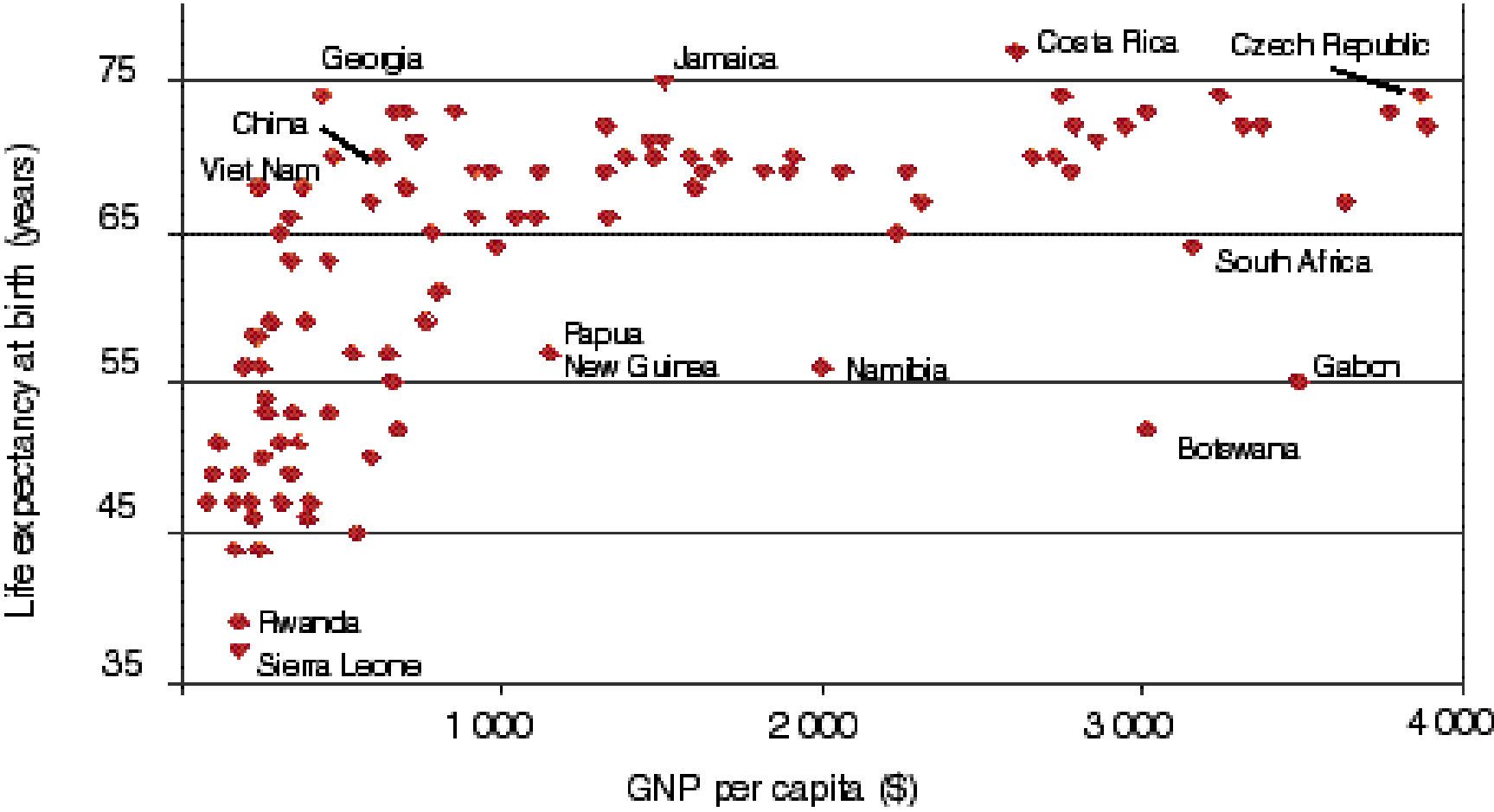
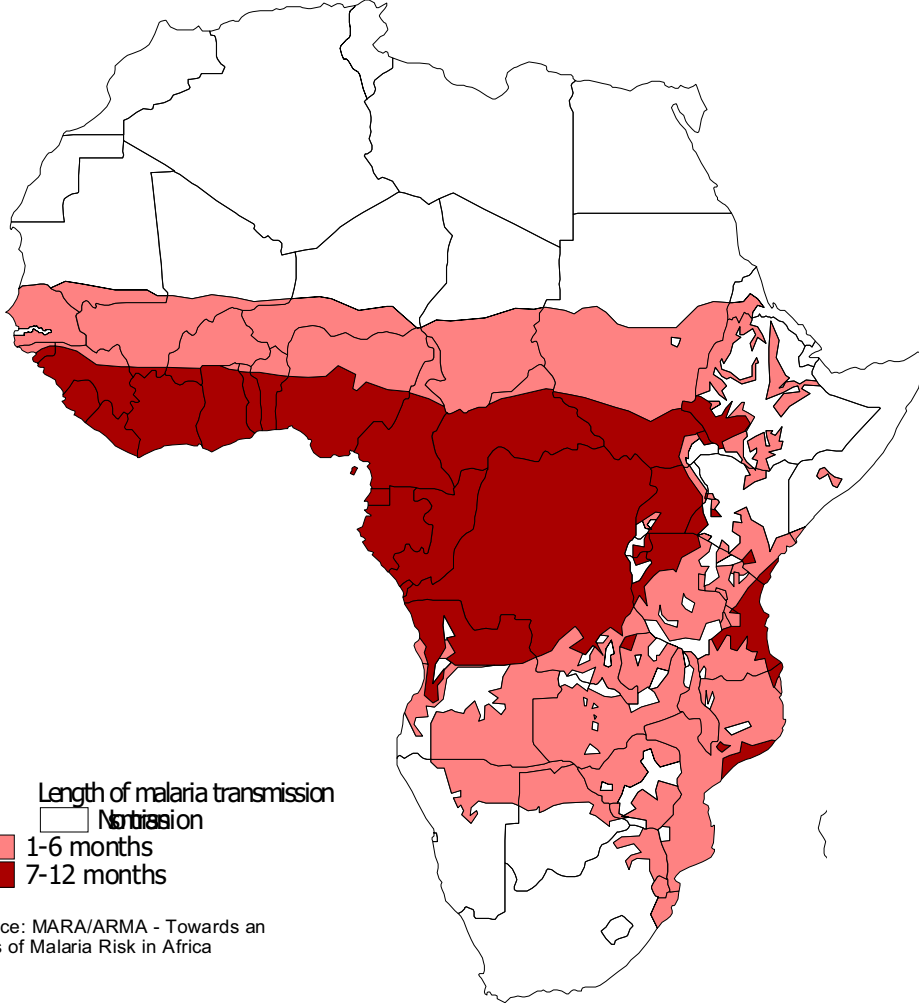


# The poorest populations live shorter lives...



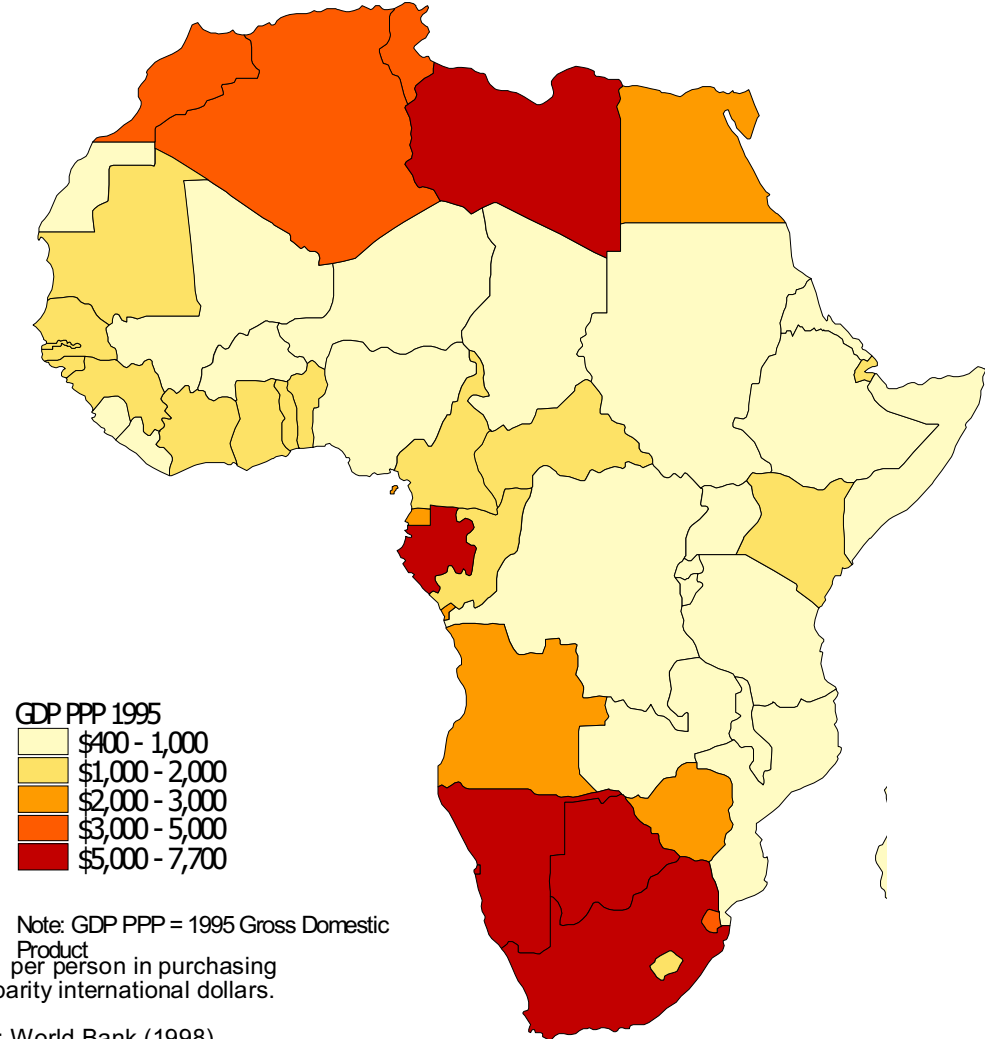
...suffer from tropical diseases that destroy wealth...

**Malaria transmission**



Source: MARA/ARMA - Towards an Atlas of Malaria Risk in Africa

**Income per person, 1995**



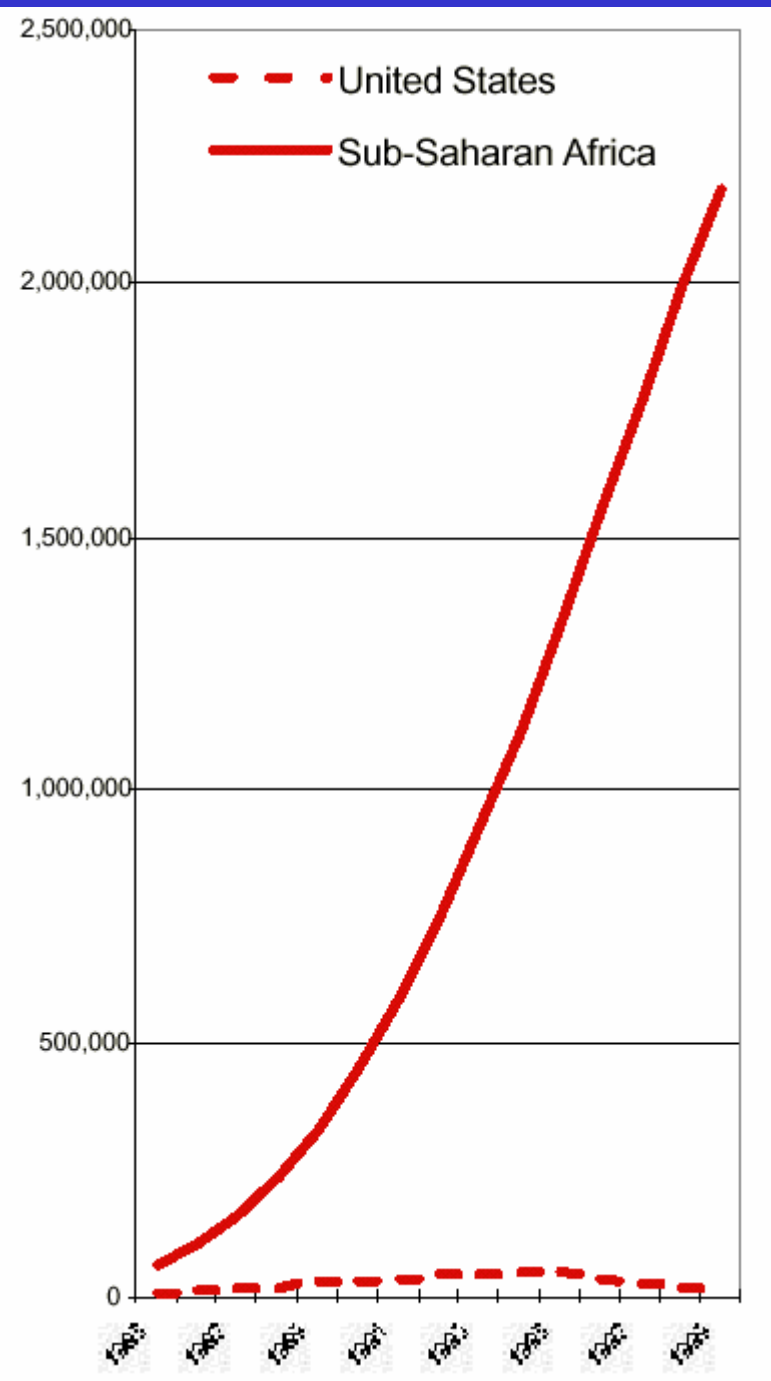
Source: World Bank (1998)

...and disease condemns them to eternal poverty.

**Table 5.** GROWTH RATE OF PER CAPITA INCOME, 1965–1994 (according to income and infant mortality rate, 1965)

Initial Infant Mortality Rate, 1965	IMR $\leq$ 50	50 < IMR $\leq$ 100	100 < IMR $\leq$ 150	IMR > 150
Initial Income, 1965 (PPP-adjusted 1990 US dollars)				
GDP $\leq$ \$750	—	3.7	1.0	0.1
\$750 < GDP $\leq$ \$1,500	—	3.4	1.1	-0.7
\$1,500 < GDP $\leq$ \$3,000	5.9	1.8	1.1	2.5
\$3,000 < GDP $\leq$ \$6,000	2.8	1.7	0.3	—
GDP > \$6,000	1.9	-0.5	—	—

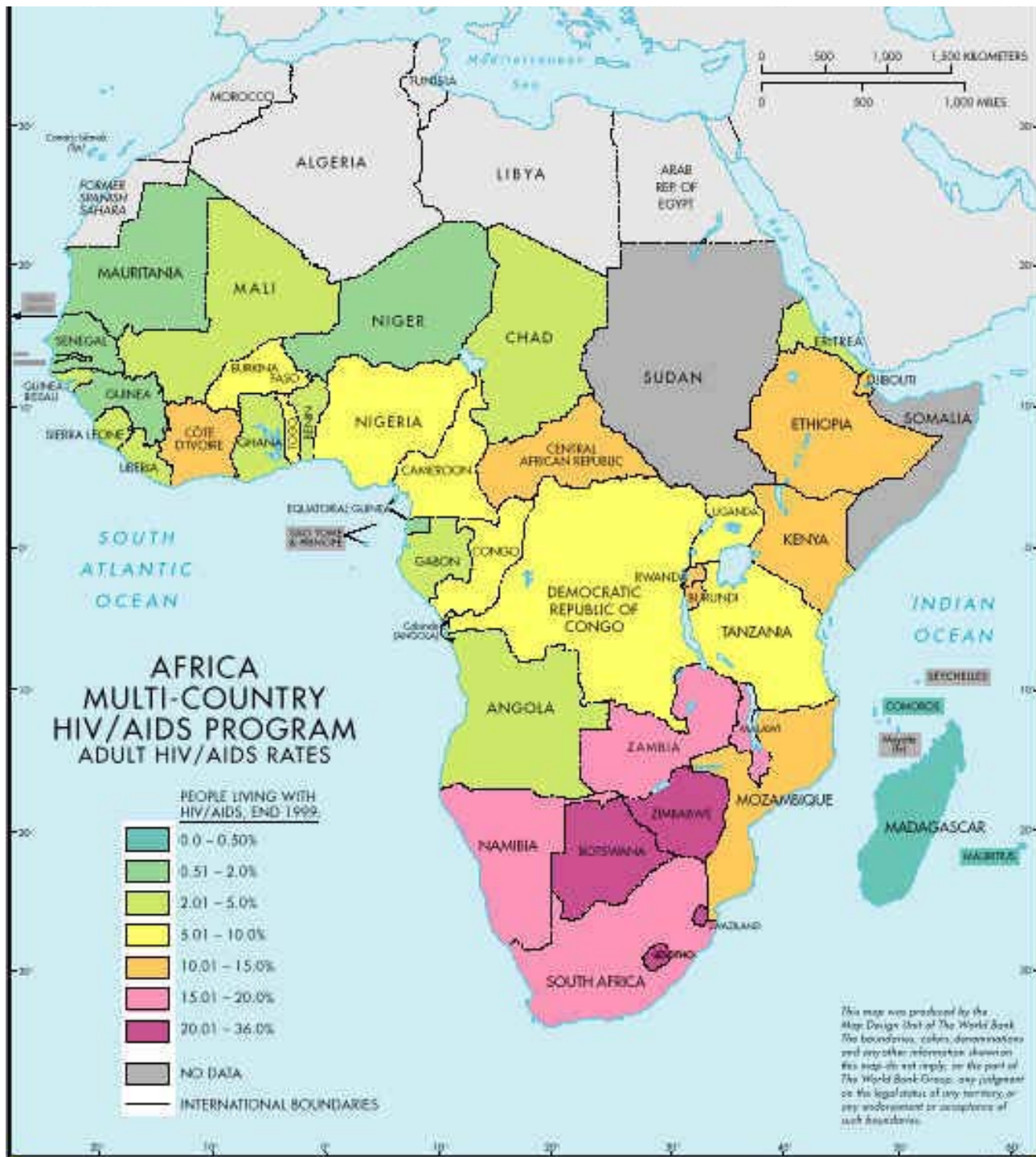
*Note: The reported growth rate is the simple average of the GDP growth rates of all countries in the specific cell.*



Aggressive viral genetics  
 Huge poverty and inequality  
 No access to prevention or treatment



Mild viral genetics (for now...)  
 Fantastic wealth  
 Access to prevention and treatment



## Back of the calculation

- ASSUME: the typical sub-Saharan African country has a per capita GNP of \$400.
- ASSUME gov't collects 20% of that revenue (almost as much as the US)
- ASSUME it can spend 15% of that on health (a vast, unprecedented level)

**\$12 per person, per year**

(In 1999, the actual median health budget in SSA is \$9 per person-year)

# Antiretroviral patent coverage in Africa (2001)

- We examined 15 ARV drugs in 53 countries (n=792).
- Each drug is patented in few countries (median = 3; mode = 1)
  - Exception: BI, GSK, Agouron/Pfizer products
- In the *subset* of 40 countries that have at least 1 patent, and therefore must have useable patent laws, generally only a few drugs are patented (median = 4; mode = 4)
  - Exception: South Africa
- Overall antiretroviral patent coverage is modest (21.6%)
- ALL these patents precede TRIPS!

Source: Attaran & Gillespie-White (2001). *Journal of the American Medical Association* 286:1886-1892.

# WHO Essential Drugs: patent situation (2002)

- WHO's *Expert Committee on the Selection and Use of Essential Medicines* chooses medicines based on medical criteria. Cost and patent status are not considerations.
  - “[P]atent status of a medicine is not considered”
  - “[The] absolute cost of [a] treatment...[is] not...a reason to exclude a medicine”... from the essential medicine list.

# WHO Essential Drugs: patent situation (2002)

- 291 meds, of which 19 are potentially patented:
  - Antiparasitics: Lariam, Coartem, Eflornithine
  - Antifungals: Diflucan
  - Antibacterials: Augmentin; Cipro; Primaxin
  - Antiretrovirals: AZT, 3TC, ddi, d4T, ABC, IND, EFV, NEV, RTV, SQV, NFV, LPV+RTV combination
- Sample size: 291 meds x 62 countries.  $n = 18,042$
- Data relationships:
  - LICs are different from MICs ( $p < 0.05$ ). **The more money your country has, the more likely someone will patent there.**
  - Access can be very poor notwithstanding the general lack of patents.

## India: a case study in generics and access

- India has zero (0) antiretroviral compounds under patent.
- Several generic antiretroviral manufacturers compete on price.
- All these generics are locally manufactured, so there are no foreign exchange constraints.
- **Yet only 20,000 Indians are on treatment (fewer still on HAART).**
- **(Note: Sub-Saharan Africa is even poorer than India. Thus following the Indian model could improve things a little, but not dramatically.)**

company  
price  
countries  
reductions  
reliability  
price  
countries  
reductions

# Untangling the web of price reductions:

*a pricing guide for the purchase of ARVs for developing countries*

24th April 2003  
Fourth edition

- Brand name cheaper: 11 cases
- WHO approved generic cheaper: 5 cases
- No generic exists: 2 cases



## Annual ARV prices in various low income countries (MSF 2002)

	WHO approved generic	Brand product	Unapproved generic
Crixivan (IDV)	\$406 (Cipla)	<b>\$400 (Merck)</b>	\$387 (Aurobindo)
Epivir (3TC)	<b>\$100 (Ranbaxy)</b>	\$234 (GSK)	\$65 (Aurobindo)
Retrovir (AZT)	<b>\$180 (Cipla)</b>	\$438 (GSK)	\$140 (Aurobindo)
Norvir (RTV)	none	<b>\$83 (Abbott)</b>	\$219 (Hetero)
Stocrin (EFV)	none	<b>\$347 (Merck)</b>	\$462 (Cipla)
Videx (ddI)	none	<b>\$310 (BMS)</b>	\$185 (Hetero)
Viracept (NEL)	none	<b>\$3172 (Roche)</b>	\$1500 (Hetero)
Zerit (d4T)	none	<b>\$55 (BMS)</b>	\$31 (Aurobindo/Hetero)

**Now, who's going to pay for the stuff?**



# Aid for AIDS (all LICs, 2000)

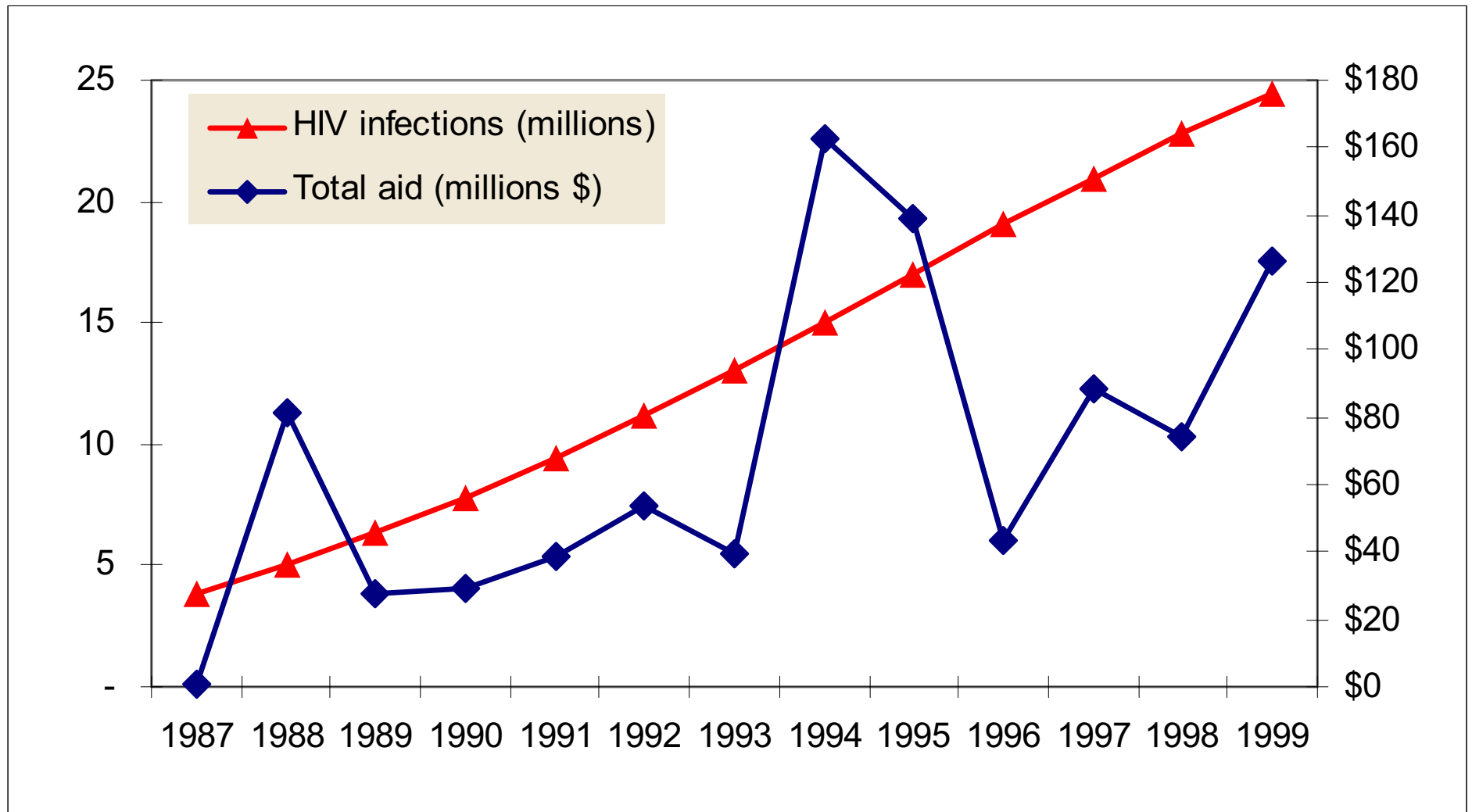
1. World Bank	\$149 m
2. UK*	\$147 m
3. USA*	\$112 m
4. Norway	\$10 m
5. Canada*	\$10 m
6. Australia	\$9 m
7. France*	\$6 m
8. Netherlands	\$5 m
9. Italy*	\$4 m
10. Japan*	\$4 m
11. Germany*	\$3 m

\* G-7 Country

Amounts committed (not disbursed) to dedicated HIV/AIDS programs

Source: OECD data; Amir Attaran & Jeffrey Sachs, *Lancet*, 2001

# Total aid commitments for AIDS, sub-Saharan Africa: (all 23 OECD-DAC grantors and lenders)



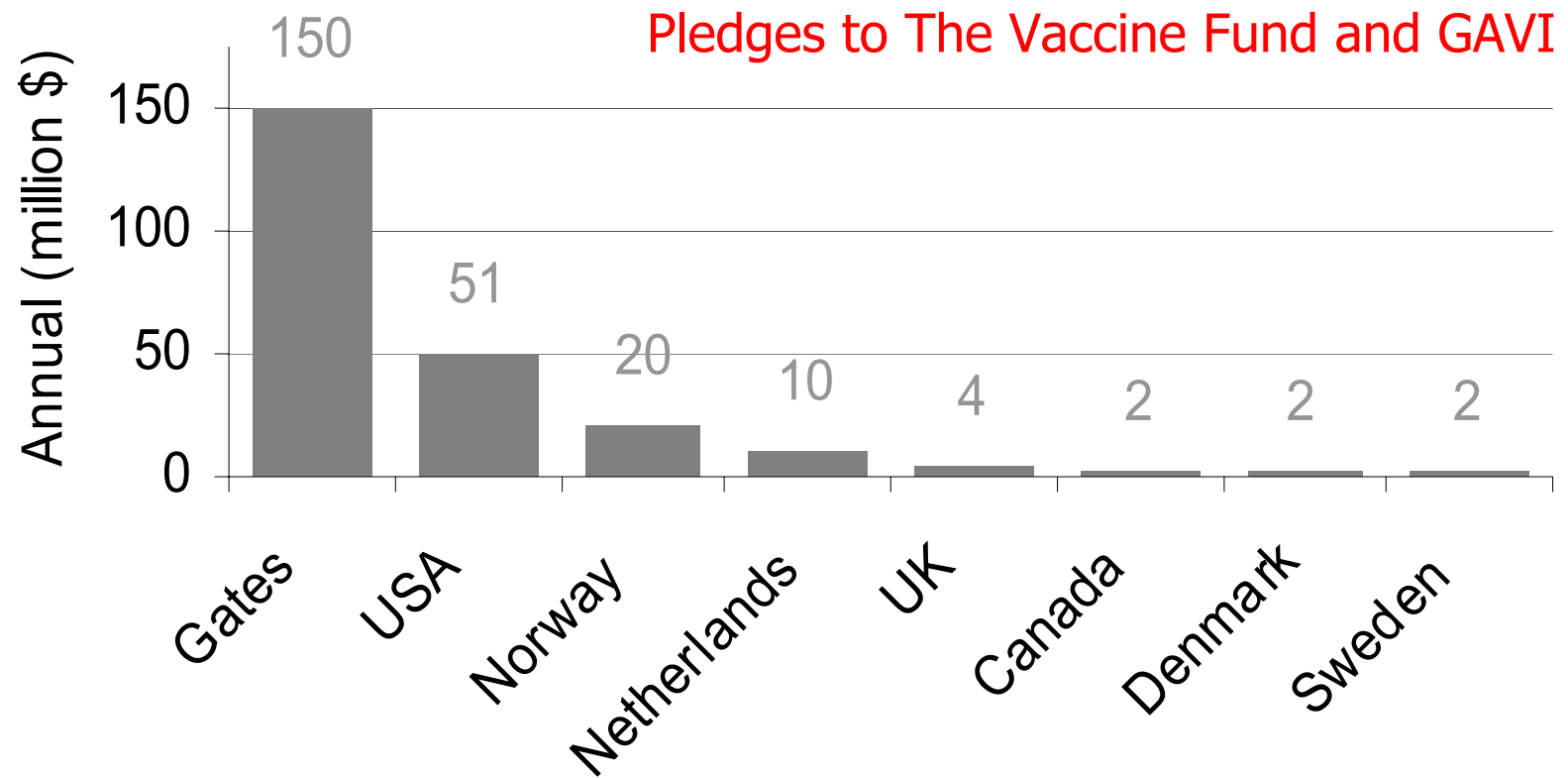
# Case study: childhood vaccination

- Some basic childhood vaccine prices:

– DTP combination	\$0.08
– Measles	\$0.12
– Tetanus	\$0.03
– BCG (tuberculosis)	\$0.06
– Hepatitis B	\$0.32
- With operational costs, immunizing a child typically costs > \$25.
- Median vaccination coverage in Africa is about 55%.

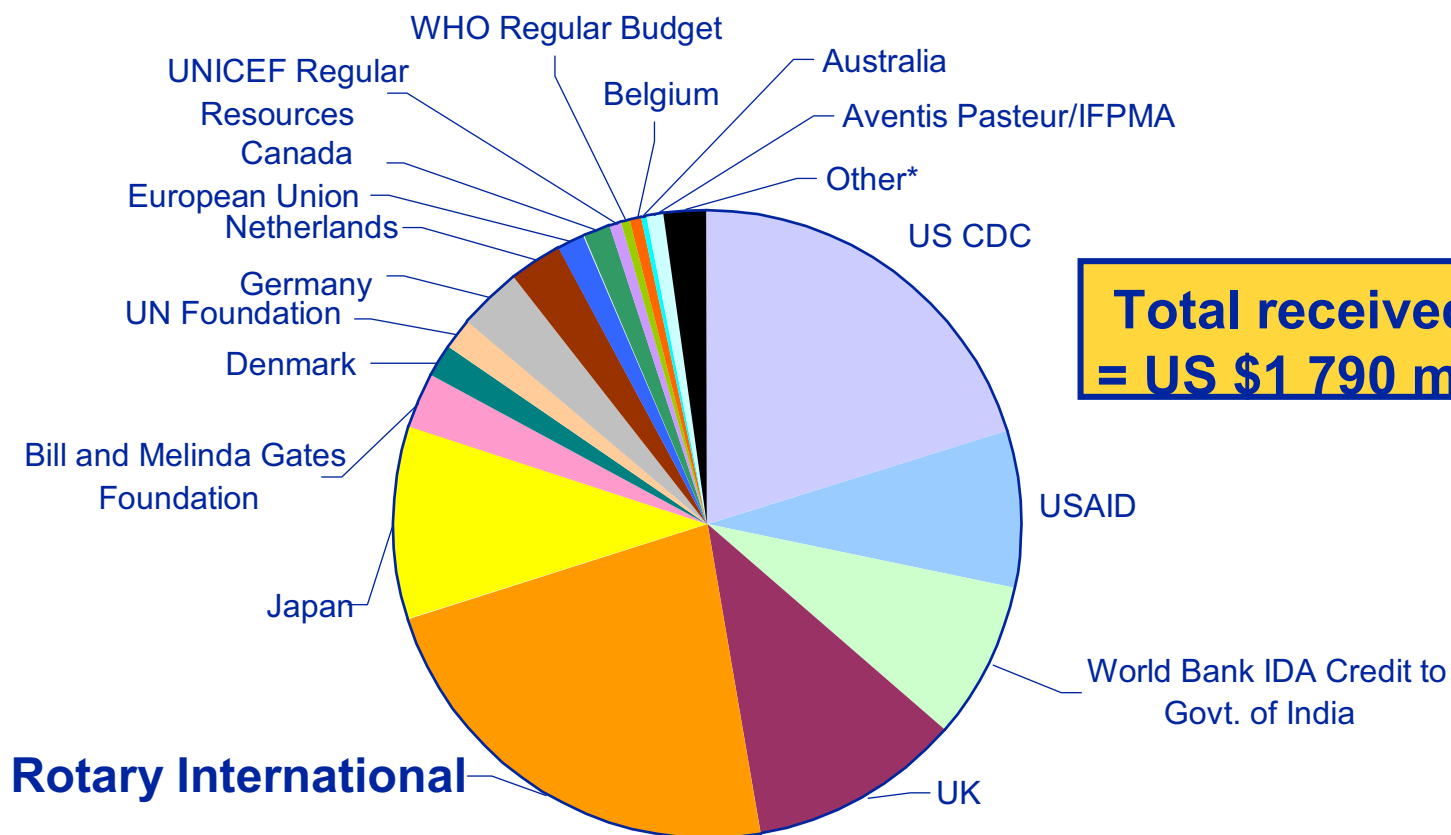
Source: UNICEF supply division (2002).

# Case study: childhood vaccination



Source: The Vaccine Fund (March 2002).

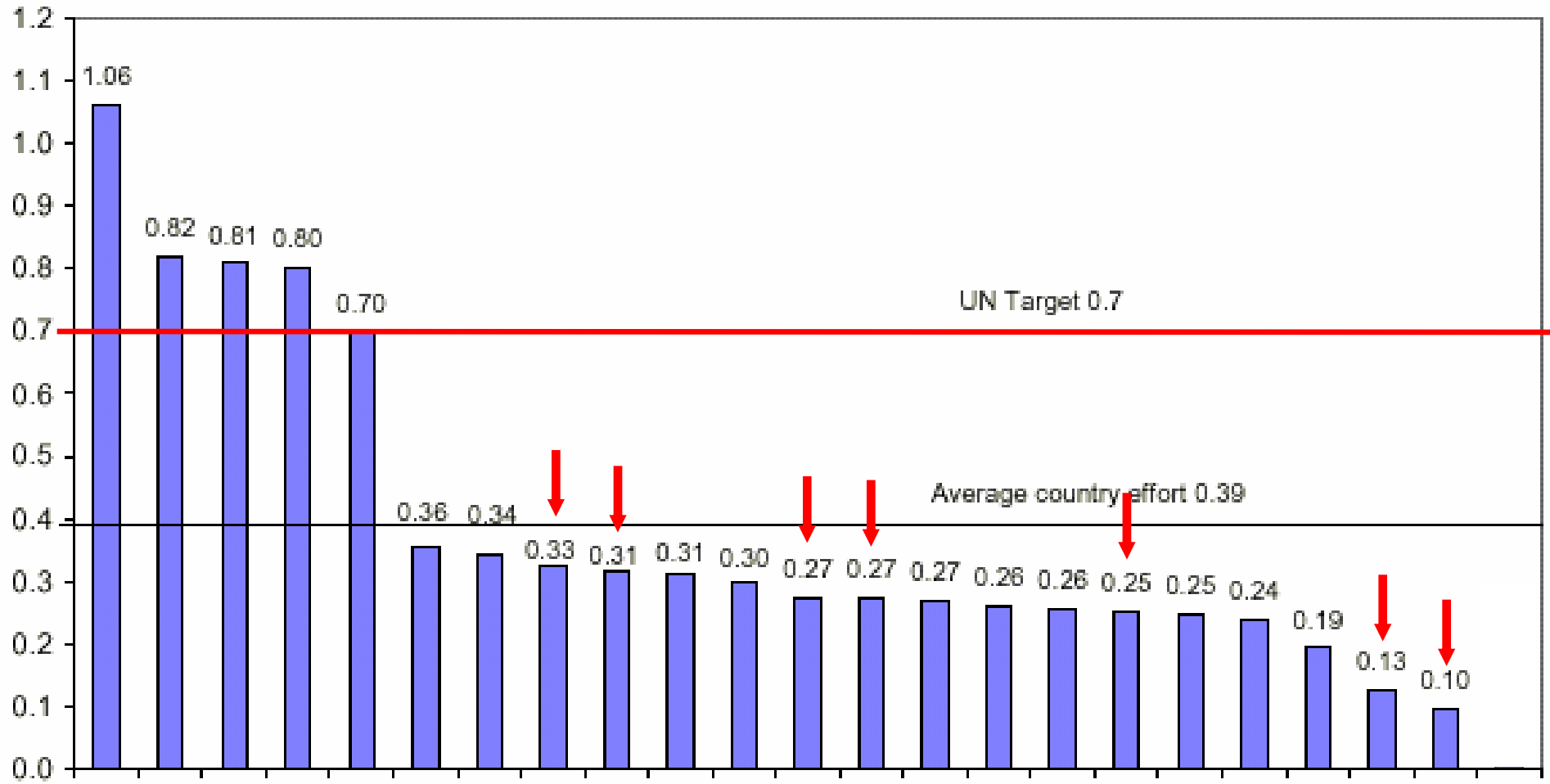
# *Donor contributions: 1985–2001*



\* 'Other' includes past contributions from the Agency for Cooperation in International Health, (Japan); American Association for World Health (USA); Austria; Custom Monoclonals International (USA); De Beers; European Community Humanitarian Office (ECHO); Finland; Miss Martina Hingis; Ireland; Italy; Japanese Committee for "Vaccines for the World's Children"; Malaysia; Millennium Fund; Norway; Portugal; Republic of Korea (GOK); Rotary of Belgium; Rotary of Switzerland; Smith Kline Biologicals (Belgium); Switzerland; United Arab Emirates; and UNICEF National Committee of Canada.

### Net ODA in 2000 - as a percentage of GNP

As % of GNP



UN Target 0.7

Average country effort 0.39

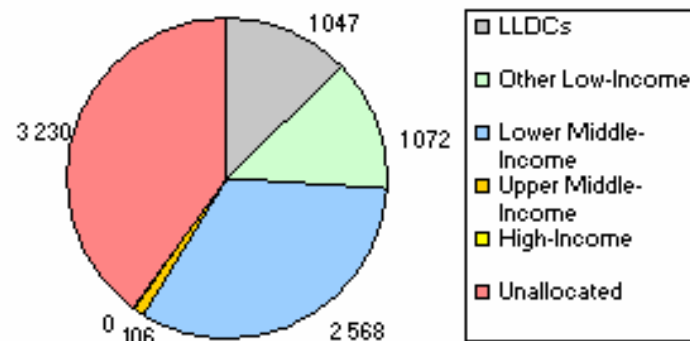
## UNITED STATES

Gross Bilateral ODA, 1999-2000 average, unless otherwise shown

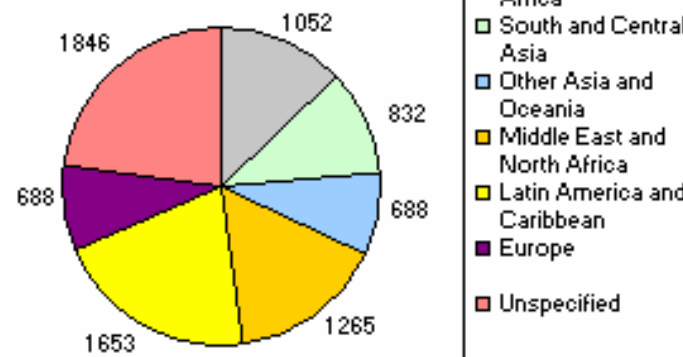
Net ODA	1999	2000	Change 1999/2000
Current (USD m)	9 145	9 955	8.9%
Constant (1999 USD m)	9 145	9 756	6.7%
ODA/GNI	0.10%	0.10%	
Bilateral share	75%	74%	
<b>Net Official Aid (OA)</b>			
Current (USD m)	3 521	2 506	-28.8%

Top Ten Recipients of gross ODA/OA (USD million)	
1 Russia (OA)	1 154
2 Israel (OA)	967
3 Egypt	799
4 Ukraine (OA)	282
5 Indonesia	194
6 Jordan	179
7 Colombia	169
8 Bosnia and Herzegovina	152
9 India	148
10 Peru	136

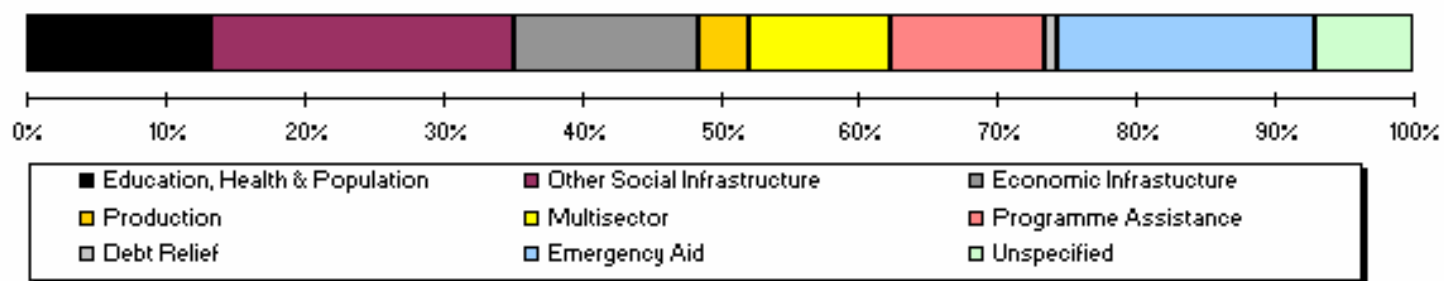
### By Income Group (USD m)



### By Region (USD m)



### By Sector

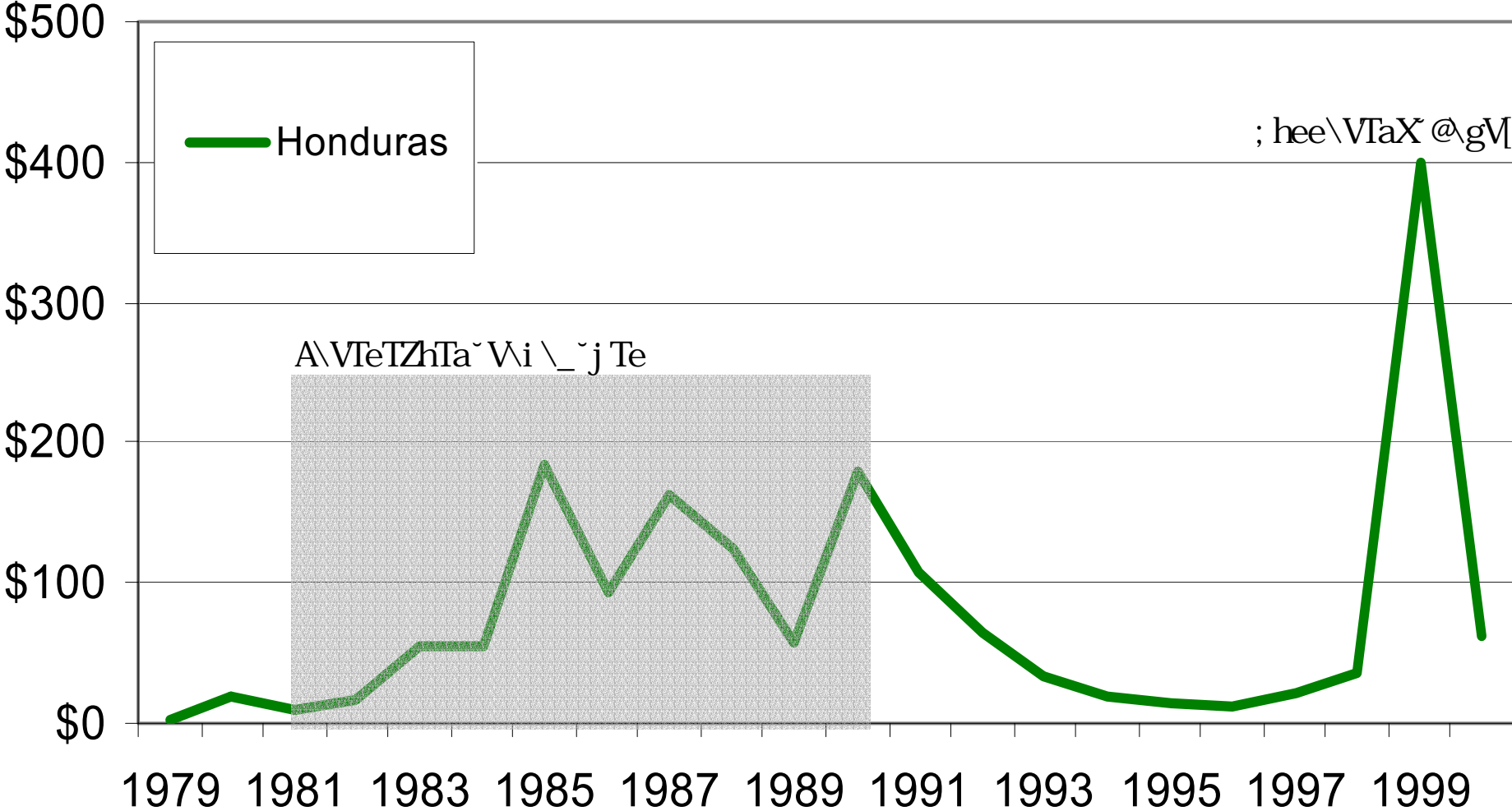


<http://www.oecd.org/oeed/pages/home/displaygeneral/0,3380,EN-countrylist-57-2-no-no-77-57,00.html>

Source: OECD

# United States: cases in official development assistance

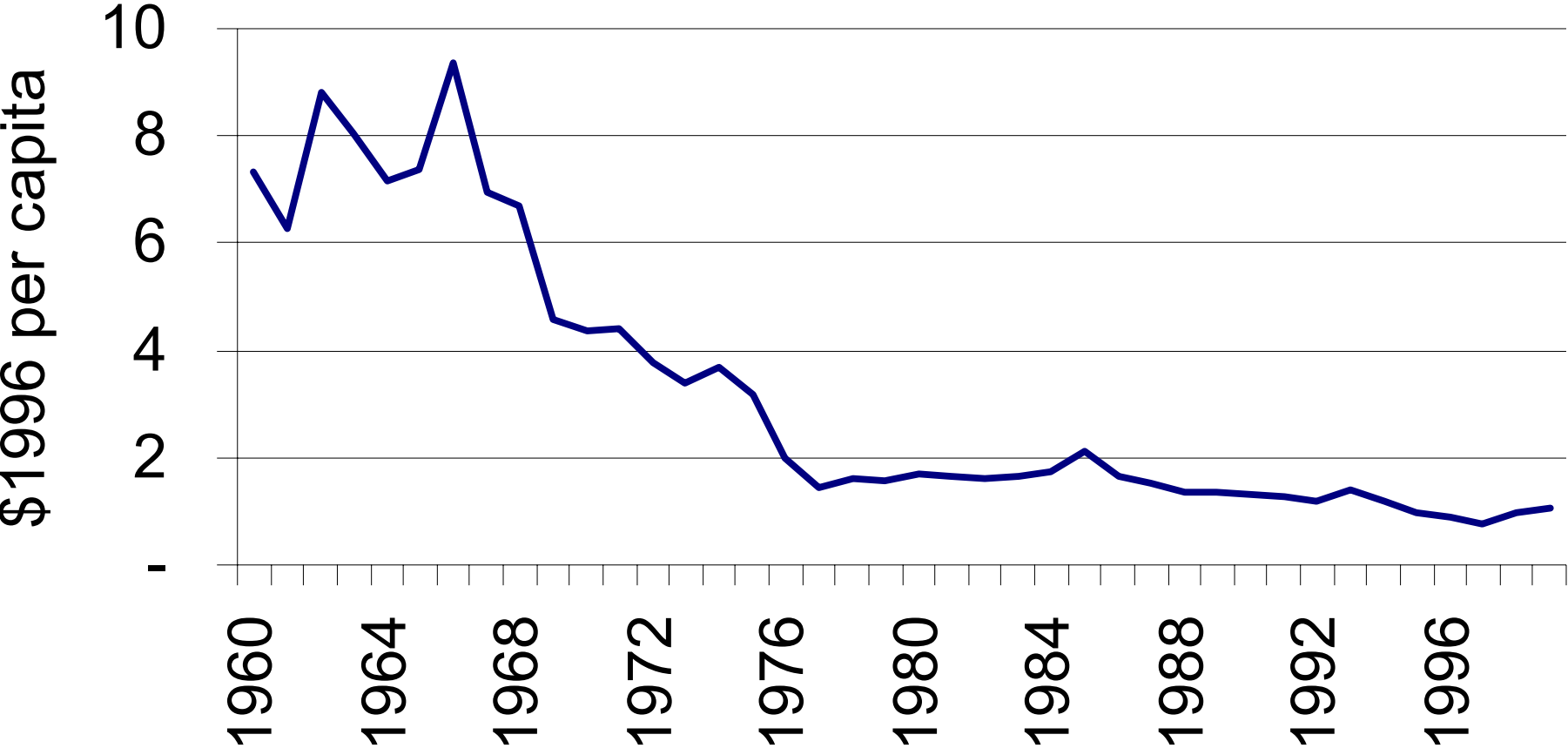
(nominal dollars, millions)



Source: OECD data

# United States: We can spend more

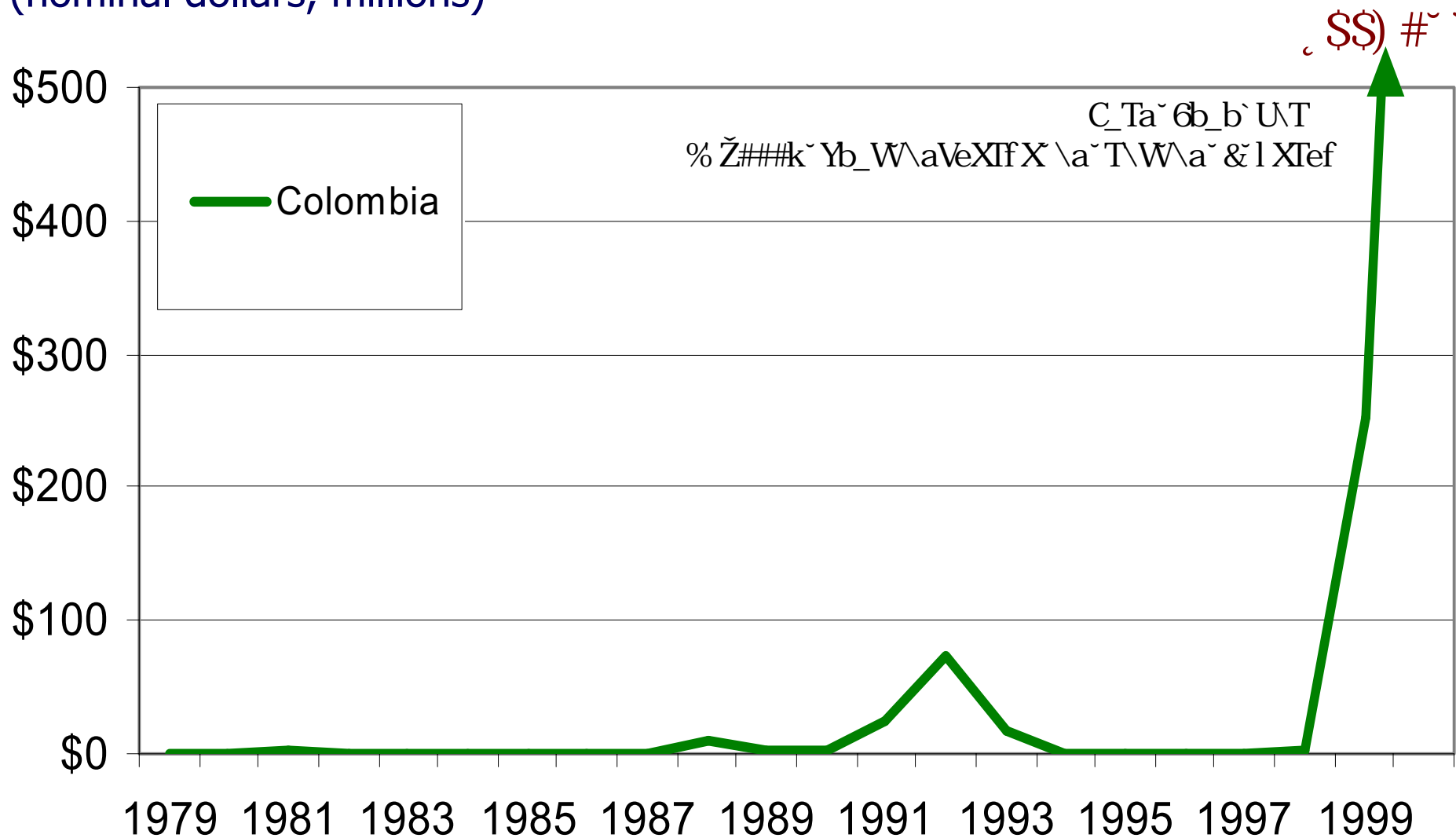
(aid to all LICs, 1960-1999)



Source: OECD data; John McArthur (Harvard-CID)

# United States: We can spend more quickly

(nominal dollars, millions)



Source: OECD data

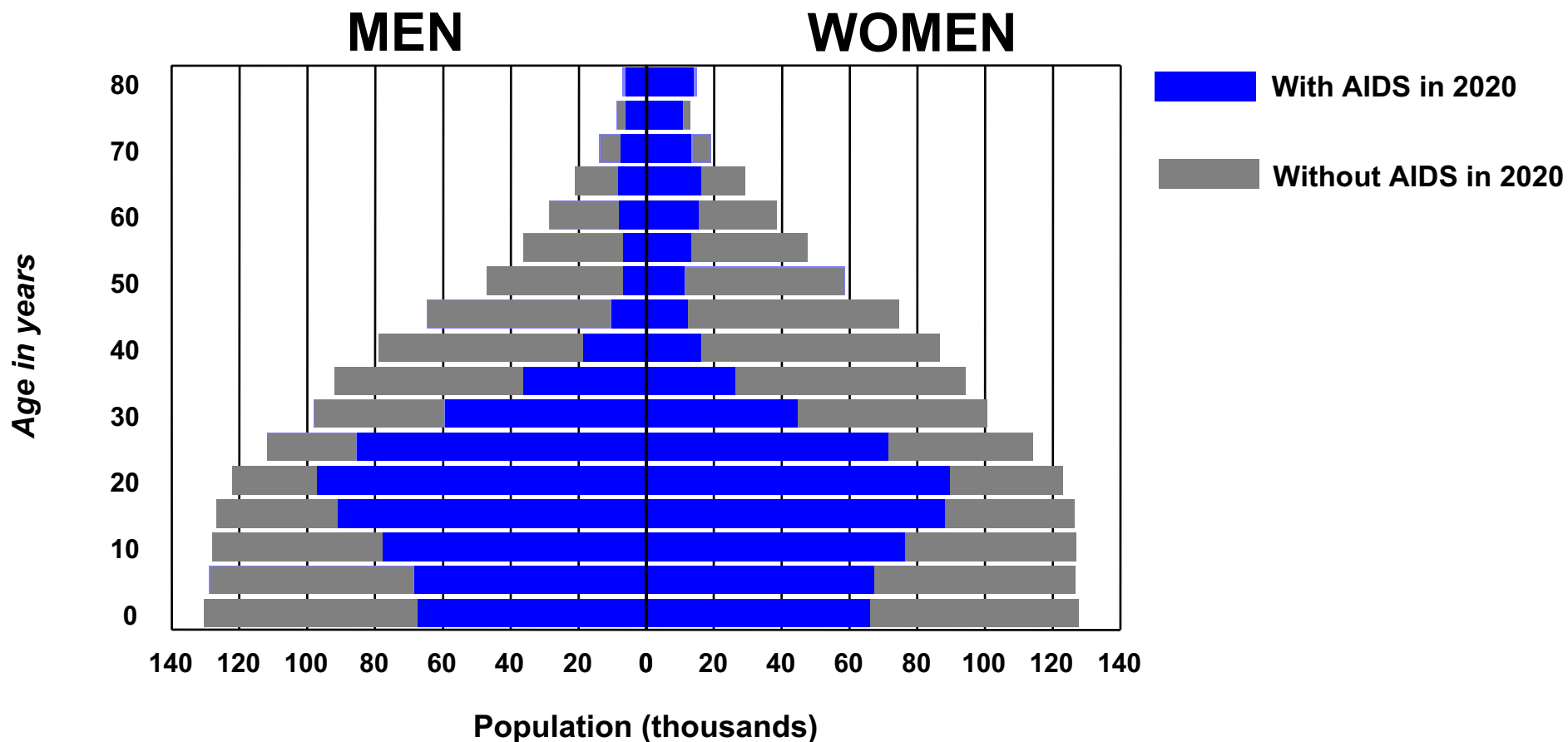


# Can We Forge New Alliances and Break New Ground?



And what if we don't?

# Botswana: up to 80% of adults dead in 2020



Source: *US Census Bureau, World Population Profile 2000*