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# >>Sustaining Ourselves

## How Can We Best Meet the Needs of Today and Tomorrow?

**A**MERICANS HAVE IT PRETTY GOOD, all things considered. Despite tough economic times, the vast majority of us enjoy a lifestyle that is out of reach for much of the world’s population—a lifestyle that, by some measures, just keeps getting better.

Each passing year brings us safer automobiles, smarter phones, and more convenient access to information and entertainment. Travel to another state or even another country has never been easier. Astonishing varieties of

food, clothes, housewares, and other products are available in huge stores just a short drive away; anyone with an Internet connection can choose from millions of items for next-day delivery.

Past generations may have viewed these goods and services as luxuries; we view them as indispensable, especially as our lives grow ever more scheduled and hectic. We work hard—why shouldn’t we be able to eat appealing foods, dress fashionably, and visit distant

relatives and friends? Why not buy items that make our lives easier, if that gives us more time for the people and activities we enjoy?

In the abstract, the answers to those questions depend on individual values; different people will respond in different ways. But there are concrete reasons to wonder how much longer we can maintain this way of life—indeed, to wonder whether circumstances might one day take these choices out of our hands.

Our current lifestyle depends on natural resources—clean water and air, forests, productive agricultural land, fuels—that were once abundant but which humans are now depleting faster than they can be replaced or repaired. Right now, the Earth needs 1.5 years to replace or repair the natural resources we use each year; by 2050, if our consumption patterns don't change, it will need 2.8 years.

In its *Living Planet Report 2010*, the World Wildlife Fund compared this level of resource usage to a household budget: if a family spent its money at this rate, it would be living off savings or forced to take out loans by September of each year. No one is sure exactly how long our planet's "savings" will allow us to keep this up, but simple math suggests that "forever" is not an option.

To be fair, resource overuse is a worldwide problem, and reducing it would require almost everyone on the

planet to make some changes. However, Americans use a particularly large share: although we are only 5 percent of the world's population, we are responsible for fully 25 percent of the world's resource use each year. Per person, we drive more, eat more, use more water, burn more fuel, develop land more rapidly, and generate more trash than people in any other country, and our consumption levels are growing much faster than our population.

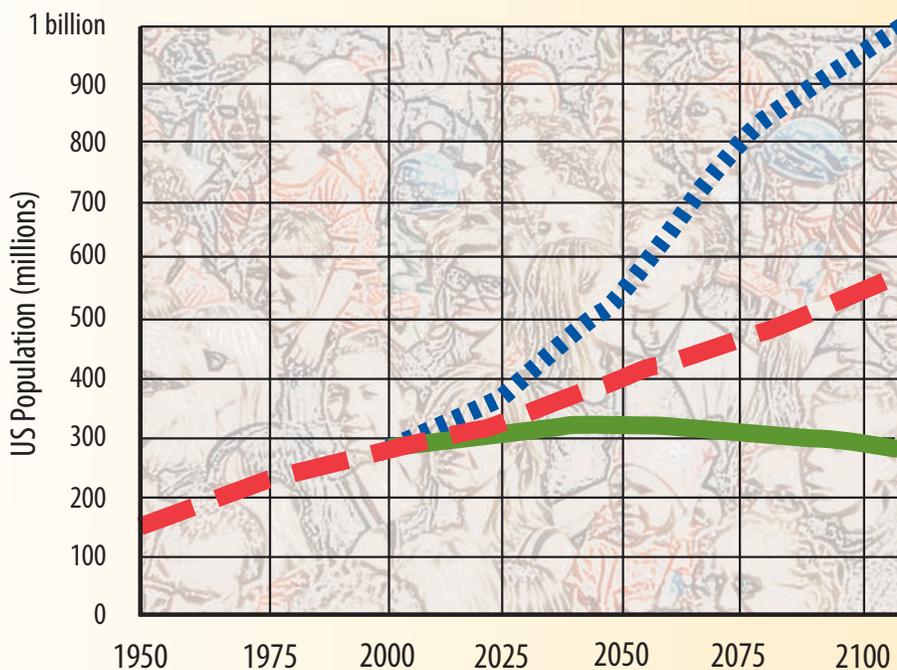
Many people are concerned that our heavy use of fossil fuels is causing our planet to grow warmer. Whether this is true or not, our current lifestyle gives us much else to be concerned about: nearly half of our rivers and lakes are too dirty for recreational swimming or fishing; a third of our commercial fisheries are in danger of collapse from overuse; and more than half of our wetlands have been lost to development and agriculture, even as we give up 3,000 acres of farmland a day to housing, malls, and roads.

If all of this isn't enough reason for concern, consider what will happen as population numbers continue to rise, both here and overseas. America's population took 230 years to grow to 300 million, but in just a few more decades we'll have added another 100 million. And if worldwide birthrates remain steady, the number of people on Earth will rise from 7 billion today to 11 billion in 2050—a population that will include 1.7 billion new members of

the "global middle class," eager to take part in the high-tech, convenient, resource-hungry lifestyle Americans already enjoy. Recall the 1.5 years needed to replace the resources we currently use each year. If everyone on Earth lived like Americans, we would already need five years to replenish what we use. Imagine what that number could climb to by 2050, with as many as four billion more people on the planet.

Given these trends, it seems clear that the America inhabited by our grandchildren will look different from the America of today. We need to address what aspects of our current lifestyle are important enough to keep and pass down, and what we could choose to do without. It is time to ask: How can we best meet our needs today without hampering our ability to meet those needs tomorrow?

## US Population Growth Projections



Range Population Projection Estimates by the US Census Bureau in 2000

■ ■ ■ ■ ■ High   ■ ■ ■ Medium   ■ ■ ■ Low

Source: Center for Environment and Population (CEP) based on US Census Bureau data, 2006

## OPTION ONE

Vital resources, such as clean water and agricultural land, are dwindling quickly, with ominous implications. Well-meaning individual efforts and neighborhood recycling programs are not enough to ward off looming catastrophe. We must take urgent measures, including government regulation and pressure on businesses to solve this problem.



# >> Take Action to Repair and Protect Crucial Resources

**W**E'VE LANDED OURSELVES in a real predicament, according to this first option. Our current lifestyle is using up or soiling too many of the various resources we depend on, with ominous implications for our health, safety, and security. Option One argues that we must head off looming shortages and other problems by doing whatever it takes to reduce our consumption levels as quickly as possible—and not only out of self-interest. Given our outsized consumption of the world's resources, reason and fairness suggest that Americans should be at the forefront of aggressive action aimed at cleaning up the mess.

Many of us feel that we are already doing our part by recycling, buying fuel-efficient cars, and making other

environmentally friendly lifestyle choices. The problem is that such individual actions accomplish little on their own. There aren't yet enough of us committed to making these choices, and the actions we're taking don't go far enough to achieve the changes we must make before it's too late.

Furthermore, it's difficult to know exactly what we should do. Which products should we buy or refuse to buy, how much should we recycle, and how little should we drive in order to effect meaningful change? Most of us don't have the time and energy to research such questions on our own.

Another obstacle is that better options aren't always available, even when we are willing to make changes. For example, as recently as 2011, only 13 percent of the nation's

electrical power was generated from renewable sources like wind and solar energy. Even if all Americans decided to make the switch to renewable energy sources, there would not be enough to go around, and what there is would suddenly become very expensive. Similarly, it might be a boon for our planet and for our grandchildren if we all bought local foods and purchased only well-made, long-lasting products rather than lower quality items that may end up in landfills after a short while. But, in the short term, these choices would require extra time and money. It is asking a lot from busy, working families to sacrifice either of these when the economy is poor and family time is at a premium.

Therefore, Option One argues that we need an organized plan for making significant changes to the way we live. Many of these changes will be uncomfortable. But, as a nation, we have made similar sacrifices in the past. Many people, for example, look back with admiration at the accomplishments of “the Greatest Generation,” whose inspiring devotion to duty helped the Allies prevail during World War II. One crucial component of their success was their compliance with strict government rationing of everyday items such as gas, meat, sugar, and tires—rationing that required Americans to adopt much leaner lifestyles, even as they fought to preserve the ideals and beliefs that are the true essence of this nation. We can live up to their example.

## What We Could Do

One of the most important steps we could take is to clarify the link between changes people will need to make in the short term and their long-term well-being. The economist Gernot Wagner puts it this way: “Self-interest,

not self-sacrifice, is what induces noticeable change. Only the right economic policies will enable us as individuals to be guided by self-interest and still do the right thing for the planet.”

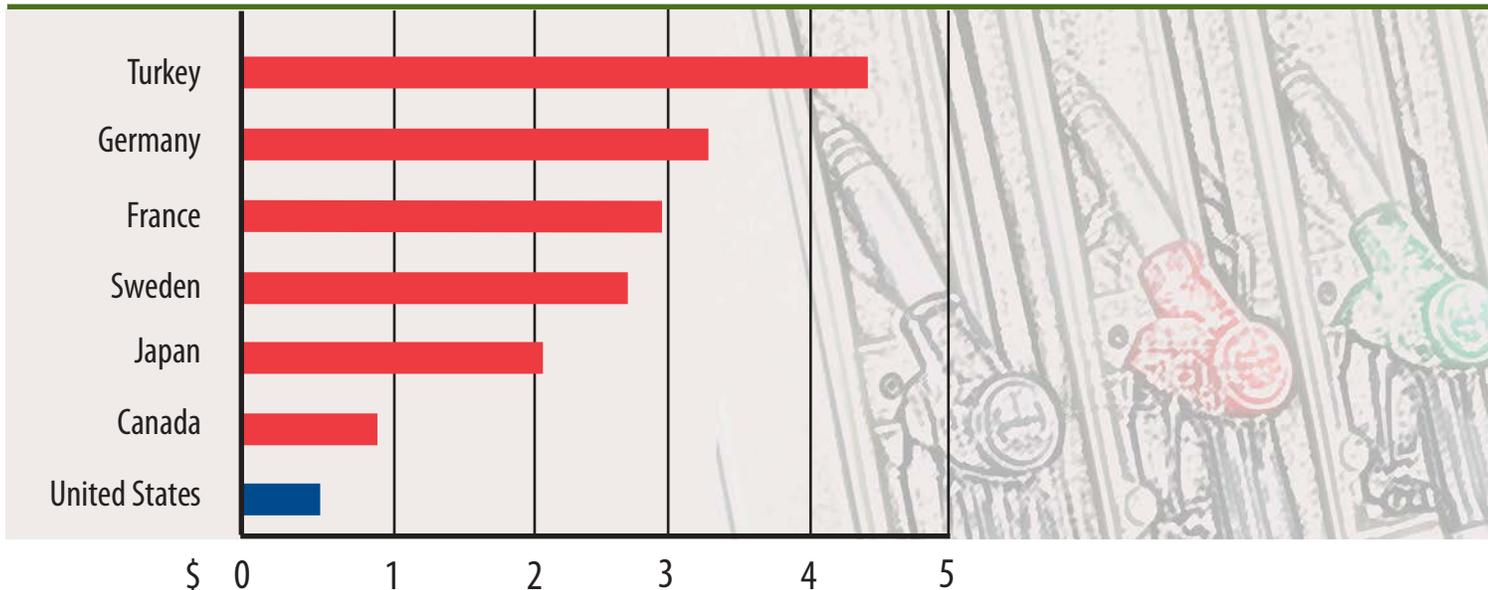
In other words, we need to make it more expensive—through taxes and surcharges—to do the wrong thing, so that idealism is no longer the only reason for doing the right thing.

Right now, the prices we pay for vital resources (or the products requiring those resources) do not accurately reflect either their scarcity or the eventual costs of repairing the damages resulting from their current overuse. Despite the pollution that results from the use of gasoline, which affects all of us and which taxpayers must pay to clean up, Americans pay only a fraction of the gas taxes that are paid in countries like France, Germany, and the United Kingdom. Similarly, more and more states experience water shortages every year, and yet water remains inexpensive enough in most parts of the country to keep massive lawns and golf courses green throughout the hottest months of the summer.

This mismatch between prices and true costs is one reason that so few alternatives exist—or why they seem too expensive to bother with. To correct this, the government can use taxes to greatly increase the price of resources that we are overusing. For example, the more expensive oil becomes, the more economic sense it will make to drive less, carpool more, and install appliances that use less power.

Another approach would be for regional water and electrical authorities to restrict access by allotting every-

## Gasoline Tax (Dollars per gallon—2010)



Source: OECD



Another approach would be for regional water and electrical authorities to restrict access by allotting everyone the minimum amount necessary for daily tasks, then charging steeply for any use above that amount. This would provide a powerful incentive to install more efficient toilets and appliances or to alter landscaping choices.

one the minimum amount necessary for daily tasks, then charging steeply for any use above that amount. Again, this would provide a powerful incentive to install more efficient toilets and appliances or to alter landscaping choices—even for those individuals who don’t spend much time thinking about “the environment.”

Businesses can work with their competitors to voluntarily adopt industrywide standards that require minimizing resource-intensive activities. For example, as Coca-Cola and Miller are already doing, businesses can calculate and reduce impacts on vital resources they need in common (water, in this case). And, although individual efforts to recycle and reduce consumption won’t be sufficient to head off looming problems on their

own, it will remain important for citizens to support and participate in local efforts along these lines.

## Trade-Offs and Downsides

The actions contemplated by this option would significantly alter our daily lives. We would drive, eat, and shop differently; air travel might become too expensive for some of us. Tasks that are fast and easy today could become more complicated, and our household budgets would take a hit. Taxes would raise the price of gasoline, food, and other things. Rationing would require us to live very differently than we have in the past. Businesses would see increased operating costs, customers would see higher prices, and individuals would have more limited consumer choices.

The Sustainable Citizen Program is the product of a US Department of Education funded effort focused on the growth of learning communities for the creation of sustainable citizens equipped with skills in democratic dialoging and systems thinking and who exhibit a mind-set geared toward enabling a more sustainable society through collective action. The Sustainable Citizen Program has been developed by researchers at Columbia University and the University of Iowa. For more information, please visit the program website at <http://www.sustainablecitizen.org> or contact the program director, Dr. Craig Just, at [craig-just@uiowa.edu](mailto:craig-just@uiowa.edu).

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## OPTION TWO

While problems related to humanity's overuse of natural resources are very real, many dire predictions in the past have been rendered irrelevant by technological and social advances. As long as the right incentives are in place, our resource-overspending problems have every chance for solution by inventors, entrepreneurs, and the market.



# >> Focus the Power of Markets and Technological Innovation

**O**PTION TWO HOLDS THAT, while we face problems related to humanity's overuse of natural resources, human ingenuity is the best tool we have for saving ourselves. This option reminds us that we've seen many dire predictions in the past rendered irrelevant by technological and social advances. Given the strong historical evidence that we are poor at predicting the future, we must not use the latest round of dire predictions as the basis for taking such actions as drastically raising the cost of oil and other vital resources—a move we know will hurt millions of the most vulnerable people on Earth.

The history of false predictions of imminent doom—what a recent report in *Wired* called “Apocalypse Not”—can be traced back at least as far as the early 19th century, when the economist Thomas Robert Malthus calculated

that population growth would inevitably, and soon, lead to widespread poverty, starvation, and other miseries. Since Malthus' time, the world's population has increased from one billion to seven billion, approximately. But technological advances Malthus could not have anticipated helped us avoid the disasters he predicted.

This pattern has repeated itself again and again: an updated version of Malthus' famine prophecies in the mid-20th century has been countered by the “green revolution” in agricultural technologies, infrastructure, and markets; predictions of “peak oil” have been overturned by major advances in exploration and extraction methods; and claims that, by 2012, we would have completely run out of natural gas and vital metals, such as aluminum, copper, gold, lead, and mercury, have proven to be untrue. Each

time, loud voices have argued that the only way for us to save ourselves is to adopt policies that limit population and economic growth. And each time, solutions have arisen not from such policies but from unforeseen technological innovations.

Many people have pointed out that, in the long run, climate change and overuse of the planet's resources pose very real threats to human existence. To concerns such as these, the economist Bjorn Lomborg responds, "Poverty ... is one of the greatest of all killers, and economic growth is one of the best ways to prevent it." In other words, although we cannot be certain about what will happen as a result of our current levels of consumption of natural resources, we do know what will happen if we take steps that limit economic growth: millions of people will continue to live in poverty, suffering needlessly from preventable diseases, lacking education and work opportunities, and dying young. This option suggests that, because "economic growth" is one of the best methods humanity has ever devised for raising people out of poverty, it would be callous and irresponsible for already rich nations to restrict it.

Furthermore, to the extent that limiting economic growth might result in limiting entrepreneurs' access to capital, reducing the buying power of consumers in emerging markets, or slowing the pace of technological advance, it might also choke off the processes most likely to produce the innovations that could head off the very problems some people are so concerned about.

Indeed, according to this option, we are now better positioned than ever to cultivate and benefit from new ideas that could, at any moment, spring forth from one or more of the now approximately seven billion people on Earth—especially given today's fertile mix of worldwide collaboration tools, ready access to startup capital, and new visions of what successful businesses should be trying to achieve. One of those making this claim is Peter Diamandis, CEO of the X Prize Foundation, who argues in his book, *Abundance*, that "humanity is now entering a period of radical transformation in which technology has the potential to significantly raise the basic standards of living for every man, woman, and child on the planet," a period that could result in "a world of nine billion people with clean water, nutritious food, affordable housing, personalized education, top-tier medical care, and non-polluting, ubiquitous energy."

## What We Could Do

So what can we do to focus on the kinds of innovations we need, without strangling either creativity or economic opportunity?

Consumers should show businesses that there is a market for cleaner, more creative approaches. What was

once the relatively limited reach of the boycott or "buycott" model can now be greatly amplified by using mobile technology to check the environmental record of a company, right in the store, before purchasing its products. Individuals can also use information technology to engage in shareholder activism to influence businesses to either clean up their operations or pursue innovations that could help address some of the resource shortages we might be facing.

Businesses should examine their own impacts and vulnerabilities and look for sensible, cost-effective ways to strengthen their operations against interruption. One approach would be for businesses to partner with non-profit environmental organizations to learn how they might operate more cleanly and efficiently. Another approach would be for global businesses to look for ways to shift their supply chains to include more local sources; this would allow them to reduce their dependence on less energy-efficient transportation methods, such as air-freight. Businesses holding patents that can improve fuel efficiency or otherwise lower various environmental impacts could consider granting access to these patents at reduced cost to businesses in developing countries, where it might still be possible to "leapfrog" over more wasteful stages of development.

Government can provide such incentives as the grants and prizes currently offered by organizations like the X Prize Foundation. Having identified desired outcomes, such as a new form of fuel or a cleaner manufacturing process, the federal government could offer a significant financial reward to anyone whose new invention satisfies a list of criteria related to those goals. This would be a way of interesting creative engineers, scientists, and business people in working toward new capabilities.

Government should also remove subsidies that artificially suppress resource prices. Today, for example, the federal tax code provides for large deductions for oil companies. While this option argues against taxes that arbitrarily raise fuel prices, these subsidies limit people's ability to make the most rational consumption choices and should be abolished.

## Trade-Offs and Downsides

There are drawbacks to the actions proposed under Option Two. If businesses reduce their strong emphasis on profits above all, jobs may be lost and prices may rise. Asking consumers to engage in shareholder activism and keep track of the records of the businesses they frequent will take time and energy that many individuals do not have to spare. Granting access to valuable patents will cost real money. Eliminating oil subsidies will make gasoline more expensive, which would disproportionately affect people in rural areas and those least able to pay for it.

## OPTION THREE

We need to reconnect with values that were once prized by most Americans: frugality, altruism, social connections, and living within one's means. If we can do this, we'll be healthier, happier, and more prosperous—and the planet and our communities will be in better shape, too.



## >> Transform Our Culture

**O**PTION THREE ARGUES that new regulations or technological breakthroughs will only nibble around the edges of the real problem we are facing. According to this option, we need to reconnect with values that have long been important to Americans, such as frugality, altruism, social connections, and the pride of making a good life within one's means. If we can do this, we will be healthier, happier, and more prosperous—and the planet and our communities will be in better shape, too.

Option Three agrees that technological innovations can solve important problems. But if our use of technology is not informed by restraint, our expanding technological capabilities might actually be our undoing. Take fuel efficiency, for example: since 1980, automobile engines have become 60 percent more efficient, but today's average car is only traveling about 18 percent farther per gallon. Why? Because increased fuel efficiency made it possible for people to afford heavier, more powerful—and thus

safer—cars, and to commute longer distances in them. Far from reducing fuel usage, improved fuel efficiency gave rise to sprawling suburbs with two or more SUVs in every driveway.

Imagine that, in the near future, we were to discover a cheap, clean, readily available alternative to fossil fuel. This would lower the price of virtually all consumer goods and reduce the incentive to limit consumption. Because of this new fuel source, we might consume even more goods, requiring even greater amounts of the water, land, trees, minerals, and other inputs necessary for manufacturing the products we purchase. In the absence of a shift in the values guiding our purchases and lifestyle, according to this option, technological innovations that seem “environmentally friendly” might actually increase damage to the planet.

On the other hand, if people in the Western world—i.e., those who consume a disproportionately large share of the planet's resources—simply decided to stop buying so much,

chose to live in smaller homes, and bought small, used cars and kept them longer, we would come a lot closer to solving our resource overuse problems than any new invention or set of regulations is likely to achieve.

This may sound like a radical change in lifestyle, but the fact is that the wasteful lifestyle we currently pursue began relatively recently. After the end of World War II, the country entered a period of unprecedented prosperity and opportunity—not to mention the beginning of an endlessly rising tide of technological innovations and refinements that seemed to promise ever easier, more convenient, more comfortable, and more affordable living for us all.

The popular view holds that our quality of life has improved ever since. But a look at the many aspects of our lives reveals some less positive outcomes. Compared to the middle of the 20th century, Americans now socialize less, have fewer close friends, and are less happy. We have drastically reduced our participation in the charities, fraternal societies, volunteer fire departments, and recreational sports leagues that were once the foundations of healthy communities. We eat too much, watch too much television, and spend less time with our families. During this period, the size of our government also grew by leaps and bounds, and more people than ever are now dependent on the government for things that individuals, families, and communities once took responsibility for.

It's no coincidence that these trends occurred during the same period when our consumption of natural resources exploded, according to Option Three. We seem to have lost the sense of restraint that once would have deterred us from making purchases for emotional, rather

than practical, reasons, or better protected us against the temptation of instant gratification. In this view, external solutions, such as regulations or new inventions, are not the answer; the answers must come from within us. This option calls for a cultural shift, a "new normal" in which Americans come to see much of the way we live now as not only wasteful but also as a cause of unhappiness, debt, and alienation.

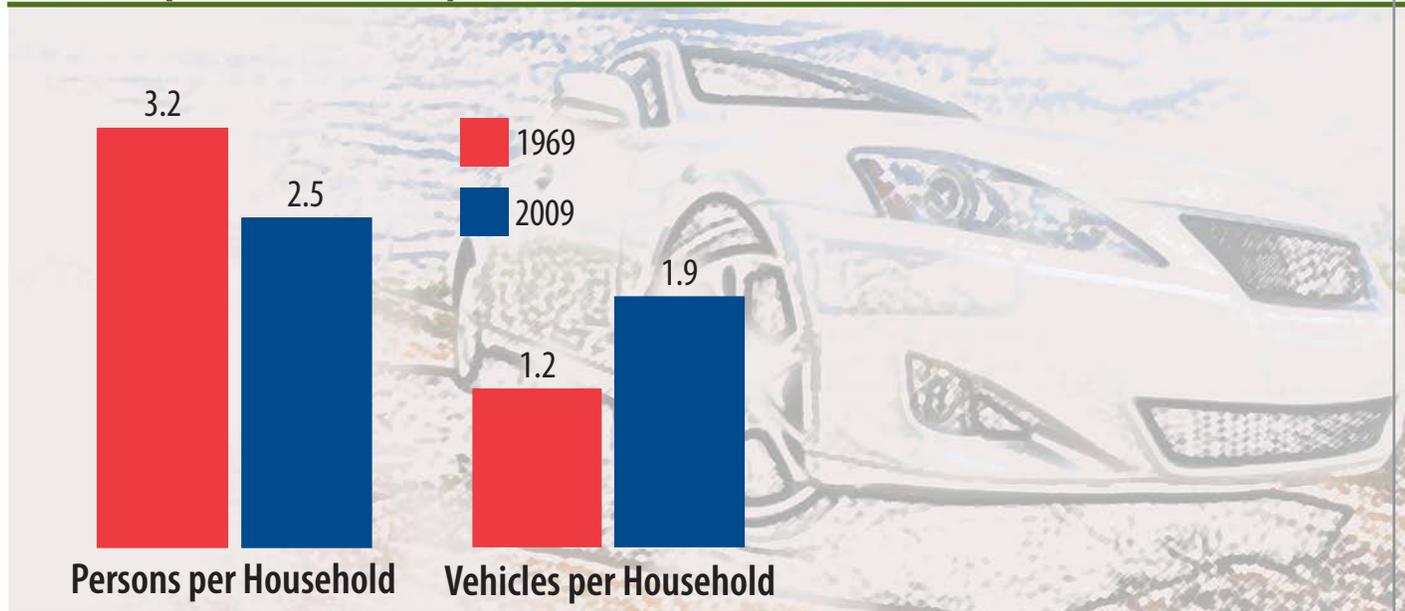
Such a shift in outlook may seem to be an unrealistic goal, but we've done it before. Consider that, just five decades ago, almost half of all adults smoked and no one wore seat belts. In the intervening years, most people have come to accept strict limits on smoking (with the result that fewer than 20 percent of Americans now smoke), and see the value of buckling up. Laws and regulations played a role in these changes in viewpoint and behavior, but they would have occurred much more slowly if individuals had not adopted new ways of thinking about health and safety and begun to police themselves and those close to them.

## What We Could Do

Most important, we need to strengthen our communities and our attachment to them. To achieve this, people could make a conscious effort to live closer to their families, to garner both emotional and economic benefits. Community members can educate their relatives and neighbors about lifestyle changes that will reduce their resource use. Volunteerism must once again become an important part of all of our lives.

Businesses, particularly smaller retail and service businesses that are centered in local communities, can agree

## Fewer People, More Vehicles per Household



Source: US Dept. of Transportation, National Household Travel Survey

At Share Tompkins Community Swap Meets in Tompkins County, NY, people come together to share and trade goods and services, working together to help people leave with what they need.



Shira Evergreen

to participate in community currency programs that help neighbors trade goods and services with one other.

Although an increased level of self-reliance is vital for the success of this option, there is a role for government in supporting stronger communities by passing laws and using tax incentives to reduce the prevalence of sprawl. Power and water utilities could replace traditional meters with technology that shows people how their consumption compares to that of their neighbors. Research on this kind of “feedback” shows that it can have a powerful effect on people’s behavior.

Schools have a role in changing cultural attitudes too. What was once commonplace instruction in subjects like woodworking, automobile repair, and home economics could be reinstated and extended to include instruction

in trades, crafts, gardening, and other skills that will help us rediscover the pleasures and benefits of self-reliance.

## Trade-Offs and Downsides

This third option brings with it significant drawbacks that will be felt on the individual level. Living and working closer to family members will result in a sense of curtailed freedom for many, in addition to reducing employment prospects and other opportunities due to decreased mobility. Increased emphasis on trades and crafts in schools will reduce the time spent on academics. Limiting sprawl will require people to live more closely together, on less land, than they may wish to. Many people may feel that their neighbors have no business tracking their electricity and water usage.

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**Writer:** Sutton Stokes

**Executive Editor:** Brad Rourke

**Managing Editor:** Ilse Tebbetts

**Design and production:** Long’s Graphic Design, Inc.

**Copy Editor:** Lisa Boone-Berry

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# >>Sustaining Ourselves

## How Can We Best Meet the Needs of Today and Tomorrow?

**A**MERICANS ARE ACCUSTOMED to multiple choices, advanced technologies, and wondrous conveniences. But there are reasons to wonder how much longer we can maintain this way of life. The problem is that the world is currently using vital resources—clean water and air, wood, energy, productive farmland—about one-and-a-half times faster than the planet’s natural processes can replace them. To use the analogy of a household budget, it’s as if we are spending our annual salary by September and living off our fast-dwindling savings for the rest of the year. Simple math tells us that we can’t keep this up forever.

Although all countries contribute to this planetary “overspending,” Americans consume a particularly large slice of the pie. We are only about five percent of the world’s population, but we use fully a quarter of all the

global resources used each year. We drive, eat, use water, develop land, and generate trash more than people in any other country, and our use of many of these resources is growing much faster than our population.

Many people are concerned that our heavy use of fossil fuels is causing our planet to grow warmer. Whether this is true or not, our current lifestyle gives us much else to be concerned about: fuel costs are high; too many children suffer from asthma; half of our rivers and lakes are too dirty for recreational swimming or fishing; many of our commercial fisheries are in danger of collapse from over-use; and more than half of our wetlands have been lost to development and agriculture, even as we lose thousands of acres of farmland per day to housing, malls, and roads.

How can we meet our needs today without hampering our ability to meet our needs tomorrow?

### OPTION ONE

#### Take Urgent Action to Repair and Protect Crucial Resources

This first option holds that we must immediately and drastically change the way we live. Vital resources, such as clean air and water and productive agricultural land are dwindling quickly, with ominous implications. In addition to threatening our health, economy, and industry, increasing worldwide pressures on these life-sustaining resources threaten our security, too. Competition for increasingly scarce water and other vital resources will lead to growing worldwide poverty, political instability, and conflicts that might imperil resources vital to Americans’ way of life.

We face a genuine crisis, and we must take urgent measures to head off the looming catastrophe. The actions of businesses and individuals have a role to play but we cannot waste time waiting for market forces or neighborhood recycling programs to solve problems of such magnitude. During World War II, American citizens went without luxury goods, submitted to strict government regulation of business, employment, and personal consumption; and contributed significant amounts of volunteer time and effort to their communities. Our current situation is so severe that we must be prepared to sacrifice on a similar scale.

**BUT:** *This option involves intrusive actions and asks us to give up control over what were once personal choices about our day-to-day lives.*

EXAMPLES OF WHAT MIGHT BE DONE	SOME CONSEQUENCES AND TRADE-OFFS TO CONSIDER
The government can use surcharges and tax incentives to aggressively phase out fossil fuels and promote energy-efficient appliances and automobiles.	Such charges will raise the prices of gasoline, food, and other daily staples. The poor and those who live in rural areas will be disproportionately affected.
Regional authorities can ration access to water and electricity.	Some people will feel that such rationing intrudes on their freedom to have swimming pools or design landscaping as they see fit.
The government can join binding international agreements to protect natural resources.	These agreements will require US leaders to take orders from international entities.
Citizens can reduce their consumption levels by purchasing mainly secondhand items and consciously avoiding products that are manufactured using polluting or exploitative practices.	These actions would limit individuals’ ability to take advantage of and enjoy technological advances, such as smart phones or the safety features in the latest generation of automobiles.
Businesses can join together to reduce impacts on resources they share in common.	Such reductions will raise operating costs, which may result in shareholder anger and higher prices for consumers.

## OPTION TWO

### Focus the Power of Markets and Technological Innovation

Our current lifestyle places severe pressures on crucial resources—but, according to this option, we have no chance of solving this problem if we handicap our freedom to experiment and choose. Instead, we must take maximum advantage of American creativity and ingenuity, as well as the power of the market. Our country has a history of creative risk-takers successfully devising solutions for, hugely challenging circumstances. The same factors that create the problems we face—population growth, increasing consumption, globalized trade—are also radically advancing our knowledge and technologies in areas like computing, energy generation, and medicine. Innovation in many vital areas increasingly requires less capital and smaller teams.

As long as the right incentives are in place, our resource-overspending problems have every chance for solution by inventors, entrepreneurs, academics, and the market. On the other hand, if we hobble and distort market forces with excessive regulations and unwarranted government favoritism, we will carelessly throw away the best tools we have for solving these problems.

**BUT:** *This option places the United States out of step with most other nations, who see a more centralized approach as necessary. It relies on unproven innovation and may not move quickly enough.*

EXAMPLES OF WHAT MIGHT BE DONE	SOME CONSEQUENCES AND TRADE-OFFS TO CONSIDER
Consumers can organize to use micro-investments and shareholder activism to show businesses that they support and will purchase more sustainable product lines.	Attending shareholder meetings and monitoring progress on these issues will require a substantial amount of time away from home, family, and work.
US businesses can sell reduced-cost patents for energy-efficient and clean-energy technologies to developing countries.	Low-cost patents will reduce operating costs for companies in those countries, creating competition for US companies.
Government can increase tax credits for research and development in clean and renewable energy sources and other clean technologies.	This places government in the position of predicting which technologies will be successful.
Global businesses can make their supply chains more local and move products by ship and train instead of by air.	With less global reach, there will be fewer products available, and ordering them will be slower and less convenient.
To strengthen market forces, the government can eliminate subsidies that unnaturally depress prices for nonrenewable sources of energy.	Eliminating these subsidies will result in higher prices for consumers, disproportionately affecting those least able to pay.

## OPTION THREE

### Transform Our Culture

Changing from one energy source to another or reducing packaging won't change our overconsumption without a shift in the values that guide us. The reason we have arrived at this point is because we have lost touch with concepts that once seemed self-evidently valuable to most Americans, and which still persist in some rural areas: frugality, altruism, social connections, and the pride of making a good life within one's means.

In a culture informed by those values, people would repair things instead of throwing them away; children would grow up learning to provide for themselves by gardening, fishing, and hunting; families would live close together to support each other and share resources; and community members would work to solve common problems and protect local resources.

We can't return to this sort of society overnight, but we should be encouraged by recent efforts to reduce smoking or increase the use of seat belts. A mix of individual education and responsibility with rules imposed by governments and businesses drove massive changes in these areas. We should try to do the same thing with rampant consumerism.

**BUT:** *This option requires us to scale back our vision of what a successful life looks like in material terms. It requires us to accept that the next generation may seem to be taking a step backward.*

EXAMPLES OF WHAT MIGHT BE DONE	SOME CONSEQUENCES AND TRADE-OFFS TO CONSIDER
People can move closer to family members.	This will reduce many people's employment opportunities and income potential.
Schools can provide training in trades, crafts, gardening, and other skills that will help people become more self-reliant.	Time spent on such training will reduce the time that can be spent on the traditional subject matter we expect schools to deliver.
Businesses can agree to participate in community currency programs to promote the local exchange of goods and services.	Participating in these programs will reduce the money that businesses have available to invest or use outside the community.
Citizens can educate family, friends, and neighbors about lifestyle changes they can make that will reduce their resource use.	Not everyone will appreciate such efforts and social relationships might suffer.
The government can pass laws against sprawl and provide incentives for people to live in denser areas.	This will restrict people's choices concerning the kind of house or neighborhood they want to live in.