



World Climate

Negotiating a Global Climate Agreement using the C-ROADS Climate Policy Simulation

Prof. John Sterman

MIT Sloan School of Management

CONFIDENTIAL

Briefing for Upcoming Climate Negotiation

TO: *Less-Developed Economy* Negotiators at 2010 UN conference on Climate Change

SUBJECT: Our negotiating goals

You represent the less developed economies of the world at the upcoming negotiations on climate change (Bangladesh, Pakistan, southeast Asia, the poorest nations of Central and South America, most African nations, the island nations of the Pacific, Indian Ocean, and Caribbean, and much of the Middle East).

Your goal is to achieve the best outcome for the nations you represent. The educated in our nations understand that climate change is real and human activity contributes significantly to it. We also understand that we will be most adversely affected by climate change: projected increases in sea level will displace hundreds of millions of our people, and some nations, such as the low-lying island states, will simply disappear. Many of our people live in poverty and are highly vulnerable to the drought, disease, flooding, drops in agricultural yields and ecological disruption caused by climate change. Climate change threatens our survival as nations. However, as the poorest nations of the world, we do not have the capital to either mitigate our emissions or adapt to climate change. Reaching an agreement to limit climate change is critical for our future, but there is little we can do ourselves, since our total energy use and greenhouse gas (GHG) emissions are such a small fraction of the world total. Like people everywhere, we want to live in a healthy environment, but we suffer from great poverty. Our people want to be able to feed, clothe, and house our families, have a chance for a decent job, and be free of malaria, dengue, cholera and other diseases long eradicated in the rich nations.

The developed nations will put strong pressure on us to reduce our emissions because our populations are growing faster than theirs. They fear that our economic development and growth will destroy the global environment and seek to use a global climate agreement to slow our growth and prevent us from enjoying the prosperity they have. However, emissions per capita in the rich nations are far higher than ours (see graph on reverse). Any agreement that forces us to slow our development, pay more for energy, or build expensive new energy infrastructure is likely to cause riot and revolution.

The developed nations created the climate crisis and must take responsibility for their past actions. Nearly three-quarters of the total CO₂ released by burning fossil fuels since the start of the industrial revolution came from developed nations. They used that energy to build their economies and enrich their populations, often by plundering our natural resources. We will do our share, but the rich nations must agree to stronger action, commensurate with their past contribution to the problem, and they must provide the financing and technology we need to develop our economies in a carbon-neutral way. We cannot, and will not, pay the price for their past emissions. We must argue that climate change will hurt the developed nations, so they will see it in their self interest to do more. Recent research, including the bipartisan “Risky Business” report (<http://riskybusiness.org>), endorsed by former US Treasury Secretaries of both parties, shows that the costs of delay are high while most regions in the US will benefit from emissions reductions policies. See also the new US National Climate Assessment report showing that climate change is harming every one of the 50 states today; without large emissions reductions, the damage they will face will become far more severe (www.globalchange.gov).

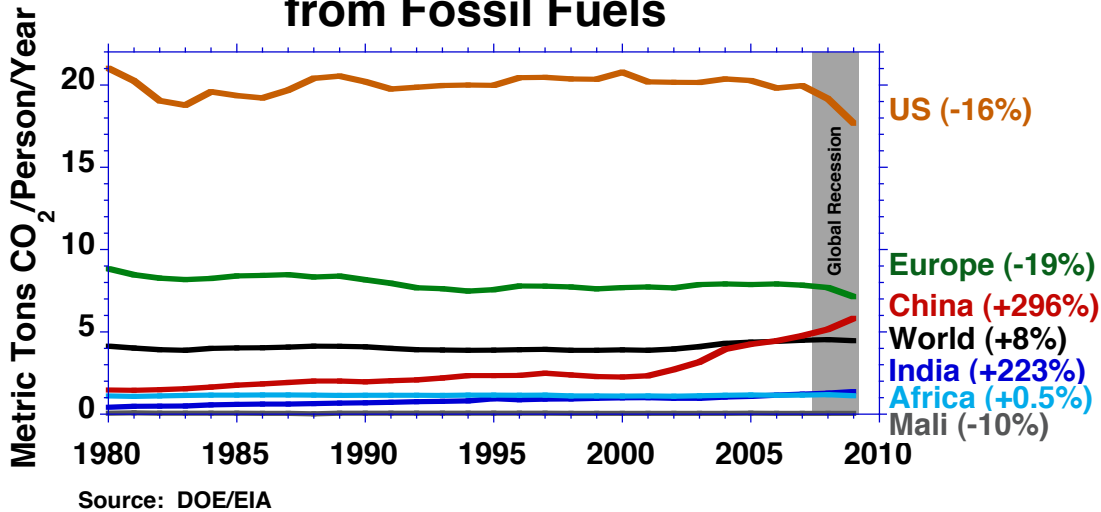
We also have an opportunity to limit growth in our GHG emissions by reducing the rate of deforestation in our territories. Our nations include most of the world’s remaining tropical forests, and, unfortunately, there is substantial deforestation in these areas. Programs to protect the forests and to sequester carbon through afforestation (planting trees in previously deforested areas) can (at some cost to our economy) significantly reduce our contribution to global CO₂ emissions. We should be paid for limiting deforestation and increasing afforestation to offset emissions in the developed world.

On the reverse of this page you will find some data that may be helpful in your negotiations. Good luck!

Prepared by John Sterman, jsberman@mit.edu, April 2008; last revision August 2014.

The graph below shows per capita CO₂ emissions from energy use (primarily fossil fuels) for the world and selected nations/regions. Percentages are the total change for the period 1980-2009. CO₂ emissions per capita in the US and Europe are far higher than world averages and far higher than emissions in the developing and less-developed nations. For example, US emissions per capita are roughly 3 times higher than those in China, 12 times higher than those in India and nearly 16 times higher than in Africa. The imbalance is far worse for the least developed nations. For example, US per capita emissions are more than 300 times greater than those of Mali. The developed nations generate more than half of global CO₂ emissions from fossil fuel consumption. With less than 5% of the world's population, the US alone generates 22% of global emissions.

World per Capita Carbon Emissions from Fossil Fuels



The graph below shows cumulative CO₂ emissions from the use of fossil fuels from 1900 to 2010. The vast majority of all the CO₂ released into the atmosphere over this period came from the developed nations of the world (about 80%). Therefore nearly all the warming observed so far was caused by these nations. Under the Business As Usual (BAU) scenario (IPCC A1FI), the share of cumulative emissions from our nations is projected to rise throughout the remainder of this century. However, cumulative emissions from the developed nations will still be more than half of the total by 2050, and roughly 45% by 2100. Since CO₂ remains in the atmosphere for roughly a century, most of the warming, sea level rise and other impacts of climate change we will experience in the 21st century will be caused by the emissions of the rich nations.

Cumulative CO₂ Emissions from Fossil Fuel Combustion (GtCO₂)

