

# WORLDS TOGETHER, WORLDS APART

VOLUME 2

*A Companion Reader*

EDITED BY

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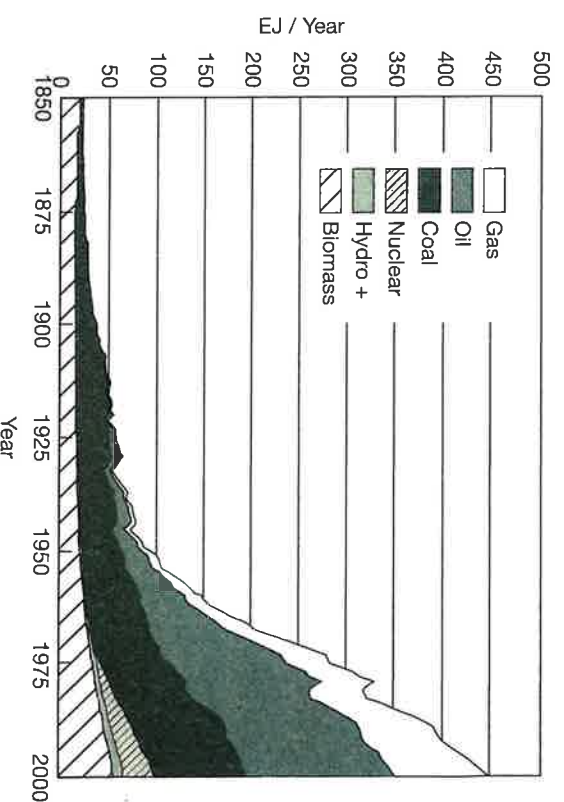
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# Chapter 21

## GLOBALIZATION, 1970–2000

### World Energy (1850–2000)

As the world energy graph shows, human energy use has increased more than twentyfold since 1850—when it was already much higher than 100 years earlier. In per capita terms, this represents more than a fourfold increase. These global averages mask differences among countries that were already large in 1850, and are even larger today. In 2005, an average U.S. citizen used 45 times as much energy as a Bangladeshi, and the average Qatari over 100 times as much. Bangladeshi consumption even in 2005 was barely one-third of what world per capita consumption had been in 1850.



Graph of World Energy, 1850–2000

### Questions

1. Which periods have seen the most dramatic changes in total energy use? What changes in energy sources have been associated with those periods?
2. The first commercial oil well was drilled in 1859; it also produced natural gas. How long thereafter did it take for each of these energy sources to become important on a global scale?
3. On average the carbon emissions for each megawatt of electricity made with natural gas are 1.0–1.7 (depending on the technology used), that for oil is 2.5, for coal a bit over 3, and for wood (biomass) about 4.3. (1.0 ≈ 250 pounds.) For hydroelectric and nuclear it can be negligible once the plants are constructed (though under some circumstances, dams can have high carbon emissions). What does this suggest about how the

Source: Redrawn from Alfred W. Crosby, *Children of the Sun* (New York: Norton, 2006), p. 162.

carbon emissions per unit of energy we use has changed over time? How does this differ from the trend in total emissions?

## Sean Daily and Daniel Zwerdling, Two Reports on Water and Farming in India (2009)

The two documents that follow highlight a national example of a global problem: contemporary farming uses unsustainable amounts of water. Though there are many problems in wealthy areas—including Australia, the American Great Plains, and California's central valley—the resulting social problems are most serious in parts of India, Pakistan, and North China. Densely populated, highly productive farms have been created in places with limited and unreliable rainfall. About half of Pakistan, for instance, gets less rain than Phoenix, Arizona; 80 percent of the country gets less rain than Tel Aviv.

Major irrigation works, pioneered in the late nineteenth century (especially in India, Egypt, Australia, and the western United States), were an obvious way of raising agricultural output to meet soaring demand as populations increased. Early projects mostly diverted surface water from lakes and rivers. As cheap, powerful motors proliferated, irrigators increasingly tapped underground aquifers. Worldwide, irrigated acreage increased by 600 percent in the twentieth century; half of that growth came after 1960.

Spectacular output gains followed. New lands became arable, droughts were reduced, and plentiful, reliable water allowed farmers to use highly productive new seeds and fertilizers. In most countries, government policies made the water cheap. But these same developments—often exacerbated by pollution—have drastically depleted both surface and underground water resources. Farming accounts for 70 percent of worldwide freshwater use.

Every proposed solution also raises questions. Various technical solutions—genetically engineered drought-tolerant plants, more efficient water delivery, desalinization—are possible, but uncertain; many are also likely to be expensive and/or to have further unforeseen environmental effects. Raising water prices can reduce waste, but can also devastate the poor. And with global population still rising—and climate change (see Intergovernmental Panel on Climate Change, *Summary for Policymakers*,

in this chapter) likely to create new drought zones—reducing farm output implies tragedy.

### MASS FARMER SUICIDE SOBERING REMINDER OF CONSEQUENCES OF WATER SHORTAGES

In one of the more tragic stories related to water shortage in recent history, some 1,500 farmers in India's agricultural state of Chhattisgarh committed mass suicide in response to the devastating effects of water shortages on their crop production.

The story \* \* \* underscores the potentially devastating effects of water shortages to agriculture-centric regions of the globe, and to those who rely on water for not only their financial livelihoods and health, but for their hope. "The water level has gone down below 250 feet here. It used to be at 40 feet a few years ago," said Shatrughan Sahu, a villager local from a Chhattisgarh district, to India's *Down To Earth* magazine. The district has been particularly devastated by farmer suicides in recent years, having recorded 206 in the past year alone. District police records indicate that many of the deaths occur due to distress over financial debt related to crop failures. In the Chhattisgarh region, water levels in the area have been reported to have been in major decline during recent years primarily due to drought, which has all but destroyed agricultural efforts in the region. However, farmer suicides, including those committed en masse, have a tragic history in India beyond Chhattisgarh state itself.

SOURCE: Sean Daily, "Mass Farmer Suicide Sobering Reminder of Consequences of Water Shortages," Blue Living Ideas (blog), 2009, <http://bluelivingideas.com/topics/water-availability/mass-farmer-suicide-sobering-reminder-of-consequences-of-water-shortages/>, and Daniel Zwerdling, "India's Farming 'Revolution' Heading for Collapse," National Public Radio (USA), April 13, 2009, [www.npr.org/templates/story/story.php?storyId=102893816](http://www.npr.org/templates/story/story.php?storyId=102893816).

According to the statistics of National Crime Records Bureau, some 200,000 farmers have committed suicide during the past 12 years. The BBC, citing another government report, reported in 2007 that "about 12 per cent of marginal and small farmers have left farming" during the past several years.

India is by no means the only region experiencing such dramatic levels of drought and resulting threat to agricultural production and farmer livelihood. For example, some Australian farmers are experiencing similar financial hardships as a result of water shortages due to drought, and which are exacerbated by loan conditions that make it difficult for farmers to manage their debt. Many believe that though such regions today serve as flash-points for the water crisis, they are actually harbingers of problems destined to face many other regions of the globe in coming years.

In addition to putting a sobering exclamation point on the present state of global water availability, the story also serves as a further reminder of how farmers and agricultural nations stand at the forefront of the world water crisis and are presently suffering the most immediate and dramatic of its effects. Recent documentary films such as Sam Bozzo's indy water documentary *Blue Gold: World Water Wars* and Irena Salina's *FLOW* include stories of the plight of farmers in relation to drought, regional politics, and economically driven multinational water interests.

#### INDIA'S FARMING "REVOLUTION" HEADING FOR COLLAPSE

Farmers in the village of Chotia Khurd in northern India don't realize it, but they symbolize a growing problem that could become a global crisis.

They gathered on a recent morning in a stone-paved courtyard—a circle of Sikhs with brightly colored turbans and big, bushy beards—to explain why the famed "bread basket" of India is heading toward collapse.

Their comparatively small region, Punjab, grows far more wheat and rice for India than any other region. But now these farmers are running out of groundwater.

They have to buy three times as much fertilizer as they did 30 years ago to grow the same amount of crops. They blitz their crops with pesticides, but insects have become so resistant that they still often destroy large portions of crops.

The state's agriculture "has become unsustainable and non-profitable," according to a recent report by the Punjab State Council for Science and Technology. Some experts say the decline could happen rapidly, over the next decade or so.

One of the best-known names in India's farming industry puts it in even starker terms. If farmers in Punjab don't dramatically change the way they grow India's food, says G. S. Kalkat, chairman of the Punjab State Farmers Commission, they could trigger a modern Dust Bowl. That American disaster in the 1930s laid waste to millions of acres of farmland and forced hundreds of thousands of people out of their homes.

#### The "Green Revolution"

The story begins in the 1960s, when parents in America's well-fed suburbs would admonish ungrateful children to "think about the starving people in India." Occasional news reports told wrenching stories about Indians subsisting on grass and leaves. The country survived on imports, like a beggar.

The public concern prompted a loose coalition of scientists, government officials and philanthropists—spurred and funded, in part, by the Rockefeller Foundation—to launch a "Green Revolution."

In the context of the times, "green" did not refer to what it means today—organic, pesticide-free farming methods. To the contrary, India's farmers were persuaded to abandon their traditional methods and grow crops the modern, American way.

For example, the advisers told farmers to stop growing old-fashioned grains, beans and vegetables and switch to new, high-yield varieties of wheat, rice and cotton. Farmers began using chemical fertilizers instead of cow dung. They plowed with tractors instead of bulls.

The "Green Revolution" of the 1960s and 1970s meant that if farmers embraced chemicals and high-yield seeds, their fields



would turn lush green with crops. (An official at the U.S. State Department, William Gaud, apparently coined the term in 1968.)

During the Cold War, the term also implied that if countries like India could stamp out hunger, the population would be less likely to foment a violent revolution and go communist.

### *A Temporary Fix*

In India, ground zero for the Green Revolution was the state of Punjab, which borders Pakistan and the foothills of the Himalayas. And the system seemed to work miracles—for a while.

The United States sent money and technical support, including advisers from one of America's most prestigious agriculture universities. India's government showered Punjab with low-cost chemicals and seeds—and they paid the farmers, in effect, to use them by guaranteeing minimum prices for Green Revolution crops.

It helped India transform itself from a nation that depends on imports and food aid to a budding superpower that often exports grains.

Villages like Chotia Khurd were harvesting three to four times as much grain per acre as they did before.

Many of the farmers and the local government were flush with money. They paved their dirt roads. The farmers replaced their mud houses with bricks and cement. They bought American tractors for a small fortune.

Just about everybody in Chotia Khurd bought cell phones, with a wide variety of ring tones—so it's hard to chat with a farmer without getting interrupted by electronic versions of Sikh chants or theme songs from Bollywood hits.

But government reports and farmers themselves say that era is over—and today, the Green Revolution system of farming is heading toward collapse.

### *"Farmers Are Committing a Kind of Suicide"*

To show why, the district director of the Punjab Agriculture Department, Palwinder Singh, leads the way up a narrow dirt road into wheat fields that encircle the village.

On the surface, they look robust. The countryside is electric green in every direction.

But Singh points to a large contraption rising above the crop, like a steel praying mantis. The machine is blanketing the countryside with a percussive, deafening roar.

"That's part of our most serious problem," he says. It's a drilling rig. A young farmer in a purple turban, Sandeep Singh, is standing next to the rig, looking unhappy. (The two men are not related—according to tradition, all Sikh men share the last name "Singh," which means "lion.")

When farmers switched from growing a variety of traditional crops to high-yield wheat and rice, they also had to make other changes. There wasn't enough rainwater to grow thirsty "miracle" seeds, so farmers had to start irrigating with groundwater. They hired drilling companies to dig wells, and they started pumping groundwater onto the fields.

But Sandeep says he has been forced to hire the drilling company again, because the groundwater under his fields has been sinking as much as 3 feet every year.

Government surveys confirm it. In fact, his family and other farmers have had to deepen their wells every few years—from 10 feet to 20 feet to 40 feet, and now to more than 200 feet—because the precious water table keeps dropping below their reach.

Nobody was surprised when environmental activists started warning years ago that the Green Revolution was heading toward disaster. But they were astonished as government officials started to agree.

"Farmers are committing a kind of suicide," warns Kalkat, the director of the Punjab State Farmers Commission. "It's like a suicide, en masse."

Kalkat offers an unsettling prediction in a nation whose population is growing faster than any other on Earth: If farmers don't drastically revamp the system of farming, the heartland of India's agriculture could be barren in 10 to 15 years.

## Questions

1. How do the tone and the focus of these two reports differ? Do they imply different approaches to the problem, or not?
2. How does Zwerdling's analysis (broadcast on public radio in the United States) explain the origins of Punjab's water crisis?
3. Since farming uses more water per dollar of output than manufacturing or services, some development planners argue that countries like China and India can best alleviate their water crises through even more rapid urbanization. What pros and cons can you see in this approach?

## Voice of Bangladeshi Bloggers, Bangladeshi Workers in Kuwait (2008)

Since 1970 the world economy has become increasingly globalized. The end of the cold war and the last vestiges of European colonial rule removed many of the most important barriers to the free flow of capital and labor. World trade increased dramatically and national economies became ever more dependent on resources from and access to foreign markets. Great masses of people moved across the globe, usually from poorer countries to richer ones in search of better wages. Some were legal migrants; many were not. This labor migration posed difficult questions of how these guest workers would fit into the political, economic, and cultural structures of their host societies. The following excerpt comes from *Deshi Voice*, a blog established by Bangladeshis. It discusses the problems faced by Bangladeshi workers in Kuwait, one of the world's major exporters of oil. These workers have migrated for construction, oil field, and domestic service jobs.

### BANGLADESHI WORKERS IN KUWAIT

The US based National Labor Committee [NCL] has recently published an investigative report on the plight of the Bangladeshi

laborers in Kuwait. These workers were trafficked to Kuwait and forced to a sub-human living standard. The report says,

Hundreds of thousands of foreign guest workers—among them 240,000 Bangladeshis—have been trafficked to Kuwait, where they are immediately stripped of their passports. Many work seven days a week for wages of just 14 to 36 cents an hour, which means they are being cheated of up to 84 percent of the 90-cent-an-hour wage they were guaranteed when they purchased their three-year contracts to work in Kuwait. Workers who ask for their proper wages are beaten and threatened with arrest and forcible deportation. The workers are housed in squalid, overcrowded dorms with eight workers sharing each small 10-by-10-foot room, sleeping on narrow, double-level metal bunk beds.

Kuwaiti companies have cheated these poor laborers and denied them of basic human rights. Kuwaiti Government kept their blind eyes and neglected to address these inhuman conditions of these poor workers. But is Kuwait a poor country? No, not at all. The NCL report adds,

Kuwait is not poor. Quite the opposite: It is the world's seventh largest oil exporter. Kuwait's GDP is expected to grow 6.8 percent this year to \$172.4 billion. Kuwait's trade surplus is running at \$84 billion this year. Government revenues for the current fiscal year (April 1, 2008 through March 31, 2009) are also projected to grow by 40 percent, to reach approximately \$129 billion. Even after all conceivable expenses, the Kuwait government should end the year with a fiscal surplus of \$66.21 billion.

Kuwait does not need to exploit desperately poor foreign guest workers. They have the money to treat all workers in Kuwait with a modicum of dignity.

Source: "Bangladeshi Workers in Kuwait," *Voice of Bangladeshi Bloggers*, August 31, 2008, <http://desivoice.blogspot.com/2008/08/bangladeshi-workers-in-kuwait.html>.

Ninety percent of Kuwait's private sector workers are non-Kuwaiti. Sixty-three percent—or 2.3 million people out of a total population of 3.4 million—are expatriates. Hundreds of thousands of foreign guest workers have been trafficked to Kuwait from Bangladesh, India, Sri Lanka, Egypt, Sudan, Pakistan, Indonesia and the Philippines.

In 2007, Ambassador Mark Lagon and the U.S. State Department's Office to Monitor and Combat Trafficking in Persons demoted Kuwait to "Tier 3"—the lowest level, for being among those countries doing the least to prevent the trafficking of human beings.

The government of Kuwait however, does take care of its own people. When inflation skyrocketed in 2008—(it's expected to reach 13.5 percent by year's end)—the government moved quickly. In June 2008, any Kuwaiti public sector employee who was earning \$45,000 a year or less, received a \$188 a month wage increase. For those who had been earning \$45,000 a year, this meant receiving a \$2,257 increase, bringing their new annual wage to \$47,397. The government was well aware that Kuwaitis earning just \$45,000 were struggling in the face of inflation, especially given the soaring food costs.

However, when it came to the foreign guest workers in Kuwait, who were earning an average of just \$903 a year and who were surely suffering due to the soaring cost of food, there was no similar concern by the government, despite the fact that the guest workers were earning less than two percent of what "low income" Kuwaitis were earning. The compounded inflation rate between 2006 and the end of 2008 is expected to reach 23.3 percent, and is causing the guest workers tremendous hardship".

The NCL urges everyone to SEND A LETTER TO SECRETARY OF STATE CONDOLEEZA RICE URGING HER TO TAKE ACTION FOR GUEST WORKERS AT CAMP ARIFIAN. Here is a draft of the letter that you can send:

The Honorable Condoleezza Rice

Secretary of State

Department of State

2201 C St., NW

Washington, DC 20520

Dear Secretary Rice:

I urge you to call upon the Government of Kuwait to end the trafficking of hundreds of thousands of foreign guest workers to Kuwait, where they are stripped of their passports, forced to work long hours, often seven days a week, while being cheated of half their wages. The workers are housed in squalid dorms. Some of these victims of human trafficking are actually working on a U.S. military base in Kuwait.

As you are well aware, Operation Desert Storm to liberate Kuwait cost the lives of 294 U.S. troops, with another 458 wounded. Moreover, 183,000 veterans of the Gulf War are now permanently disabled! This was a very heavy price to pay. The U.S. also has a defense pact with Kuwait to guarantee the security of the Kuwaiti people and government. This gives the Government of United States a very powerful voice, which the Kuwaiti Government must take seriously. I urge you again to call upon the Government of Kuwait to end the heinous practice of human trafficking, to assure that all guest worker passports are returned to them and to finally guarantee that the legal rights of these hundreds of thousands of guest workers be respected.

These workers, including those working on U.S. military bases, should also be made whole again and paid the back wages of which they were cheated.

Thank you for your concern and efforts to end human trafficking.

## Questions

1. Why does the author of the blog post say that Bangladeshi workers were "trafficked" to Kuwait? Why not use another term?



2. What are the chief grievances of the blogger about the condition of Bangladeshi laborers in Kuwait?
3. What does this post tell us about information networks and the economic aspects of globalization in the first decade of the twenty-first century?

### Intergovernmental Panel on Climate Change, Summary for Policymakers (2007)

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organization and the United Nations Environmental Program. It is a scientific body of leading researchers that synthesizes current findings. It does not undertake its own research. The IPCC's work supports the UN Framework Convention on Climate Change, the basic treaty that led to the 1997 Kyoto Protocol to reduce worldwide emissions of greenhouse gases. The panel's work is regarded as authoritative by almost all climate scientists around the world. The IPCC shared the 2007 Nobel Peace Prize with former U.S. vice president Al Gore in recognition of efforts to call attention to the effects of human actions on the environment.

The following chart comes from an executive summary of four lengthy volumes that comprise the IPCC's Fourth Assessment Report: "The Physical Science Basis," "Impacts, Adaptation, and Vulnerability," "Mitigation of Climate Change," and "The AR Synthesis Report." The full text of the report is available online at [www.ipcc.ch/](http://www.ipcc.ch/).

Phenomenon and direction of bend	Likelihood of future trends based on projections for 21st century using SRES scenarios	Examples of major projected impacts by sector			
		Agriculture, forestry and ecosystems	Water resources	Human health	Industry, settlement and society
Over most land areas, warmer and fewer cold days and nights, warmer and more frequent hot days and nights	Virtually certain	Increased yields in colder environments; decreased yields in warmer environments; increased insect outbreaks	Effects on water resources relying on snow melt; effects on some water supplies	Reduced human mortality from decreased cold exposure	Reduced energy demand for heating; increased demand for cooling; declining air quality in cities; reduced disruption to transport due to snow, ice; effects on winter tourism
Warm spells/heat waves. Frequency increases over most land areas	Very likely	Reduced yields in warmer regions due to heat stress; increased danger of wildfire	Increased water demand; water quality problems, e.g., algal blooms	Increased risk of heat-related mortality, especially for the elderly, chronically sick, very young and socially isolated	Reduction in quality of life for people in warm areas without appropriate housing; impacts on the elderly, very young and poor
Heavy precipitation events. Frequency increases over most areas	Very likely	Damage to crops; soil erosion, inability to cultivate land due to waterlogging of soils	Adverse effects on quality of surface and groundwater; contamination of water supply; water scarcity may be relieved	Increased risk of deaths, injuries and infectious, respiratory and skin diseases	Disruption of settlements, commerce, transport and societies due to flooding; pressures on urban and rural infrastructures; loss of property

Phenomenon and direction of bend	Likelihood of future trends based on projections for 21st century using SRES scenarios	Examples of major projected impacts by sector			
		Agriculture, forestry and ecosystems	Water resources	Human health	Industry, settlement and society
Area affected by drought increases	Likely	Land degradation; lower yields/crop damage and failure; increased livestock deaths; increased risk of wildfire	More widespread water stress	Increased risk of food and water shortage; increased risk of malnutrition; increased risk of water- and food-borne diseases	Water shortages for settlements, industry and societies; reduced hydropower generation potentials; potential for population migration
Intense tropical cyclone activity increases	Likely	Damage to crops: windthrow (uprooting) of trees; damage to coral reefs	Power outages causing disruption of public water supply	Increased risk of deaths, injuries, water- and food-borne diseases; post-traumatic stress disorders	Disruption by flood and high winds; withdrawal of risk coverage in vulnerable areas by private insurers, potential for population migrations, loss of property
Increased incidence of extreme high sea level (excludes tsunamis)	Likely	Salinisation of irrigation water, estuaries and freshwater systems	Decreased freshwater availability due to saltwater intrusion	Increased risk of deaths and injuries by drowning in floods; migration-related health effects	Costs of coastal protection versus costs of land-use relocation; potential for movement of populations and infrastructure; also see tropical cyclones above

SRES, Special Report on Emissions Scenario

## Questions

1. What message do the report authors want policymakers to understand?
2. According to this chart, what are the most noticeable effects of climate change on the earth's ecosystems? For human activities?
3. Why would the authors have created a chart to include in the summary to a four-volume scientific study? What is gained—and what is lost—by presenting information in this format?

SOURCE: *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. by M. L. Parry, O. F. Canziani, J. P. Palutikof, P. J. van der Linden, and C. E. Hanson (Cambridge, Eng.: Cambridge University Press, 2007), p. 18, Table SPM.1.