

Part Two

SPECIAL FEATURES

Environment Features



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Birds in Decline
Small Islands Threatened by Sea Level Rise

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Around the world, ornithologists are alarmed at bird population declines and are concerned about what they mean for the world's ecosystems and our own future. In 2000, a study published by a global alliance of conservation groups called BirdLife International found that

about 12 percent of the world's 9,800 bird species are threatened with extinction within the next century and that

in the near future an additional 8 percent may become threatened.¹ In addition, the populations of many widely distributed and still plentiful species are in decline. (See Table 1.)

These trends worry scientists because birds provide critical natural services—dispersing seeds, pollinating flowers, controlling insect and rodent populations, and scavenging dead animals.² Of course, birds' colorful plumage, songs, and varied behaviors also capture people's attention. To many, the world would seem incomplete without ostriches, eagles, flamingos, parrots, hummingbirds, and orioles.

In addition, many declining bird species serve as indicators of impending environmental problems. Aquatic songbirds called dippers, for example, disappear from stream waters acidified by pine plantations and acid rain.³ Dying North American crows, hawks, and owls mark the rapid spread of the West Nile virus that has been introduced to the region.⁴

Since 1800, 103 species have gone extinct.⁵ BirdLife International's threatened list tallies almost 1,200 more that may vanish within the next century.⁶ Many are declining due to combined human-related threats. Habitat loss or degradation is now the single greatest overall threat to birds, including 85 percent of the most imperiled species. Many of these species are endangered by recent tropical forest destruction.⁷

In addition, many bird populations shrink after invasions by introduced, or exotic, species, which constitute the second greatest threat.⁸ Rats, cats, mongooses, and other exotic predators kill birds and their young; introduced birds compete with native species; and exotic pathogens knock out endemic birds that lack disease resistance. Introduced insect pests destroy birds' forest habitats. Worldwide, exotic plants also

alter local flora, denying birds their food supplies and habitat.⁹

Control of exotic species often requires costly active management that may include pesticides and other tools that might harm native fauna as well.¹⁰ In the United States alone, estimates of the annual cost of damage caused by exotics and the measures to control them reach as high as \$137 billion.¹¹

Meanwhile, poorly regulated or illegal hunting and capture take a heavy toll. In Malta, for example, up to 3 million migratory birds are trapped or shot each year.¹² In Central and South America, turkey-like birds called guans and curassows are among the first animals to disappear when hunters invade remaining pristine forest areas.¹³ The same holds true for 22 localized Asian pheasant species.¹⁴ Parrots, while not widely hunted, are being loved to death instead: almost a third of the world's 330 parrot species are threatened by habitat loss and capture for the cagebird trade and habitat loss.¹⁵

Another form of wildlife exploitation—longline fishing—inadvertently kills hundreds of thousands of seabirds, which are hooked on baited lines and then drowned. More than 30 countries have longline fleets.¹⁶ Although mitigation measures can dramatically reduce bird kills, little action has been taken. In 2001, seven countries signed an agreement under the Convention on the Conservation of Migratory Species of Wild Animals (known as the Bonn Convention) that will legally bind them to reduce longlining bycatch.¹⁷ The agreement is awaiting ratification.

Pollution threatens birds in the oceans, near industrial sites, and in the countryside. Large and small oil spills kill many birds, including penguins, murres, and gannets. In addition to increased tanker traffic, aging vessels and lax restrictions make the business of transporting oil even more hazardous.¹⁸ On land, oil and natural gas exploration, extraction, and pipelines threaten some of the world's most bird-rich habitats in Peru, Ecuador, and elsewhere.¹⁹

PCBs and other industrial effluents likely disrupt birds' endocrine systems and compromise their ability to attract mates.²⁰

Agricultural pesticides kill millions of birds, weaken others, and deplete birds' food supplies of insects and wild plants.²¹

Another chemical threat, lead poisoning, weakens and then kills birds that swallow hunters' spent shot. Recent bans on lead shot in wetlands likely save many waterfowl from poisoning in the United States and a number of other countries.²²

Skyscrapers, communications towers, and power lines can kill millions of migrating birds, which collide with the structures.²³ These threats, along with growing wind farm networks, require careful study to determine safe locations and heights that will minimize bird collisions.²⁴ To date, little work has been done in this area.

To these threats due to human activities must now be added another one: climate change. Earlier bird breeding, migration arrivals, and some bird species' northward range expansions seem to indicate the early effects of this. Also, some long-distance migrants now return to nesting grounds too late to exploit sped-up peaks in insect food supplies.²⁵ Climate change will likely alter many bird habitats in coming decades, perhaps causing the demise of isolated species.²⁶

Decades of dedicated study lie ahead before scientists fully understand bird ecology, distribution, and behavior. Unfortunately, in many parts of the world, birds do not have much time. They will be lost if society doesn't protect their habitats and address other threats. Approximately a quarter of all bird species have ranges that are at most the size of Costa Rica.²⁷ More than half of these species are threatened or near-threatened, and for many, only fragmented habitats remain.²⁸

In recent years, conservationists have catalogued 7,000 important bird areas (IBAs)—critical bird breeding and migration stopovers in 140 countries.²⁹ Also, hotspots for restricted-range and endemic species have been pinpointed in 218 endemic bird areas (EBAs), most of them in the tropics. Some IBAs and EBAs already include designated reserves. But many others remain unprotected and poorly studied.³⁰

While reserve areas remain vital to protecting bird habitats, much of the world's land sits

Table 1: Conservation Status of the World's Birds, 2000

Status	Species (number)
Extinct in the wild ¹	3
Critically endangered	182
Endangered	321
Vulnerable	680
Near-threatened	727
No threatened status	7,884
Total	9,797

¹ Species no longer survives in the wild, but at least some individuals remain in captivity.

Source: Stattersfield and Capper.

in private hands. Community, corporate, and government involvement in varied conservation efforts will be required to ratchet biodiversity and bird conservation to a higher status as part of a sustainable strategy for the planet. Fortunately, in a growing number of cases, enterprise and environmentalism prove mutually beneficial. Habitat-friendly agricultural programs in the Netherlands, the United Kingdom, and the United States bear this out, as do a growing number of corporate efforts to conserve birds.³¹

The ecotourism industry can also provide benefits to local communities near critically important habitats. An increasing number of tour operators hire local guides to assist their tours.³² Meanwhile, town-based guide-training programs are taking flight in South Africa and elsewhere.³³

Although some bird extinctions seem imminent, many can be avoided with a deep commitment to bird conservation as part of a sustainable development strategy. As the world works toward a more balanced future, keeping an eye on birds will help us keep ourselves in check—if we care to heed the warnings.

Sea level, like the weather, varies considerably from year to year for island nations.¹ (See Table 1.) A combination of many factors, including wind, ocean currents, ocean temperature, and periodic oceanic oscillations like El Niño, bring about this annual variation.²

Long-term trends make it clear that for most islands, as for the world in general, the sea is rising. In the twentieth century, global sea level rose 10–20 centimeters, averaging 1–2 millimeters per year.³ The sea level rises from melting continental ice masses and from the expansion of the oceans due to climate change.⁴

Over the next century, global sea level rise is expected to accelerate. According to the Intergovernmental Panel on Climate Change (IPCC), the sea level will rise 9–88 centimeters in the next 100 years, with a mid-estimate rise of 50 centimeters.⁵ This translates into 5 millimeters per year—two to four times faster than during the twentieth century.⁶

In terms of culpability for global sea level rise, the small-island states are beyond reproach; in terms of vulnerability, they are the most at risk. Although plagued by their own internal environmental problems, these small nations account for less than 1 percent of global greenhouse gas emissions.⁷

Accelerated sea level rise brings up the possibility that, for the first time in history, an entire sovereign country could be lost due to environmental change.⁸ The height of low-lying atolls, like those in the Pacific and Indian Oceans, rarely exceeds 2 meters, with maximum heights of 3–4 meters.⁹ New Zealand has drawn up a plan to accept immigrants from the tiny Pacific island country of Tuvalu, where residents fear losing their homes to future sea level rise.¹⁰ And the Indian Ocean nation of the Maldives—65 percent of which is less than 1 meter above sea level—has evacuated residents from four of the lowest lying islands to larger ones over the past few years.¹¹

One study notes that the impact of sea level rise on the Marshall Islands, Tuvalu, and Kiribati would be “profound,” including disappearance in the worst scenario; the impact on the Feder-

ated States of Micronesia, Nauru, and Tonga would be “severe,” resulting in major population displacement; and the impact on Fiji and the Solomon Islands would be “moderate to severe.”¹² Indeed, in 1999, Kiribati lost two uninhabited islets, Tebua Tarawa and Abanuea, to the sea.¹³

Sea-level-rise scenarios have been compiled for a few small-island states, with most focusing on the impact of a 1-meter rise—the “worst-case scenario” for the next 100 years. Such a rise would inundate or erode 940 hectares in Antigua, 1,000 hectares in Mauritius, 3,700 hectares in Tonga, and 340 hectares in Nevis.¹⁴ A recent study calculated that a 1-meter rise in the Caribbean would inundate 98 coastal communities in Cuba, threatening more than 50,000 persons.¹⁵ Majuro Atoll, in the Marshall Islands, would lose 8.6 percent of its total land area with a rise of this magnitude, and 12.5 percent of Betio Island, Kiribati, would be vulnerable to annual flooding.¹⁶

While the long-term threat to these islands is inundation, the more immediate and pressing problems are those associated with storm surges, flooding, coastal erosion, saltwater intrusion into freshwater supplies, coral bleaching, and economic attrition.

Storm patterns are heavily connected to local weather patterns, most notably El Niño, strongly affecting islands in the Caribbean and the Pacific. According to the IPCC, the warm episodes of El Niño, which affect rainfall and periods of drought for small-island states, have been more “frequent, persistent and intense” since the mid-1970s.¹⁷ Cyclones cause storm surges, which can reach up to 6 meters in height. With elevated sea levels, these surges are predicted to be more destructive, and even more so if cyclone intensity increases due to climate change.¹⁸

Individual studies suggest an increase of 10–20 percent in the intensity of tropical cyclones under enhanced atmospheric carbon dioxide conditions.¹⁹ In June 1997, Cyclone Keli destroyed an islet of Tuvalu—Tepuka Savilivili—washing away all the vegetation and rendering the islet uninhabitable.²⁰ Some flood-risk mod-

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els suggest that by 2080, the number of people facing severe floods in the Caribbean, Indian, and Pacific Ocean regions would be 200 times higher than if there were no sea level rise.²¹

Accelerated coastal erosion has caused some beaches in Trinidad, where sea level has risen four to eight times faster than the global average, to retreat by as much as 2 meters a year during the past 15 years.²² In Fiji, where sea level has risen at the average global rate, beaches at Viti Levu and Taveuni have retreated by about 75 centimeters per year.²³ Coral reefs, which provide sand and a buffer for the beach, suffer severe impairment or death with ocean temperatures of about 1 degree Celsius higher than the summer maximum. This condition, called bleaching, will be highest in the Caribbean and lowest in the central Pacific in the next few decades.²⁴

Tourism is one of the most important economic sectors for island states. For a number of these countries, such as Antigua and Barbuda, the Bahamas, Barbados, Cyprus, Grenada, Jamaica, the Maldives, Malta, St. Kitts and Nevis, Samoa, and the Seychelles, tourist revenue makes up more than 20 percent of the gross national product.²⁵ In addition to the degradation of natural resources, equatorial islands worry that global warming will lead to milder winters in industrial countries in northern latitudes, decreasing the incentive to travel for a large number of tourists.²⁶

Another economic concern for islands is the reduction of their exclusive economic zones (EEZ), which provide sovereign development rights over 370 kilometers (200 nautical miles) of ocean area surrounding the islands.²⁷ These nations typically include tens to thousands of islets; for some mid-Pacific states, the EEZs are a thousand times larger than the land areas.²⁸ Even if they are uninhabited, disappearing fringe atolls could lead to a reduction of the EEZ and, therefore, a reduction in fishing license revenues for the government.

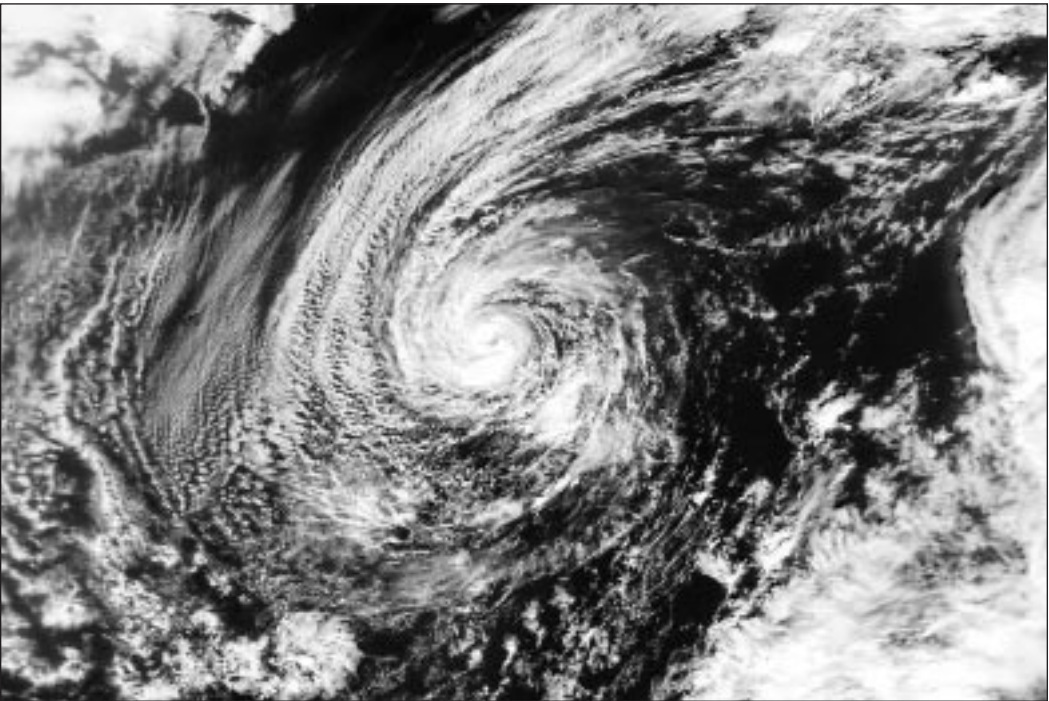
Table 1: Current and Historical Sea Level Rise in Selected Island Countries

Country	Average Sea Level Rise, 2002 (millimeters)	Long-Term Sea Level Rise (millimeters per year)
Cook Islands	12	2.3
Fiji	2	4.0
French Polynesia	24	2.5
Galapagos	52	1.5
Japan	6	3.2
Kiribati	35	-0.2
Maldives	8	-
Saipan	6	-
Seychelles	6	-
Tonga	40	4.9
Tuvalu	38	0.9

Source: University of Hawaii, Permanent Service for Mean Sea Level, and the South Pacific Sea Level and Climate Monitoring Project.

Economy Features

Courtesy the SeaWiFS Project, NASA/Goddard Space Flight Center, and ORBIMAGE



Rich-Poor Divide Growing
Gap in CEO-Worker Pay Widens
Severe Weather Events on the Rise

In 1960, the per capita gross domestic product (GDP) in the 20 richest countries was 18 times that in the 20 poorest countries, according to the World Bank.¹ By 1995 the gap between the richest and poorest nations had more than doubled—to 37 times.²

To a large extent, these vast income gaps drive global consumption patterns. Disproportionate consumption by the world's rich often creates pollution, waste, and environmental

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damage that harm the world's poor. For example, growing demand for fish for non-food uses, mainly animal feed and oils, is diminishing the source of low-cost, high-protein nutrition for a billion of the world's poor people.³ Carbon dioxide emissions, about 60 percent of which come from industrial countries, are threatening the very existence of poor island nations and the agricultural productivity of many developing ones.⁴

Between 1980 and the late 1990s, inequality also increased within 48 of 73 countries for which good data are available, including China, Russia, and the United States.⁵ These 48 nations are home to 59 percent of the world's population and account for 78 percent of the gross world product.⁶ This trend contrasts sharply with earlier declines in the gap between rich and poor in a number of countries between the 1950s and the early to mid-1970s, a period of stable global economic growth.⁷

Inequality remained constant in 16 countries and decreased in only 9: France, Norway, the Bahamas, Honduras, Jamaica, Malaysia, Tunisia, South Korea, and the Philippines.⁸ Recent data, however, suggest that inequality may have increased since 1998 in the latter two nations in the wake of the East Asian financial crisis, as well as in four nations where it had been constant: Brazil, India, Indonesia, and Tanzania.⁹

The most dramatic surges in inequality have occurred in nations in transition from Communist rule to market-based economies.¹⁰ Like other countries in the region, Russia is struggling with rising poverty, unemployment, and violence.¹¹ The main driver of inequality has been “state capture”—the manipulation of gov-

ernment by firms and powerful individuals to create laws and regulations to their own advantage.¹² This has concentrated power in the hands of the elite, while the vast majority of Russians remain politically and economically disenfranchised.¹³

Many industrial nations, including New Zealand, Japan, and the United Kingdom, have also experienced increases in inequality since the 1980s.¹⁴ This is correlated with declines in the minimum wage, lower unionization, the decreasing power of unions, and a widening gap in the wages of skilled and unskilled workers.¹⁵

Of all high-income nations, the United States has the most unequal distribution of income, with over 30 percent of income in the hands of the richest 10 percent and only 1.8 percent going to the poorest 10 percent.¹⁶ Data from the U.S. Census Bureau indicate increases in household income inequality between 1968 and 2001, which follow decreases between 1947 and 1968.¹⁷ In particular, the richest 5 percent of the population has experienced the greatest percentage gain in income, and within that group, the top 1 percent gained more than the next 4 percent.¹⁸

Inequality is not restricted to personal incomes. Health and education—two important indicators of well-being—reveal stark disparities among the world's “haves” and “have-nots.” Despite numerous international commitments to closing the gaps in access to education and health care, these remain correlated with income levels.¹⁹ For example, the infant mortality rate in low-income countries is 2.5 times greater than in middle-income countries and 13 times greater than in high-income countries.²⁰

And national averages only illustrate one level of disparity. A study of 44 developing nations found that infant mortality in the poorest fifth of the population is on average about twice the level in the richest fifth.²¹ Even in a relatively wealthy developing nation such as Turkey, infant mortality among the poorest fifth is about four times higher.²² In the United States, significant differences in infant mortality between racial and ethnic groups are largely the result of disparities in socioeconomic status and

access to health care.²³ The infant mortality rate among American Indians and Alaskan natives is 1.5 times the figure among whites, while that of African-Americans is 2.5 times higher.²⁴

Income, health, and education can, in fact, reinforce one another, with higher income leading to better health and education and those, in turn, leading to higher income.²⁵ These relationships are strongest at the lower end of the economic spectrum. That is, small increases in the income of the poor can yield dramatic health and education benefits.²⁶

The links between inequality, economic growth, and poverty are complex. Economic growth plays an important role in reducing poverty, but existing inequalities can hamper this. The share of income earned by the poor in an unequal society is low, so only a small share of the income generated by growth will benefit this group. Evidence confirms that growth reduces poverty by nearly twice as much when inequality is low than when it is high.²⁷

The nature of growth, and particularly the way that additional income generated by growth is distributed, is another important determinant of the impact on poverty. At any given rate of growth, poverty will fall faster in countries where growth raises the incomes of the poor by more than it increases average income. This essentially means that poverty falls faster when growth is accompanied by decreases in inequality and slower when accompanied by increases in inequality.²⁸

In Bangladesh, for example, per capita GDP grew about 2 percent a year during the 1990s, but the decline of poverty has been slower, and rural poverty in particular remains very high.²⁹ Had it not been for rising inequality between 1992 and 1996, the poverty rate in 1995–96 would have been about 7–10 percent lower than it actually was.³⁰

Poverty alleviation also depends on equality in access to opportunities. If poor people have no access to income-generating opportunities because of a lack of education, training, mobility, or credit, growth is unlikely to benefit them. This also holds true for other segments of society that are discriminated against in access to

resources: women, ethnic minorities, and indigenous groups.³¹ Faster growth in the urban sector than in the rural sector—the larger source of poor people’s income—can also exacerbate inequality, as happened in China between the mid-1980s and mid-1990s.³²

High inequality can itself worsen poverty by lowering overall growth. An unequal society is prone to political instability, increased crime, and dysfunctional or easily toppled institutions.³³ Unequal access to education, credit, and other resources is also inefficient for society as a whole because it blocks marginalized groups from increasing their productivity.³⁴

A recent analysis by economists at the United Nations University concluded that international poverty-reduction targets cannot be achieved at current levels of inequality, despite projected economic growth.³⁵ The Gini index of income inequality measures the extent to which the distribution of income (or of consumption expenditures) deviates from a perfectly equal distribution. A value of zero indicates perfect equality, while 100 represents perfect inequality. When the Gini index is higher than 40, growth and poverty reduction tend to be dampened.³⁶ In 55 countries around the world, the Gini index is above this threshold.³⁷ (See Table 1.)

Table 1: Income Inequality in Selected Countries, 1990s

Country	Share of Income		Gini Index
	Poorest 20 Percent	Richest 20 Percent	
	(percent)		
Denmark	9.6	34.5	24.7
India	8.1	46.1	37.8
United States	5.2	46.4	40.8
Russia	4.4	53.7	48.7
Zambia	3.3	56.6	52.6
Brazil	2.2	64.1	60.7

Source: World Bank. Data are for most recent year available.

The difference between the compensation of corporate chief executive officers (CEOs) and the pay of factory workers is gaping and growing steadily in the United States. In 2001, executives of surveyed corporations in the United States made more than \$11 million—some 350 times as much as the average factory worker.¹ (See Table 1.) And this earnings differential grew more than fivefold between 1990 and 2001.²

Today, the U.S. gap is at least 10 times greater than the differential in other industrial nations, where tax laws and cultural norms have prevented huge increases in executive pay. But as U.S. executive compensation practices—which rely heavily on stock, rather than cash, as the primary form of CEO compensation—are adopted elsewhere, the earnings gap in other countries could increase as well.

The average executive compensation of \$11 million in the United States compares with the average pay of factory workers of \$31,260.³ Because earnings of manufacturing workers increased only 42 percent between 1990 and 2001, the bulk of the fivefold increase in the pay gap clearly came from sharp increases in executive pay. The pay for manufacturing workers in other industrial countries grew on average 39 percent, roughly similar to that of workers in the United States.⁴

Growing pay discrepancies in the United States emerge largely from a compensation system skewed in favor of the CEO. In the past two decades, the shift to compensation based on stock options gave CEOs the right to buy company stock in the future at a price set today. The assumption was that tying executive compensation to company stock would give CEOs a strong incentive to ensure that a company is financially successful.

In the rapidly rising stock market of the 1990s, executives often held on to their options, allowing the value of the stocks to rise, then purchased the stock at the low price they had locked in. This led to huge accumulations in wealth. In the year 2001 alone, the average value of stock options received by CEOs in 370 surveyed U.S. companies was at least \$8

million, more than triple the average level of CEO salary and bonuses (\$2.3 million).⁵ In the 1990s, the generous grants of options quickly skyrocketed in value. In an extreme example, Oracle CEO Larry Ellison cashed in \$706 million in long-held options in 2001, making his take-home pay that year more than 17,000 times greater than the pay of the average manufacturing worker.⁶

With the fall of the stock market in 2001, executives saw an average decline of 43 percent in pay-related wealth (the sum of pay, bonuses, and accumulated stock options).⁷ But two things cushioned this decline and give lie to the claim that compensation is closely pegged to company performance. First, pay packages are typically determined by committees of other CEOs, making the setting of compensation levels a political rather than an economic process—and a process that CEOs often influence.⁸ Second, when stock prices fall, many compensation committees simply give the CEO more stock options, or they trade deflated stocks for newer and more valuable options.⁹ Thus Ellison's \$706-million record bonanza in 2001, for example, came even as his other stock holdings lost more than \$2 billion in value.¹⁰

The use of stock options outside the United States, though less common, is on the rise as well. In the mid-1990s, stock option plans were allowed in only 10 of 26 nations surveyed.¹¹ By 2000, 19 of them had such schemes.¹² In Japan, where options have been allowed only since 1997, the number of firms using them grew by 7 percent between 1999 and 2000.¹³ The trend appears to be one of the consequences of a globalization of the executive labor force, as corporations compete across borders for managerial talent. This can lead to odd situations in which branch executives working in the United States make substantially more than their bosses at headquarters in Europe or Asia.

In the United States, options are attractive not only to CEOs but to corporations as well, because they open an accounting loophole that saves companies money. U.S. accounting rules do not treat options as expenses, so millions of dollars in executive compensation do not show

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up on corporate balance sheets. Indeed, the difference between the income that corporations report to shareholders and what they report to the Internal Revenue Service grew by 70 percent just in the late 1990s, as more corporations took advantage of this loophole.¹⁴ It is as though companies found a way to pay their executives at no cost to the corporation.¹⁵ This accounting trick artificially inflates stock values—by 5–8 percent, in U.S. companies, according to a study by the U.S. Federal Reserve.¹⁶

Indeed, because options are profitable to CEOs and corporations alike, they now account for about 80 percent of executive compensation packages in the United States.¹⁷ Elsewhere the figure is lower, but growing: in Australia, options and other long-term incentives made up 35 percent of CEO compensation in 1998, up from 13 percent in 1990.¹⁸ Options are so liberally dispensed in the United States that they now account for about 15 percent of all stocks outstanding in the country.¹⁹

Such a system of compensation puts CEOs at odds with workers, both directly and indirectly. A 2002 study by the Institute for Policy Studies shows that many of the companies under investigation for accounting irregularities saw their CEOs claim lavish salaries—in part because of options—even as workers were laid off by the thousands.²⁰ U.S.-style compensation packages put jobs in jeopardy because they encourage executives to take excessive risks that will inflate stock values and because aggressive accounting methods overstate company earnings, a charade that cannot continue indefinitely.²¹

As taxpayers, workers are also hit.²² While companies do not report stock options on the balance sheets in their annual reports, they do report options in their tax returns, as this reduces their tax liability—and increases the tax burden of the rest of society. And to the degree that workers hold stock, they are also hit, because liberal grants of stock options dilute the value of stock for other shareholders.²³

Table 1: CEO-Worker Disparity in Pay, Selected Countries, 2001

Country	Average Annual Pay		Ratio
	Chief Executive Officers	Manufacturing Workers	
	(dollars)		
United States			
With stock options	10,926,000	31,260	350
Without options	1,932,580	31,260	41
Mexico	866,833	3,720	233
Brazil	530,220	4,840	110
Italy	600,319	19,880	30
Canada	787,060	27,040	29
Spain	429,725	16,140	27
France	519,060	21,500	24
United Kingdom	668,526	27,720	24
Australia	546,914	23,460	23
Netherlands	604,854	29,000	21
New Zealand	287,345	15,300	19
South Korea	214,836	11,940	18
Sweden	413,860	28,960	14
Japan	508,106	36,960	14
Germany	454,974	34,760	13
Switzerland	404,580	35,180	12

Source: Towers Perrin, *Business Week*, and Bureau of Labor Statistics.

In response to recent options-related American corporate scandals, reform of options packages are being considered, even on Wall Street.²⁴ Many major corporations are now expensing their grants of stock options, and others are looking to tie stock grants more directly to company performance. At the same time, there are efforts to limit the gap between the pay of workers and that of executives, or at least to end government support for huge gaps. A bill before the U.S. Congress, the Income Equity Act, would change the U.S. tax code to cap the deduction for executive pay at 25 times that of the lowest paid worker in the company.²⁵

The year 2002 set numerous local and regional records for windstorms, rain intensities, floods, droughts, and temperatures. Economic losses from weather disasters worldwide approached \$53 billion, a 93-percent increase over 2001 losses.¹ (See Figure 1.) The increase was due in part to the return of El Niño in mid-2002.² The number of natural disasters totaled about 700; of these, 593 were weather-related events.³ Windstorms and floods accounted for 98 percent of total 2002 insured losses from natural catastrophes.⁴

Weather disasters also took a significant human toll. Nearly 8,000 people died in storms, floods, droughts, heat waves, or extreme cold.⁵ Many who survived faced the threat of diseases, including cholera, dysentery, malaria, and dengue fever.

The highest costs of weather disasters, in dollar terms, are borne by industrial nations.⁶ But developing countries suffer far higher losses as a share of their gross domestic products, as well as the majority of fatalities.⁷

The most costly event of 2002 was the flooding of the Danube and Elbe Rivers in August. Munich Re, a reinsurance company that compiles data on global disasters, called them “the worst floods in Europe for centuries, probably since the millennium flood in August 1342.”⁸ In less than two days, Germany received as much rain as it normally gets in a year.⁹ At least 108 people died and 450,000 were forced to evacuate.¹⁰ Total economic losses were estimated at \$18.5 billion.¹¹

Extreme cold in Moscow killed more than 300 people in December and early January, while eastern Russia had its worst snowstorm in at least 50 years.¹² Melting snows led to record floods, forcing thousands from their homes in southern Russia.¹³ The following month, Bolivia’s capital, La Paz, was hit by the most powerful storm in its history—receiving almost a gallon of water per square foot in less than an hour.¹⁴ Then heavy snowfall and extreme cold hit Bolivia, Peru, and Argentina in July, killing at least 59 people and affecting 86,682 in Peru alone.¹⁵

In May and June, Southwest Asia sweltered

in temperatures as high as 50 degrees Celsius (122 degrees Fahrenheit).¹⁶ More than 1,200 people died in India, the highest one-week death toll on record for heat waves there.¹⁷ In late July, torrential rains, mudslides, and floods killed nearly 300 Indians and affected more than 10 million.¹⁸ Yet at the same time, expected monsoon rains neglected much of the country, causing the first all-India drought in 15 years.¹⁹

Warm, dry weather contributed to massive wildfires and agricultural losses in the United States and Australia.²⁰ Many U.S. regions experienced the worst drought since the Dust Bowl.²¹ Australia lost some 40,000 rural jobs between July and October due to drought, and analysts expect economic growth to drop 1 percent as a result.²² China also suffered major losses, estimated at \$1.2 billion, due to the most severe drought in over a century.²³ More than 800,000 people in eastern and northern China were affected.²⁴

Heavy rains in Kenya killed at least 53 people and displaced more than 150,000 in May.²⁵ As Kenya battled floods, the Eritrean government reported a drought that was unusually bad even for that country.²⁶ While AIDS, war, and other political problems also play a role, erratic weather patterns are the prime cause of famine for upwards of 18 million people across Africa.²⁷

After months of dry weather, typhoons hit much of Southeast Asia and Japan in mid-2002.²⁸ Record-breaking rains, floods, and landslides killed nearly 1,100 people and injured more than 80,000 in China from June through August.²⁹ The flooding of Hunan’s Dongting Lake affected 8.4 million people and cost more than \$5.4 billion.³⁰ In September, Typhoon Rusa struck South Korea, setting a national record for rainfall and damage and costing the nation \$6.6 billion.³¹ Halfway around the globe, September was also the most active tropical storm month on record for the Atlantic basin.³²

Since 1980, a total of 10,867 weather-related disasters have caused more than 575,000 deaths and entailed costs of more than \$1 trillion (in 2001 dollars).³³ The frequency of severe weather

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events is clearly on the rise. In the United States, the number of weather-related disasters has increased fivefold since the 1970s.³⁴ Worldwide, the number of big weather catastrophes has quadrupled since the 1960s.³⁵

As a result, average annual losses from weather events are rising as well, from more than \$25 billion in the 1980s to nearly \$71 billion in the 1990s.³⁶ Losses due to great catastrophes—which overtax a region's resources, making external assistance necessary—have increased even faster. Average annual losses from catastrophic weather events exceeded \$43 billion during the 1990s—triple the figure in the 1980s, five times that of the 1970s, and eight times the average in the 1960s.³⁷

Although the average number of deaths per weather event falls with improvements in forecasting and preparedness, the total number of people affected is rising.³⁸ In the Oceania region, for example, the number of deaths due to weather disasters rose by 21 percent between the 1970s and 1990s, while the number of people affected swelled from 275,000 in the 1970s to 18 million in the 1990s.³⁹ Environmental disasters—including severe weather—are to blame for 58 percent of the world's 43 million refugees.⁴⁰ Klaus Töpfer of the U.N. Environment Programme (UNEP) believes that the number of environmental refugees could double to 50 million by 2010.⁴¹

These economic and human costs have multiplied over the years due to not only the surge in extreme weather events but also rising global population and increasing concentrations of people and wealth in urban areas and vulnerable regions. Human activities such as clearcutting of upstream slopes have increased the impacts as well. In many cases, efforts to avert or lessen disaster, such as construction of dikes, dams, and avalanche barriers, have drawn people to coastal areas, riversides, and hillside locations, giving them a false sense of safety

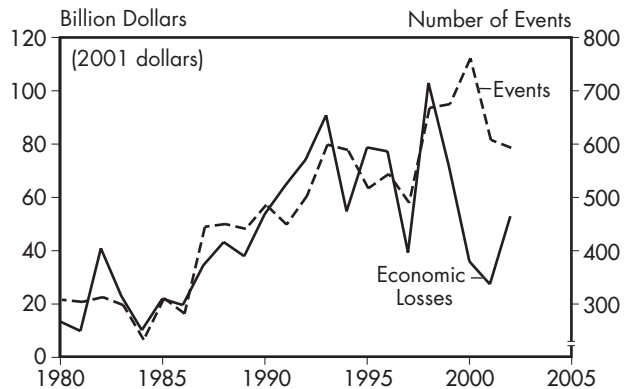


Figure 1: Number and Cost of Weather-Related Disasters, 1980–2002

and perversely increasing the costs of future weather-related disasters.⁴²

Scientists believe that rising global temperatures may increase the intensity and frequency of extreme weather events even more.⁴³ During the twenty-first century, average global surface temperatures are projected to increase at a rate unprecedented over at least the past 10,000 years.⁴⁴ Even slight temperature increases can shift low-pressure systems from their usual paths, causing sudden and significant increases in the frequency of heavy rainfall in a particular area.⁴⁵ Small increases in event severity can lead to multiple increases in damage and costs—for example, a 10-percent increase in wind speed can increase damage by 150 percent.⁴⁶ Thus climate change is expected to exacerbate the upward trends of economic and human costs.

A recent UNEP report concluded that if current trends continue, economic losses from natural disasters will reach \$150 billion annually within the next decade.⁴⁷ According to experts at Munich Re, some single “worst case” disasters could exceed \$100 billion.⁴⁸ Rising costs could stress insurers and banks to the point of insolvency.⁴⁹

Resource Economics Features

Jeff Vanuga, USDA Natural Resources Conservation Service



High Farm Subsidies Persist
Harvesting of Illegal Drugs Remains High

The governments that belong to the Organisation for Economic Co-operation and Development (OECD) gave \$311 billion in subsidies to their agricultural sectors in 2001 (the last year for which data are available), which was down from \$329 billion (in 2001 dollars) in 2000.¹ (See Figure 1.) Three quarters of these subsidies went directly to farmers, while the remainder supported food welfare, agricultural research, and government agriculture departments.²

Governments subsidize farmers in two main ways: through direct payments (based on production, acreage, or head of cattle, for example) and through price supports for various commodities.

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Although politicians generally argue that these subsidies provide a social safety net for rural communities and assure domestic food security, the way in which subsidies are distributed can actually undermine rural areas.

Moreover, economists argue that these payments distort production and trade, since they encourage farmers to produce more than the market demands. At the same time, the least distorting payments—those targeted at poorer farmers or payments to encourage farmers to improve their environmental performance—remain just 1 and 3 percent of support in OECD nations, respectively.³

On average, farmers in OECD nations received 31 percent of their income from government subsidies in 2001, compared with 38 percent in the mid-1980s.⁴ But the share varies widely—from 4 percent in Australia and just 1 percent in New Zealand, which eliminated almost all farm subsidies in the 1980s, to 60 percent or more in Iceland, Japan, South Korea, Norway, and Switzerland.⁵ In the European Union (EU), farm payments account for 35 percent of farm income, compared with roughly 20 percent in Canada, Mexico, and the United States.⁶

The average OECD farmer received \$12,000 in farm payments in 2001, ranging from a high of \$35,000 in Norway to under \$1,000 in Mexico, Poland, and Slovakia.⁷ This measure is misleading, however, since in all countries the distribution is highly skewed toward the largest producers.⁸ Because they are tied to production,

the payments also tilt the table toward the largest and wealthiest farmers, putting smaller, family farmers at a competitive disadvantage.⁹ A 1995 analysis showed that the largest 25 percent of farms in the European Union got nearly 90 percent of total support.¹⁰ And the largest 10 percent of U.S. farms are due to receive two thirds of the estimated \$125 billion in farm payments distributed over the next decade.¹¹

Several nations have recently adjusted their agricultural policies to try to help small or disadvantaged farmers more.¹² For instance, Hungary increased per acre payments for small farmers, while keeping them the same for larger farms, and Turkey now gives payments on a maximum of 20 acres.¹³

Because most farm subsidies are tied to the production of a handful of commodities—such as corn, soybeans, and beef—the payments help encourage farms that are low in diversity and high in agrochemical use, and they inhibit the adoption of resource-conserving practices. Farmers interested in diversifying out of the few crops that receive support lose a significant source of income.¹⁴ A study of cropping patterns in South Dakota over the past half-century found that federal subsidies that gave disproportionate support to corn, wheat, and soybeans encouraged less diverse fields and fewer rotations.¹⁵

Governments give other types of subsidies to agriculture—for irrigation water, fuel, and agrochemicals—beyond the payments included in the \$311-billion OECD estimate. The U.S. government provides an estimated \$5 billion in irrigation subsidies each year.¹⁶ One analysis estimated that agriculture costs \$250 billion more in annual subsidies worldwide in the form of soil erosion, pesticide pollution, and other “externalities” that farmers do not have to pay for.¹⁷

Instead of making payments to farmers directly, many nations support farmers indirectly by purchasing food to distribute to poor consumers at reduced prices through welfare programs, for instance, or school meals. The United States spent \$34 billion on domestic food assistance in 2001.¹⁸ In 2001, India spent

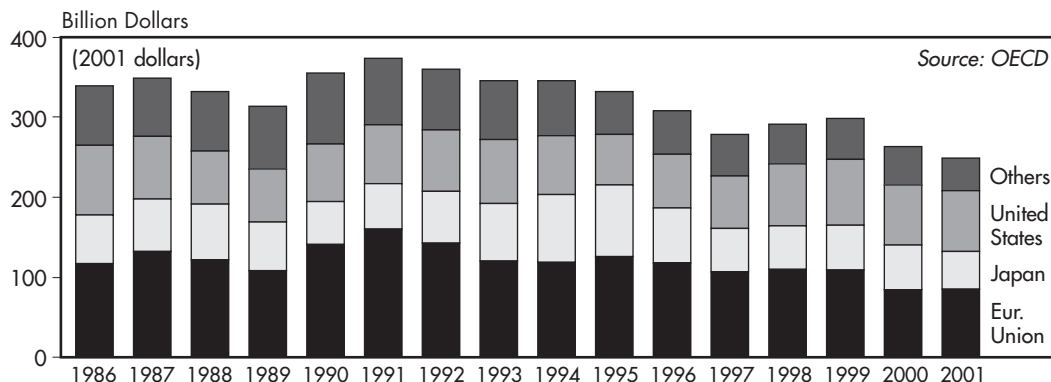


Figure 1: Total Agricultural Subsidies for OECD Nations, 1986–2001

\$2.8 billion on subsidies used to buy food for government ration shops and public storage, in addition to \$1.8 billion on fertilizer subsidies given to farmers and fertilizer makers.¹⁹

Even poorer nations have some subsidies, although none on the scale of the United States, Europe, and Japan. In 2001, Mexico paid farmers \$6.5 billion in subsidies, and the government recently proposed a \$10.25-billion subsidy package for 2003, partly to help farmers cope with subsidized U.S. crops.²⁰ In late 2002, in an effort to reduce herd sizes in the face of a regional drought, Namibia approved a program that would give farmers a \$1.25 subsidy for each cow slaughtered—but this compares with \$30–166 per cow in the European Union.²¹

Citizens finance farm subsidies not only through their taxes but also when price supports inflate food prices. In 2001, consumers in OECD nations paid roughly \$137 billion more for food as a result of support for agriculture (lower than the \$245 billion in the mid-1980s and \$152 billion in 2000).²²

Ironically, while subsidies can push food costs up domestically, nations and food exporters can dump the subsidized commodity on the world market and drive prices down, squashing local production in foreign nations.²³ Recent studies estimate that subsidies pull the price of U.S. and European crop exports to 20–50 percent below the cost of production, exerting substantial downward pressure on world market prices.²⁴ Beyond payments to

farmers, the EU spent about \$3 billion in 2001 on export subsidies (to reduce the price of exported goods and make them more competitive on the world market), and the United States spent roughly as much on export credit guarantees (to help foreign nations buy American farm goods).²⁵

Despite the rhetoric about reducing subsidies as part of World Trade Organization negotiations on agriculture and in order to make farming “respond more to market signals,” most OECD nations have made only minor adjustments to their farm subsidies.²⁶ In the United States, the 2002 Farm Bill will actually increase farm payments above previous levels.²⁷ In Europe, where farm subsidies make up half of the EU budget, governments appear to be gradually reducing farm subsidies per country in order to improve the environmental performance of agriculture and as part of the expansion of the Union.²⁸

France is considering shifting 20 percent of all farm payments toward rural development and ecological farming programs in coming years.²⁹ France and Germany, the two biggest recipients of EU farm aid, will receive less aid over the next five years in order to finance payments to 10 new members starting in 2004.³⁰ And high-ranking Cabinet ministers in the U.K. government recently called for Common Agricultural Policy reform as a way to reduce the burden on taxpayers, improve the environmental performance of farms, and lower the damage to farm economies in developing countries.³¹

Although production of the three major illegal drug crops—cannabis, coca, and opium poppies—is hard to track, the best global estimates indicate that it has increased dramatically since the 1980s, albeit with growth slowing in the last decade.¹ (See Table 1.) Products derived from these plants constitute over 95 percent of all global illegal drug sales.² (Sales of synthetic drugs, particularly amphetamine-type substances like “ecstasy,” are growing rapidly but still only constitute a small share of all drug use.)³

The very nature of drug production—it is illegal, often takes place in unstable areas, and involves an industry that does not disclose its finances or activities—means that production estimates are generally based on indirect indicators such as drug seizures and drug treatment enrollment.⁴

Governments wrestle with the social paradox of drugs: they are a source of enjoyment and a lucrative business, but they cost billions of dollars each year in drug control and treatment of abusers. In a number of places—from Afghanistan to Colombia to Cambodia—drug crops have helped to finance violent conflicts, a reality that has prompted governments to militarize drug control and to criminalize drug use and production.⁵ Yet eradication campaigns often take a heavy toll on the environment, while threatening the health and livelihoods of people in and near producing communities.

Cannabis is by far the most widely grown, sold, and consumed illicit drug. It is cultivated in an estimated 120 countries, compared with 35 countries where opium poppies are grown and just 6 with coca production.⁶

Coca—a bush whose leaves, which are used to make cocaine, have been consumed in raw form for thousands of years in the Andes—is grown primarily in Colombia, Peru, and Bolivia.⁷ These three nations produce 98 percent of the world's cocaine, and Colombia alone is responsible for over 75 percent of global production.⁸

Coca production has declined slightly in recent years as a result of eradication efforts in Peru and Bolivia, partly offset by Colombian

farmers growing more.⁹ And the eradication effect tends to be short-lived, as production moves to adjacent regions or nations. For example, even though Colombian and U.S. authorities sprayed 260,000 hectares between 1994 and 2000, Colombia's total coca acreage grew more than threefold over the same period.¹⁰

Although Afghan farmers have traditionally produced opium poppies—the resin of which is used to make heroin, opium, and morphine—Afghanistan only surpassed Myanmar (formerly Burma) as the world's top opium producer in the 1990s, after more than two decades of war installed the crop as a major funding source for warring factions.¹¹ By the late 1990s, Afghanistan was responsible for over 70 percent of global opium production.¹²

In 2001, however, Afghan production plummeted by 94 percent—from 3,276 to 185 tons—after the ruling Taliban banned poppy cultivation.¹³ As a result, production at the global level dropped by 65 percent, from 4,700 tons to 1,600 tons.¹⁴ More recently, opium growers have taken advantage of the power vacuum created by the fall of Taliban regime and the U.S.-led war to once again make that nation the world's largest producer of opium poppies—with an estimated production of 3,400 tons in 2002.¹⁵

With recent instability in Afghanistan, the “Golden Triangle” of Southeast Asia, defined by Myanmar, Laos, and northern Thailand, has re-emerged as an important opium production center.¹⁶ Myanmar and Laos grow 1,100 tons and 134 tons, respectively.¹⁷

Analysts estimate global illicit drug sales at between \$300 billion and \$500 billion each year, compared with just over \$300 billion in annual drug sales for the pharmaceutical industry.¹⁸ In some countries the illegal drug trade generates more money than any other single legal industry.¹⁹ In Colombia and Mexico, for instance, drug exports rival revenues from oil, the top legal export.²⁰ Bolivia's estimated coca and cocaine exports in the early 1990s were half the size of the nation's total legal exports.²¹ A 1998 estimate found that marijuana was the fourth most lucrative crop in the United States, after corn, soybeans, and hay, and the biggest

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Table 1: Trends in Major Drug Crops, Circa 2000

Drug	Production Estimate	Major Producing Nations	Seizures Record
Cannabis	Some 120 countries cultivate cannabis. Annual production estimates vary widely—from 10,000 tons to 300,000 tons—with 30,000 tons considered a best guess.	Widely dispersed	4,500 tons of cannabis herb seized in 2000—twice as much as in 1990
Coca	Production of coca leaf has fluctuated at 300,000–350,000 tons, enough to yield 600 tons of cocaine in 1989, peaking at 950 tons in 1996, and reaching 827 tons in 2001.	Colombia, Peru, and Bolivia	335 tons of cocaine were seized in 2000, more than 90 percent in the Americas
Opium	Production climbed throughout the 1990s, from roughly 3,400 tons in 1989 to 5,800 in 1999. Opium production plummeted to 1,626 tons in 2001 but rose enough in 2002 to make about 160 kilos of heroin.	Afghanistan, Myanmar, Laos, and Thailand	75 tons of heroin and morphine were seized in 2000—five times as much as in 1990

Source: U.N. Office for Drug Control and Crime Prevention and U.N. International Drug Control Programme.

grossing crop in several states.²²

Like other agricultural commodities, by far the largest profits in the drug business come at the retail end, with an estimated 90 percent or more of the final sale price going to local dealers and often a minuscule share going to the farmer.²³

Despite this skewed distribution of profits, in many cases drug production, processing, smuggling, and retailing provide jobs and income in communities where there are few other opportunities.²⁴ In Mexico, many farmers are turning to opium or marijuana because their corn and other crops cannot compete with cheaper imported food.²⁵ In Baltimore, Maryland, drug dealing provides a stable—albeit dangerous—income in some neighborhoods where jobs are scarce.²⁶ In Afghanistan, revenue for each of the 200,000–250,000 families involved in poppy production is estimated at \$3,000–4,000 a year, a substantial amount in one of the world's poorest nations.²⁷

An estimated 2–5 percent of Peru's work force and between 8 and 17 percent of Bolivia's work force—in other words, hundreds of thousands of people—are directly employed in drug production or processing.²⁸ One analysis suggests this share approaches 50 percent in Colombia's centers of coca production.²⁹

The drug business is so lucrative because of persistent high demand in wealthy nations. The United Nations Office for Drug Control and Crime Prevention estimates that 185 million people worldwide use drugs each year, roughly 4.3 percent of the population over the age of 15.³⁰ This includes at least 147 million marijuana users and roughly 13 million users of cocaine and heroin.³¹ Use tends to be highest among men, single people, the unemployed, and people aged 15 to 35.³²

North America and Western Europe remain the first and second largest markets, respectively, for illegal drugs.³³ Nonetheless, drug use is growing rapidly in Eastern Europe and the former Soviet states in addition to the developing world, where rising incomes and “spillage” from drug production and export have boosted local availability.³⁴

Because most of the world's coca production and processing and most opium production and processing in Southeast Asia and Latin America occur in rainforests, some of the most acute costs of both drug production and drug control fall on the environment, when farmers clear forests to produce illicit drugs, when processors use toxic compounds, and when authorities spray herbicides during eradication campaigns.³⁵

Health and Social Features

Jonathan Frerichs, Lutheran World Relief



Number of Refugees Drops
Alternative Medicine Gains Popularity
Maternal Deaths Reflect Inequities
Consumption Patterns Contribute to Mortality
Orphans Increase Due to AIDS Deaths

At the beginning of 2002, roughly one out of every 300 persons on Earth—19.8 million people in all—were classified by the U.N. High Commissioner for Refugees (UNHCR) as “people of concern.”¹ Of this total, 12 million were officially recognized as refugees.² (The United Nations defines a refugee as a person who,

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“owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and owing to such fear, is unwilling to avail himself of the protection of that country.”)³ The other nearly 8 million included 940,800 asylum seekers, 462,700 returned refugees, 5.3 million internally displaced persons (IDPs), 241,000 returned IDPs, and 1 million others “of concern.”⁴ (See Table 1 for examples of displaced people.) The overall figure was 2 million below the previous year’s total.⁵ But another 50 million people were environmental refugees, IDPs not eligible for UNHCR aid, or otherwise uprooted people who were not counted by UNHCR.⁶

Developing countries produced 86 percent of the world’s refugees over the past decade, but at the same time they also provided asylum for 72 percent of the global refugee population.⁷ Asia hosted the largest overall refugee population (5.8 million), while North America provided a home, even if temporarily, to an estimated 650,000 refugees.⁸

The number of people seeking asylum worldwide dropped slightly—from 1.1 million in 2000 to 923,000 in 2001.⁹ Asylum applications in industrial countries, however, rose by 8 percent.¹⁰ The United Kingdom received the largest number of applications in 2001 (92,000), followed by Germany (88,300) and the United States (83,200).¹¹ From 1992 to 2001, industrial countries resettled 1.2 million refugees, with the United States receiving 77 percent of all arrivals.¹² Afghanistan was the main country of origin of asylum seekers in 2001, with 66,800 Afghans applying for asylum in 144 countries.¹³

Some 463,000 refugees repatriated—returned to their original home country—in

2001, 40 percent fewer than in 2000.¹⁴ The annual number of refugees who repatriated with direct assistance from UNHCR fell by 60 percent.¹⁵ (But 2002 brought about a sharp reversal, as roughly 2 million Afghan refugees and internally displaced civilians returned to their homes in Afghanistan.)¹⁶

The UNHCR figures do not cover the entire population of uprooted people in need of aid. They do not, for instance, include an estimated 3.9 million Palestinians who are cared for by the U.N. Relief and Works Agency for Palestine Refugees in the Near East.¹⁷

Internally displaced people largely fall outside the core mandate of the UNHCR, primarily because they remain within their own borders. The U.S. Committee for Refugees puts the figure of internally displaced persons at 22 million, while the Norwegian Refugee Council’s Global IDP Project estimates the number to be 25 million.¹⁸

Outnumbering international refugees two-to-one and receiving far less help and protection, IDPs pose a key humanitarian challenge.¹⁹ Of the 20–25 million people thought to be internally displaced due to conflict or persecution, only 5.3 million receive UNHCR aid.²⁰ The latest estimates for mid-2002 placed the number of people displaced by armed conflict in Asia at over 4.6 million; Indonesia was the most affected, with 1.3 million internally displaced people.²¹ Afghanistan and Sri Lanka each had about 1 million IDPs.²² Nearly 2.2 million people were displaced in the Americas, twice as many as in 1996, due entirely to the escalating violence in Colombia, where 300,000 people are being displaced yearly.²³ In Europe, at least 3.3 million people have still not been able to return to their homes due to conflicts in 11 countries—outnumbering the official refugee population of 2.7 million.²⁴ But by far the largest IDP population is in Africa, with 10–13 million people displaced.²⁵

The number of environmental refugees and those displaced by natural disasters and development projects has also risen considerably.²⁶ In 1995 (the latest year for which estimates are available), at least 25 million people fell into this

Table 1: Selected Examples of Displaced People Worldwide

Country or Region	Description of Displacement
Sudan	Approximately 4.4 million Sudanese were uprooted at the end of 2001—including an estimated 4 million internally displaced persons and some 440,000 Sudanese living outside the country as refugees and asylum seekers.
Afghanistan	Some 700,000 Afghans were newly internally displaced in 2001; 200,000 Afghans fled to Pakistan; and another 200,000 fled to Iran. At the same time, 140,000 Afghans were repatriated and 120,000 were deported.
Burundi	IDPs in Burundi account for a striking 10 percent of the population. Human rights groups have criticized the government for conscripting some 14,000 IDP children into the army.
Colombia	In 2001, some 342,000 Colombians were newly displaced by political violence and 13,000 applied for asylum in other countries.
Gaza Strip/West Bank	Some 26,000 Palestinians fled to Jordan from the Occupied Territories.
Bosnia	In Kosovo, 220,000 non-Albanians have had to move to other parts of the Federal Republic of Yugoslavia. Approximately 15,000 ethnic Albanians also continued to leave southern Serbia for Kosovo. Some 99,000 Bosnians returned to their places of origin—93 percent to areas where they are in the ethnic majority.

Source: U.S. Committee for Refugees, UNHCR, and U.N. Office for the Coordination of Humanitarian Affairs.

category.²⁷ And this number was projected to double by 2010, growing by almost 8,500 a day.²⁸

The Intergovernmental Panel on Climate Change has predicted that a large share of Bangladesh's landmass could be submerged due to rising sea levels, turning millions of people into refugees.²⁹ Many of the residents of the small Pacific island nation of Tuvalu are expected to seek shelter in New Zealand in the coming decades, as they worry that rising seas will wash away their homes.³⁰

In a sign of the disruption from natural disasters that could lie ahead, Hurricane Mitch displaced more than 1.2 million people throughout Central America, while the Venezuelan floods displaced about 150,000.³¹ In Brazil, some 12 million people were affected by drought, forcing many of the rural poor to migrate to cities like São Paulo, whose population of 19 million in 1999 was swollen by 300,000 of the "wandering poor."³²

According to the World Commission on Dams, some 40–80 million people were displaced from their homes by dams over the last half-century.³³ And as of 2000, about 300 development projects supported by the World

Bank "adversely affected" 2.6 million people in 548,000 households through physical or economic displacement as a result of land acquisition for Bank-aided projects.³⁴

The UNHCR also does not count people who live in "refugee-like situations," which means that typically they live in similar or worse conditions but do not meet the narrow definition of a refugee.³⁵ The U.S. Committee for Refugees estimated that approximately 4.4 million people were in this category at the end of 2002.³⁶

Women account for 50–80 percent of the global refugee population.³⁷ Despite investigations pointing to a persistent problem of violence against and exploitation of refugee women and girls, an ongoing funding crisis has curtailed programs to prevent sexual and gender-based violence against female refugees. Funding by donor countries for international refugee programs was seriously inadequate during 2002. UNHCR expected to end the year some \$170 million short of the \$1.04 billion needed to address basic refugee needs.³⁸

Traditional medicine (TM) and what is called complementary/alternative medicine (CAM) are primary sources of health care for millions of people—about 80 percent of the world depends on traditional techniques alone for treating and curing illness.¹ In many parts of Africa, Asia, and Latin America, TM is the only health care many people receive; at the same time, the use of alternative medicine is growing in Australia, Europe, and North America.² (See Table 1.)

In Africa, about 80 percent of the population uses traditional remedies, while in China, TM accounts for 30–50 percent of health care.³ In Canada, two out of three people have used alternative or traditional therapies at least once.⁴ And in the United States, 42 percent of the population reports use of some traditional medicine, including medication (herbal, animal parts, or minerals) and other therapies (exercise or meditation).⁵

According to the World Health Organization (WHO), TM refers to ways of protecting and restoring health that existed before the arrival of modern medicine.⁶ It “incorporates plant, animal, or mineral-based medicines, spiritual therapies, manual techniques, and exercises... to maintain well-being, as well as to treat, diagnose, or prevent illness.”⁷ Complementary and alternative medicine can include TM, but it refers to a broad set of practices that are not based on a particular country’s religious or spiritual traditions or that are not a part of its dominant health care system. Herbal remedies, spiritual therapy, acupuncture, yoga, various forms of indigenous medicine, and nutritional therapy can all be part of TM or CAM.⁸

Traditional and alternative medicine are increasingly used in part because of accessibility and affordability. People in poor nations can obtain them for free by gathering plants in forests and jungles or by growing them in gardens or between crops. In rural areas, traditional healers are also more readily accessible than doctors. In Tanzania, Uganda, and Zambia, the ratio of TM practitioners to the population is 1 to 200 or 1 to 400 compared with 1 to 20,000 for doctors trained in more modern medicine.⁹ For many, TM is the only affordable source of

health care for treating malaria, AIDS, and other diseases. According to WHO, most Africans living with HIV/AIDS use TM to both obtain relief and combat infections.¹⁰ Treating malaria with herbal medicines is also far cheaper and can be highly successful.¹¹

In industrial countries, many people decide to use TM or CAM because they believe these alternatives are less invasive or toxic than modern therapies.¹² In Japan, Australia, Canada, and Switzerland, 40–70 percent of people have used CAM, leading many conventional doctors to include some form of alternative medicine in their practices.¹³ Acupuncture is the most popular CAM method used by conventional practitioners. In Belgium, for example, 74 percent of acupuncture treatment is administered by medical doctors.¹⁴

“Ecological medicine” is an emerging philosophy shared by many health care professionals, scientists, and environmentalists.¹⁵ It adds an ecological component to non-toxic and natural medical practices. Epidemiologists have long acknowledged that cultural dimensions play a role in health. Now that human activities—population growth, resource abuse, a narrow pursuit of economic growth, and inappropriate technologies—are degrading the environment, there are new patterns of human and ecosystem poverty and disease.¹⁶ And although intensive medical procedures, such as chemotherapy, have prolonged countless lives, many of these advances have come at great cost to both human health and the environment by creating medical waste and long-term contamination.¹⁷ Ecological medicine advances public health by protecting the environment and creating a diverse, equitable, environmentally just system of guidelines for doctors and patients to follow when choosing treatments.¹⁸

Protecting the natural resources on which herbal and other traditional medicines are based is important, especially in developing countries that depend heavily on TM for basic health care.¹⁹ Publicity about use of the African potato in treating AIDS, for instance, and growing demand for the plant are threatening its sustainable production in eastern and

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southern Africa.²⁰

Unlike conventional therapies, the efficacy of many traditional and alternative treatments is not based on just scientific fact but is a holistic approach that emphasizes total health more than isolated symptoms.²¹ Evaluation of TM and CAM “products” can be difficult. Plant identification, including the area of collection and the time of plant collection, is important in determining the effectiveness of therapies. And because a single plant can contain hundreds of natural constituents, it can be prohibitively expensive to establish which is responsible for an effect.²² Similarly, cultural differences among practitioners and patients can create problems concerning the interpretation and application of a therapy.²³

Governments are beginning to respond to the growing interest and use of TM and CAM by regulating them.²⁴ Some governments in Africa have started programs to improve knowledge among traditional birth attendants, as well as training doctors, nurses, and pharmacists about TM.²⁵ And in Mali, Nigeria, Rwanda, Senegal, and several other African nations, national budgets allocate funds specifically for TM.²⁶ Most developing nations also have national TM research institutes. In 2000, when the heads of 53 African countries signed the Abuja Declaration on Roll Back Malaria, they noted the importance of using TM to fight this devastating disease.²⁷

In Norway, the government requires CAM practitioners to be certified.²⁸ The Norwegian Ministry of Health and Social Affairs also established a committee to study CAM’s role in improving health care.²⁹ And in the United States, according to the newly established National Center for Complementary and Alternative Medicine, CAM funding has increased significantly—from just \$2 million in 1990 to

Table 1: Use of Traditional and Complementary/Alternative Medicine, Selected Countries and Regions

Country or Region	Description
China	Traditional Chinese medicine is fully integrated into China’s health system and 95 percent of hospitals have units for traditional medicine.
India	Traditional medicine, such as <i>ayurveda</i> , <i>siddha</i> , <i>unani</i> , yoga, and homeopathy, is widely used in rural India, where 70 percent of the population lives.
United States	National expenditure on complementary or alternative medicine stands at \$2.7 billion per year.
Japan	Seventy-two percent of registered western-style doctors use <i>kampo</i> medicine, the Japanese adaptation of traditional Chinese medicine.
Europe	Acupuncture is provided by 77 percent of the pain clinics in Germany; in the United Kingdom, 46 percent of doctors recommend patients get acupuncture elsewhere or perform it themselves.
Africa	Most Africans living with HIV/AIDS or malaria use some form of traditional medicine. In Ghana, drugs from a clinic can cost more than 10 times as much as self-treatment with herbs.
Central and South America	Regulation and registration of herbal medicines have been established in Bolivia, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, Peru, and Venezuela.

Source: World Health Organization.

more than \$68 million in 2000.³⁰

Drug companies and institutions have also realized the economic opportunities that can be gained by tapping into the knowledge of traditional practitioners. Unfortunately, knowledge about traditional medicines is often adapted and patented by industry without the consent of its original custodians because they lack intellectual property rights.³¹

Although the use of traditional and alternative medicine is becoming more important as conventional health care costs rise, only 25 of WHO’s 191 member states have developed a national TM/CAM policy.³² In 2002, WHO established a traditional medicine strategy to evaluate methods, assure safety of products, train practitioners, and consider intellectual property issues.³³

An estimated 515,000 women die annually from pregnancy-related causes.¹ And for every maternal death, there are 30 cases of injury, illness, or disability, bringing the total number of women harmed each year by pregnancy or during childbirth to over 15 million.²

Of all health indicators, maternal mortality reveals the starkest disparity between industrial and developing nations.³ Ninety-nine percent of maternal deaths occur in developing countries, where a large proportion of women give birth without the aid of skilled health personnel.⁴ (See Figure 1.)

Four out of five maternal deaths are the direct result of complications arising from pregnancy and childbirth: hemorrhage, infection, unsafe abortion, prolonged or obstructed labor, and hypertensive disorders, such as convulsions.⁵ The other 20 percent result from pre-existing conditions that are exacerbated by pregnancy, including anemia, malaria, hepatitis, and HIV/AIDS.⁶ Poor nutrition, which often starts during childhood, and deficiencies of vitamin A, iodine, calcium, iron, and folic acid also contribute to poor maternal health.⁷

The maternal mortality ratio—the number of maternal deaths per 100,000 live births—measures the risk of death once pregnancy has occurred. But since a woman faces this risk each time she is pregnant, a more comprehen-

sive measure is the lifetime risk of maternal death, which also takes into account the average number of pregnancies per woman.

Women in countries with a high maternal mortality ratio as well as a high total fertility rate face the greatest lifetime risk. The chance of a woman dying during pregnancy or childbirth is as low as one in 5,500 in Australia and New Zealand and as high as one in 11 in the nations of Eastern Africa.⁸ Compared with women in industrial countries, those in developing nations run a 40 times greater risk of maternal death during their lives, and those in the 49 “least developed” countries (using the standard U.N. designation) are more than 150 times as likely to die during their lifetime due to pregnancy or childbirth.⁹

Most maternal deaths could be avoided if not for the vast disparities in maternal health care both between and within countries. The presence of a skilled attendant with midwifery skills and the availability of transport to a health facility in case of an emergency are basic components of safe motherhood. Traditional birth attendants, whether trained or untrained, are often unable to handle serious complications.¹⁰

Skilled attendants deliver 99 percent of births in the industrial world, compared with 58 percent in the developing world and only 34 percent in the “least developed” countries.¹¹

A World Bank study of 44 developing

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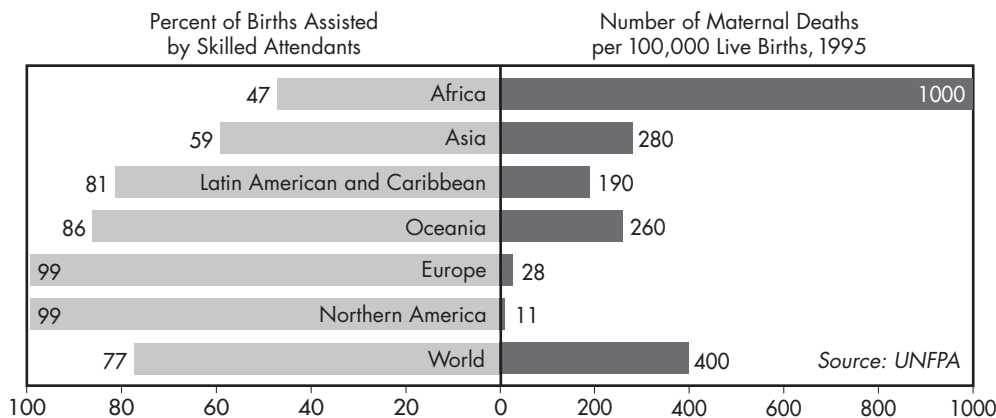


Figure 1: Skilled Care at Delivery and Maternal Deaths, Regional Comparisons

nations shows that personal income is strongly correlated to maternal health and care. In South Asia, for example, the richest fifth of the population is 10 times more likely to have skilled assistance than the poorest fifth.¹² The place of delivery is also linked to income: in the countries studied by the Bank, 80 percent of the poorest one fifth of women delivered at home while, in direct contrast, 80 percent of the richest one fifth delivered at health facilities.¹³

Simply meeting the demand for family planning services would lower maternal mortality by reducing unintended pregnancies. A recent analysis by the Global Health Council found that nearly 700,000 women died as a result of unwanted or unintended pregnancies between 1995 and 2000.¹⁴ (The majority—more than 400,000—died from unsafe, unsanitary, and sometimes illegal abortions.)¹⁵ This suggests that roughly 115,000 maternal deaths could be prevented every year through birth spacing or prevention.¹⁶

Regions with the most limited reproductive health care—sub-Saharan Africa and South Asia—suffer the greatest abortion-related maternal mortality, despite having lower abortion rates than other regions.¹⁷ For instance, 13 percent of all pregnancies end in abortion in sub-Saharan Africa compared with 22 percent in Northern America.¹⁸ Yet the rate of abortion-related maternal deaths per 100,000 pregnancies in sub-Saharan Africa is over 300 times greater than in Northern America.¹⁹

Trends in maternal mortality are difficult to evaluate. In recent years, new ways of measuring this important indicator of a nation's well-being have been developed, making it hard to compare recent data with data from past analyses. And even the best current estimates have large margins of error, adding to the difficulty of trends analysis. However, the percentage of births attended by skilled attendants serves as a good proxy indicator because it is highly correlated with maternal mortality and is easier to measure.

Trend data on skilled attendants at delivery are available for 51 nations, accounting for 74 percent of live births in the developing world.²⁰

Table 1: Skilled Attendants at Birth, by Region, 1990 and 2000

Region	1990	2000
	(percent of births attended by skilled personnel)	
Sub-Saharan Africa	40	42
Middle East and North Africa	51	64
Asia	37	50
Latin America and the Caribbean	76	85
Total	42	53

Source: UNICEF.

(See Table 1.) Delivery care has increased in many regions over the past decade, but in sub-Saharan Africa, where maternal mortality is highest, there has been little improvement. In fact, in some African nations delivery care has worsened. In 1998–99, skilled personnel attended only 31 percent of births in Burkina Faso, down from 42 percent in 1993.²¹ In Kenya, the proportion fell from 50 to 44 percent between 1989 and 1998.²²

Improving maternal health care has a positive effect on infant and child survival as well. Eight million stillbirths and newborn deaths occur each year, largely as a result of insufficient care during pregnancy and delivery.²³ And research from Bangladesh shows that children under age 10 who have lost a mother are 10 times more likely to die than those whose mothers are still alive.²⁴

Safe motherhood depends not only on providing sound medical care but also on correcting social and economic disparities between men and women. These disparities are often the root causes of women's poor health. Discrimination against women—in access to food, resources, and education—remains an obstacle to improving maternal health.

In 2000, 55.7 million people died around the world, succumbing to a wide range of illnesses and conditions.¹ (See Table 1.) Cardiovascular diseases, including various chronic heart conditions and stroke, were the largest cause—killing 16.7 million people.² Infectious and parasitic diseases, including AIDS, tuberculosis and respiratory infections, malaria, and diarrheal diseases, were the second largest, taking 14.4 million people.³ And cancers were the third, responsible for 6.9 million deaths.⁴

On the broadest scale, the two population groups at opposite ends of the income scale—the affluent and the impoverished—are dying

from very different diseases.

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Infectious diseases primarily plague the developing world, especially people earning less than \$2 a day, who cannot afford clean water, sanitation, or nutritious food.⁵ People in Africa and Southeast Asia are the most gravely affected by these: they account for 75 percent of the deaths from infectious diseases, but just 36 percent of the world's population.⁶ In contrast, cardiovascular diseases and cancers primarily affect those who consume too many unhealthy foods, tobacco, alcohol, and drugs, and who lead sedentary lifestyles—primarily Europeans and Americans.⁷ They account for 42 percent of cardiovascular diseases and cancers, yet only 28 percent of the world's population.⁸

Underlying such overt causes as infectious and cardiovascular diseases are a number of risk factors for these illnesses. In 2002, the World Health Organization identified several major risks and assessed the contribution of each to global mortality.⁹ Of course, risk factors do not act exclusively—for instance, diarrheal diseases can be caused jointly by poor sanitation and poor nutrition. Thus, adding risk factors results in high-end estimates. Even as such, the WHO analysis conveys the significant impact consumption has on mortality. Indeed, in 2000, overabundant consumption of resources accounted for up to 46 percent of mortality, while lack of access to resources accounted for up to 23 percent of deaths—roughly 99 percent of which occurred in the developing world.¹⁰

In the developing world, where people often lack access to clean fuels and well-ventilated shelter, the use of such solid fuels as coal, wood, and dung for cooking and heating caused 1.6 million deaths by triggering respiratory infections and lung diseases.¹¹ Unsafe sex, mainly through spreading HIV or a lack of contraception, killed 3 million people in 2000—75 percent of whom lived in Africa.¹² Due to lack of access to education, condoms, and health care, HIV is growing unchecked throughout this continent, with more than 3.5 million people newly infected in 2002.¹³

Dietary deficiencies, including lack of calories, protein, iron, zinc, and Vitamin A, produced up to 6.2 million deaths, mostly in children and women of reproductive age—primarily by weakening the immune system, thus increasing susceptibility to infectious diseases.¹⁴ The lack of access to clean water and sanitation led to 1.7 million deaths in 2000, the vast majority from diarrheal diseases.¹⁵ Of these deaths, 99.8 percent occurred in the developing world, and 90 percent of the victims were children.¹⁶

Improving the allocation of health resources and sanitation would dramatically reduce infectious disease deaths. Currently, almost 30 million of the 130 million children born each year do not receive vaccinations.¹⁷ Immunizing every child would prevent 3 million deaths each year, while costing just \$1.3 billion more than the world currently spends annually on vaccinations—far less than the costs of long-term treatment and disability.¹⁸ Providing access to sanitation to just half of the 3 billion people who currently lack it would reduce the number of years of lost life by 30 million, at a cost of just \$37.5 billion over 10 years.¹⁹

In the industrial world, deaths brought about by lack of access to resources accounted for just 1 percent of deaths.²⁰ People in these countries suffered primarily from diseases related to poor dietary and lifestyle behaviors.²¹

High blood pressure, high cholesterol, being overweight, and eating too few fruits and vegetables together caused up to 7.6 million deaths in industrial countries by increasing the risk for a number of diseases,

including stroke, heart diseases, cancer, and diabetes.²² These conditions are primarily triggered by a diet too high in salt, sugar, fat, and calories; as these increase in the diet—often in the form of processed foods—they displace healthier, less convenient foods, such as fresh fruits and vegetables.²³

Physical inactivity exacerbates poor dietary behaviors and contributed to 855,000 deaths in industrial countries by increasing rates of heart disease, cancer, and diabetes.²⁴ The use of addictive substances only compounds the problems caused by poor diet and lack of exercise. Tobacco and alcohol use cause heart disease, stroke, and cancers and were responsible for 3 million deaths in the industrial world.²⁵

These problems do not plague only the industrial world. More people die from overconsumption in developing countries (up to 14.3 million) than in industrial ones.²⁶ And even in high-mortality developing countries, where poor sanitation and dietary deficiencies account for up to 42 percent of deaths, overconsumption now accounts for up to 27 percent of mortality.²⁷ As conditions in the developing world improve, those living there often undergo a “risk transition”: increases in income provide more access not only to food and clean water but also to processed foods and to tobacco, alcohol, and drugs; together these shift the disease burden from infectious to chronic diseases.²⁸ In low-mortality developing countries, where poor sanitation and undernourishment are less of a problem, overconsumption now causes up to 45 percent of deaths.²⁹

A few countries have successfully countered the poor health that stems from the increases in unhealthful consumption that can accompany growing affluence. South Korea, for example, has minimized obesity by promoting its traditional diet—high in rice and vegetables and low in fats, salt, and sugar—through a combination of education, support for local farming, and mass media campaigns.³⁰

Two decades after going through a nutritional transition in the 1950s, Finland suffered from one of the highest rates of cardiovascular disease

Table 1: Global Mortality by Cause, 2000

Cause of Death	Number (thousand)	Share of Total (percent)
Cardiovascular diseases	16,701	30.0
Infectious and parasitic diseases	14,398	25.9
Cancers	6,930	12.4
Maternal and perinatal conditions and congenital abnormalities	3,591	6.4
Chronic respiratory diseases	3,542	6.4
Unintentional injuries (such as auto accidents)	3,403	6.1
Digestive diseases	1,923	3.5
Neuropsychiatric disorders	948	1.7
Violence and war	830	1.5
Genitourinary diseases	825	1.5
Suicide	815	1.5
Diabetes	810	1.5
Nutritional deficiencies and disorders	669	1.2
Other	309	0.6
Total	55,694	100

Source: World Health Organization.

in the world.³¹ In the 1970s, the government worked with health experts, the food industry, and local communities to reverse this trend, and by 1995 the program had reduced heart disease deaths by 65 percent.³²

Yet South Korea and Finland represent exceptional cases. Most governments have not faced the epidemic of overconsumption in their societies and will need to work aggressively if they are to prevent rapid growth in mortality in the coming decades.

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At the end of 2001, an estimated 13.4 million children under the age of 15 in Africa, Asia, and Latin America and the Caribbean had lost a parent to AIDS.¹ (See Figure 1.) More than 11 million of these “orphans due to AIDS” live in Africa.² (The United Nations defines “orphan” as any child under the age of 15 who has lost either one parent or both parents. Although the loss of one parent may be less of a burden on children and other relatives, it is still a cause of physical and emotional insecurity and often a trigger for extra support, where available.)³ By 2010, the number of children orphaned by AIDS is projected to reach 25 million.⁴ Most of these children—20 million of them—will live in sub-Saharan Africa.⁵

If HIV/AIDS were not boosting mortality rates for adults, the number of children who are orphans would be declining due to overall improvements in human well-being. Unfortunately, at the moment the opposite is happening. In 2001, AIDS orphans accounted for 12.4 percent of all orphans; by 2010, nearly a quarter of orphans will be children who have lost one or both parents to this disease.⁶ (See Table 1.)

In 2001, 12 percent of all children in sub-Saharan Africa were orphans, compared with 6.5 percent in Asia and 5 percent in Latin America and the Caribbean.⁷ The greater burden of HIV/AIDS in sub-Saharan Africa accounts for much of this difference between regions; without AIDS as a factor, the figure in sub-Saharan Africa would be 8 percent.⁸ In Zimbabwe, where an estimated 34 percent of adults are HIV-positive, more than three quarters of the orphans have lost a parent to AIDS.⁹ In seven other African nations, orphans due to AIDS account for more than half of the total.¹⁰

Because it takes about 10 years before an HIV infection leads to an AIDS-related death, given current treatment options and availability in many poor nations, the number of children orphaned by AIDS is expected to continue rising over at least the next decade in countries

where HIV is widespread.¹¹ Botswana and Zimbabwe will be the hardest hit by 2010, with orphans due to AIDS accounting for nearly 90 percent of all children who have lost a parent; in Lesotho, Namibia, Swaziland, and Zambia, the figure is expected to top three quarters.¹²

Even in countries where HIV prevalence has been curbed in recent years, the number of orphans remains high. In Uganda, where adult HIV prevalence declined from 14 percent in the late 1980s to 5 percent in 2001, some 884,000 children have been orphaned by AIDS—one of the largest totals in the world.¹³ Although this number is beginning to decline, in 2010 Uganda will still have to care for over a half-million children orphaned by AIDS.¹⁴

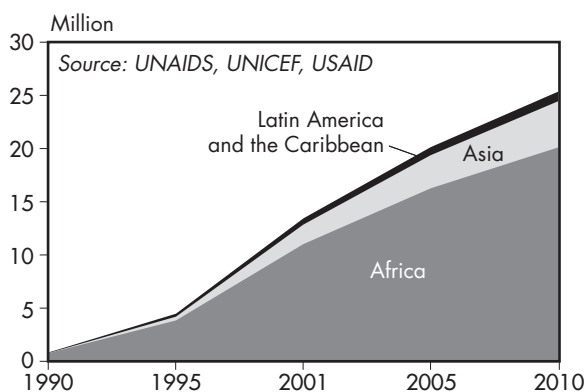


Figure 1: Orphans Due to AIDS, by Region, 1990–2001, with Projections to 2010

In Asia, the number of orphans due to AIDS, 1.8 million, was small compared with the total orphan count of 65.5 million in 2001.¹⁵ Less than 3 percent of orphans in this region lost a parent to AIDS, compared with nearly a third in Africa, reflecting Asia’s large populations and low HIV prevalence levels.¹⁶ Yet with growing epidemics in India, China, and Indonesia, even small increases in HIV prevalence can translate into large numbers of AIDS deaths.¹⁷ In fact, projections for Asia indicate that by 2010 orphans due to AIDS will number 4.3 million, accounting for 7.5 percent of all orphans.¹⁸

Although all three developing regions will

experience an increase in orphans due to AIDS, both in absolute number and as a proportion of all orphans, Africa is distinct in one respect. The total orphan counts in Africa will be higher in 2010 than they are now by about 8 million.¹⁹ In Asia and in Latin America and the Caribbean, in contrast, the total number of orphans is projected to decline slightly because the increase in the number of children orphaned by AIDS will be offset by a decline in the number of orphans from other causes.²⁰

One of the most serious effects of AIDS is the increasing number of children who are losing both parents—called “double orphans” by the United Nations. It is likely that one parent who is infected with HIV will pass on the virus to the other. In turn, the eventual death of both parents due to AIDS within a short span of time is also likely. As a result, the number of double orphans who have lost at least one parent to AIDS is expected to increase from 3.8 million in 2001 to 6.9 million in 2010.²¹

All orphans, whether they have lost one parent or two, face tremendous physical and emotional insecurity. The death of a parent can mean greater responsibility to care for siblings, tend to fields, or earn an income. Orphans may face malnutrition and lose access to basic health care, clothing, housing, and education. Young girls are the first to get pulled out of school. UNICEF found that in 20 countries in sub-Saharan Africa, orphans were less likely than other children to be in school and more likely to be working more than 40 hours a week.²²

Children who lose parents to AIDS can also face stigma and discrimination, including physical abuse and isolation. Without a foster family to care for them, their only option may be prostitution and petty crime while living on the streets. A study in Zimbabwe found that half of all street children are orphans, the majority due to AIDS.²³ Sexual exploitation and drug use heighten the risk that orphaned street children will contract the same virus that their parents succumbed to.

In sub-Saharan Africa, HIV/AIDS is also placing an immense burden on extended families, which often take in orphaned relatives.

Table 1: Orphans Due to AIDS and Other Causes, 1990–2001, with Projections to 2010

Year	Orphans Due to AIDS (thousand)	Orphans Due to All Other Causes (thousand)
1990	903	104,855
1995	4,523	101,923
2001	13,440	94,524
2005	20,106	88,230
2010	25,296	81,469

Source: UNAIDS, UNICEF, and USAID.

Family structures are changing rapidly, with households being headed by single parents, grandparents, other relatives, or children themselves. While people try to cope by increasing income-generating activities, it is often difficult to meet needs, especially in households headed by poor women or elderly grandparents.²⁴

Orphanages are not considered an appropriate or effective solution for providing care for orphans. First, the costs associated with building and staffing orphanages are too high for most AIDS-affected countries. Second, child advocacy organizations find that care provided in an institutional setting does not necessarily meet the needs of children, who require personal attention and broader social interactions.

In developing countries, where family and community members are the first to provide care for orphans, direct assistance should be provided to foster families. Policies that strengthen family- and community-based care through day-care centers, support groups, and skills training are also needed. Ultimately, the resources and services available to the larger community and the children themselves will determine how effectively this emerging crisis is managed.²⁵

Military and Governance Features

U.S. Airforce photo by Staff Sgt. Greg L. Davis



Corruption Thwarts Development
International Criminal Court Starts Work
Military Expenditures on the Rise
Resource Wars Plague Developing World

Corruption—the misuse of public power for private benefit—is hard to measure because officials who take bribes try to hide such activity. Since Transparency International (TI), a Berlin-based nongovernmental organization, published its first global Corruption Perceptions Index in 1995, however, opinion surveys have become a widely used tool to gauge corruption.

The index combines 15 surveys from nine institutions that ask businesspeople, risk analysts, and residents about corruption among public officials and politicians. In 2002, the index covered 102 countries. Of these, 70 nations scored less than 5 out of a clean score of 10, and 35 scored less than 3.¹ (See Table 1.)

The methodology of this index is evolving, making year-to-year comparisons difficult, but TI does point to a few countries where the perception of corruption seems to be changing.² South Korea improved its score between 2001 and 2002, after an anti-corruption law established a commission to investigate high-ranking officials and set fines for bribery of up to \$40,000, jail terms of up to 10 years, and a ban on subsequent employment of 5 years.³ In contrast, Argentina was perceived as being more corrupt in 2002—its economic crisis invited new scrutiny of government spending at the same time that investigations into abuses by former President Carlos Menem were under way.⁴

Corruption erodes people's trust in government. In 1999, two thirds of 57,000 people polled in 60 countries by Gallup's International Millennium Survey believed that their country was not governed by the will of the people.⁵ Similarly, the Open Society Institute found that three fourths of citizens in Central and Eastern Europe believed that most or all of their public officials were corrupt, while only 4 out of 10 children surveyed in Europe and Central Asia saw voting in elections as an effective way to improve conditions in their country.⁶

Corruption also appears to sap economic growth. In a path-breaking 1995 paper, economist Paulo Mauro showed that highly corrupt nations have a smaller share of their gross domestic product going into investment.⁷ Cor-

ruption raises the cost of business, deterring would-be investors.⁸ A study of transition economies in Eastern Europe and Central Asia found that gross domestic investment averaged 20 percent less in countries with high corruption compared with countries with medium levels of corruption.⁹

When bribes mean more than votes, a government fails its citizens, as money that could be used to provide needed public services is diverted to private bank accounts. A parliamentary committee in the Philippines calculated in 2002 that corruption costs that government some \$1.9 billion annually—twice the size of the national education budget.¹⁰ The World Bank estimates the cost of corruption in Colombia at \$2.6 billion a year.¹¹

Further, corruption skews public spending toward the sectors where bribing is easier.¹² Studies show that corruption shifts spending away from education, health, and maintenance of existing infrastructure and toward large public works construction and buildup of the military.¹³ Indeed, surveying corporate executives, bank officials, and law firms in 15 emerging market economies in 2002, TI found that public works was the sector in which bribes were most often demanded, followed by defense.¹⁴

At the local level, petty bribes solicited by officials from citizens act as a regressive tax that falls most heavily on the poor. Urban Kenyans polled by the Kenya chapter of TI in early 2001, for example, reported paying some \$104 in bribes each month, on an average monthly income of only \$331.¹⁵

Corruption also corresponds to environmental harm. Researchers at Yale University's Center for Environmental Law and Policy have designed an Environmental Sustainability Index that ranks nations by environmental performance. Of 67 quality-of-life variables included in the index, corruption was the one most highly correlated with poor environmental quality.¹⁶ One explanation for this link could be that officials in nations with high levels of corruption take bribes in return for not enforcing environmental laws.

Deforestation spurred by corruption is well

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documented, for instance. In Indonesia, a recent study found that many of the logging concessions, covering more than half of the nation's total forest area, were awarded by former President Suharto to relatives and political allies, that at least 16 million hectares of natural forest were approved for conversion to plantations, in direct contradiction of existing laws, and that corrupt officials allowed illegal logging that accounted for some 65 percent of total supply in 2000.¹⁷

Public officials have also used concessions for mining and fuel extraction to liquidate a nation's resources without passing the revenue on to citizens. In oil-rich Nigeria and Angola, public officials have used oil money for arms and for personal gain.¹⁸ In July 2002, the family of Nigeria's former dictator Sani Abacha agreed to return some \$1.2 billion that he took from Nigeria's central bank.¹⁹

Construction of public works is another area in which corruption has the potential to harm the environment. In Japan, unnecessary and environmentally damaging bridges, dams, and roads have been built as a result of unethical ties between the construction industry and lawmakers.²⁰ The president of the upper house of Japan's Diet resigned in April 2002 after allegations that his aide took a kickback from a construction company on a public works project.²¹

In a landmark case involving the Lesotho Highlands Water Project, both the briber and the person who was bribed were found guilty of corruption in 2002. A court in Lesotho fined the Canadian company that built a dam \$2.2 million for bribing the chief executive of the project, who was sentenced to 18 years in jail; this was the first time a developing nation's court convicted an international company for paying bribes.²²

The Lesotho case reflects mounting international pressure to combat corruption. Since 1999, the World Bank has barred from development projects companies that are involved in corruption.²³ A 1997 Anti-Bribery Convention by the Organisation for Economic Co-operation and Development (OECD) criminalizes the bribery of foreign public officials, primarily targeting companies from industrial nations that

Table 1: Nations Perceived by Business People and Risk Analysts as Most Corrupt of 102 Surveyed, 2002

Corruption Index Score ¹	Countries
1.0–1.9	Bangladesh, Nigeria, Angola, Madagascar, Paraguay, Indonesia, Kenya
2.0–2.3	Azerbaijan, Moldova, Uganda, Bolivia, Cameroon, Ecuador, Haiti, Kazakhstan
2.4–2.6	Georgia, Ukraine, Viet Nam, Albania, Guatemala, Nicaragua, Venezuela, Pakistan, Philippines, Romania, Zambia
2.7–2.9	Côte d'Ivoire, Honduras, India, Russia, Tanzania, Zimbabwe, Argentina, Malawi, Uzbekistan

¹ Index ranges from 0 (most corrupt) to 10 (least corrupt).

Source: Transparency International.

pay bribes for contracts in the developing world.²⁴ The Asian Development Bank and OECD launched an anti-corruption initiative in the Asia Pacific region in 2001 that committed nations to developing anti-corruption action plans.²⁵ The Organization of American States has begun to implement an Inter-American Convention against Corruption.²⁶ And in 2002, the United Nations began negotiating a global treaty on corruption.²⁷

All these new initiatives recognize that "it takes two to tango" in corruption: a bribe payer and a bribe taker.²⁸ But most companies have yet to fear prosecution for paying bribes. A recent survey of managers of major firms operating in developing countries found that only 19 percent knew something about the 1997 OECD anti-bribery treaty.²⁹ Peter Eigen, TI's chairman, notes: "Only a level playing field—a world in which honest companies know that bribery doesn't pay and that unscrupulous competitors will be punished—will bring about a lasting change in the behavior of international business."³⁰ To help level the playing field, his organization is working with companies such as BP, Shell, Tata, and General Electric to develop business principles for countering bribery.³¹

On July 1, 2002, the Rome Statute of the International Criminal Court (ICC) entered into force, creating the first permanent and independent court capable of investigating the most serious violations of international humanitarian law—genocide, war crimes, crimes against humanity, and, once it is defined, aggression.¹ (See Table 1 for an overview of

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the ICC.) Countries that ratify the statute agree either to prosecute individuals accused of such crimes under their own laws or to surrender them to the Court for trial.²

The Court's jurisdiction is not retroactive: it can only address crimes that have occurred on or after July 1, 2002.³ The ICC will act as a court of last resort, when national courts are unable or unwilling to act. As adopted, the ICC statute also asserts jurisdiction over citizens of a non-party state by virtue of the "universal jurisdiction" exercised by the ICC.⁴ But the country where the crimes are alleged to have occurred has to have ratified the statute or at least accept the Court's jurisdiction, even if only on a temporary basis. The U.N. Security Council can also refer a case to the Court.

The U.N. General Assembly first recognized the need for a permanent judicial mechanism to prosecute war criminals and mass murderers in 1948, following the Nuremberg and Tokyo trials after World War II. Until the adoption of the Rome Statute of the International Criminal Court, there was no system to hold individuals criminally liable for genocide or war crimes. The International Court of Justice at the Hague, the principal judicial organ of the United Nations, was designed to deal primarily with disputes between states, and hence it had no jurisdiction over matters involving individual criminal responsibility.⁵

Since World War II, the need for a permanent criminal court has only become stronger. An estimated 170 million people have died in 250 conflicts.⁶ From April to July 1994, for example, some 800,000 Rwandans—roughly 10 percent of that country's population—were murdered during ethnic violence between Hutus and Tutsis.⁷ An estimated 10,000 ethnic

Albanians were killed in Kosovo by the armed forces of the Federal Republic of Yugoslavia from March to early June 1999.⁸ On August 30, 1999, East Timor voted in favor of independence from Indonesia; following the vote, militia forces massacred hundreds, and possibly thousands, of East Timorese.⁹ And about 300,000 people perished under the rule of Idi Amin, the *de facto* President of Uganda from 1971 to 1979.¹⁰

The U.N. Security Council's establishment of the International Criminal Tribunals for the former Yugoslavia and for Rwanda in 1993 and 1994 was perceived as a step in the right direction.¹¹ The establishment of tribunals has also been pursued in a few other areas. In East Timor, a "hybrid" approach—involving international and local judges—is in operation.¹² In July 2002, the U.N. Security Council approved plans for the launch of a special court to try people for abuses committed during the civil war in Sierra Leone.¹³ But these panels suffer from inadequate funding and what critics have called low standards of professionalism.¹⁴ In Cambodia, U.N. officials have been negotiating with the government to set up a tribunal for Khmer Rouge leaders, but ensuring adequate standards has been a major obstacle.¹⁵ And these tribunals are limited in their territorial and temporal jurisdiction. The ICC was created with the goal of deterring future crimes and remedying the deficiencies of *ad hoc* tribunals.

For nearly a decade, the United States had demonstrated a consistent level of executive and congressional interest in the concept of a permanent International Criminal Court. The Foreign Operations, Export Financing, and Related Programs Appropriations Act of 1991, for instance, required the President and the Judicial Conference of the United States to report to the Congress on the desirability of establishing an International Criminal Court.¹⁶

But the United States sought to weaken the Rome Statute and ended up being one of seven nations voting against it (along with China, Iraq, Libya, Yemen, Qatar, and Israel). The Statute was adopted in July 1998 by 120 nations voting in favor, with 21 abstaining.¹⁷

Table 1: Overview of the International Criminal Court

Characteristic	Description
Origin	Legal framework was established at a U.N.-sponsored conference in Rome with representatives from 160 countries. Rome Statute was adopted on 17 July 1998. By the deadline of 31 December 2000, 139 countries had signed the statute; as of 10 February 2003, 89 countries had ratified it.
Crimes dealt with	Genocide (the commission of certain acts "with the intent to destroy in whole or in part, a national, ethnic, racial, or religious group, as such"); crimes against humanity ("committed as part of a widespread or systematic attack directed against any civilian population, with knowledge of the attack, pursuant to or in furtherance of a national or organizational policy"); and currently undefined crimes of aggression (under the ICC's jurisdiction, there was not enough time to reach a definition of "aggression" that was acceptable to all).
Status	The ICC is an independent and permanent court.
Cost and funding	The Court will be funded by assessed contributions from states party to it; by funds provided by the United Nations; and by voluntary contributions from governments, international organizations, individuals, corporations, and other entities.
Referral to ICC	A case may be referred to the ICC by a country member of the Assembly of State Parties, by a country that has chosen to accept the ICC's jurisdiction, by the Security Council (subject to veto), or by the three-judge panel when it authorizes a case initiated by the International Prosecutor.
Penalty and compensation	Consistent with international human rights standards, the ICC has no competence to impose a death penalty. The Court may impose lengthy terms of imprisonment of up to 30 years or life when justified by the gravity of the case. The Court may, in addition, order a forfeiture of proceeds, property, or assets derived from the committed crime.

Source: Rome Statute of the International Criminal Court, Coalition for the International Criminal Court, and Human Rights Watch.

President Clinton signed on to the ICC in the last days of his term in office.¹⁸ Yet his successor launched an aggressive campaign to undermine the court and to remove U.S. nationals from its jurisdiction. On May 6, 2002, the Bush administration withdrew the U.S. signature.¹⁹ The main reason cited for its opposition was the belief that U.S. troops would be subjected to frivolous or politically motivated investigations and that the ICC would develop into a "wide open complaint system."²⁰

In August 2002, President Bush signed into law the American Servicemembers' Protection Act of 2002, dubbed by activists as the Hague Invasion Act.²¹ The new law prohibits U.S. cooperation with the ICC and authorizes the use of military force to liberate any American or a citizen of a U.S.-allied country being held by the Court. In addition, the law provides for the withdrawal of U.S. military assistance from

countries ratifying the ICC treaty and restricts U.S. participation in U.N. peacekeeping operations unless the United States obtains immunity from prosecution by the ICC.²² Threatening to veto the renewal of a U.N. peacekeeping mission in Bosnia, the United States secured a one-year promise of immunity from prosecution for peacekeepers from the United States and other states that are not member of the ICC.²³

The United States has also signed impunity agreements that seek to prevent U.S. nationals accused of genocide, crimes against humanity, or war crimes from being surrendered to the International Court. The government has threatened to cut off military aid to any state that is party to the Rome Statute that does not enter into an impunity agreement with the United States. As of November 18, 2002, a total of 15 countries had signed such agreements.²⁴

According to the Stockholm International Peace Research Institute, world military expenditures amounted to a conservatively estimated \$839 billion in 2001, the most recent year for which data are available.¹ This works out to \$2.3 billion each day—almost \$100 million an hour.²

The reduction in military expenditure that began in the fading days of the cold war in 1987 is now definitely a thing of the past. From \$847 billion in 1992 (in 1998 dollars), military budgets fell to \$719 billion in 1998.³ Since

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then, spending has been on the rise again, however, with the total in 2001 equaling \$772 billion in 1998 dollars.⁴

And with the “war on terrorism” in full swing, spending appears set for substantial further increases, particularly in the United States.⁵

World military spending amounted to \$137 per capita in 2001.⁶ Such an average figure, however, masks massive imbalances among different countries.⁷ More than three quarters of the total is spent by just 15 countries.⁸ The United States is now the world’s sole military colossus, accounting for 36 percent of all military spending—as much as the next nine biggest spenders combined.⁹

The other nine countries can be grouped into two tiers. The first includes Russia, France, Japan, and the United Kingdom—together accounting for 21 percent of world spending.¹⁰ The second encompasses Germany, China, Saudi Arabia, Italy, and Brazil—with a combined 15 percent share.¹¹

The United States and its core allies in Europe and the Asia-Pacific region (the North Atlantic Treaty Organization, Japan, South Korea, and Australia) account for two thirds of world spending.¹² (See Figure 1.) In stark contrast, Russia and China combined spend less than 10 percent.¹³ And the group of countries that the U.S. government considers hostile “rogue states” (Cuba, Iran, Iraq, Syria, Libya, and North Korea) barely register on a global scale. Collectively, they spend less than 3 percent of the world total, or one fourteenth the U.S. budget.¹⁴

Increasingly, the U.S. military—particularly its technological edge and global reach—is with-

out peer.¹⁵ U.S. military R&D, slated to grow from \$56.8 billion in fiscal year 2003 to \$61.8 billion in 2004, is the fastest-growing component of the American military budget.¹⁶ It alone surpasses the total amount that any other nation devotes to military purposes.

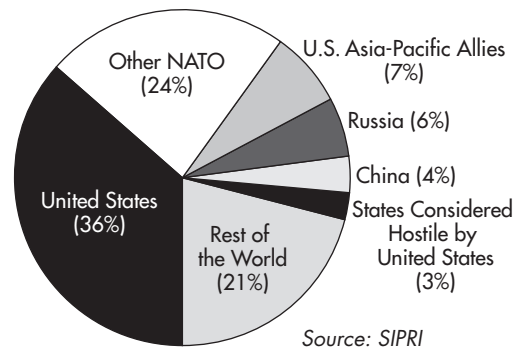


Figure 1: Share of World Military Expenditures, by Country or Group, 2001

The events of 11 September 2001 provided political cover for the largest expansion in the U.S. military budget in 20 years, even though most of the extra money is not slated for the “war on terrorism” as such. President Bush requested an additional \$48 billion in fiscal year 2002 funds.¹⁷ Large additional increases are now proposed. The plan submitted to Congress by the Bush administration in February 2003 envisions a military budget of \$503 billion in fiscal year 2009 (\$414 billion in inflation-adjusted dollars of 2001), compared with \$363 billion in 2003.¹⁸ (See Figure 2.) And the administration may ask Congress for even more money.¹⁹

The Pentagon’s fiscal year 2004 weapons procurement request stands at \$73 billion.²⁰ Just under half of that money goes to fund the top 20 weapons systems, in what is little more than a down payment for huge costs over the years. The total program costs of these 20 systems—including jet fighters, combat helicopters, destroyers, attack submarines, and high-tech missiles and munitions—are currently estimated at \$750 billion.²¹ But such

systems have historically suffered from large cost overruns, so a commitment to them may imply even greater expenses in the future.

A swelling military budget reflects the Bush administration's policy of unquestioned military superiority. In a national security strategy statement released in 2002, the U.S. administration asserted that "we must build and maintain our defenses beyond challenge" to dissuade any other powers from even considering a military buildup.²² And it says that "to forestall or prevent...hostile acts by our adversaries, the United States will, if necessary, act preemptively."²³

The confrontation with Iraq is the first concrete application of this policy. A war against Iraq would likely absorb additional tens of billions of dollars. In December 2002, the White House put forward an estimate of war costs of \$50–60 billion.²⁴ But this did not include the possibility of a protracted conflict. Nor did it address the costs associated with an occupation regime or with humanitarian and reconstruction needs. And it did not take into account the possible wider economic repercussions of a war. These could well be in the hundreds of billions of dollars.²⁵

The 32 richest nations, with just 15 percent of the world's population, spend by far the most on the military, representing 70 percent of global expenditures in 2001.²⁶ However, the most militarized countries—with the highest per capita spending—are located in the Middle East.²⁷ States in that region imported close to \$190 billion (in 2001 dollars) worth of weapons from 1990 to 2001; Saudi Arabia and other Persian Gulf states accounted for almost two thirds of that sum.²⁸

By contrast, 51 low-income countries, with 41 percent of world population, account for just 7 percent of total military expenditures.²⁹ Yet this is more than double their current portion of the world's gross economic product, and military spending is a heavy burden for these impoverished and indebted nations. For countries such as Eritrea, Burundi, and Pakistan,

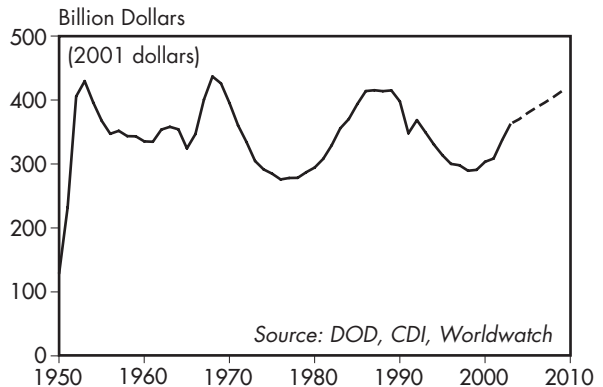


Figure 2: U.S. Military Expenditures, 1950–2003, with Projections to 2009

military spending equals or surpasses combined public expenditures for health and education.³⁰

Some governments are setting different priorities. Brazil decided in January 2003 to put on hold the planned purchase of jet fighters costing \$760 million.³¹ And the military budget is to be cut 4 percent in a bid to fund an ambitious anti-hunger program.³²

The renewed growth in world military expenditure has troubling implications for many of the world's unmet needs in the fields of health, education, general human well-being, and environmental protection. Estimates suggest, for instance, that the prevention of soil erosion worldwide would require something on the order of \$24 billion annually; the elimination of starvation and malnutrition, \$19 billion; reproductive health for all women, \$12 billion; safe, clean drinking water, \$10 billion; prevention of acid rain, \$8 billion; and elimination of illiteracy, \$5 billion.³³ Although these are substantial sums, they pale in comparison with the funds being made available for military purposes.

Half a century after they were first spoken, U.S. President Dwight Eisenhower's warning words still ring true today: "Every gun that is fired, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed."³⁴

Abundant natural resources—such as oil, minerals, metals, diamonds and other gemstones, drug crops, and timber—have helped fuel a large number of armed conflicts in developing countries. Resource wealth plays an important role in the outbreak of conflict and tends to make conflicts last longer, although it has a more varied influence on their intensity. Altogether, in about a quarter of the roughly 50 wars and

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armed conflicts of recent years, resource exploitation helped trigger or exacerbate violent conflict or financed its continuation.¹

In those cases, natural resource wealth has turned out to be a curse, triggering a torrent of arms trafficking, human rights violations, humanitarian disasters, and environmental destruction. A rough, conservative estimate suggests that more than 5 million people were killed in resource-related conflicts during the 1990s.² (At least 2.5 million people died in the conflict in the Democratic Republic of the Congo alone).³ In addition, close to 6 million fled to neighboring countries, and anywhere from 11–15 million people were displaced inside the borders of their home countries.⁴

The money derived from resource exploitation in war zones has secured an ample supply of arms and military equipment for armed factions and has served to enrich a handful of people—warlords, corrupt government officials, arms merchants, mercenaries, and unscrupulous corporate leaders.⁵ (See Table 1.) But critical human needs have been trampled in the process. In oil- and diamond-rich Angola, for instance, almost 30 percent of children die before the age of six.⁶ Nearly half of all Angolan children are underweight, and a third of school-age children have no school to go to.⁷ Unsafe drinking water, a pervasive lack of health services, and food shortages have limited Angolans' life expectancy to 47 years.⁸

In places like Angola, Afghanistan, Cambodia, and Colombia, the pillaging of resources allows wars to continue that were initially driven by grievances or liberation and ideological struggles.⁹ Elsewhere, such as in Sierra Leone or the Democratic Republic of the

Congo, nature's bounty attracts predatory groups that initiate violence as a means of establishing control over resource deposits.¹⁰ Finally, resource extraction can itself be the source of conflict where the economic benefits accrue to foreign companies and local elites, while the local population shoulders an array of the burdens. This has led to violent conflict in places like Nigeria's Niger Delta, Papua New Guinea's Bougainville island, and several provinces in Indonesia.¹¹

Violent struggles arising out of a context of contested resource wealth join a host of conflicts that emerge from situations of resource scarcity—overuse and depletion—and are exacerbated by the social and economic repercussions of environmental degradation. Where resource wealth is a factor in conflicts, it is primarily nonrenewable resources such as fuels and minerals that are at issue. Where resource scarcity is a factor, on the other hand, it is the degradation of arable land, the depletion of water for irrigation and drinking, and the decimation of forests that are focal points.¹²

Combatants have relied on a variety of means to secure the natural resources that finance their military activities. They use extreme violence to establish undisputed control, intimidate local populations, or depopulate resource-rich areas altogether. They pillage existing stocks, coerce large numbers of civilians into mining and logging operations, or put some of their own combatants to work. They “tax” loggers and miners or otherwise extract ransom before allowing the passage of commodities to their intended markets. They contract with unscrupulous companies to extract, smuggle, and market the resources.¹³

The countries with resource-related conflicts suffer from a number of debilitating economic and political conditions. Overly dependent on natural resources, they fail to diversify their economies, stimulate innovation, or invest adequately in critical social areas or public infrastructure.¹⁴ Resource royalties help political leaders maintain power, even in the absence of popular legitimacy, by funding a system of patronage.¹⁵ These governments also spend a

Table 1: Estimated Revenues from Conflict Resources, Selected Cases

Combatant	Resource	Period	Estimated Revenue
UNITA rebels (Angola)	diamonds	1992–2001	\$4–4.2 billion total
RUF rebels (Sierra Leone)	diamonds	1990s	\$25–125 million a year
Liberia (government)	timber	Late 1990s	\$100–187 million a year
Sudan (government)	oil	Since 1999	\$400 million a year
Rwandan army	coltan (from Congo)	1999–2000	\$250 million total
Afghanistan (Taliban, Northern Alliance)	opium, lapis lazuli, emeralds	Mid-1990s–2001	\$90–100 million a year
Cambodia (government, Khmer Rouge)	timber	Mid-1990s	\$220–390 million a year
Myanmar (government)	timber	1990s	\$112 million a year
FARC rebels (Colombia)	cocaine	Late 1990s	\$140 million a year

Source: Compiled from Renner, *The Anatomy of Resource Wars*.

high portion of state income on internal security to suppress challenges to their power.¹⁶ Ruthless predatory groups have emerged, intent on seizing control of a prized resource that represents one of the few tickets to wealth and power. Violent tactics are facilitated by the massive proliferation and easy availability of small arms and light weapons.¹⁷

Ending these kinds of conflicts and the associated pillage is not easy. In the Congo, foreign forces have withdrawn, yet fighting among various armed factions continues, and elaborate illegal networks have emerged that continue to exploit natural resources for the benefit of a handful of Congolese, Zimbabwean, Ugandan, and Rwandan elites.¹⁸

The enormous expansion of global trade and financial networks has made access to key markets relatively easy for warring groups. They have had little difficulty in establishing international smuggling networks and sidestepping existing international embargoes, given a degree of complicity among certain companies and lax customs controls.¹⁹

It is at least becoming a bit more difficult for “conflict resources” to be sold on world markets. In the diamond industry, this is due to

national certification schemes and efforts to negotiate a standardized global certification scheme. But the resulting set of rules still suffers from numerous shortcomings, including reliance on voluntary measures and a lack of independent monitoring.²⁰

Natural resources will continue to fuel deadly conflicts as long as consumer societies import materials with little regard for their origin or the conditions under which they were produced. Some civil society groups have sought to increase consumer awareness and to compel companies—some of them major corporations—to do business more ethically through investigative reports and by “naming and shaming” specific corporations.²¹

Promoting democratization, justice, and greater respect for human rights are key tasks, along with efforts to reduce the impunity with which some governments and rebel groups engage in extreme violence. Another challenge is to diversify economies away from a strong dependence on primary commodities. A more diversified economy, and investments in human development, would lessen the likelihood that natural resources become pawns in a struggle among ruthless contenders for wealth and power.

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