

PLAN B: THE GREAT MOBILIZATION

The choice is ours – yours and mine. We can stay with business as usual and preside over an economy that continues to destroy its natural support systems until it destroys itself, or we can adopt Plan B and be the generation that changes direction, moving the world onto a path of sustained progress. The choice will be made by our generation, but it will affect life on earth for all generations to come.

Lester R. Brown*



*Lester R. Brown is President of Earth Policy Institute and author of Plan B 3.0: Mobilizing to Save Civilization (2008) from which this article was adapted. The book is available in Turkish through TEMA www.tema.org.tr as well as for free downloading at www.earthpolicy.org

There are many things we do not know about the future. But one thing we do know is that business as usual will not continue for much longer. Massive change is inevitable. Will the change come because we move quickly to restructure the economy or because we fail to act and civilization begins to unravel?

Saving civilization will take a massive mobilization, and at wartime speed. The closest analogy is the belated U.S. mobilization during World War II. But unlike that chapter in history, in which one country totally restructured its economy, the Plan B mobilization requires decisive action on a global scale.

It is time for individual countries to take initiatives on their own, such as that taken by New Zealand, which announced in late 2007 that it would boost the renewable share of its electricity from 70 percent, mostly hydro and geothermal, to 90 percent by 2025. The country plans to cut per capita carbon emissions from transport in half by 2040. Beyond this, New Zealand plans to expand its forested area by some 250,000 hectares by 2020, ultimately sequestering roughly one million tons of carbon per year.

We know that the western economic model –the fossil-fuel based, automobile-centered, throwaway economy– will not last much longer. We need to build a new economy, one that will be powered by renewable sources of energy, will have a diversified transport system, and will reuse and recycle everything.

The question is how to get from here to there before time runs out. Can we reach the political tipping points that will enable us to cut carbon emissions before we reach the ecological tipping points where the melting of the Himalayan glaciers becomes irreversible? Will we be able to halt the deforestation of the Amazon before it dries out, becomes vulnerable to fire, and turns into wasteland?

As we have seen, a corporate accounting system that left costs off the books drove Enron, one of the largest U.S. corporations, into bankruptcy. Unfortunately, our global economic accounting system that also leaves costs off the books has potentially far more serious consequences.

The key to building a global economy that can sustain economic progress is the creation of an honest market, one that tells the ecological truth. To create an honest market, we need to restructure the tax system by reducing taxes on work

and raising them on various environmentally destructive activities to incorporate indirect costs into the market price.

If we can get the market to tell the truth, then we can avoid being blindsided by a faulty accounting system that leads to bankruptcy. As Øystein Dahle, former Vice President of Exxon for Norway and the North Sea, has observed: “Socialism collapsed because it did not allow the market to tell the economic truth. Capitalism may collapse because it does not allow the market to tell the ecological truth.”

Climate Stabilization Measures

To minimize the future rise in temperature we need to cut net carbon dioxide emissions 80 percent by 2020. Replacing fossil fuels with renewable sources of energy for generating electricity and heat will reduce carbon emissions in 2020 by more than 3.1 billion tons. (See Table 1) The biggest single cut in carbon emissions comes from phasing out the use of coal to generate electricity, a step that will also sharply reduce the three million deaths from air pollution each year. Other cuts come from entirely backing out all the oil used to generate electricity and 70 percent of the natural gas.

Table 1. Plan B Carbon Dioxide Emissions Reductions and Sequestration in 2020

Action	Amount (million tons carbon)
Energy Restructuring	
Replacing fossil fuels with renewables for electricity and heat	3,140
Restructuring the transport system	1,190
Reducing coal and oil use in industry	100
Biological Carbon Sequestration	
Ending net deforestation	1,500
Planting trees to sequester carbon	950
Managing soils to sequester carbon	600
Total Carbon Dioxide Reductions in 2020	7,480
Carbon Dioxide Emissions in 2006	9,180
Percent Reduction from 2006 Baseline	81.5

In the transport sector, the greatly reduced use of oil will eliminate close to 1.2 billion tons of carbon emissions. This reduction relies heavily on shifting to plug-in hybrid cars that run on carbon-free sources of electricity such as wind. The remainder comes largely from shifting long-haul freight from trucks to trains, electrifying freight and passenger trains, and using green electricity to power them.

At present, net deforestation of the earth is responsible for an estimated 1.5 billion tons of carbon emissions per year. The Plan B goal is to halt deforestation by 2020, totally eliminating this source of carbon emissions. In addition, we need to increase the number of trees on the earth in order to sequester carbon. The forestation of wastelands will fix more than 950 million tons of carbon each year. Trees also need to be planted to control flooding, reduce rainfall runoff to recharge aquifers, and protect soils from erosion. Land use management by expanding the area of minimum –or no– till cropland, planting more cover crops during the off-season, and using more perennials instead of annuals in cropping patterns will also help to sequester carbon. These practices can fix an estimated 600 million tons of carbon per year.

Together, replacing fossil fuels in electricity generation with renewable sources of energy, switching to plug-in hybrid cars, going to all-electric railways, banning deforestation, and sequestering carbon by planting trees and improving soil management will drop carbon dioxide emissions in 2020 more than 80 percent below today's levels. This reduction will stabilize atmospheric CO₂ concentrations below 400 parts per million, limiting the future rise in temperature.

Energy efficiency is vital to reducing carbon emissions. Some initiatives are relatively simple, such as raising thermostats in the summer and lowering them in the winter. Others are switching to compact fluorescent light bulbs or LEDs (light emitting diodes), retrofitting buildings to make them more energy efficient, and using more efficient appliances. Lifestyle changes encompass changing our mode of transportation. Replacing a 3,500 pound car with a 22 pound bicycle reduces energy use dramatically, but it also reduces materials use by 99 percent, indirectly saving still more energy.

Moving down the food chain can also make a difference. The energy differences between a diet rich in red meat and a plant-based diet is roughly the same as the energy-use difference between driving a Chevrolet Suburban sports utility vehicle and a Toyota Prius gas-electric hybrid.

For countries everywhere, particularly developing ones, the economic good news is that the Plan B energy economy is much more labor-intensive than the fossil-fuel-based economy it is replacing. For example, in Germany, a leader in the energy transition, renewable energy industries already employ more workers than the long-standing fossil fuel and nuclear industries do.

The restructuring of the energy economy outlined here will not only dramatically drop CO2 emissions, helping to stabilize climate, but it will also eliminate much of the air pollution that we know today. The idea of a pollution-free environment is difficult for us even to imagine, simply because none of us has ever known an energy economy that was not highly polluting.

And, finally, in contrast to investments in oil fields and coal mines, where depletion and abandonment are inevitable, the new energy sources are inexhaustible. While wind turbines, solar cells, and solar-thermal panels will all need repair and occasional replacement, the initial investment can last forever. This well will not go dry.

Mobilizing to Save Civilization

Mobilizing to save civilization requires an enduring economic restructuring. The U.S. entry into World War II offers an inspiring case study in rapid mobilization. Initially, the United States resisted involvement in the war and responded only after it was directly attacked at Pearl Harbor on 7 December 1941. But respond it did. After an all-out commitment, the U.S. engagement helped turn the tide of war, leading the Allied Forces to victory within 3.5 years. The U.S. mobilization for World War II demonstrates that a country and, indeed, the world can restructure the economy quickly if convinced of the need to do so.

Mobilizing to save civilization means restructuring the economy, restoring its natural support systems, eradicating poverty, stabilizing population and climate, and, above all, restoring hope. We have the technologies, economic instruments, and financial resources to do this. Jeffrey Sachs of Columbia University's Earth Institute sums it up well:

The tragic irony of this moment is that the rich countries are so rich and the poor so poor that a few added tenths of one percent of GNP from the rich ones ramped up over the coming decades could do what was never

before possible in human history: ensure that the basic needs of health and education are met for all impoverished children in this world. How many more tragedies will we suffer in this country before we wake up to our capacity to help make the world a safer and more prosperous place not only through military might, but through the gift of life itself?

It is not possible to put a precise price tag on the changes needed to move our 21st century civilization off the decline-and-collapse path and onto a path that will sustain economic progress. But we can at least provide some rough estimates of the scale of effort needed.

The additional external funding needed to achieve universal primary education in developing countries that require help, for instance, is conservatively estimated at 10 billion dollars per year. (See Table 2) Funding for an adult literacy program based largely on volunteers will take an estimated additional four billion dollars annually. Providing for the most basic health care in developing countries is estimated at 33 billion dollars by the World Health Organization. The additional funding needed to provide reproductive health care and family planning services to all women in developing countries amounts to 17 billion dollars a year.

Table 2. Plan B Budget: Additional Annual Expenditures Needed to Meet Social Goals and to Restore the Earth

Goal	Funding (billion dollars)
Basic Social Goals	
Universal primary education	10
Eradication of adult illiteracy	4
School lunch programs for 44 poorest countries	6
Assistance to preschool children and pregnant women in 44 poorest countries	4
Reproductive health and family planning	17
Universal basic health care	33
Closing the condom gap	3
Total	77

Earth Restoration Goals	
Planting trees to reduce flooding and conserve soil	6
Planting trees to sequester carbon	20
Protecting topsoil on cropland	24
Restoring rangelands	9
Restoring fisheries	13
Protecting biological diversity	31
Stabilizing water tables	10
Total	113
 Grand Total	 190

Closing the condom gap by providing the additional 9.5 billion condoms needed to control the spread of HIV in the developing world and Eastern Europe requires three billion dollars: 550 million for condoms and 2.75 billion dollars for AIDS prevention education and condom distribution. The cost of extending school lunch programs to the 44 poorest countries is 6 billion dollars. An estimated 4 billion dollars per year would cover the cost of assistance to preschool children and pregnant women in these countries. Altogether, the cost of reaching basic social goals comes to 77 billion dollars a year.

A poverty eradication effort that is not accompanied by an earth restoration effort is doomed to fail. Protecting topsoil, reforesting the earth, restoring oceanic fisheries, and other needed measures will cost an estimated 113 billion dollars in additional expenditures per year. The most costly activities, protecting biological diversity at 31 billion dollars and conserving soil on cropland at 24 billion dollars, account for almost half of the earth restoration annual outlay.

Combining social goals and earth restoration components into a Plan B budget yields an additional annual expenditure of 190 billion dollars, roughly one third of the current U.S. military budget or one sixth of the global military budget. (See Table 3) In a sense this is the new defense budget, the one that addresses the most serious threats to our security.

Table 3. Military Budgets by Country and for the World in 2006 and Plan B Budget

Country	Budget (billion dollars)
United States	560
United Kingdom	59
France	53
China	50
Japan	44
Germany	37
Russia	35
Italy	30
Saudi Arabia	29
India	24
All other	314
World Military Expenditure	1,235
Plan B Budget	190

Unfortunately, the United States continues to focus on building an ever-stronger military, largely ignoring the threats posed by continuing environmental deterioration, poverty, and population growth. Its defense budget for 2006, including 118 billion dollars for the military operations in Iraq and Afghanistan, brought the U.S. military expenditure to 560 billion dollars. Other North Atlantic Treaty Organization members spend a combined 328 billion dollars a year on the military. Russia spends about 35 billion dollars, and China, 50 billion. U.S. military spending is now roughly equal to that of all other countries combined.

As of late 2007, direct U.S. appropriations for the Iraq war, which has lasted longer than World War II, total some 450 billion dollars. Economists Joseph Stiglitz and Linda Bilmes calculate that if all the costs are included, such as the lifetime of care required for returning troops who are brain-injured or psychologically shattered, the war will cost in the end some two trillion dollars. Yet the Iraq war may prove to be one of history's most costly mistakes not so much because of fiscal outlay but because it has diverted the world's attention from climate change and the other threats to civilization itself.

It is decision time. Like earlier civilizations that got into environmental trouble, we can decide to stay with business as usual and watch our modern economy decline and eventually collapse, or we can consciously move onto a new path, one that will sustain economic progress. In this situation, no action is a de facto decision to stay on the decline-and-collapse path.

No one can argue today that we do not have the resources to eradicate poverty, stabilize population, and protect the earth's natural resource base. We can get rid of hunger, illiteracy, disease, and poverty, and we can restore the earth's soils, forests, and fisheries. Shifting one sixth of the world military budget to the Plan B budget would be more than adequate to move the world onto a path that would sustain progress. We can build a global community where the basic needs of all the earth's people are satisfied – a world that will allow us to think of ourselves as civilized.

This economic restructuring depends on tax restructuring, on getting the market to be ecologically honest. The benchmark of political leadership will be whether leaders succeed in restructuring the tax system. Restructuring the tax system, not additional appropriations, is the key to restructuring the energy economy.

It is easy to spend hundreds of billions in response to terrorist threats, but the reality is that the resources needed to disrupt a modern economy are small, and a U.S. Department of Homeland Security, however heavily funded, provides only minimal protection from suicidal terrorists. The challenge is not to provide a high-tech military response to terrorism but to build a global society that is environmentally sustainable and equitable – one that restores hope for everyone. Such an effort would do more to combat terrorism than any increase in military expenditures or than any new weapons systems, however advanced.

Just as the forces of decline can reinforce each other, so can the forces of progress. Fortunately, the steps to reverse destructive trends or to initiate constructive new trends are often mutually reinforcing, win-win solutions. For example, efficiency gains that lower oil dependence also reduce carbon emissions and air pollution. Steps to eradicate poverty help stabilize population. Reforestation fixes carbon, increases aquifer recharge, and reduces soil erosion. Once we get enough trends headed in the right direction, they will reinforce each other.

The world needs a major success story in reducing carbon emissions and dependence on oil to bolster hope in the future. If the United States, for instance,

were to launch a crash program to shift to plug-in hybrid cars while simultaneously investing in thousands of wind farms, Americans could do most of their short-distance driving with wind energy, dramatically reducing pressure on the world's oil supplies.

With many U.S. automobile assembly lines idled, it would be a relatively simple matter to retool some of them to produce wind turbines, enabling the country to quickly harness its vast wind energy potential. This would be a rather modest initiative compared with the restructuring during World War II, but it would help the world to see that restructuring an economy is entirely doable and that it can be done quickly, profitably, and in a way that enhances national security both by reducing dependence on vulnerable oil supplies and by avoiding disruptive climate change.

Saving Civilization is not a Spectator Sport

One of the questions I am frequently asked when I am speaking in various countries is, given the environmental problems that the world is facing, can we make it? That is, can we avoid economic decline and the collapse of civilization? My answer is always the same: it depends on you and me, on what you and I do to reverse these trends. Saving our civilization is not a spectator sport.

We have moved into this new world so fast that we have not yet fully grasped the meaning of what is happening. Traditionally, concern for our children has translated into getting them the best health care and education possible. But if we do not act quickly to reverse the earth's environmental deterioration, eradicate poverty, and stabilize population, their world will decline economically and disintegrate politically.

The two overriding policy challenges are to restructure taxes and reorder fiscal priorities. Saving civilization means restructuring taxes to get the market to tell the ecological truth. And it means reordering fiscal priorities to get the resources needed for Plan B.

The choice is ours – yours and mine. We can stay with business as usual and preside over an economy that continues to destroy its natural support systems until it destroys itself, or we can adopt Plan B and be the generation that changes direction, moving the world onto a path of sustained progress. The choice will be made by our generation, but it will affect life on earth for all generations to come.