
The Shadows of Consumption

Consequences for the Global Environment

Peter Dauvergne

The MIT Press
Cambridge, Massachusetts
London, England

© 2008 Massachusetts Institute of Technology

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from the publisher.

MIT Press books may be purchased at special quantity discounts for business or sales promotional use. For information, please email special_sales@mitpress.mit.edu or write to Special Sales Department, The MIT Press, 55 Hayward Street, Cambridge, MA 02142.

This book was set in Sabon by SNP Best-set Typesetter Ltd., Hong Kong. Printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Dauvergne, Peter.

The shadows of consumption : consequences for the global environment / Peter Dauvergne.

p. cm.

Includes bibliographical references and index.

ISBN 978-0-262-04246-8 (hbk. : alk. paper) 1. Consumption (Economics)—Environmental aspects. 2. Environmentalism.

I. Title.

HC79.C6D38 2008

333.7—dc22

2008017002

10 9 8 7 6 5 4 3 2 1

1

An Unbalanced Global Political Economy

For thousands of years, the Ayles ice shelf sat off the northern coast of Ellesmere Island, a desolate stretch of glaciers and rock 500 miles (800 kilometers) south of the North Pole. Then, on an August afternoon in 2005, a mass of ice the size of 11,000 football fields suddenly broke free. No humans were nearby to bear witness. But it sent tremors flickering across earthquake monitors 150 miles (250 kilometers) away, and satellites recorded the image of the shelf floating out to sea.

Why did this happen? Was the collapse simply a normal process of nature?

Most scientists think not. They believe that climate change was at least partly responsible. There's compelling evidence to support this. The five warmest years on record are all since 1998. The 1990s was the warmest decade and 2005 was the warmest year in over a century. Over the last few years, hundreds of thousands of square miles of Arctic sea ice have melted under these warmer conditions. If current trends continue, by the end of this century, the North Pole's ice cap could virtually disappear during the late summer season.

Warmer days and nights in the Arctic would seem like a reasonable explanation for the collapse of the Ayles ice shelf. But this raises the underlying question: Why are temperatures rising? Because, the usual scientific answer goes, the amounts of greenhouse gases from human sources (especially carbon dioxide, methane, and nitrous oxide) are rising. World output of carbon dioxide from just consuming fossil fuels currently exceeds 27 billion metric tons a year, up from 18 billion in 1980, and now equal to some 4 metric tons—about the weight of two Hummers—for every man, woman, and child on earth.¹

Again, however, this answer gives rise to a more fundamental question: Why are these amounts rising?

The direct causes of greenhouse gases span thousands of activities. Factories and furnaces contribute. So do automobiles and airplanes, and so does cultivating rice and raising cattle. Other environmental changes, such as deforestation, desertification, and ozone depletion, are adding to greenhouse gases, too. Just about every act of producing and consuming everywhere seems to contribute. What's more, the total number of people and their per capita rates of consumption continue to rise as well, with environmental impacts far beyond "just" climate change.

Rising Consumption

"Ah," children's storyteller Eric Carle playfully writes, "what we could learn—even if just a little—from the gentle sloth who slowly, slowly, slowly crawls along a branch of a tree, eats a little, sleeps a lot, and lives in peace."² Few of the 6.7 billion humans now on earth are so tame (or slothful). The second half of the twentieth century saw our global population grow by 3.5 billion people—a rate of increase faster than in all of recorded history. The global economy expanded at an even faster rate, allowing a per capita increase in gross domestic product (GDP) of 20 percent per decade, or about \$3,000 overall from 1960 to 2002.³ Every month, our industrious and prosperous species continues to increase on average by a little over 6 million members—equal to adding a major city or two. By the middle of this century, assuming past trends hold, our population will exceed 9 billion. Ninety-six percent of this growth will occur in developing countries, with about half in just six countries: Bangladesh, China, India, Indonesia, Nigeria, and Pakistan.⁴

A global hurricane of consumption from these rising populations is gathering force as it sweeps through each generation. For more than 50 years now, per capita consumption of natural resources such as wood, fish, and water has been rising much faster than population growth. The rapid growth in consumption over this time is seen in many statistics. For example, private consumption expenditures (the amount households spend on goods and services) increased more than fourfold from 1960 to 2000, even though the global population only doubled during this period. The future will bring even higher per capita rates of consumption as the developing world pursues the lifestyles of North America and Europe. It has much ground to cover: North America and Europe, with less than 12 percent of the world's population, account for over 60 percent of total private consumption expenditures.⁵ China is in

hot pursuit, however, with consumption rising in just about every sector.

The Political Economy of Consumption

People buy things for many reasons: need, habit, belief, desire, fear. Most wealthy consumers are free to choose from among many products. Even so, the global political economy determines the “options” as well as guides the collective “choices” of consumers. This is not a static structure, but a shifting set of forces arising from the interaction of many factors along a lengthy chain, from extraction to production to retailing to disposal. The globalization of trade, corporations, and financing is at the core of this global political economy. But new technologies, advertising, and culture shape it, while government policies, activist networks, and global institutions guide it.

Mitigating the environmental impact of this global political economy of rising consumption is one of the biggest governance challenges of the twenty-first century, if not the biggest. Doing so will require a far better understanding of how, why, and to what extent consumption contributes to global environmental change. Chapter 1 begins this trek by unpacking some of the consequences of the globalization of corporations, investment, and trade. Economic globalization is producing many benefits, not only for societies, but also for environmental management. Yet this same process is making it easier and easier for powerful states and firms to deflect the costs of producing, using, and replacing consumer goods into distant ecosystems and onto people at the margins of the global economy. The net result is an unbalanced process of change—unequal within societies, uneven across countries, and unsound in terms of what growing economies draw down from nature—one that, as chapter 2 will show, is casting a disproportionate share of the ecological shadows of rising consumption onto the world’s most vulnerable ecosystems, poorest people, and future generations.⁶

The Globalization of Ecological Shadows

As the volumes of trade, investment, and financing and the numbers of consumers continue to rise in a globalizing economy, the ecological shadows of consumption crisscross more and more of the planet.⁷ These global patterns of harm arise when states and firms pursuing economic growth, profits, financial stability, and local interests displace the

environmental costs of producing, transporting, using, and replacing consumer goods.

More specifically, they arise when multinational companies from countries like Japan and the United States import timber or beef from the tropical rainforests of Southeast Asia and South America, when wealthy consumers in Europe and North America ship used computers to China for recycling, and when countries like China and India spur the growth of their economies without accounting for the costs to the atmosphere or open oceans. They arise as well when companies introduce products without concern for the long-term effects on the health of people or the stability of environments and when states allow products banned as unsafe at home to be exported abroad.

Globalization is accelerating many of the processes casting ecological shadows by integrating—as well as restructuring—economies, institutions, and societies. Many forces are driving it. The continuing spread of capitalism and Western values, which began long ago under modernization and colonization, plays a role. So do faster technologies, such as airplanes, TVs, and computers, by providing efficient and inexpensive transmission belts for people, resources, money, and knowledge. All of which leads more and more to the world becoming “a single place,” where changes in faraway lands affect people everywhere with greater speed, force, and frequency, and where borders are ever easier to cross for money, technologies, ideas, and tourists, although, tellingly, not for many of the poor, despite international agreements like the Convention Relating to the Status of Refugees.⁸

Globalization carries with it underlying values and assumptions about how best to organize the world order, which explains why some see it more as an ideology than a set of processes. One core assumption is that indefinite economic growth is possible *and* necessary—and, moreover, that “emerging” economies should follow the path of industrial development and intensive agriculture to ensure ever more consumption, and thus prosperity and stability. Consuming more per capita is a sign that all is well, even when the distribution of its benefits is grossly uneven. The institutional “solution” to such inequalities, which some call “pockets of poverty,” boils down to a rather simple formula: rely on the globalization of investment, trade, technologies, and (when necessary) regulations to produce even more goods and services more efficiently—that is, with less labor, resources, time, waste, and environmental impacts. This formula can produce many economic benefits. It can create jobs, it can increase incomes, and it can churn out an abundance of

consumer goods and services. It can also enhance environmental management.

Globalization of Environmental Management

Rising per capita incomes over the last half century have been crucial for the emergence of the concept of sustainable development, most commonly defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”⁹ Citizens in wealthier places began to demand cleaner and safer environments; activists began to call for action; and, after first resisting, governments began to respond by starting to “manage” the environment, drawing on higher tax revenues to enhance their capacity to regulate. Firms then responded to these consumer and political pressures by developing codes of conduct, expanding environmental markets, and, most significantly, making products more efficiently, with less damage over a life cycle. At the same time, states were able to negotiate hundreds of international environmental agreements, including a few to finance initiatives in developing countries to protect the global environment. Together, such efforts, for example, have helped protect biodiversity in regions having little political or economic power: lichens in Antarctica and elephants in Africa, to list just two.

Today, just about every state is managing the global environment in ways that do not impede economic growth or deter multinational investors, trade, and financing. Most see this as necessary to maintain political and social stability as well as implement environmental regulations (by, for example, hiring staff or buying equipment). This partly explains why international organizations like the World Bank and the International Monetary Fund (IMF) continue to push so many developing states to liberalize investment and trade rules. Given the current world economy, most states and international organizations work hard to avoid currency crashes and capital flight, which can cause not only social but also environmental havoc, as was the case in Indonesia after the Asian financial crisis of 1997–99.

Economic globalization can advance global environmental management in other ways, too. Some multinational corporations raise standards in developing countries by following codes of conduct that are stricter than local laws require—what political scientist Ronie Garcia-Johnson has termed “exporting environmentalism.”¹⁰ This can happen because multinationals rely on more sophisticated technologies

and management techniques, because social and market forces are pressuring them to go beyond compliance, or because they wish to avoid lawsuits and consumer backlashes. And it can happen because firms are competing for trade or market advantages, or because they have adopted an industry code (such as the chemical industry's Responsible Care), international standards (such as those of the International Organization for Standardization), or internal policies of social responsibility.

At the same time, trade can stimulate more efficient production and create incentives to transfer environmental technologies. It can also encourage producers with comparatively low standards to raise these to gain entry into markets with higher standards. Freeing up trade can improve environmental standards, too. In contrast, trade barriers, from tariffs to embargoes, can serve to lower them, shielding incompetence by distorting market signals. Firms manufacturing behind trade barriers face less competition, often with fewer incentives to upgrade facilities or avoid unnecessary waste. Government subsidies, such as tax relief for farmers growing feed grain, can also cause financial and environmental inefficiencies.

International financing organizations can directly support poorer states striving to implement environmental policies. One example is the Global Environment Facility (GEF), which began as a pilot program in 1991, and which now involves three implementing agencies: the World Bank, the United Nations Development Programme, and the United Nations Environment Programme. Its mandate is to disburse grants and technical assistance to developing countries for projects having a global environmental goal (such as mitigating climate change or protecting biodiversity). As one of the world's major sources of financing for such projects, the GEF has distributed more than \$7 billion in grants and \$28 billion in cofinancing from other sources.

Thus a globalizing world economy, coupled with globalized environmental policies and institutions, can improve environmental management—and is already doing so on some measures. As the next section explains, however, this “progress” relies, at least in part, on an unbalanced process of economic globalization that draws down natural resources and deflects the costs of rising consumption away from those who benefit the most and toward those who benefit the least. Therefore environmental progress may appear to occur in one location (London, Paris, Los Angeles), while another location (New Delhi, Rio de Janeiro, the open oceans) absorbs the resulting costs. This helps to explain why

the *total* stress on the biosphere is rising even as the life-cycle impact of *particular* consumer goods declines.

Unbalanced Globalization

Globalization is widening what some call the “global market” and others the “global consumer culture.” A few statistics will suffice to show this. The value of world merchandise exports now exceeds \$10 trillion, up from \$6 trillion in 2000, an amount that even then was over 100 times higher than in 1948. On average, foreign currency trading is now around \$2 trillion per day, up from about \$1 trillion per day a decade ago, and far higher than the daily trading of \$10–20 billion during the 1970s. The number of multinational parent companies with investments in more than one country has grown, too, from about 7,000 in 1970 to over 78,000 today (with more than 780,000 affiliate firms). The flow of foreign direct investment into developing countries has been rising steadily as these multinationals continue to expand: from \$22 billion in 1990 to \$380 billion in 2006 (the highest ever).¹¹

Trade and multinational corporations have been engines of growth for the world economy. Figures over the last few decades show the rapid rate of economic growth during a time of increasing trade and growing numbers of multinational corporations. World GDP (in constant 1995 dollars) almost tripled from 1970 to 2000: from \$13.4 trillion to \$34.1 trillion. The world economy continues to expand, too. It grew more from 2001 to 2006 than in any five-year period since World War II. Over this time, First World economies grew on average by over 3 percent. Growth in the Third World was even faster, with an average expansion of about 7 percent in 2006 (following 6.6 percent in 2005 and 7.2 percent in 2004).

As globalization intensifies, national incomes could grow even faster in the next 25 years than in 1980–2005. In what it describes as the “next wave of globalization,” the World Bank predicts the output of the global economy—led by growth in developing countries like China and India—could well expand from \$35 trillion in 2005 to \$72 trillion in 2030 (in constant exchange rates and prices). This assumes an annual average growth of 2.5 percent in developed countries and 4.2 percent in developing countries. The World Bank also expects a more than threefold rise in global trade in goods and services by 2030 (to \$27 trillion). Over this period, it expects trade as a share of the global economy to jump from one-quarter to more than one-third. Such rapid economic growth within

developing countries alone would increase the number of “middle-class” consumers, with incomes of between \$4,000 and \$17,000, from 400 million to 1.2 billion. Maintaining such growth over the next 25 years would increase the purchasing power of billions of people, allowing the new middle class, for example, to afford advanced consumer goods like automobiles. By then, assuming trends hold, the World Bank predicts average living standards in countries like China, Mexico, and Turkey will more or less reach those in Spain today. The number of people living in “dire” poverty—defined as having an income of less than \$1 a day—would also fall from about 1.1 billion to 550 million (despite growing populations in the poorest countries).¹²

So far, the “flattening” of the globe under globalization has not, however, brought equal or balanced outcomes for individuals or societies.¹³ The superrich like Bill Gates now live on an island in a sea of 2.7 billion people subsisting on less than \$2 per day. Over 800 million people, in a world with 946 billionaires worth \$3.5 trillion in 2006, continue to suffer from chronic malnutrition. Over a billion people do not even have access to clean water. *Forbes* magazine ranked Americans Bill Gates and Warren Buffett as the world’s richest in 2006. Together, these men were worth \$108 billion (\$56 and \$52 billion, respectively). The world’s third richest was not far behind at \$49 billion. Tellingly for the unequal effects of globalization, this was Carlos Slim Helú, a citizen and resident of Mexico. The forces generating much of this unequal wealth—corporations, trade, and financing—are, as the next three sections show, especially prone to deflecting ecological costs of consumption away from the wealthy and toward the poor and powerless, a process that may partly explain why some people try to resist, or on occasion fight to reverse, globalization.

Side Effects of Corporate Behavior

Since at least colonial times, entrepreneurs have been heading overseas to supply consumers back home. The risks have been considerable, but so have the profits from cheap or exotic products. The first wave of entrepreneurs from Europe in the 1600s went to “collect” natural resources or “harvest” crops. Over the next few centuries, loggers from Britain trekked into the rainforests of Southeast Asia for teak and mahogany, miners from France dug deep into the heart of Africa for diamonds and gold, and fishermen from these and other European nations sailed across the Atlantic for cod and seals. Overseas plantations

also began to supply wealthy consumers in Europe with luxuries like tea, coffee, bananas, sugar, and pepper—luxuries that soon became “necessities.” Over time, manufacturers also began to move overseas to gain access to these inexpensive natural resources, as well as to cheap labor and infrastructure. Imports of natural resources and goods into Europe increased markedly in the late eighteenth century. By the turn of the twentieth century, global imports were accelerating even faster, as the United States began to surpass the import might of the European economies.¹⁴

The history of trade and financing was marked by racism, brutal wars, and cultural annihilation. Although the multinational companies and trade chains emerging from this period have benefited some developing countries in some ways, many of the structural imbalances of relations between them remain, and, if anything, the intensity and range of the ecological shadows arising from these corporate activities is even greater today than during colonial times. One reason is the sheer number of multinational corporations today, including ones increasingly from developing countries like Malaysia (for example, in the logging industry) and China (for example, in the mining industry). Already, by the beginning of the twenty-first century, multinational corporations accounted for one-tenth of world GDP, while intra-firm trade accounted for one-third of world exports.¹⁵ Since then, with economic globalization opening markets and encouraging mergers and acquisitions, the financial clout of the biggest corporations—Citigroup, General Electric, Exxon Mobil, Wal-Mart, Microsoft, Ford, General Motors—has continued to grow.

When investing, these companies tend to bring along “advanced” technologies, financing, and access to global markets. Such investment tends to promote “efficiencies” and expand markets, and thus to grow economies. But, in doing so, these multinationals also tend to extract more natural resources, whether timber, fish, or minerals, or to manufacture more goods than local firms; many do so as quickly as possible, exporting to wealthy markets to earn foreign exchange. Many agricultural companies continue to invest in the production of food for export, in palm oil plantations on the outer islands of Indonesia (to supply the margarine and fast-food cooking oil markets), for example, or in cattle ranches in the Amazon rainforests (to supply the growing global demand for cheap beef). Such operations commonly rely on chemicals and fertilizers—inputs most often supplied by distant multinationals—with long-term environmental costs.

Shifting toward export crops and a reliance on chemicals and fertilizers can cause nutritional deficiencies among local people as subsistence farming declines. Moreover, mass-producing goods in developing countries with low environmental standards tends to pollute rivers, soils, and water supplies. Some corporations in the First World are also shipping garbage and hazardous waste to poorer countries (such as computer waste to China). Everywhere, corporations also spew dangerous substances (dioxins, furans, PCBs, DDT) into the air, poisons that eventually fall back to earth. Granted, virtually every multinational corporation now works within an environmental plan, labeling it something like “sustainable yield” or “sustainable management” or “sustainable investment.” Yet, in many cases, these plans are either unrealistic or put in place largely, if not entirely, for public relations. Although, over time, competition among multinational companies, even in developing countries, does tend to produce less environmental harm per unit of output, at the same time, it tends to expand markets, which in turn casts larger ecological shadows of consumption even as per unit damage declines.

Multinational corporations cast ecological shadows in other ways as well. They tend to work within complex trade chains of suppliers, financiers, producers, wholesalers, and retailers. Such networks tend to reduce accountability and transparency, making it exceedingly difficult to hold any single corporate entity accountable for environmental costs. Some of these firms hide costs through illegal activities. Among multinational companies logging the rainforests of Southeast Asia and the South Pacific, for example, smuggling, evading taxes, and transfer pricing are all commonplace, as are bribes to enforcement officers, customs officials, military officers, and politicians.

Almost all multinational companies also employ double standards, obeying a higher set at home than in host countries. This is particularly true for labor standards, such as wages, pensions, and accident insurance, but it’s also the case for many environmental standards. Although, arguably, double standards allow companies to “respect” local laws and traditions, countenancing these double standards means that many national policies designed to protect citizens from environmental harm serve, instead, as incentives for companies to expand into overseas markets with lower standards. Governments with the higher standards commonly ignore such “unintended consequences” to appease corporate opposition and allow for more effective domestic implementation of environmental regulations, while ensuring that companies remain profit-

able. For these reasons, the double standards of multinational corporations remain a core force in casting ecological shadows of consumption onto the poorest regions of the world.

The aggressive pursuit of corporate profits tends to cast even longer ecological shadows. State incentives to sustain economic growth—or the lack of penalties for actions harmful to the environment—can reinforce such tendencies. So, too, can the efforts of advertisers to expand or hold markets through strategies like branding. Firms may profit from intentionally deflecting environmental costs, for example, by dumping untreated waste into nearby rivers. Firms can profit as well from introducing new goods or services with uncertain risks, in effect, experimenting with the health of consumers or the integrity of ecosystems. Some of the most profitable corporate “innovations” of the last century, such as the discovery in 1928 of “safe” and “stable” chlorofluorocarbons (CFCs) for refrigerators and air conditioners, have dispersed lasting harm far into the future. In this case, the consequences for depleting the ozone layer were unknown to science for over four decades.

But, for countless other innovations, such as adding tetraethyl lead to gasoline after the 1920s, the possible consequences alarmed some scientists right from the beginning. In such cases, industry scientists and corporate spinmasters work hard to keep critics on the defensive. Corporate executives lobby politicians, demand “proof” of *direct* harm, raise “scientific” doubt, and rely on drawn-out legal battles to delay regulations or phaseouts. It’s during these “tough” times at home that some multinational corporations expand their overseas markets (as in the case of the tobacco industry). Firms may also begin to search for profitable substitutes. Sometimes, these substitutes eliminate the harm; but other times, they begin the process of experimenting on consumers all over again with yet another “improved” product (such as benzene in unleaded gasoline or hydrofluorocarbons in refrigerators). Corporate research teams are always searching for the next cutting-edge process or new product able to capture or expand a market. The effects of introducing many of these “innovations” may remain uncertain for years, sometimes generations. Who, for example, can really predict the future consequences of genetically modified organisms or nanotechnology?

Side Effects of Trade

The globalization of trade can interact with corporations to lengthen ecological shadows in other ways as well. Producer and consumer prices

of many traded products, such as for timber and beef, do not reflect the full ecological or social costs of harvesting, processing, producing, marketing, or disposal. The resulting low consumer prices can in turn contribute to wasteful consumption and overconsumption (defined as consumption with no benefits for well-being, such as overeating until obese). This helps to explain why strategies like “supersizing” are so profitable for fast-food chains, and why rates of obesity are rising worldwide, even as millions of people continue to starve.

Wasteful consumption in turn feeds back into more expansive and damaging ecological shadows. The environmental history of Japan’s rapid growth after World War II illustrates this well. Japanese trading companies—such as the Mitsubishi and Sumitomo Corporations—began financing networks of firms to import large quantities of cheap natural resources into the fast-growing Japanese economy. Much of these resources, as in the case of wood, came from Southeast Asia. Japan imported, for example, 60 percent of total log production during the height of the logging booms in the old-growth forests of the Philippines (1964–1973) and the Malaysian state of Sabah (1972–1987), and 40 percent during the boom in log exports from Indonesia (1970–1980). These firms turned next to the Malaysian state of Sarawak and to Melanesia after cheap and accessible log supplies declined sharply in the Philippines and Sabah, and after Indonesia restricted raw log exports to prop up its domestic plywood industry. By the mid-1990s, Japan was absorbing about half of the total log exports from Sarawak, Papua New Guinea, and the Solomon Islands. Japanese processors turned the bulk of these raw logs into plywood panels for a booming construction industry looking for inexpensive ways to mold concrete. These panels, known as “kon pane” in Japanese, were generally burned or left to rot after only a few uses. The reason for such “waste” was straightforward: it was cheaper to buy new panels than clean the old ones.

Japan had no Machiavellian plot to protect its own forests at the expense of others’. Japanese firms went searching overseas for timber because supplies within Japan were inadequate (insufficient or of lower quality) and more expensive. Also, Japanese consumption is not solely to blame: deforestation, biodiversity loss, and soil erosion that continue to this day to sweep across Southeast Asia and Melanesia are a result of a complex interplay of political, socioeconomic, and ecological forces from the global to local levels. Still, the boast in the early 1990s by the Japanese Forestry Agency that Japan was now one of “the most heavily forested countries in the world” reveals much about the delusional

accounting of environmental progress still so common today among national governments.¹⁶

Global trade can lengthen ecological shadows in other ways, too. Governments in an effort to increase trade or participate in trade agreements will sometimes lower—or perhaps fail to strengthen—environmental rules. This can cause a “race to the bottom” among states; or, in some cases, leave countries “stuck at the bottom.”¹⁷ Moreover, what wealthy states label as “sound trade practices”—even after the so-called liberalization of trade—is hardly “free” or “fair,” with many trade rules continuing to protect the interests of powerful countries (such as farmers in the United States and western Europe). The globalization of trade is also lengthening the distances between producers and consumers, so that users don’t perceive—or at least can more easily ignore—the effects.¹⁸ It’s creating larger and more diverse markets as well, casting shadows into increasingly distant lands. Even if markets collapse, as happened after the European ban on the import of whitecoat harp seal pelts in the 1980s, new markets can readily form with even more consumer demand, as is now happening in China and Russia for seal furs.

Side Effects of Financing

Foreign aid buttresses many of the trading and corporate structures casting ecological shadows into developing countries. Organizations like the World Bank and IMF impose conditions on assistance requiring governments to liberalize trade and investment. No doubt reforms such as eliminating tariff barriers can improve environmental management by reducing waste and inefficiencies. Yet decades of foreign aid have left much of the developing world with ballooning foreign debts. Total external debt for developing countries stood at just over \$72 billion in 1970. Ten years later, it was over \$600 billion. A decade after this, it was nearly \$1.5 trillion. By the beginning of the twenty-first century, it was hovering around \$2.4 trillion. Total debt service paid by developing countries in 2001 was more than \$377 billion, of which \$116 billion was in interest repayments. Since then, even with recent international efforts to provide some relief for the most heavily indebted countries, debt burdens in more than half of developing countries have continued to worsen.¹⁹

Such heavy foreign debts push governments to pursue development paths that allow them to earn sufficient foreign exchange to service or repay loans. This tends to mean strategies like exporting gold, timber,

and oil, or clearing land for cash crops like coffee and sugar. It tends as well to encourage governments in developing countries to build infrastructure to entice further investment in natural resources, plantations, and low-end manufacturing. All of this yet again reinforces a globalizing order that deflects the ecological costs of consumption to distant places and times.

Deflecting Costs and Responsibilities

Within countries, these costs tend to be deflected into places like industrial neighborhoods or indigenous communities: an outcome often reinforcing existing patterns of inequality and racism. Across nations, they tend to be shifted from wealthy states and cities to poorer countries and regions: an outcome aggravating existing South-North inequities. More globally, costs tend to gravitate toward places far from centers of power: into the deserts of Africa, the rainforests of the Amazon, the sea life of the Arctic, the depths of the Pacific Ocean, the heights of the stratosphere. Costs tend, as well, to drift into the future, often with far greater consequences: accumulating in ecosystems and exposing people to long-term health risks (with the poor facing higher risks). All of these changes can reinforce patterns of wasteful and excessive consumption. At the same time, shifting environmental consequences into poor communities can undermine social well-being by contributing to inadequate nutrition or insufficient housing and can cause political and economic instabilities, creating the potential for weak states or fragile environments to spiral into collapse.

Governing the consequences of these ecological shadows of consumption is much harder than stopping a chemical plant from poisoning a stream or citizens from tossing garbage into the streets. Often, the processes channeling these consequences occur inside a global system so complex, so chaotic, that tracing the pathways of cause and effect is beyond the traditional tools of policy makers or scientists. The domino effects of resulting changes can also create many unpredictable outcomes, with consequences snowballing within and across various systems. This tends as well to disperse and distance responsibility, leaving many consumers unable to perceive the differences for the global environment of choosing among various options. Who, after all, is really accountable or responsible for the collapse of the 120-foot-thick Ayles ice shelf?

Of course, to some extent every consumer is responsible, although not all share equal responsibility. Those with power and wealth are consum-

ing far more of the world's ecological resources: a life of luxury in Philadelphia deflects more environmental damage farther than a life of poverty in Harare. Still, no single consumer, no matter how wasteful or profligate, can cause an ecological shadow to form or shift direction, although this does not absolve consumers who ignore the effects of their personal choices on the sustainability of life for others. Accepting that these effects are "real" is essential for sustaining the collective will for reforms.

Yet far-reaching change will require far more than educating some consumers in some cultures to consume a few things more thoughtfully. As this chapter reveals, it will require tackling structural features of a world order that deflects environmental costs of consumption into spaces with relatively less power. In particular, governing mechanisms will need to guide globalization more effectively, strengthening environmentalism in ways that rein in the shadow effects of corporations, trade, financing, and local policies. Immediate action is imperative. As the global population races toward 9–11 billion, worldwide economic growth shows every sign of racing even faster, global consumerism every sign of consolidating further, and the next wave of globalization every sign of increasing both the scale and the speed of the ecological changes brought about by the shifting global patterns of consumption.

In all likelihood, the globalization of environmentalism will continue both to improve the efficiency of producing, using, and recycling consumer goods and to promote further advances in global governance, from greener corporate codes of conduct, to stricter international environmental laws, to stronger cultural norms of "appropriate" consumption. But, as things now stand, and as chapter 23 will elaborate in the conclusion to this book, it will do so at a pace that is too slow and too incremental to prevent the intensity and spread of ecological shadows from escalating. The costs to the global environment and human health, as chapter 2 will make clear, are already too great *not* to take immediate action.

