

## ***What You Can Ask Government to Do***

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When faced with major problems, such as air pollution, global warming, habitat alteration, and water pollution, individuals can easily feel as if nothing they can do will make a meaningful difference. But as the previous chapters have shown, people can significantly reduce the environmental impacts associated with consumption if they consume wisely.

Nevertheless, by themselves, the personal actions we have recommended cannot solve all of these problems. Consumers are often severely limited in their choices, and the economic market is frequently structured in a way that makes environmentally sound options unattractive. In other cases, businesses and other institutions, rather than individual consumers, are the key decision-makers. Government can, and should, help expand the choices, make responsible behavior appealing, and influence the behavior of institutions. Good government policies are needed for action on the personal lifestyle level to succeed.

Anyone can take steps to improve the policies of local, state, and federal government. The methods you can use to accomplish this may not seem novel or exciting, but they have repeatedly been -proven to work: keeping informed about what government and your elected representatives are doing for the environment; voting and working for candidates who will push for environmental improvement; contacting your elected officials to express your views; writing letters to newspapers to influence public understanding of environmental issues; supporting and working with environmental organizations that are working for sound government policies; and encouraging like-minded citizens to get involved in the political process.

Tens of millions of Americans care deeply about the environment. If just a small fraction of them were to spend just ten additional hours a year trying to influence government policy, it could make a dramatic difference. We hope you will commit to becoming more politically engaged.

If you do, what should you expect and ask of government? You might think of consumption as a game, with consumers as the players and government as developer and arbiter of many of the rules. We are reminded of our own childhood experiences, when we frequently altered game rules to suit our whims and meet our needs. In Monopoly, for example, we increased the amount of money players received

when they landed on "free parking." In volleyball we gave the server two chances to get the ball over the net. And in baseball we prohibited hitting to right field when we didn't have enough players for full nine-person teams. Even though we didn't realize it at the time; each one of these rule changes affected how the games progressed, as well as who won and who lost.

In a similar way government's regulations, taxes, and spending priorities influence what gets produced by manufacturers and what gets consumed by the public. Over the years governments have instituted many sound policies for helping consumers act responsibly. However, because politicians and government officials think about multiple issues, many other policies have been set without consideration for how they will affect the environment. Either intentionally or unwittingly, policies have often ended up making it more difficult or less appealing for consumers to reduce environmental damage. So sometimes government has helped the environment, while other times it has hurt it.

In this chapter we will focus on four key strategies governments can use to ensure that the rules of the consumption game help consumers to act in an environmentally responsible manner.

### **FOUR KEY GOVERNMENT STRATEGIES**

**Make the marketplace work for the environment.**

**Set high standards.**

**Invest in the environment.**

**Make land use an environmental issue.**

### **MAKE THE MARKETPLACE WORK FOR THE ENVIRONMENT**

When functioning properly, the free market provides people, businesses, and organizations with useful information about how to spend their money. But when the prices charged in the marketplace do not reflect the true cost of goods or services, consumers end up basing their decisions on incomplete information.

Some products have artificially low prices, because our economic system does not require manufacturers and distributors to pay for all the environmental and social costs of what they produce. When you fill up your car at a gas station, for example, the price of gasoline does not include what society will need to pay to address health problems caused by air pollution or clean-up costs from water pollution. Similarly, farmers who spray pesticides on their fields do not get charged for dealing with the chemicals that run off into, streams or seep into groundwater.

Government policies that bring such "external" costs into the prices consumers pay make the marketplace work more efficiently and reduce the consumption of environmentally damaging products. Policymakers can also use the free market in

other ways to ensure that purchasing decisions take the environment into account. Here are key strategies for making the free market better reflect concern for the environment:

### **Influencing Government Policy**

Because Marjorie and Louis Davis of Decatur, Georgia, are model political activists, their actions illustrate many of the ways in which individuals can successfully influence their fellow citizens and the policymaking process.

For the Davises, the key to effectiveness is being well informed on those issues that they care most about, like renewable energy. They therefore belong to environmental organizations that provide useful information. Even more important, - they rely on the Internet to keep up with developments. To inform others, they help staff environmental groups' literature tables at Earth Day and other community events.

With sound information as a starting point, they write frequent letters to the editor of the Atlanta Journal Constitution. Because that newspaper limits the number of times any individual's letters can appear, the Davises sometimes send their letters to other, smaller newspapers in the area. Every time one of their letters gets published, they reach many thousands of people and can influence their views.

The Davises have also made it a point to find out the names of the environmental aides to their senators in Washington. Through letters and phone calls, they have established first-name relationships with these individuals and feel comfortable contacting them to pass along information and ideas.

When an election is near, the Davises find out the environmental positions of the various candidates and then work for those candidates who will do the most to advance those issues. In addition, because of her political activism, Marjorie earned a seat on a state committee that interviews candidates for the Public Service Commission, which regulates the electricity industry.

### **STOP SUBSIDIZING POLLUTION AND WASTE**

Because of decisions made long ago and the continued influence of powerful interests, the government subsidizes various environmentally harmful activities,

thereby artificially lowering their cost. For the free market to work effectively, such subsidies should be eliminated, or at least reduced.

The federal tax code provides preferential treatment to the oil industry, for example. Because of special corporate income tax credits and deductions, oil companies pay an effective income tax rate of 11 percent, compared with an average of 18 percent for other companies: If they were taxed at the total industry average (including the oil industry) of 17 percent, they would have had to pay \$2 billion extra in 1991. On top of these tax preferences, the Department of Energy spends more than \$100 million a year to develop and improve oil production techniques, while the Army Corps of Engineers pays for infrastructure improvements related to the shipping of oil. These and other subsidies help keep the price of oil artificially cheap.'

Water is also often heavily subsidized, especially for agriculture, which consumes more water than all other uses combined. Nationwide, irrigation receives government subsidies totaling \$2.5 billion. Because the government does not charge the full price of the water it provides, farmers have not always had sufficient incentive to conserve or to install more efficient irrigation systems. And manufacturers have not had enough of a financial incentive to develop water-saving devices.

If farmers had to pay the full cost of the water they use, they would use less of it. Of course, the price of the products they sell would have to go up, but consumers are already paying, through the taxes that subsidize irrigation rather than at the grocery or clothing store. Especially in arid parts of the country like California and the Southwest, it is silly to have a subsidized price system that encourages inefficient use of such an important yet scarce resource as water. When farmers in parts of Texas and elsewhere have been forced to adopt water-efficiency measures because their water supply was running out, they have been able to reduce their use considerably, sometimes by more than half. So there is much to be gained by eliminating subsidies and setting the price of water accurately.

The federal government undercharges users for taking valuable resources from government land. Ranchers in parts of the West pay much less to graze animals on government-owned lands than they would have to pay for the use of private lands. Similarly, some timber companies pay only part of the market price for logging on federal lands, with the National Forest Service picking up the rest of the tab-about \$1 billion. Not only does such undercharging encourage overuse, but it denies government agencies valuable income that could be devoted to resource

conservation and environmental protection. Although a particular special interest may benefit from such subsidies, the environment and society as a whole suffer.

Germany has addressed a more subtle form of subsidy. In the United States manufacturers generally do not have to pay for the disposal of what they sell. Instead, consumers throw out or recycle any packaging or waste, and the costs of garbage pickup and disposal are covered by tax dollars or fees. A landmark 1991 German law makes producers responsible for the packaging they generate. They must either reuse it or pay for recycling it. Different packaging gets handled in different ways—it is either returned to the manufacturer, returned to retail stores, or handled through joint collection systems paid for by the manufacturers. Germany's complicated system has certainly had some difficulties, but it has also stimulated manufacturers to use much less packaging and to recycle much more. Inspired by the German example, several other countries have established systems for ensuring that producers take responsibility for the waste they produce.

#### TAX POLLUTION

Taxes are such a politically charged subject in 1990s America that it is hard to have a calm, rational public discussion about them. For this reason, ever since President Clinton's ill-fated effort to introduce an energy tax in 1993, most environmentalists have avoided the topic. But when one asks economists about ways to improve environmental quality, they point to taxes on environmentally damaging products and activities as the most efficient and fair policy solution. Energy taxes get the most attention, but there are also other possibilities, such as taxes on harmful types of packaging.

From an economist's standpoint, a well-crafted tax is an easy and fair way to increase the price of a polluting activity so that it includes those external social costs that would otherwise be ignored. Economists also like the fact that even as taxes provide financial reasons to take better care of the environment, they ultimately leave the final decision on what to buy and do up to consumers acting through the free market. MIT economics professor Paul Krugman has observed that "virtually every card-carrying economist" believes pollution taxes are a good idea.

Unsurprisingly, neither politicians nor the general public have embraced the concept of pollution taxes. Politicians know that they have little to gain politically from

talking about new taxes. Many members of the public worry that somehow they will be left with less money, while the government gets more to squander.

To reduce the fears associated with environmental taxes, most proponents these days talk in terms of "tax shifting"—the idea that government should reduce other levies, such as the income tax, at the same time that it raises taxes on polluting activities. In this way, taxpayers would not have to pay more overall but would still receive marketplace price signals to get them to spend less on environmentally undesirable products. A few groups like Redefining Progress and the World Resources Institute have actively promoted the tax shifting concept and have even calculated that lower income taxes, offset by higher consumption taxes, would yield a net gain for the economy by increasing investment and reducing environmental restoration expenses? Although some other economists have questioned whether tax shifting would yield such a windfall, they acknowledge that the environment would benefit and that taxpayers would not be seriously hurt. Of course, any tax shifting would need to be done carefully, and strategies would need to be instituted to compensate low-income Americans who do not pay income taxes but who would have to pay the new environmental taxes. Krugman concludes that "The Great Green Tax Shift... has everything going for it. It is supported by good science and good economics, as well as by good intentions."

Unfortunately, even though tax shifting to benefit the environment is an unassailably logical idea, it has made little headway in the political arena. We only have to look at the fate of the President's Council on Sustainable Development to see how reluctant political-leaders are to support a new tax, even one that would be offset by other tax reductions. This council, instituted in response to the 1992 Earth Summit's call for countries to move toward more environmentally responsible behavior, included a task force on the topics of population and consumption. When it came time in 1996 for the task force to make its recommendations, its first one on consumption was to shift taxes. The committee members recommended: "The federal government should reorient fiscal policy to shift the tax burden from labor and investment toward consumption, particularly consumption of natural resources, virgin materials, and goods and services that pose significant environmental risks."

Although the task force was co-chaired by a prominent member of the Clinton administration, Undersecretary of State for Global Affairs Timothy Wirth, and included a cabinet member, Commerce Secretary Ron Brown, its recommendation on taxes was greeted by silence from the president and others in his administration.

Those responsible for political strategy made it clear, then and in subsequent years, that the administration was not willing to be perceived as advocating taxes as a solution to environmental problems.

Despite the political obstacles, environmental taxes remain a sound policy solution. Perhaps they can become a part of efforts in Washington to generally overhaul the tax system.

#### PROVIDE TAX INCENTIVES

Tax credits and tax breaks can be the flip side of higher environmental taxes, but they are certainly easier to sell to politicians and the public. Rather than provide discouragement for environmentally harmful behavior via taxes, the government encourages environmentally beneficial behavior via tax incentives.

Small tax credits are already in place, for example, to encourage development of wind power and biomass for electricity. In early 1998, President Clinton proposed tax credits of \$2,000 or more for people who buy cars or vans that have at least double the fuel efficiency of the average vehicle in its class. Similarly, five energy and environmental groups, including the Union of Concerned Scientists, have called on the government to provide tax credits to encourage manufacturers to invest in new equipment. They argue that "as a rule, the more modern the plant technology, the more energy efficient and the lower the level of environmental emissions." Because society benefits when companies modernize, it makes sense to provide businesses with financial incentives to take this step.

#### COMBINE REWARDS FOR GOOD CONSUMER DECISIONS WITH PENALTIES FOR BAD ONES

Some of the features of taxes and tax incentives can be combined into a system of rebates and fees, or "feebates; that avoids mentioning the dreaded "t" word (taxes). Because the rebates and fees are designed to balance out, the government ends up with no more, or no less, money overall. Such a feebate system has been most frequently considered for the sale of cars. Several states have explored the idea of instituting feebates, and Maryland even passed a law, which the federal government overturned by claiming it unfairly took over federal responsibilities. It is quite likely that some state will soon develop a plan that can overcome federal objections.

Under a feebate system for vehicles, the purchaser of a car that has low emissions of air pollutants and high fuel efficiency (so therefore uses little gas) would receive a rebate of perhaps several hundred dollars. Purchasers of electric and nongasoline-powered vehicles would also receive rebates. The money would come from fees paid by purchasers of vehicles that guzzle lots of gasoline and emit large quantities of air pollutants. This transfer of payments can't be justified on the grounds that the purchasers of the more polluting vehicles will be saddling society with higher costs for health care and environmental cleanup. The exact level of fees and rebates would have to be worked out carefully, but the general concept is not complicated.

Consumers would still be free to purchase any vehicle they wished, but a feebate program would provide them with a financial incentive for making a sound environmental choice. Feebates would also have a beneficial impact on manufacturers, who would have an incentive to produce more of the vehicles that qualified for rebates, since those vehicles would be especially appealing to consumers.

#### SET A LIMIT ON EMISSIONS AND ALLOW COMPANIES TO TRADE POLLUTION PERMITS

With this more complicated approach, usually called "tradable permits," "emission reduction credits" or a "cap-and-trade system," the government sets a limit for an industry on how much of a particular pollutant it can emit. Particular companies are then assigned individual quotas, generally either based on a percentage of their past emissions or as the result of an auction. Companies that emit less than their quota can sell the leftover "pollution rights" to someone else. Because this sort of system can work only if it is possible to accurately measure emissions and if good monitoring mechanisms can be put in place, emissions trading will not work for every environmental problem.

Economists find this approach efficient and cost-effective. Companies can decide for themselves whether it is cheaper to reduce their own emissions or pay to buy leftover pollution rights from another company that reduces its emissions more than the minimum. As environmental economics specialist Frances Cairncross notes, "Companies for whom cleaning up is relatively inexpensive thus have an incentive to be as clean as possible. But the dirty can also stay in business, though carrying the extra cost of buying more pollution credits." The result is that total pollution is reduced at the lowest possible cost, as determined by the free market. Although it can seem odd for the government to give companies a right to pollute, the environment benefits and the industry in question pays the price for the cleanup.

Many U.S. policymakers have found cap-and-trade systems appealing, because they avoid taxes and do not impact average citizens directly, but only indirectly through higher prices on the products from affected companies. In addition, by including the market mechanism of trading, this approach seems philosophically virtuous during an era when politicians favor free market principles.

Cap-and-trade systems have been tried in several situations, but most notably as part of the 1990 Clean Air Act Amendments to reduce acid rain. The law set a limit on emissions of sulfur dioxide, a key factor in acid rain and air pollution, and then allowed trading between polluters, primarily fossil-fuelbased electricity-generating plants. As the advocates of this approach predicted, it worked with marvelous efficiency to reduce emissions at a low cost—less than one-tenth of what some in the electric utility industry had claimed it would cost.

Given the experience of the Clean Air Act, the Clinton administration has made a cap-and-trade system an important part of its proposals for cutting U.S. emissions of greenhouse gases. The administration persuaded the rest of the world to include a trading system between countries in the 1997 agreement on global warming in Kyoto, Japan.

#### CHARGE DEPOSITS ON ITEMS THAT SHOULD BE RETURNED

If consumers are charged a refundable deposit when purchasing a product, they will most likely return it in order to get their money back. And if they don't, someone else will probably take the item to claim the deposit for themselves. Deposits work best when it is important to ensure the proper disposal of a used product, either because it is hazardous or because it could otherwise end up as litter.

For this reason, a few states charge deposits on lead-acid batteries. Germany places deposits on paint cans. In Norway a refundable deposit on automobiles has ensured that over 90 percent of cars get brought to an approved site at the end of their life.

In the United States ten states have deposits on beer and soda containers. They initially passed these laws to cut down on roadside litter, which then declined. From an environmental standpoint, beverage deposits are also useful because they increase the number of aluminum cans that get recycled, saving 90 percent of the energy

required to make new aluminum cans and preventing other harmful environmental impacts of the aluminum production process. In the ten so-called "bottle bill" states, approximately 85 percent of aluminum cans get returned and recycled, while only about 50 percent are recycled in the other forty states. According to the Container Recycling Institute, 36 billion aluminum cans with a scrap value of \$600 million ended up in landfills in 1996. Deposit systems in all fifty states would certainly reduce this waste.

Ironically, beverage deposits have come under attack in recent years as community recycling programs have grown. The beverage deposit systems, which require consumers to keep their bottles and cans out of regular recycling containers, represent a duplicative and competing recycling program. Not only are they more expensive per recycled item than community recycling programs, but the community programs can suffer financially, in part because they cannot make money from selling high-value aluminum. On balance, however, bottle bills remain worthwhile because the extra cost is small and they do increase recycling rates and reduce litter. A study by the Tellus Institute found that the cost of container deposit plans can be reduced and the impact on community recycling systems can be minimized by using a streamlined version of California's system where the state, rather than individual bottlers, collects the returns.

#### SET HIGH STANDARDS

Despite the advantages of market-based solutions like deposits, taxes, and cap-and-trade schemes, policymakers need other tools in their arsenal for changing environmentally damaging consumer behaviors. For one thing, it is hard to use the marketplace to protect resources that have little economic value or whose value is difficult to quantify. Making markets the sole vehicle for environmental protection is asking for endless arguments over the correct price of clean water or an endangered species or an especially inspiring scenic view.

Even when it is possible to address a problem through the free market, market-based solutions may not achieve the desired end. Sometimes a theoretically appropriate market mechanism can produce unintended and undesirable consequences. More than two hundred communities, for example, charge householders for each bag of garbage that gets picked up at the curbside or dropped off at a landfill. This, in effect, puts a tax on garbage, which gives people an incentive to send fewer bags of garbage to the landfill. However, if the fee is set too high, some people respond to the economic incentive not just by producing less garbage but by dumping garbage illegally. This can be at least as big an economic and

environmental problem as the high quantities of garbage that the fees were designed to counteract.

There is also another limitation to market-based solutions. In some cases, consumers may not understand the financial implications of a purchasing decision unless they have help. It has long been the case, for example, that consumers benefit from buying an energy-efficient refrigerator. If it costs an extra \$180 for an efficient model and consumers then save \$31 per year on their electric bills, the initial investment will pay back \$310 over a ten-year period. This represents better than a 10.5 percent compounded annual rate of return, much more than they would earn by putting the \$180 in the bank.

But on their own, most consumers would not be able to make an informed decision, since it is hard for them to figure out how much their current refrigerator costs to operate and they cannot tell how much one new model will save compared with another just by looking at it. For this reason, the government wisely stepped in to require each refrigerator to carry a label indicating exactly how much electricity it uses in a year and how much that will cost. This means that potential refrigerator purchasers can get the information they need to choose wisely.

The federal government helped even more by requiring manufacturers to meet minimum standards for refrigerators. Over time the average refrigerator has become three times as efficient, and the worst models were taken off the market. Consumers have benefited by having a much better selection of products to choose from. This has not only helped the environment but has cut Americans' electricity bills.

Although some politicians like to attack the concept of government regulation and to argue that American society would be better off if current regulations were dismantled, policies like the refrigerator labels and refrigerator standards are popular with consumers. We don't hear many people complaining that the federal government should not have forced refrigerator manufacturers to improve their products and that they long for the older type of refrigerators so that they can squander money on electricity. Americans will willingly accept certain types of rules and regulations to reduce the environmental impacts of their consumption.

When using strategies other than market-based mechanisms, the government should focus on setting clear and high standards. It should then either require manufacturers to meet those standards or tell consumers about the standards so they can make their own decisions. There are plenty of successful examples of both approaches.

## REQUIRE EFFICIENCY

In 1987 amendments to the Energy Policy and Conservation Act established national efficiency standards for various home appliances, ranging from refrigerators, clothes washers, and ovens to pool heaters and fluorescent lamp ballasts. The law authorized the Department of Energy to periodically review and update these standards. Additional legislation in 1992 not only added other appliances but covered such commercial and industrial equipment as commercial air conditioners, electric motors, water heaters, and certain types of lamps. Most manufacturers, somewhat unexpectedly, supported these various national standards, since they seemed preferable to having to comply with a hodge-podge of divergent state regulations. 17 As in many similar situations, because companies want to be able to plan ahead, industry's greatest fear was not government regulation but rather uncertainty and unpredictability.

In 1996 the Department of Energy estimated that the various appliance standards would "save consumers \$22 billion through the year 2000 and reduce emissions by more than 50 million tons of carbon dioxide and 750 thousand tons of nitrogen oxide through the year 2000." The previous year the American Council for an Energy-Efficient Economy had estimated that the existing appliance and equipment efficiency standards will save consumers and businesses about \$190 billion on their energy bills over the forty-year period from 1990 to 2030. This same study acknowledged that the standards will also cost consumers \$59 billion in higher appliance and equipment prices, but on balance the net savings will be considerable. And new, more rigorous standards that will go into effect in future years will only increase the savings to consumers and to the environment.

The refrigerator standards have often been held up as a special success, not only because they reduced substantially the energy requirements for a large household electricity user, but because they have had so little impact on the price of new models. Back in 1989, when the DOE issued a refrigerator standard requiring an average 25 percent reduction in energy use by 1993, no mass-produced models met the standard. But by 1993 all new refrigerators met the standard, and they did so at prices comparable to those of the inefficient 1989 models. A new standard for refrigerators and freezers that will go into effect in 2001 will cut energy use another 30 percent. We could easily tell similar success stories for most of the other appliances that consumers use daily.

Efficiency standards can work for water as well as energy. A 1992 federal law requires that new household toilets use only 1.6 gallons per flush. Given that toilets are the biggest water users in the home and that old toilets use up to six gallons per flush, this represents a tremendous reduction in water use. Unfortunately, some of the first of the new toilets on the market worked less than flawlessly and sometimes required two or three flushes. This certainly does not invalidate the concept of setting high but realistic standards for water efficiency. In the case of toilets, better models have already been developed, and most toilet manufacturers want to keep the toilet regulation, since they prefer to live with the certainty of a stable, long-term standard. The same 1992 law also established standards for showerheads and faucets.

#### MAKE RENEWABLE ENERGY A STANDARD

Generating electricity from renewable energy sources, such as wind and sunlight, is usually much kinder to the environment than using fossil fuels—coal, oil, and natural gas. In recent years the cost of using renewable energy technologies has come down dramatically, but so has the cost of fossil fuels. This has made it difficult for renewables to capture a large share of the electricity market. Currently only 8 percent of the nation's energy is generated using them, and most of that comes from water power.

For America to make the needed transition away from fossil fuels, renewables will have to come on line at a much faster rate. Many public opinion surveys over the last decade have indicated that the public realizes this necessity and would like to get more of its electricity from renewables.<sup>2z</sup> Various environmental groups and policymakers have consequently tried to find ways to speed their development. Initially they focused much of their attention on trying to eliminate subsidies for fossil fuels, as well as on other market-based approaches that would recognize the high environmental and social costs of these traditional energy sources. They also tried to secure and then retain tax credits for renewables.

But starting in 1995, when several states started to consider deregulating their electric utility systems and allowing consumers to buy power from competing suppliers, renewables advocates began working to ensure that deregulation would help rather than hinder renewables development. They worried that, in an unregulated market, environmental quality and other nonprice factors would be ignored. They looked for ways to ensure that the considerable advantages of renewable technologies would receive appropriate recognition.

One promising solution to this dilemma, most actively promoted by the Union of Concerned Scientists and the American Wind Energy Association, is the "renewables portfolio standard." It would require each competing electricity supplier or generator to get a certain percentage of its electricity from renewables. Over time the percentage would increase to encourage continued development of new renewable electricity facilities. The advocates of this approach stress the importance of the "portfolio" concept. They argue that, just as smart investors build a diversified portfolio rather than putting all their money into one stock, electric companies should rely upon a diversified portfolio of energy sources. This would protect consumers from sharp rate hikes if the price of any single energy source, like coal or nuclear power, were to go up quickly.

Although a renewables portfolio standard would be a government-imposed regulation, it would use market mechanisms to achieve its objectives at the lowest cost. It would provide strong incentives for suppliers to find the most cost effective renewables projects. Because the renewables portfolio standard holds the promise of helping the United States to switch to renewables economically, it is well worth instituting. By 1998 a renewables portfolio standard had been adopted in Arizona, Connecticut, Maine, Massachusetts, and Nevada. It was also being considered in many other states and at the national level.

#### CERTIFY AND LABEL

The government can have an important impact on consumer behavior without imposing required rules on companies. Instead, it can identify a standard for a particular product and then let the public know which companies' models meet that standard. The EPA, through its Energy Star program, certifies certain computers, TVs, and VCRs as meeting its standards for energy efficiency. The agency encourages manufacturers to produce models that can carry an Energy Star logo, but the incentive would increase if the EPA were to do a better job of publicizing the program. The most effective certification efforts combine prominently displayed logos with advertising to educate consumers about the reasons for the program.

Organic farmers have long understood that certification and labeling can help them market their agricultural products to consumers interested in food purity, and they have helped build state and local certification systems. They also supported the 1990 Organic Foods Production Act, which required the Department of Agriculture to work with the organic industry and other stakeholders in organic agriculture to set up procedures for inspecting and nationally certifying organic operations. Although the USDA is having difficulty coming up with standards that are strict enough for organic farmers and consumers, the usefulness of a third-party certification program for distinguishing organic foods from more conventional ones remains undisputed.

Consumers, as well as organic farmers and processors, will benefit once labels tell consumers that a particular food has been certified by the government as meeting special requirements regarding pesticides, antibiotics, and animal confinement.

The government can also help consumers by labeling products, even without any formal certification process. The USDA-required nutrition labels on packaged foods have made consumers much more conscious of fat and sugar content. Although not an environmental measure, they demonstrate the ability of labels to change consumer buying patterns. Labels on appliances about electricity use also provide consumers with useful information and have increased sales of those appliances that use relatively little electricity. Fuel economy numbers for cars have served a similar purpose, although they would be much more effective if they included information about how much more it costs to operate an inefficient rather than an efficient model. And as states start to give consumers the ability to choose which electricity supplier they want to use, environmentalists have called for strong disclosure and labeling requirements. In that way consumers would know the air emissions, greenhouse gases, toxic metals, and other environmental impacts of the electricity each alternative supplier offers.

Private organizations rather than the government have sometimes carried out certification and labeling, but they don't always have the resources to do an effective job of evaluating, products or informing the public of their conclusions. The Green Seals program had wanted to become an environmental version of the Good Housekeeping Seal of Approval, but they have had difficulty getting companies to cooperate. Certification and labeling of wood can tell consumers whether trees were grown in a sustainable fashion, either in this country or in a tropical country with endangered rain forests, but few people know that such certification exists. Over time, consumer awareness of wood certification should increase.

#### INVEST IN THE ENVIRONMENT

New, cleaner technologies can significantly reduce the environmental damage associated with consumption. Private entrepreneurs do not always have enough money to support research into such technologies, and they often cannot initially compete equally with more established products. A little assistance from the government can allow a company to get to the point where it can compete without further aid.

#### FUND RESEARCH AND DEVELOPMENT

In recent years the federal government has provided funds for research and demonstration projects to perfect various renewable energy technologies like wind turbines and biomass gasifiers. Such assistance is certainly justified by society's interest in having a cleaner energy supply and by the many hidden and overt subsidies to traditional energy sources, such as coal, oil, and nuclear.

Similarly, the government has supported research and development of various environmental cleanup technologies, as well as more efficient cars and vehicles powered by fuels other than gasoline. Research funding to help farmers adopt systems that reduce the use of pesticides and chemical inputs has also been helpful, even though the USDA continues to spend much more on conventional high-input agriculture.

#### BUY GREEN

The government can use its own purchasing power to build a market for a new technology. A commitment by the federal government to purchase more recycled paper, for example, assured manufacturers that it would be worth their while to open recycled paper mills. Various solar power advocates have suggested that the federal government could jump-start the photovoltaic industry by agreeing to purchase large quantities of photovoltaic panels for use on government buildings. By being able to switch to low-cost mass-production techniques, manufacturers' costs would come way down. As part of the Clinton administration's "million solar roofs" program, the government plans to make at least some small purchases of solar technologies.

Government programs to help local transit agencies switch from dirty diesel buses to natural gas and fuel-cell ones not only clean the air but demonstrate new technologies and strengthen the companies that produce them. We could imagine lots of other ways in which the government could use its purchasing power to make consumption cleaner.

#### MAKE LAND USE AN ENVIRONMENTAL ISSUE

Here we get into the trickiest and probably most complicated area of environmental policy. As we have seen, scientists believe changes in land use rank among the most serious environmental problems (see chapter 3). The loss of wetlands, ancient forests, and other undeveloped land deservedly gets special attention from environmentalists, but the conversion of farmland to housing and business uses also deserves consideration.

Suburban development and other changes in land use not only directly threaten valuable natural resources but can also exacerbate other environmental problems.

For example, the conversion of arid landscapes to green lawns puts added pressure on overstressed water supplies. Environmentally conscious transportation professionals bemoan suburban sprawl because it has been a major reason why people are driving more, thereby using more gasoline. In California, where the population increased 60 percent between 1970 and 1995, the number of miles vehicles travel increased by 162 percent. This has made it harder to solve such problems as air pollution and

global warming, not only because more driving means more emissions but because auto alternatives like mass transit are difficult and expensive to implement in dispersed suburbs.

Over the past several decades, communities, states, and the federal government have improved stewardship of the nation's public lands and have also taken some useful steps to encourage the environmentally sound use of private lands. Additional undeveloped natural areas have been protected as parks and refuges. The Endangered Species Act has saved plants and animals from extinction, by preserving the land they rely on. And millions of acres of highly erodible farmland have been protected by the Conservation Reserve Program. Yet these efforts ultimately represent small-scale holding actions that, by themselves, cannot counter the long-term trends threatening the nation's land-based resources.

Governments can most quickly and easily improve land-use policy by starting with those lands that are directly owned and controlled by government. In particular, the federal government, as the nation's largest landowner, has the opportunity to directly determine how a significant amount of land gets used. Moreover, when the government manages its own land wisely, it serves as a model of sound environmental stewardship for other landowners.

The U.S. Forest Service, for example, can restrict road-building in national forests and on Bureau of Land Management lands that threatens the loss of biodiversity. Similarly, federal agencies can prepare plans to restore lost or degraded habitats on lands they control, and Congress can provide them with sufficient funding to implement such recovery plans.

Although activities aimed at improving public lands are clearly essential, we want to focus here on those land-use problems that are caused most directly by individual consumers' decisions and on those land-use policies that intersect with individual consumers' choices and options. When we do this, we can quickly see that the traditional ways of approaching environmental problems do not work especially well for land use. As land conservationists John Turner and Jason Rylander have pointed out, from the 1970's to the 1990's "the nation's many environmental laws addressed one problem at a time - air

*Helping Others to Reduce Their Environmental Impact  
Ken Hughes's wide-ranging experiences illustrate some of the ways in which individuals can move beyond the personal realm to help their neighbors and influence their governments.*

*Ken has a special passion for bicycles and has long used one for recreation, errands, and commuting. Back in the 1980s, when he was living in Washington, D.C., a friend asked him to serve on the board of the Washington Area Bicyclists Association. In that role, he organized yearly bike-to-work days that stimulated hundreds of people to commute by bicycle for the first time. He also promoted a buddy system that matched experienced bicycle commuters with novices to help the newcomers overcome any fears they might have and to show them how to commute safely and easily.*

*When Ken moved to Santa Fe, he became active in local environmental groups and was asked to serve on a task force to help develop the city's bike plan. He was then asked to move into a yet wider sphere by serving as the chair of New Mexico's Bicycle Pedestrian Equestrian Advisory Committee. This group played a key role in getting the state to take such important steps as eliminating restrictions on bicycle traffic on highways and requiring new roads to be designed with wide enough shoulders to make biking feasible. Because of the work of people like Ken, New Mexico residents will have a much easier time using their bicycles, rather than their cars, for transportation.*

or water pollution, endangered species; waste disposal" - whereas truly effective policy would look at land use holistically, considering the interaction between these and other environmental, social, and economic factors. Otherwise one problem-say, traffic congestion-may be solved at the cost of making another problem, like water pollution, worse. In general, policymakers and the public have an insufficient appreciation of the ways various government activities-from constructing highways to imposing zoning regulations to assisting selected businesses-affect both land use and environmental quality. And in truth it would be a major task for policymakers to try to consider all the likely land-use implications of even a seemingly straightforward decision about whether to widen a road.

The daunting challenge of addressing land use in a comprehensive way is not the only reason that it is hard to institute land-use policies that effectively protect the environment. Another considerable obstacle is the large number of people and institutions responsible for problems and involved in their solution. When environmentalists and policymakers wanted to end the production of ozone-depleting chemicals, they could concentrate on the relatively few manufacturers who made those chemicals. In contrast, most harmful changes on private land are caused by the cumulative actions of a large number of individuals and businesses making separate decisions. Policymakers wanting to slow the annual conversion of tens of thousands of acres of farmland in California's Central Valley to housing and industry cannot hold just a few, or even a few hundred, corporations responsible. And then for the Central Valley to effectively tackle the job of preserving agricultural land, many different local governments, as well as state agencies, would need to be involved.

Environmental problems associated with changes in private land will therefore never be solved by just passing a few federal laws. On the other hand, because so many important decisions are made in local settings, individual citizens have considerable opportunity to make their views heard. Particular communities and regions can move ahead with solutions without having to wait for the rest of the country to join in. And indeed, this has already been happening.

Unfortunately, policymakers seeking to change harmful land-use patterns face an even bigger challenge to effective action because of Americans' very strong belief in individual property rights and emotional attachment to any land they own. As former EPA administrator William Reilly has observed, "The sense of pride in the ownership of a piece of real estate is indeed fierce, and public officials trifle with it at considerable risk."

In recent years, government officials who have appeared to be triflers have felt considerable wrath from angered citizens. They have been accused of caring more about snail darters and socialistic theories than about people's livelihoods or fundamental rights. Aggrieved individuals have combined with self-interested business interests to build the so-called "wise use" movement and a wide range of property rights organizations. These groups have persistently and forcefully advocated for "takings" legislation, to make it more difficult for governments to take private property and to require governments to reimburse property owners whenever they impose regulations restricting what property owners can do with their land.

The principle of reimbursing property owners for government actions that reduce property values initially sounds logical, but the concept tends to fall apart under closer scrutiny. Since, as we have seen, an unusually large number of government policies influence land use, would property owners be eligible for compensation anytime they are adversely affected? Where would society draw the line? If a county were to build a new road that diverts traffic from an older road, would businesses along the deserted road be entitled to compensation? Would a town have to pay a landowner who wants to build a factory on his or her property but is prevented from doing so by a zoning ordinance that prohibits industry in the neighborhood? What if a city allows construction of an office building that makes a condominium owner's dwelling less valuable by blocking a harbor view? And what about government actions designed to protect some people's property, but at the expense of others-for example, forcing an individual to close a hazardous waste dump that threatens a neighborhood's water supply? Taken to its logical conclusion, the concept behind takings legislation would open a veritable Pandora's box of disputes and would paralyze government. Admittedly, most advocates of these sorts of laws do not want to go this far, but it would be harder than many of them acknowledge to draw a clear line once the concept was institutionalized.

Nevertheless, the property rights movement is not likely to go away, and many people will continue to believe fervently that they should be able to do whatever they want on their land. Any attempts to protect and improve the environment through land-use planning or growth management are therefore bound to remain controversial. As Reilly notes, "The continuing lack of consensus about the proper reach of government and public authority in constraining the behavior of private landowners" has made and will continue to make it difficult to manage land rationally.<sup>7</sup> But that does not mean the attempt to regulate and improve land use should be abandoned. Environmentalists and policymakers should emphasize strategies that cannot be easily criticized for restricting property owners and reducing the value of their land:

## HELP PEOPLE WHO WANT TO PRESERVE LAND

Some people who own undeveloped land would like to see it stay that way. Many farmers would like to keep their land from being built upon. Groups of conservationists would like to buy up natural ecosystems to keep them in their current state. Policymakers should take steps to make it easier for all these people to do what they want.

Various states have passed laws to help preserve farmland. In Massachusetts, for example, through the Agricultural Preservation Restriction Act, farmers can apply for payments from the state in exchange for agreeing to continue to use their land for agriculture. They retain ownership of the property, but neither they nor any subsequent owners can develop it for nonagricultural purposes. The amount of money available for this program is unfortunately quite limited, but it is a step in the right direction. These sorts of programs protect the nation's future food supply, since 86 percent of the nation's fruits and vegetables, 80 percent of dairy products, and 45 percent of meat and poultry are grown on farms near urban areas.

Governments can help people who want to permanently preserve undeveloped land by increasing tax benefits to individuals who donate their land to conservation organizations. Policies can also provide more favorable tax treatment for those who establish conservation easements preventing certain types of future development on their land.

In recent years "land trust" organizations have proliferated across the country. There are now eleven hundred of these groups dedicated to managing undeveloped land that they have either been given or purchased. These groups deserve government assistance, which can include grants, loans, and the elimination of cumbersome red-tape procedures. Land trusts already protect more than 4 million acres, but they could do much more with greater government support.

Some developers and homebuyers also want to preserve natural land, but they are too often thwarted by insufficiently flexible government regulations, such as zoning ordinances requiring certain lot sizes. Cluster developments, where houses are placed close together, so that most of a tract of land can be kept as open space, should be promoted rather than impeded by public officials.

## LOOK FOR POPULAR ACTIONS

Policymakers and environmentalists should be on the lookout for sprawl-preventing actions that will win wide popular support. If people in a community are fed up with traffic congestion or worry that further development will destroy appealing aspects of life in their town, they will be receptive to regulations to slow sprawl. Even actions that restrict property owners' freedom, like zoning regulations, can be quite popular if residents believe they enhance property values and their own quality of life. Of course, it is important to avoid having antigrowth measures turn into vehicles for preventing racial, ethnic, or income diversity in a community.

The public will often be receptive to protecting open space, as long as it does not increase tax rates too much. As evidence of the potential appeal of land preservation, we can point to a 1995 survey sponsored by a home-builders group, in which 77 percent of those questioned selected "natural open space" as the most desirable feature for a new home development. There is also evidence that local residents will support measures, like bike paths and pesticide-use restrictions that reduce a community's environmental impact.

## STOP ENCOURAGING SPRAWL

Governments do many things that speed the land development process and make it artificially cheap to convert farms and natural ecosystems to dispersed house lots and business facilities. Obviously, housing and business are desirable, but governments can encourage relatively compact developments that preserve land in a natural state.

Road-building is perhaps the most obvious government activity speeding development. A more cautious approach emphasizing good transportation within an existing metropolitan area rather than constructing new and wider roads to undeveloped areas would clearly discourage sprawl. Governments should also much more clearly acknowledge the considerable expense of providing services to new developments. In most cases, developers and home-builders do not have to pay the full cost of providing water, utilities, sewers, and roads to the new homes they build. In Loudon County, Virginia, for example, the average house in 1994 sold for \$200,000. Yet the real estate tax rate was set at a level where only owners of new houses costing more than \$400,000 paid tax that equaled the average cost of the services the county provided to them. This meant that the county generously subsidized development and new home construction.

In many places the hidden local government subsidy for new development is so great that it actually pays for a community to buy up land to keep it out of development. In Acton, Massachusetts, where one of us lives, the town recently bought 33 acres of land for \$1.3 million. The price was steep, but if the land were to be converted to twenty-two house lots, the town would have lost \$92,000 each year because tax payments would not cover the total cost of services to the new residents.

Another approach communities can use is to charge so called "impact fees" to recover more of the cost of servicing new developments. A 1990 study of thirty-three places that charge such fees found that they averaged \$9,425 for single-family houses. The fees have not always been effective or popular, however. If they are to work well, public officials cannot view them greedily as just a new pot of tax revenues but must instead link them to a conscious strategy for managing and controlling growth. They also need to make sure that fees are not structured in a way that unfairly burdens less affluent residents of their community.

Not only local communities but states also encourage suburban sprawl, sometimes unwittingly. For example, they often provide state aid to growing communities to build new schools and libraries, but do not give equivalent money to older communities for the maintenance of existing public buildings.

#### MAKE EXISTING COMMUNITIES AND OLDER HOUSING ATTRACTIVE

Some people choose to move to new suburban communities because of dissatisfaction with their existing living situation. Not only center cities but many inner suburbs have been losing residents turned off by crime, declining public services, and lousy schools. By tackling such problems and building on the advantages of life in a compactly settled community, public officials can slow migration to new developments in far-flung suburbs. Policies that reward property owners for preserving and upgrading old homes and historic buildings have a similar effect.

#### WHERE POSSIBLE, BE MORE AMBITIOUS

So far we have focused on land-use policies that do not directly challenge the ideology of property rights groups, but there are circumstances where it is possible to do this. In some states and cities, public support for environmental protection has been strong enough or concern over the impact of rapid, development great enough to forge a political consensus around limiting development and preserving agriculture and natural ecosystems. In such circumstances it makes sense to try to implement a comprehensive approach to controlling growth and protecting land.

In Oregon concern over the environment and unmanaged growth has long run high, so the state was able to pass a comprehensive land-use law in 1973. Every town in the state is required to have zoning laws and land-use plans that meet statewide goals. Most significantly, all cities have had to create an "urban growth boundary," an area encompassing the existing built-upland plus enough vacant land for twenty years of growth. Compact development on small lots is encouraged within the boundary, while farming and forestry are protected outside of it. This approach has had a significant impact on slowing land conversion, and it retains widespread support in the state, even though it can be difficult to implement and clearly limits property owners' ability to do whatever they want with their land. Like Oregon, Vermont has been relatively successful in looking at land use in a comprehensive way.

Boulder, Colorado, has been one of the communities where residents have shown an admirable willingness to spend their own money to protect open space. In 1967 they voted in favor of a one-cent sales tax, 40 percent of which went for purchasing land that would otherwise be developed. This made Boulder the first city to pass a tax for preserving open space. Twenty-two years later they agreed to increase the open-space component of the tax by a third of a cent. In 1976 the city adopted a growth limit reducing the rate of growth "substantially below" that of the 1960s when the city expanded rapidly. Various popular regulations have helped ensure that Boulder remains surrounded by a 27,000-acre greenbelt, nearby mountains remain off limits to developers, and large houses on oversize lots are discouraged.

#### FOCUS ON ECOSYSTEM PROTECTION

Scientists have become increasingly disillusioned with the piecemeal, one-problem-at-a-time approach to land-related environmental problems. They have, for example, called on the federal government to transcend the strategy of the original Endangered Species Act, which looked at each species in isolation. A better approach, they argue, would be to identify and conserve those threatened ecosystems that would protect the maximum amount of biological diversity. This would be beneficial for reasons beyond

species preservation, since as scientists have become increasingly aware, properly functioning natural ecosystems perform valuable services for human society—for example, forests that ensure a dependable water supply, marine ecosystems that detoxify wastes, wetlands that purify water and mitigate flooding.

Secretary of the Interior Bruce Babbitt embraced the ecosystem protection approach early in his tenure. Unfortunately, his initial efforts met fierce opposition from property rights organizations and the wise use movement. Nevertheless, bipartisan proposals for reauthorizing the Endangered Species Act have moved in the direction of ecosystem protection. Not just the federal government but states and local communities can take this more holistic approach. They can find out which are the most important ecosystems to protect and then develop comprehensive strategies for doing so. For example, five fast-growing southern California counties have worked together to preserve biological diversity by preserving a threatened habitat—coastal sagescrub.

#### EDUCATE THE PUBLIC

Because so many individuals, businesses, and local governments influence American society's use of land, education and grassroots activism must be essential elements of any effort to reduce the harmful environmental impacts of land-use practices. It will inevitably be a lengthy, gradual process to help these many people and institutions to view land use as an environmental issue.

Nature centers and other traditional environmental education programs can help, as can policy initiatives that include a significant public awareness component. Quite a few cities and towns have affiliated with the "sustainable communities" movement and have attempted to put into place various policies to make their communities sensitive to environmental needs, including the use of land. Even though they have often had limited success in actually redirecting land practices, they have helped teach local residents about the need to be sustainable. This should pay back over the long run.