



# Solutions

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Published on *Solutions* (<http://www.thesolutionsjournal.com>)

[Home](#) > Sustainable Shrinkage: Envisioning a Smaller, Stronger Economy

## Sustainable Shrinkage: Envisioning a Smaller, Stronger Economy

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Volume 2: Issue 4: Page 10-15: Aug 11, 2011

In 1987 when the United Nations' Brundtland Report, *Our Common Future*, appeared to worldwide fanfare, its slogan of "sustainable development" reassured environmentalists, who focused on the term "sustainable," while pleasing business interests, who understood "development" to mean continued material growth. It seemed we could have it all. But many thoughtful observers then and since have pointed out that "sustainable development" is an oxymoron. On a finite planet, we can't have both sustainability and continued material growth. More than two decades after the Brundtland Report, it's past time to abandon this linguistic sleight of hand and rally around a new, shocking but this time realistic slogan: sustainable shrinkage! Within this new perspective, we can get on with saving species, restoring wastelands, improving efficiency, putting our life-support systems on sustainable bases—in short, finding solutions.

But we'll do so with a new urgency and clarity, conscious that if we are to survive on our little planet in some reasonably civilized way, human activity (and its impacts) must shrink. If we don't shrink it, Gaia will shrink it for us, catastrophically.

### What to Shrink?

**Population must shrink.** Nobody knows exactly how many people eating what kinds of food the earth can support in acceptable comfort, but we know there are too many of us already. We're steadily decreasing the fertility of the globe's limited arable soils, increasing our dependence on fertilizers produced with fossil fuel, and rapidly pumping dry the essential aquifers on which millions depend. If climate change thins the Himalayan glaciers as it is thinning lower-elevation ones, several billion people will be unfed. They will not go peacefully. While it is shameful that world food supplies are distributed so unfairly, greater equality of access is both highly improbable under capitalism and moot in the long run: humans, like any other species, tend to use up whatever food is available.

**Consumption must shrink.** Sheer numbers matter in food consumption. Sheer wealth matters in food and everything else. Rich people and rich countries (North America, Europe, Japan) buy more, mine more, burn more, dispose of more. Ecological impacts of manufacturing, shipping, distribution, use, and disposal are directly proportional to the money spent, with only rare exceptions—solar panels and wind machines, for instance. Unless we shrink overall consumption, we have no chance of cutting global-heating emissions, oceanic biology impoverishment, habitat loss, extermination rates—or avoiding feedback phenomena (methane release, for instance) that threaten runaway planetary warming. The only means yet known to reduce consumption is economic recession/depression; we badly need to find others.

### How to Shrink?

**Supply the right incentives.** The best candidate so far for reducing consumption is a substantial carbon tax, the only workable way to motivate ourselves and our corporations to stop trashing our planetary home. Idealism or even pious hopes for long-term survival don't significantly motivate either ordinary people or corporate/political leaders. A carbon tax would force us all to get smarter about using energy (where cap-and-trade systems only make us smarter about tweaking the rules). Businesses would be intensely and permanently motivated to reduce their energy use. We'd drive less and travel less. We'd waste less of everything: food, wood, steel, glass. We'd spend more time at home, with family and friends and neighbors. We'd wear sweaters instead of turning up the heat and replace air conditioners with swamp

coolers. We'd find amusements less expensive than shopping and more rewarding of the incredible responsiveness, ingenuity, flexibility, endurance, and spontaneity of our species. We'd no longer have a problem deciding where to store unused stuff. We might even get outside and enjoy hiking in nature, without the distraction of cell phones.

**Switch from consumption to maintenance.** For the past several decades, most Americans' real income has been stagnant. This has been mitigated by the influx of women into the workforce and by super-cheap, mainly Chinese imports; many people have been able to live a reasonably comfortable life by buying a lot of stuff at Walmart. But as our chronic unemployment continues and real incomes dwindle, this won't be so easy. We will actually have to face frequent choices between making things last and doing without. Doing without sometimes seems painful, especially to children and others who don't understand budgets, but it can also usefully simplify life.

**Build to last.** On the whole, however, we will try to make things last. Modern appliances aren't designed to be repaired but rather to be thrown away and replaced. But sometimes repairs can be improvised—there is a vigorous subcategory of Internet information about fixing almost anything (go to RepairClinic.com, for example). Laws such as the European "take-back" regulations can force manufacturers to redesign their products for recycling and repairability both. Patching of clothes, which was fashionable among hippies in the 1960s and '70s, will come back, and indeed some people will relearn how to sew simple garments. We're already keeping our cars longer and buying used rather than new.

**Control shrinkage instead of letting it control us.** Smart shrinkage doesn't mean collapse. To get a rough idea of what's required, think back to about 1965, when our impacts on the planet were roughly half what they are now. It took more than five decades to contrive the auto-dependent, truck-dependent, space- and energy-hogging way of life we now enjoy, and though we need to shrink it faster than we have been, the pace needn't be unduly shocking. For example, average new-house area is now 2,000 square feet, compared to 2,200 a decade ago. When gas prices hit \$4 a gallon, we cut down a bit on driving, but people weren't committing suicide because of the price hike; quite a few just sold their SUVs and bought fuel-efficient cars. Walmart made its giant worldwide fleet of diesels more efficient. Utility magnates had second thoughts about nuclear power and started investing in solar. Imagine gas creeping up toward \$10 a gallon and you can construct your own idea of what sustainable shrinkage would actually mean—challenging, but not the end of the world as we know it. We can adjust if we have to. The real planet-scouring trouble will only come if we *don't* adjust.

**Decline need not mean fall.** The good news is that shrinkage may also mean transformation. When old institutions falter, they make room for new and more responsive and efficient ones. We stand near the end of an unprecedented period of heavy industrial and population expansion, and we confront an utterly new and yet age-old challenge: living better on less, figuring out how to live on a limited planet in an enduringly comfortable way.

Nobody, outside of a few visionaries, has bothered to think much about what a stable-state society might look like. However, in England especially, a movement called New Economics is now afoot, which tries to incorporate real-world environmental factors into economics.

And even in the United States, a few socially and psychologically astute economists have realized that the abstract formulas of traditional economics do not in fact match how people or economies actually behave, which is of course not straightforwardly rational. We have to devise a new economics sophisticated and flexible enough to equip us to think about a stable-state world.

## The Coming Transformation

Material growth in the industrial era has been astonishing, with many good results as well as bad. But what if material growth as we have known it is no longer possible, and the rosy growth projections are wrong? Let's look at a few particulars.

What if world oil supplies, no matter where we drill, become inexorably more expensive? What if extraction from tar sands consumes so much energy, not to mention water, that if all the costs are accounted for it's only marginally economical, not to mention environmentally unacceptable? What if profit making in most industries (obviously in airlines and trucking, but really almost all) becomes much more difficult, and taxpayer subsidies get harder to finagle? What if procurement of certain essential minerals becomes critically difficult and expensive? What if nuclear power, with its pipe dreams of a renaissance, is in fact a doomed twentieth-century technology barely surviving on public-money life support? What if our vaunted agribusiness system, which puts between four and ten calories of fossil energy into every calorie of food, can't sustain seven billion humans?

And, most ominous of all on the economic side, what if the stupendous stimulus outlays of governments can't return us to business as usual, or indeed anything like it? What if the real incomes of American and other advanced-country

working people continue to decline toward third-world levels, while the Wall Street bankers get ever richer? Can we imagine such a society remaining politically stable? How do we avoid despair, which is certainly not a constructive stance? And how do we avoid false hope, a witless nostalgia for the return to things as they were (and, in the United States, a possible gateway to a homegrown fascism)?

In the face of such grim circumstances, let's try to see what gradual sustainable shrinkage means and what our chances are of achieving it. It took us 60-odd postwar years to build a petroleum-dependent, suburbanized world. Can we retool and rebuild in a sustainable way?

**Privileging density and conservation.** Some of the requirements for sustainability are familiar, but that doesn't make them easy. Our fossil-fuel energy systems must be replaced by renewable sources. Our sprawling auto-dependent urban agglomerations must be rebuilt into compact ecocities that offer access by proximity to the necessities of life (including jobs) and to each other. Consider cities like San Francisco: They cover their rooftops with solar cells. They create green jobs for workers displaced from dying industries. They offer a compelling alternative to American-style auto-dependent suburban sprawl, making life easier for pedestrians and bicyclists and harder for cars. Or look at countries like Sweden that limit nuclear power and favor centralized town heating—keeping people warm collectively. Consider that computerization and miniaturization do more with less material and less energy, enabling a new kind of global shared brain. And intelligent engineering can vastly reduce the energy requirements of both our domestic and industrial machinery. Squeezing “negawatts” (Amory Lovins's term for watts that we don't have to generate, if we conserve instead) out of our system is cheaper than any way of producing megawatts. Conservation is always the first choice, and conservation is something that, being social animals, we mainly copy from each other. In an era of shrinkage, this will seem more and more obvious.



Thomas Hawk

San Francisco offers a compelling alternative to auto-dependent suburban sprawl: with a well-developed public transportation system, it has been effective at limiting car use and making the city friendly to pedestrians and bicyclists.

**Rediscovering our social roots.** We will find, as unemployed and underemployed and health-bankrupt Americans already know, that we have to share housing, both with family and others. It's not easy to live near or with other people, but that's our history as a species. We are groupy and interdependent even in the best of times. So we will learn to live together better. We will share space, friends, amusements, vehicles, tools—we may even learn again to sing and dance and play games together. Humans are a sociable species, playful, sexy. Spending more time together rather than interacting with expensive electronic toys will mean going back to our human nature. Consider that communicating via Facebook and e-mail only uses about 7 percent of our species' communication bandwidth, the verbal; the rest—expressions, gestures, postures, and probably even pheromones—lies dormant. Face-to-face contact will make us psychologically healthier and physically better off too, because people in supportive groups live longer and less anxious lives.

**Encouraging population stability.** And, though demographers continue to prognosticate further growth in world population, at some point (even without plagues or other disasters) this trend will reverse. What would it be like if—through better access to general health care, including contraception and abortion, and a growing realization that fewer children would mean happier lives for both kids and parents—world population began gently to decline? (Not just rise more slowly, which is the extent of most hopes heretofore.) In places like the United States, Western Europe, and Japan (in the absence of massive in-migration), there would be plenty of decent, modest-priced apartments for rent.

Some office buildings abandoned by failing corporations would be converted into dwelling space. There would be a surplus of electricity and gas, so utility rates would fall. Because of fewer people, the water supply in most regions would be ample. Instead of a globe overloaded with growing population and increasingly hungry consumers, our planet might be capable of supporting the people it has.

**Restoring nature.** How would shrinkage affect our immediate natural environment? We wouldn't need to pave over more land—indeed we could rip up unneeded roads and maybe even tear down a few dams and restore salmon runs. We could put a lot of people to work restoring natural areas, which developers would no longer covet. A few minutes' walk outside town, there would be wild places that humans would enter as guests, not masters.

**Redefining a healthy economy.** Because “growth” is the ignition fuel for speculation, the stock market would dwindle in importance. Economists would proclaim the economy to be in ruins, but people would be better off: even if we continued our present scandalous division into rich and poor, nobody need be hungry or unhoused. Because there would be fewer people, we would not have to invest in more power plants and roads and cars and schools and shopping centers and courts and police and prisons and psychiatrists. We could cut back on petroleum-intensive farming and pesticides and herbicides.

Our food production would become more local, more healthful, and less energy-consuming. Our manufacturing would follow nature's example in recycling waste, turning outputs into inputs, achieving the efficiencies of zero emissions. Our fisheries would learn how to sustain yields instead of maximizing them in the short run until collapse. Since trees sequester a lot of carbon, we would defend them against land development and deforestation.

These are big changes, and some of them will require capital, which will be harder to get. But some will thrive in conditions of declining capital, which will make them newly attractive. Saving money is the same as making money (sometimes better) and it's almost always less destructive ecologically. Some of the necessary changes will bring joy and happiness. Some will demand harder and smarter work—which may be good for our health. A lot of the changes, it's crucial to note, will involve the creation of many new jobs: the renewable-energy industry (solar and wind, mainly) already provides more jobs in the United States (about 88,000) than coal mining (about 81,000); intensive agriculture has higher outputs per acre than commercial fossil-fuel-driven farming, but it requires more labor. This is *good*.

While some changes will require massive technological innovations, many will spring up and spread by ordinary cussed human determination, like the gardening that's taking over areas of Detroit and Flint, Michigan, that General Motors has abandoned. Some innovations are within the power of present-day corporations, financed by our existing financial institutions: rooftop solar if we adopt German feed-in tariffs, plug-in cars, more efficient appliances. Some changes will happen faster if helped along by governments: incandescent lightbulbs are now illegal to import into the European Union, which is consequently far ahead of the United States in adopting compact fluorescents.

A stable or shrinking economy will still be tumultuous, full of opportunities for entrepreneurs and jobs for all kinds of people. The standard work week may shrink too, as in France and more recently in Germany—a kind of job sharing. Some industries will contract drastically, as airlines and construction are doing now; but others will grow, like medical services. The huge energy throughputs of the Internet can be reduced, and participant sports (not spectator sports) can grow. Battery building and other types of energy storage will thrive, while internal-combustion-engine manufacturing will decline. Wind turbines will become a big business (they already are), while coal- and nuclear-plant construction will collapse. There will even be a new construction-and-destruction industry of retrofitting car-dependent suburbs into compact, dense towns with lively centers and good transport connections, taking the place of the sprawl-construction industry. Airplane builders will convert themselves into train and streetcar and bus manufacturers. Bicycles, already bigger in unit sales than cars, will further expand, along with low-energy devices like scooters and light motorbikes. In fascinating, titanic struggles, power companies and oil companies will joust over propulsion energy for vehicles. Centralized power generators will be mortally threatened by distributed-energy solar and wind entrepreneurs.

None of this, any more than life in the past, is going to be easy. For people interested in the combats inherent in business life, it will be an exciting and challenging time. We will slowly shift toward “distributed” everything: electric power, ethanol production from agricultural wastes, construction supplies, food. Shrinkage will bring localization, even perhaps political devolution: Vermont and Texas may secede, while Blue States may try to recapture some of the national taxes that are transferred to Red States.

We can't entirely give up on Washington, DC. Some innovations, like a smart grid or high-speed trains, demand government initiative. Some changes, like green taxes to motivate lower-carbon energy use, will test to the utmost whether our social institutions are capable of fundamental changes. We are social animals, and now we must see whether we can be, as Aristotle put it, political animals as well.

Part of that is envisioning a lively and inventive and wholesome future of sustainable shrinkage. Because this future will have to respond to real-world constraints, it will look something like my Ecotopia, though every bioregion and cultural region will invent its own adaptations. The coming world will host new ideas about everything from microbiology to cosmology, with biology the central science. Our descendants will enjoy new ways of living and working together. They will probably wonder, if they bother to look back, how we ever lived in such extravagant and wasteful ways. But they will share hopes we can only dimly envision. We who are alive now are all runners, on their behalf, in the marathon of hope for the earth. When necessary, we will carry on against grim odds. But we must never give up that hope.

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