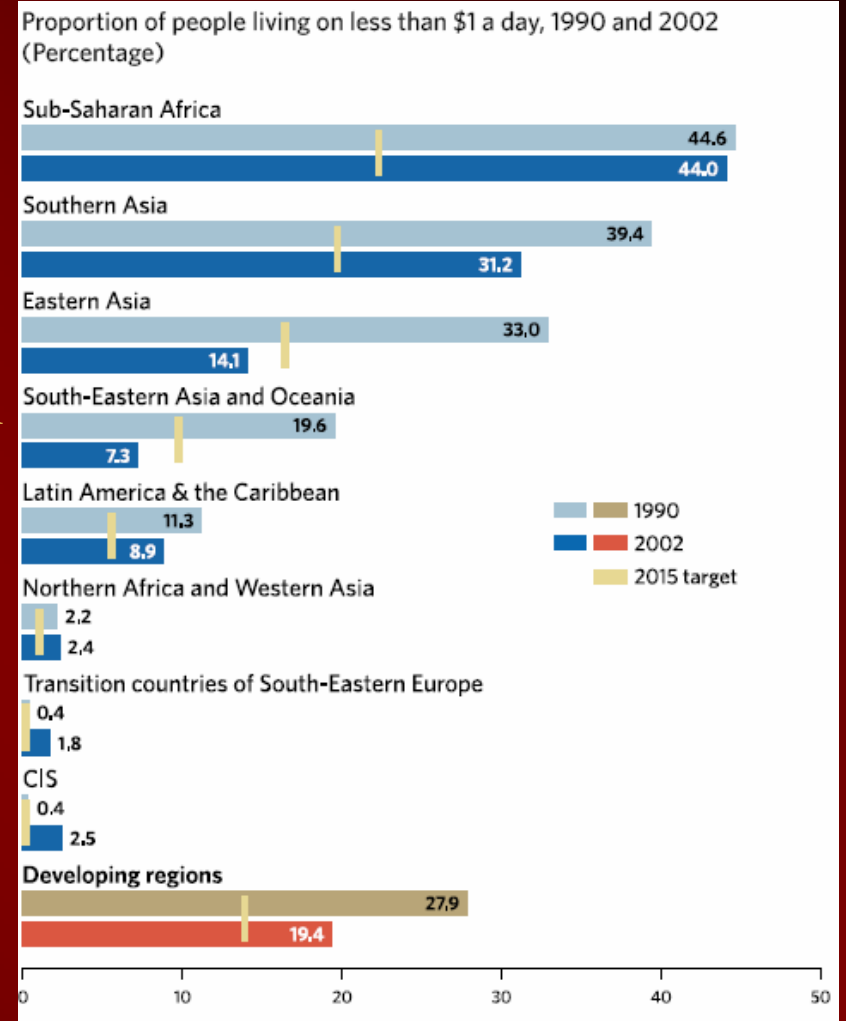
- **Top-down initiative—technocratic in nature**
- **Donors-recipient relationship unaltered**
- **Structural impediments left unchallenged**
- **Not enough data to adequately measure progress**
- **Weak attempt to address women's rights
Not enough focus on social justice/equity**
- **No solutions for environment problems**
- **Assumptions of development never addressed**



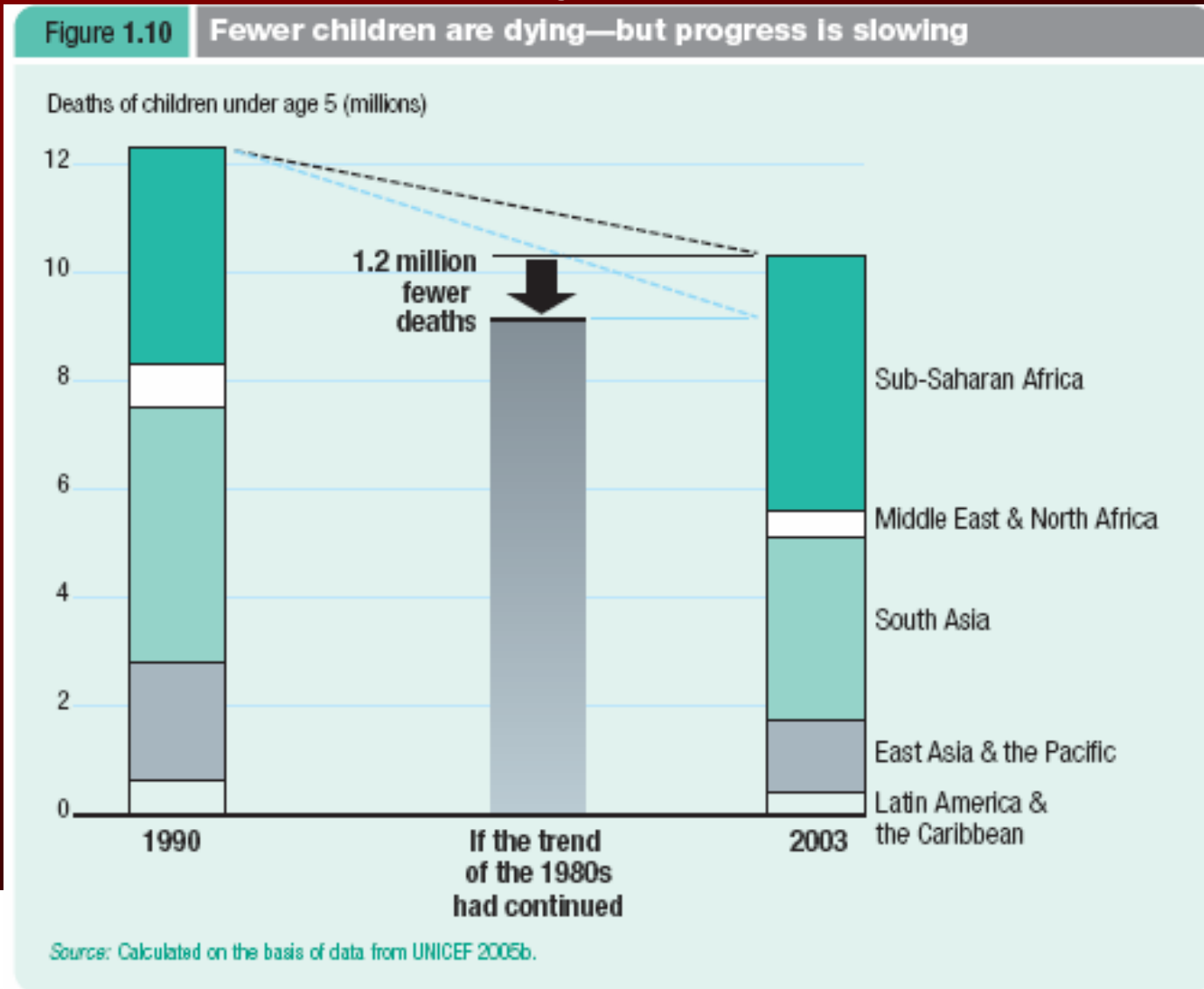
Extreme Poverty and Hunger

Halve the proportion of people living on less than one dollar per day in low and middle income economies, between 1990 and 2015 – from 29% to 14.5%

- In the 1990s, global poverty rates fell 20%, but growth was uneven
 - Asia saw a major decrease in extreme poverty
 - Sub-Saharan Africa saw little change
 - South-Eastern Europe saw a slight increase



Child Mortality Down, BUT...

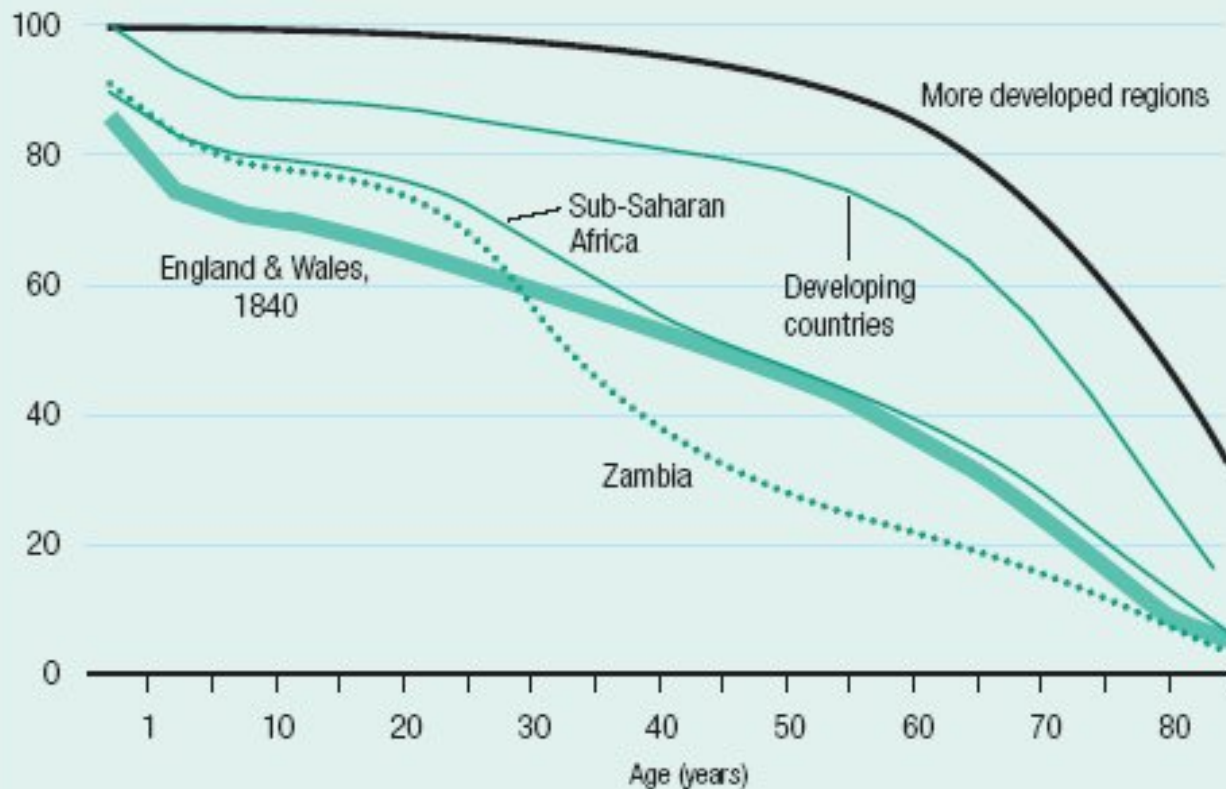


Sub-Saharan Africa Suffering

Figure 1.8

Chances of survival in Sub-Saharan Africa are not much better than in 1840s England

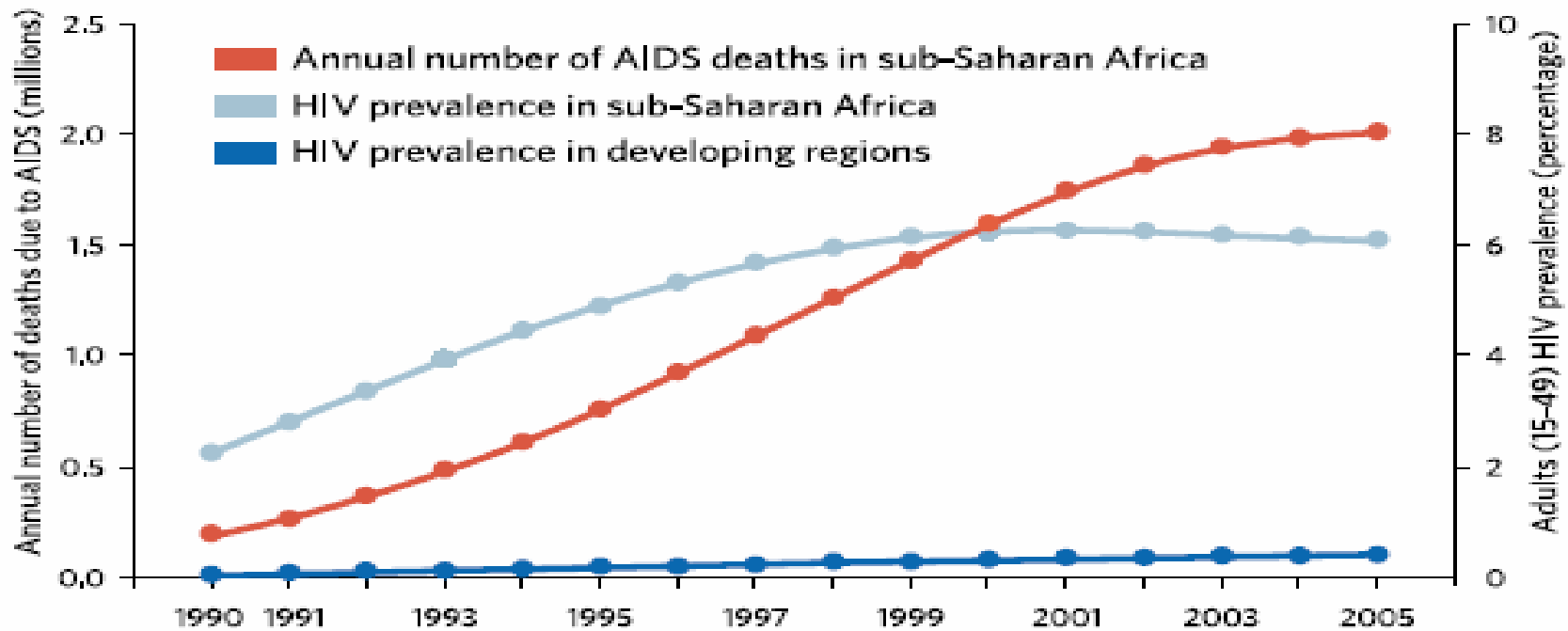
Probability at birth in 2000–05 of surviving to a certain age (%)



Source: UN 2005d and University of California, Berkeley and Max Planck Institute for Demographic Research 2005.

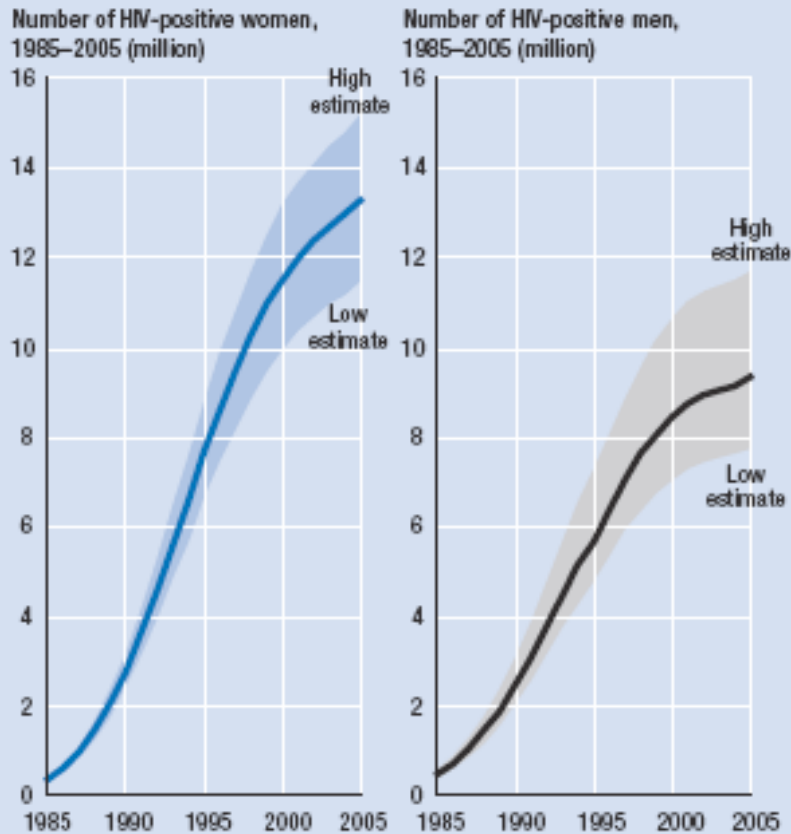
Why? HIV Prevalence

HIV prevalence in adults aged 15-49 in sub-Saharan Africa and all developing regions (Percentage) and number of AIDS deaths in sub-Saharan Africa (Millions), 1990-2005



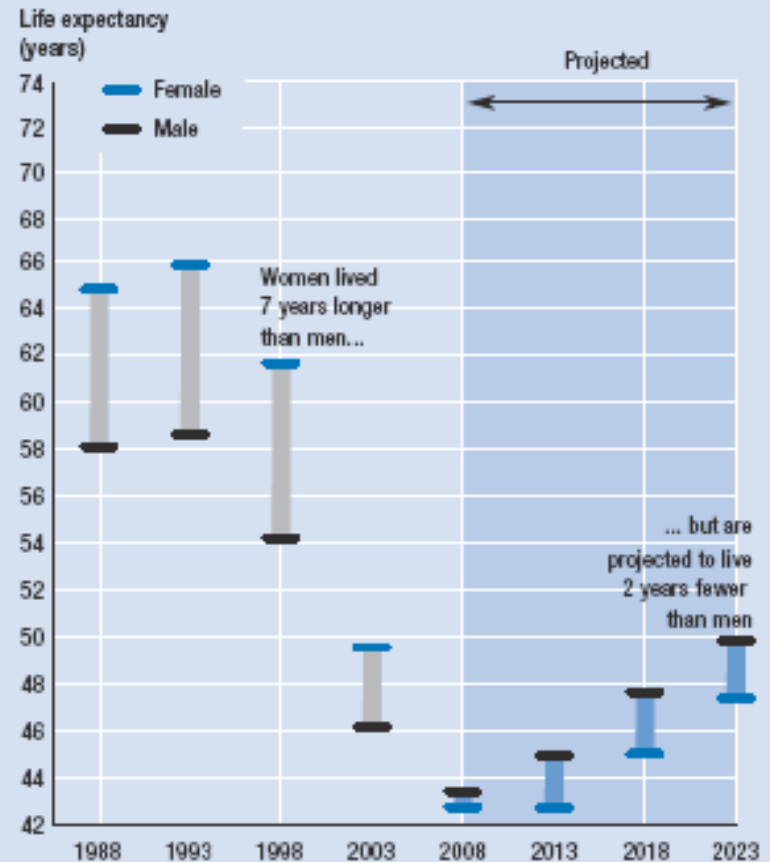
HIV burden affects women

Figure 1 Sub-Saharan Africa—an increasingly female crisis



Note: Refers to adults ages 15 and older.
Source: UNAIDS 2006.

Figure 2 Life expectancy—the great gender reversal in Southern Africa



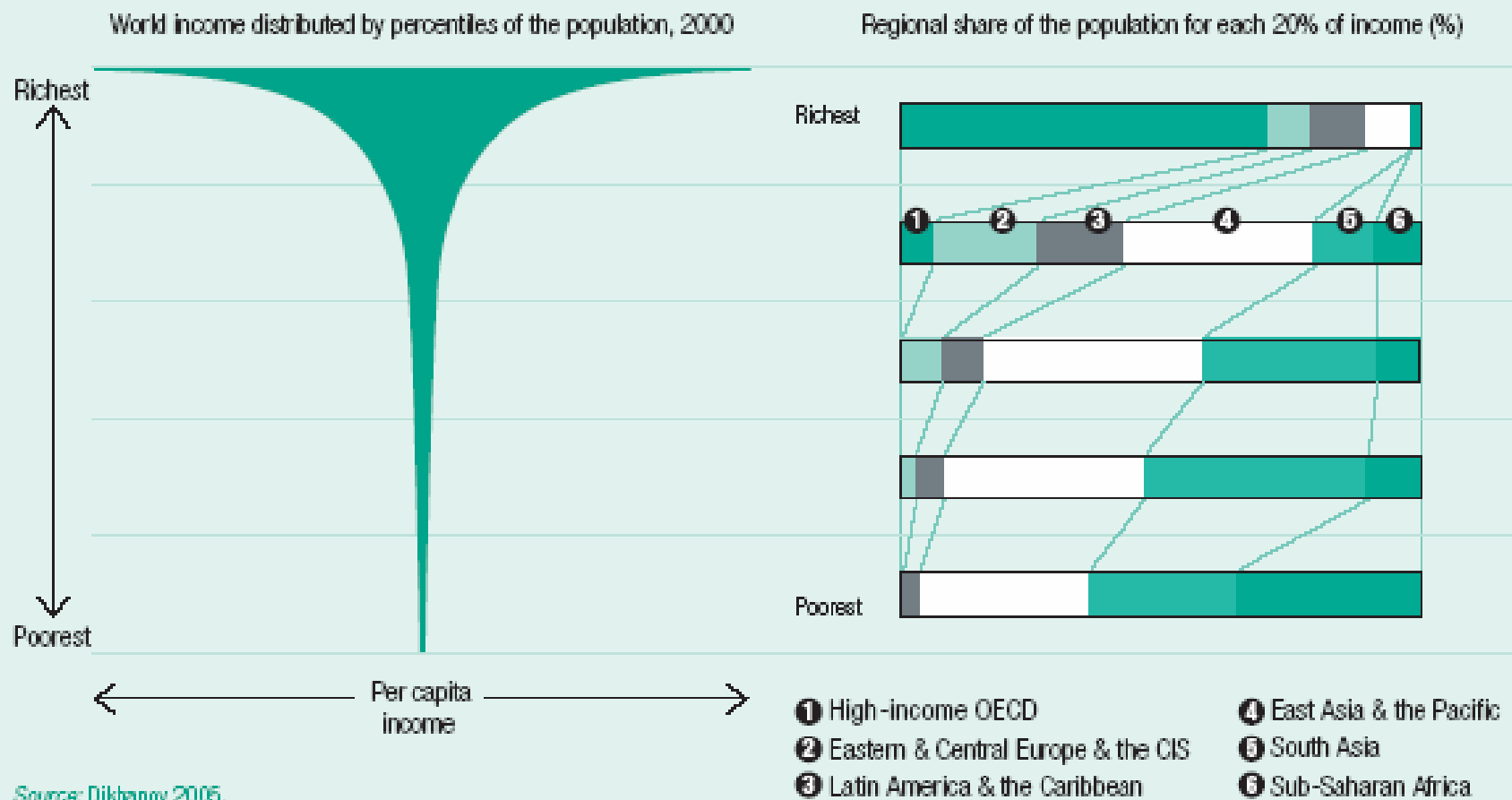
Source: UN 2005b.



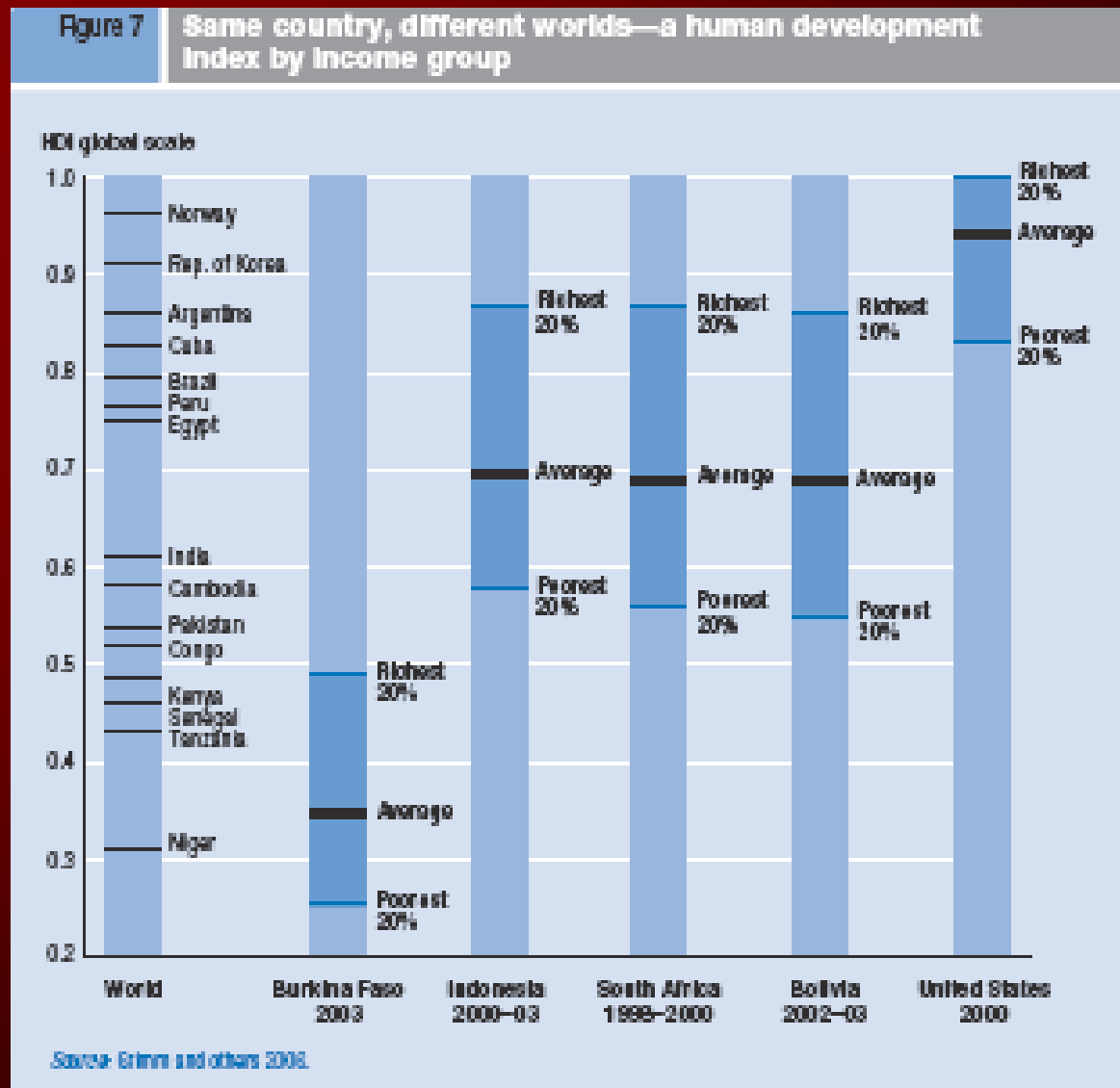
Source: HDR 2006

Global Income Inequality

Figure 1.16 | Where the money is

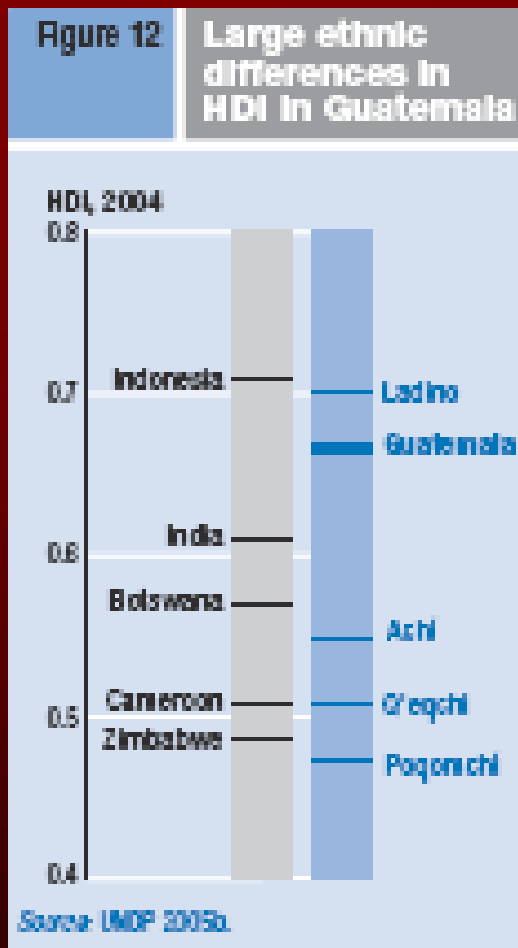


National Income Inequality



Source: HDR 2006

Who are the poorest 20%?



- Within countries, income, opportunity, and human development are often stratified by race and ethnicity
- Poverty is not equally distributed among all groups

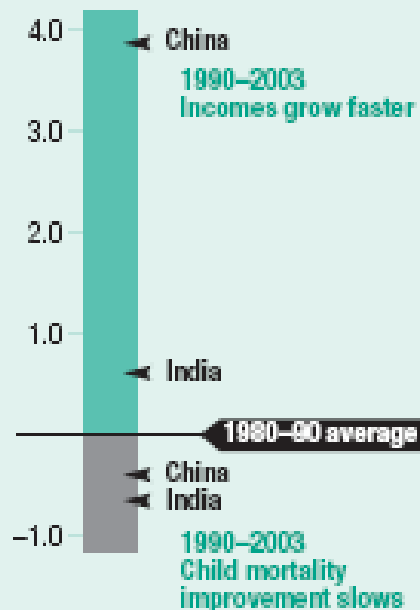
Implications at all levels

- Child mortality
- Overall health is poorer
- Lower levels of human development
- Deprived of basic rights and freedoms
- Lack access to basic knowledge and technology
- Others?

Economic Growth not a Magic Bullet

Figure 1.13 Income growth and child mortality improvement diverge in India and China

Change from 1980s average growth rates (percentage points)



Source: Calculated on the basis of data on child mortality from UNICEF 2006a and data on GDP per capita (2000 US\$) from World Bank 2006f.

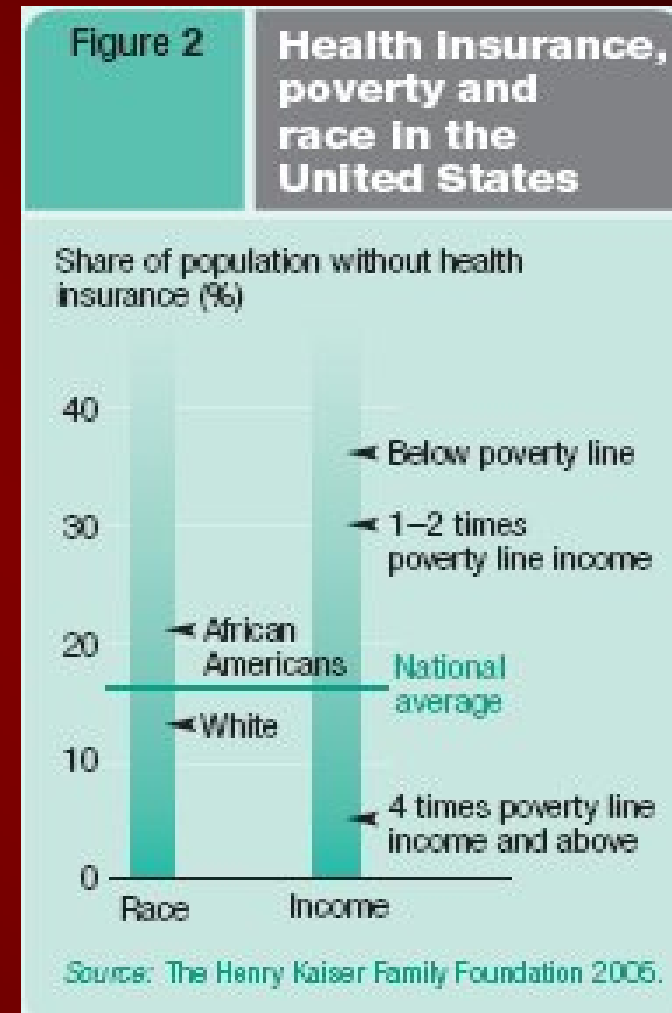
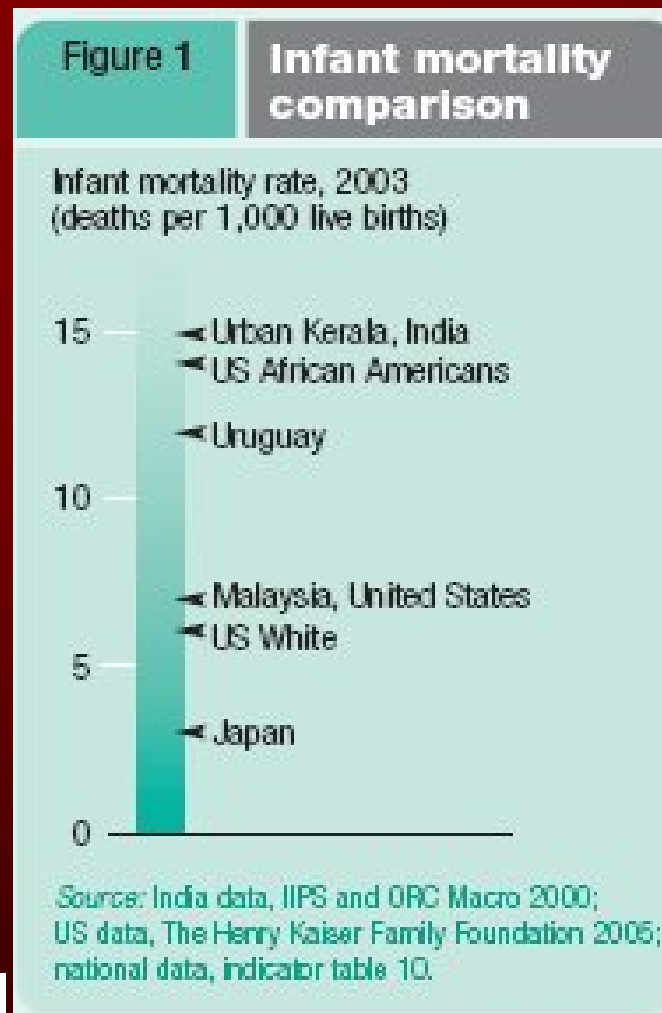
Figure 1.14 China and India fall behind in child mortality

Under-five mortality rate (per 1,000 live births)



Source: UN 2005b.

Holds even for the richest nation



US Fairs Poorly in Infant Mortality

- US Ranks 32 out of 33 (2nd to last) in terms of infant mortality among industrialized nations



Opportunities linked to income and gender

Figure 8 Staying alive—opportunities linked to wealth

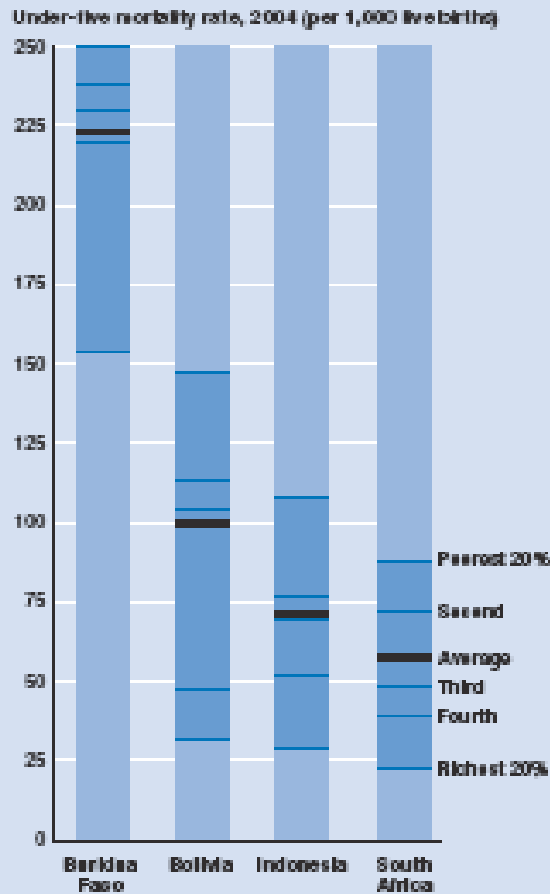
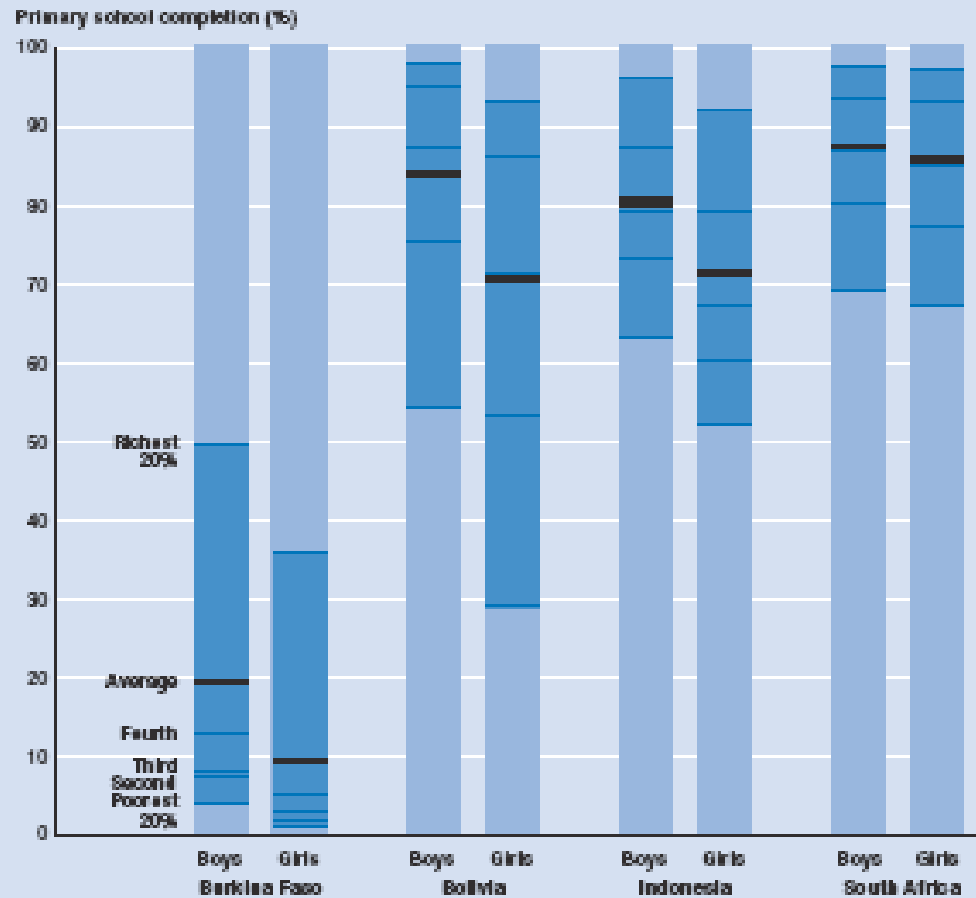
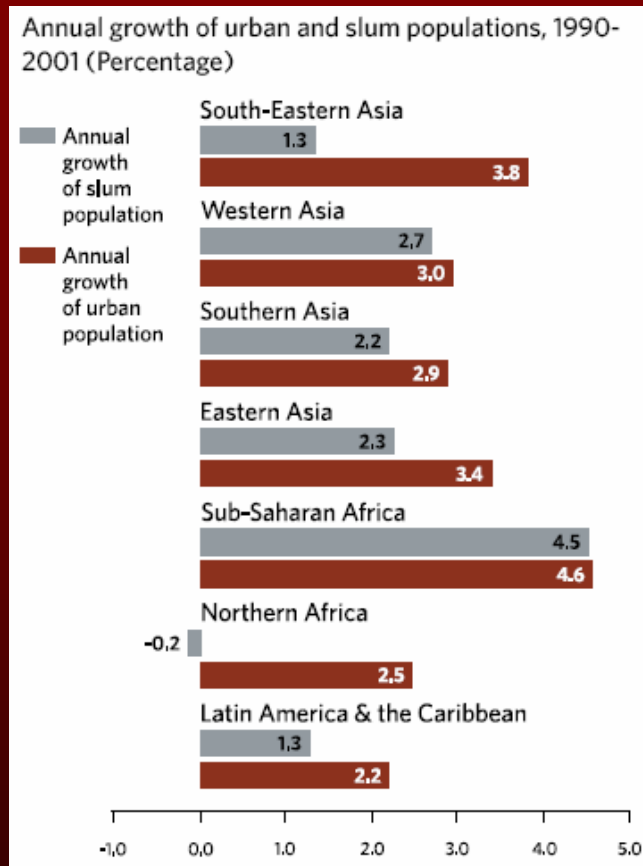


Figure 9 Opportunities for education are shaped by income and gender



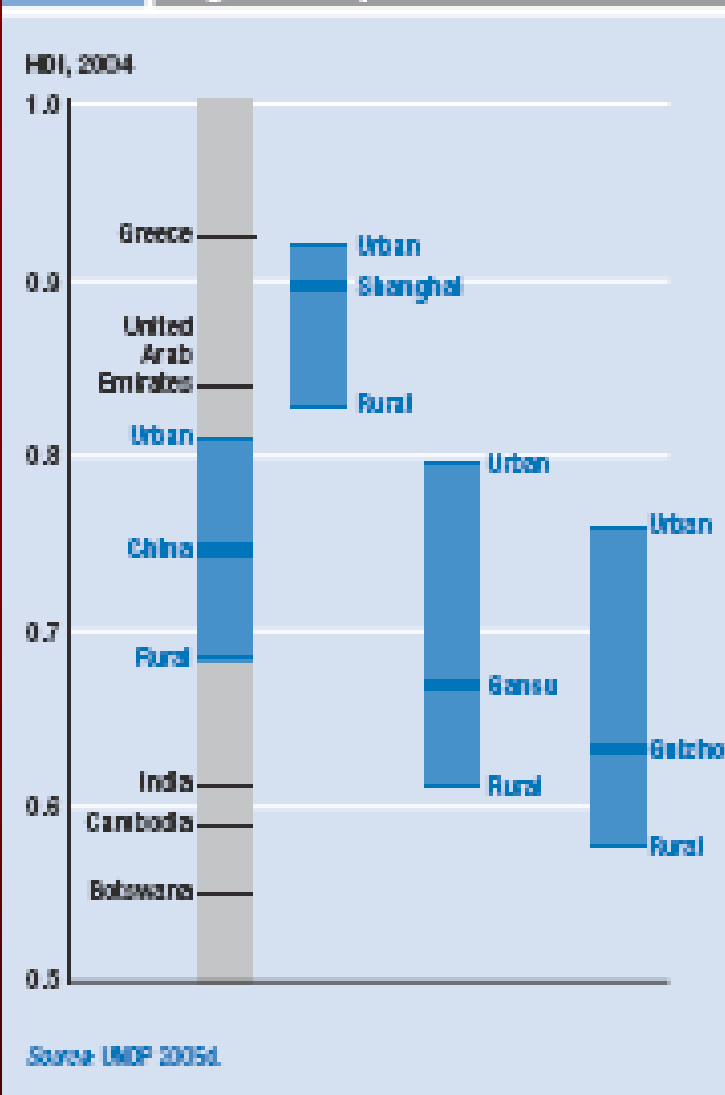
Urban Growth and Slum Growth



- In 2007, for the first time in history, more people will live in urban settings than in rural settings
- The result is growth of slums in most developing countries

Rural areas are suffering

Figure 11 Rural-urban differences intensity regional disparities in China



Source: HDR 2006

Reasons for Hope

- Why might we be hopeful despite the challenges we face?
- What role can technology play in making lives of poor people better? Can it help increase income, education, and opportunity, and decrease prevalence of disease, infant mortality, etc.



The Role of Technology

**Special case of Information and
Communications Technology (ICT)**

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Isn't Technology Part of Development?

- Agricultural Revolution
 - Industrial Revolution
 - Information (or Knowledge) Revolution...
-
- What are the 2 largest foreign investment sectors in Africa?

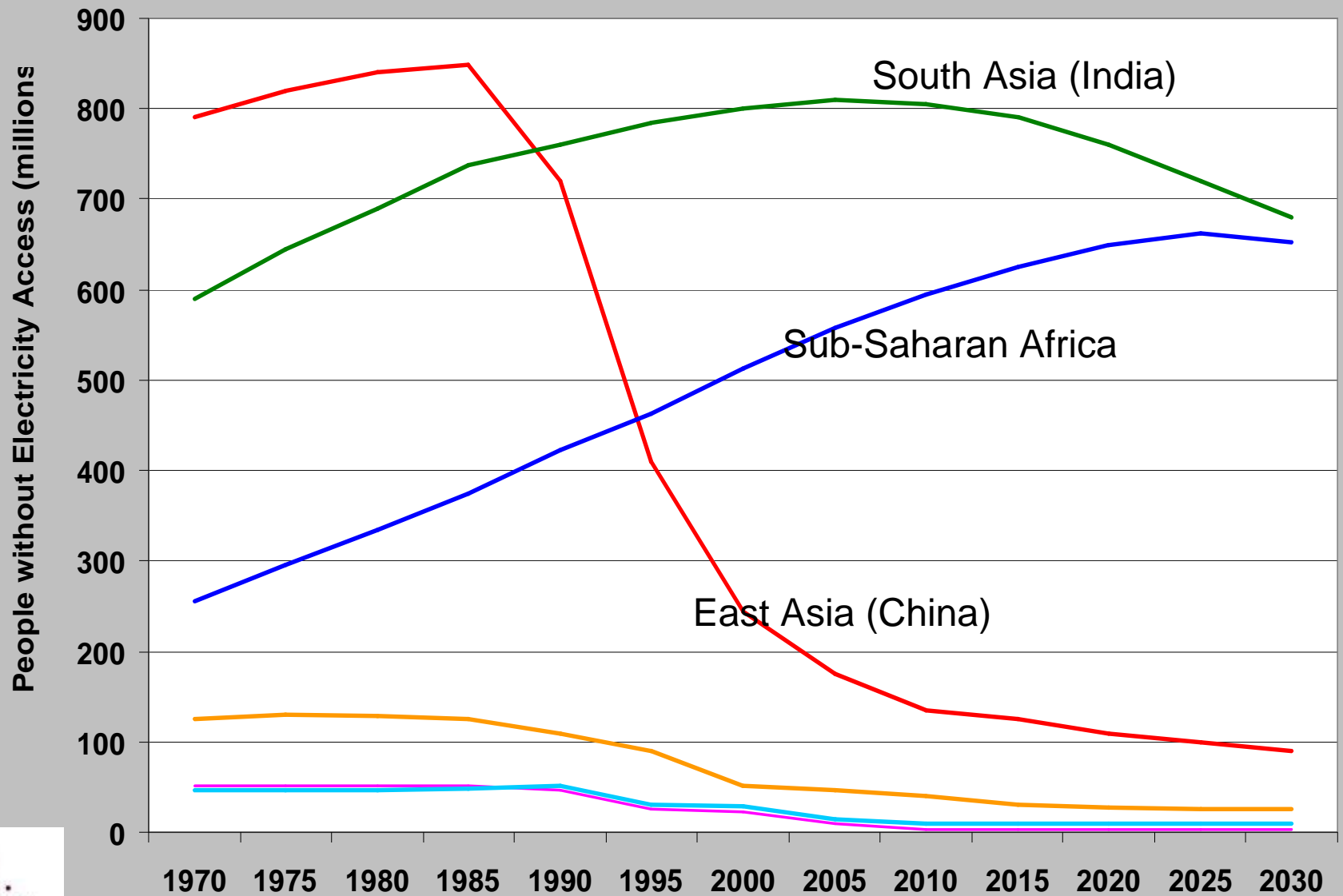
Value of Knowledge

- Services Sector growth rates > Manufacturing > Agriculture (GDP basis)
- Every “commodity” exporter has seen low development
 - Congo
 - Nigeria, Middle East
 - Russia/USSR
 - What of China?

ICT – A Means or an End?

- World Summit on Sustainable Development, August 2002, in Johannesburg was groundbreaking
 - Use of principles of sustainability relating to development
 - Understanding of the importance of technology, especially ICT
- But still, limited scientific analysis for the business case for ICT
 - Correlation vs. Causality

Access to Electricity



Source: WEO 2002



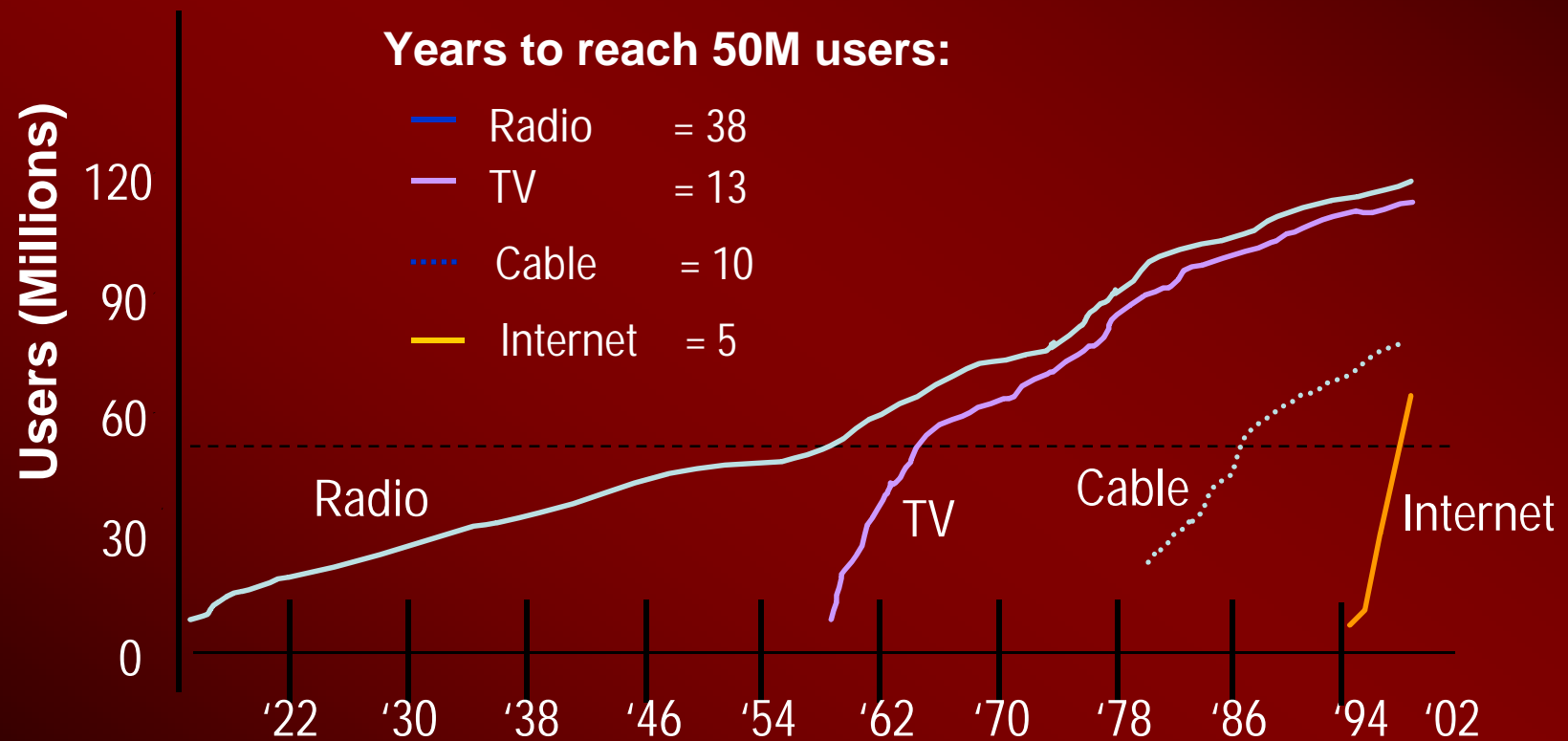
How to achieve development?

- China provides a number of insights
 - Limited Democracy
 - Central Control with increasing autonomy to provinces and local authorities
 - Economic growth was probably KEY
 - LDC issue - State Owned Enterprises
 - Inefficiency
 - Corruption
 - Poor allocation of capital and resources
 - Limited understanding of technology
 - Policies
 - Education / Investment
 - Tendering

Free Rider Effects

- Are traditional economic measures enough?
- Externalities
 - Critical issue if ICT is more a means than an end
 - Should we have Universal Service for Internet Access? Broadband?
 - Mid-day Meal Program in India example
- Public Goods
- Network Effects

Industry & Society: Penetration Rates



Source: Morgan Stanley



A Recent Visit to North Africa

