

Examining Globalization's Role on Climate Change and the Environment

Michael Raiwet

200288739

Dr. Ralph Paragg

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Globalization, which can be considered as the growing interdependence between separate states, has taken many forms over history. Whether discussing the establishment of the Silk Route, which occurred some millennia ago, or the more recent discovery of America, globalization connects different regions in various forms such as trade, communications and commerce. More recently, advents such as shipping containers and the internet have allowed globalization to spread faster and further than before though possible, allowing consumer products to travel greater distances in much shorter periods of time and communications to travel virtually instantaneously. Corporations can now smoothly operate their businesses from separate sides of the globe and executives can spend their entire careers without ever stepping onto an assembly line or warehouse. As well as businesses, products too have been globalized, as raw materials can be mined, processed and manufactured all in separate continents. Globalization is rarely considered as solely good and negative aspects, such as development issues, are important in any discussion when dealing with the expansion and integration of markets. A larger, more foundational negative issue, one that affects all parties equally, is the concern of environmental degradation and climate change. Climate science, which is sometimes speculative in nature, has become quite polarizing over the last few decades. This essay investigates globalization's function in environmental issues and attempts to raise some of the solutions that have been proposed to address climate change.

Unintended consequences as a result of human activity in the environment is by no means a recent phenomenon. Unfortunately, these relationships between are not well understood as Boomgaard and Hart (2010:5) explain, "...history traditionally studied the actions of humans in the past, with only scant attention paid to the environment, which was more often than not viewed as immovable and unchangeable." There are however some notable examples, such as the decline of the Anasazi and the Maya due to water shortages (Diamond, 2010:202), or loss of biodiversity due to overhunting and overfishing in the Easter and Henderson islands (Diamond, 2010:200). By over exploitation of their environments, these past societies risked their wellbeing and their ability to thrive.

The consequences of the Maya or Easter Island societies are local in nature. The damages caused by overfishing and mismanagement of water resources did not extend far beyond the realm of these societies. However, in the modern globalized world, it is becoming much more difficult for the actions of any one local population to not have some global repercussion elsewhere. Instability in eastern Europe may lead to a rise in energy prices in America or a rise in interest price adjustments in China may lead to massive economic crises in Europe. Even nations that try to isolate themselves, such as Iran or North Korea, can quickly cause more militaristic nations like the United States to stir at the notion of nuclear proliferation (Weber et al., 2007). Truly, any concept of isolation seems quite impossible in the twenty-first century.

It may be beneficial to outline some basic truths about energy availability on the Earth. The Earth contains a finite amount of resources. However, some resources, such as trees, are in fact renewable and can be replanted and replenished. Other resources such as hydrocarbons like oil or coal, although technically renewable are replenished on a timescale far slower than what can be considered as renewable in a practical sense. In a process called nuclear fission, it is also possible to extract energy from other minerals such as uranium or thorium. Other forms of energy include, hydropower, wind power generated from turbines and solar power, which is limited only to the availability of sunlight and the duration of the sun itself. Each of these mentioned forms of energy have both positive and negative considerations. Hydrocarbons release a great deal of carbon dioxide into the atmosphere, but they have great energy potentials. Nuclear energy derived from uranium releases a great deal of energy and releases no green house gases. However, radioactive waste is incredibly dangerous and due to the half-lives of the radioactive material remain dangerous for many millennia. Wind and solar energy appear to be the best sources of energy, except for the reality that their energy potential is nowhere near the potentials for other more harmful energies. This gap will most potentially lessen as research and investment increase and improve these technologies.

Before the use of fossil fuels, the primary source of energy was biomass, which includes firewood, charcoal, peat, straw, grass and cow dung (Boomgaard and t' Hart,2010:21). However, due to increasing energy consumption, diminishing forest cover and rising costs of biomass fuel, it became infeasible for some countries to persist on biomass alone. Britain was one of the first countries to begin to use coal as a replacement for biomass in household and industrial processes. This change in energy use would lead to the Industrial Revolution and massive expansion of technological breakthroughs that followed into the subsequent centuries (Boomgaard and t' Hart, 2010:21).

Rates of deforestation did not slow down after the rise of fossil fuels. On the contrary, over half of the world's original forested areas have already been removed and replaced for other uses such as agriculture, industry or human lodging (Diamond, 2010:198-199). As well, Stiglitz (2007:178) suggests that 20% of the increase in atmospheric concentrations of greenhouse gases came directly from deforestation. Forests contribute more than just timber, they protect the watershed, protect soil against erosion, constitute essential steps in the water cycle and provide habitat for most terrestrial plant and animal species (Diamond, 2010:199). Deforestation also results in changes in rainfall patterns and infiltration. The effects of which result in increases in devastating floods (Huppert and Sparks, 2006:1878). In addition, Stiglitz (2007:178) indicates two further reasons why deforestation is so harmful: deforestation results in fewer trees that can convert carbon dioxide into oxygen and as the wood is burned it releases the stored carbon dioxide into the atmosphere. It is difficult to imagine any benefits of deforestation beyond that which could not be achieved by responsible forest removal and replacement.

Stiglitz (2007:162) describes the underlying problem of climate change due in large part to globalization to what he refers to as the tragedy of the commons. The expression was first used to describe common land used by peasants in England and Scotland where they could bring their sheep to graze in the Middle Ages. Only considering their own interests, each peasant would begin to graze more and more sheep which would cause the amount of available grass would diminish to the point where no sheep could feed. Stiglitz suggests the global fishing industry as a modern analogy. Overfishing around the world has led to the majority of fisheries to either collapse or enter a steep decline (Diamond, 2010:200). Because two billion people, most of them poor, depend on ocean derived protein, continued mismanagement of the valuable resource will ultimately lead to turmoil and great stress in many parts of the world (Diamond, 2010:199).

Huppert and Sparks (2006) argue that the apparent increase in the occurrence of natural disasters are associated with globalization and an increasing world population. They use examples of the Asian tsunami, which affected over fifty countries and killed over 250,000 people, and Hurricane Katrina, with an estimated 938 fatalities, as evidence to this claim (Huppert and Sparks, 2010:1875, 1879, 1881). They speculate that with rising populations, a calamity of a million victims is likely to occur within the next few decades (Huppert and Sparks, 2010:1875). Huppert and Sparks (2010:1878) are careful not to attribute the apparent rise in devastating storms directly to climate change, although they do admit that a rise in sea levels by only a half-metre could potentially increase the frequency of storm surges with a recurrence of one in 60 years to a theoretical one in two (Huppert and Sparks, 2010:1878). In their concluding remarks, Huppert and Sparks (2010:1878) discuss the differences between the aftermaths of devastating storms in developed and developing nations:

“Globalization also means that the consequences of natural events are increasingly penetrating beyond the borders of the nation that is directly affected. If the disaster is in a poor country then the international community responds mostly with disaster relief. If the disaster is in a developed nation, such as the USA or Japan, then there can be adverse effects for the whole world economy, with major financial and human losses.”

Proponents of globalization frequently remark on its ability to improve the conditions of under developed nations by integrating markets. This is true, international trade does typically increase GDP for developing nations, what is more true is the fact that most of the benefits go to developed nations (Soleymani, 2010:104). To explain this, Soleymani (2010:104-105) writes:

“...increased participation in international trade forces developing countries to focus on exporting raw materials and other basic commodities—the only products that they can produce competitively on the global market, which keeps these countries

impoverished and does not allow for the development of healthy, diversified economies”

Health and safety standards, and environmental regulations are important factors foreign investors consider before establishing mining operations in developing countries. Countries with lower standards are likely to be less costly and thus more lucrative (McAteer, 2002:233). Corporations are often not interested in damage caused by environmental destruction, so if governments are just as unwilling to deal with it, developing populations are left with the cleanup, pollution and toxins themselves (Soleymani, 2010:117). As well, environmental regulations tend to be less restrictive. The effects of climate change on developing nations are expected to burden an already overburdened portion of the world’s population. Low lying countries, such as The Maldives or Bangladesh, face possibly the worst outcomes. The Maldives, with a population of over 330,000, is expected to be completely submerged by rising oceans within the next fifty years (Stiglitz, 2007:167).

As the nation with the largest economy, along with the most powerful military, it should be no surprise that the United States plays a crucial role in any climate change discussion. The United States has held the position as the leading world leader since the 1990s, after the fall of the Soviet Union, and has rewarded the world by spreading its values and influence throughout the world ever since (Weber et al., 2007). Some even argue that modern globalization in essence is just the Americanization of the global markets (Steger, 2010:193). Weber et al. describe the dangers of American unipolarity in their 2007 report titled, “How Globalization Went Bad.” They describe several negative effects from globalization, from terrorism, nuclear proliferation to even global warming, and suggest that these are not a result of globalization itself, but in fact “...are the dark side of American predominance” (Weber et al., 2007:50). They propose three axioms to supplement their case:

- The first axiom states that beyond a certain threshold, the rate at which old global problems are solved are surpassed by the amount of new global problems generated. They argue that additional great powers will benefit the world by having the ability to consider more problems from more positions and more varied viewpoints.
- They argue in the second axiom that in an increasingly networked world, any places that fall between the networks can become very dangerous; a world of several great powers would make it more difficult for troublemakers to sprout through fissures because more regions and ideologies would be incorporated into the network.
- And finally, the last axiom argues that without opportunities to form alliances to counter a superpower, dissenters balance power by implicating themselves using nefarious means, such as acquiring nuclear weapons. In a world of several great powers, weaker states would have more choices to find suitable alliances.

The arguments raised by Weber et al. do prompt legitimate concerns about security and issues dealing with globalization, but when solely discussing climate change, the biggest challenges for the United States occur from within. The United States emits nearly 25% of global greenhouse gases (Stiglitz, 2007:171). Texas alone, with its population of around 22 million, contribute more emissions than 120 developing countries with an combined population of over 1.1 billion people (Stiglitz, 2007:171). Conservative estimates suggest that air-pollution alone is responsible about over 130,000 death in America each year (Diamond, 2010:203). The above realities are deplorable, but more damning yet is America's unwillingness to accept its responsibility or to consider legitimate reforms to address climate change. Politicians and television pundits argue as if there was still considerable debate between climate scientists about any consensus, or that the expenses of addressing the problem now would in some way be a bad investment. The most despicable concede that global warming is occurring and the melting ice glaciers will allow for more energy exploration in new realms once unreachable. Ian Lowe (2004:39) sums it up best when he remarks, "As long as politicians are more concerned about the next election than the next generation, there is little change of policy reform on the scale needed to effect a transition to a sustainable future."

It may seem logical to condemn globalization for its role in environmental degradation, but this may be unwise. In an essay titled, "The Counterintuitive Relationship between Globalization and Climate Change," J. Samuel Barkin (2003) argues that anti-globalist environmentalists may be missing some crucial facts about transportation and that localization of industries may actually cause more damage than good. He indicates two methods to reduce the use of fuel in transportation: decreasing usage and increasing fuel prices (Barkin, 2003:9-10). He remarks that although gains in fuel efficiency is to be expected, large vehicles would have to become smaller and/or transport smaller loads in order to achieve reduced fuel usage (Barkin, 2003:10). Barkin argues that increasing fuel prices will raise the prices on more fuel efficient forms of transport than the less-efficient (Barkin, 2003:10). As an example, he details that it takes just over 200 litres of fuel to get a standard shipping container from London to Boston by sea, while the same amount of fuel by train would only travel from Boston to Chicago (Barkin, 2003:10). Thus, localization would greatly increase fuel consumption. Barkin closes by encourages more trade among ports, at the expense of trade inland, even when inland areas are closer than other ports (Barkin, 2003:12).

There have been several global initiatives to address climate change. In 1992, over 100 heads of state met in Rio de Janeiro and committed to do something about the problem (Stiglitz, 2007:168). Here, they set up the initial steps to develop a treaty that would reduce emissions. Over 150 countries, including the United States, signed the agreement. Following the Rio Earth Summit, the next major event was held in Kyoto, Japan in 1997. More than 1500 delegates, lobbyists and heads of state from over 150 countries assembled with the purpose of coming up with a treaty to cut greenhouse gas emissions

worldwide (Stiglitz, 2007:169). The Kyoto Protocol, the product of this gathering, made no immediate demands on developing countries, but appealed to developed countries to reduce their emissions levels by specified amounts: Japan by 6%, Europe by 8% and the United States by 7% (Stiglitz, 2007:169). As of 2014, 192 Parties have ratified the Kyoto Protocol (UNFCCC). One notable absentee is the United States. The Clinton administration, facing strong senatorial opposition, did not submit for ratification and two months after taking office, President Bush assured Republican senators of his opposition to the protocol (Stiglitz, 2007:171). If the United States, which is responsible for over 25% of the greenhouse gas emissions would not take responsibility, what hope did the protocol have in convincing other nations, especially developing nations, whom many have only just begun to raise their living standards.

To address climate change, Stiglitz (2007) proposes several options which will now be outlined. The first of which involves improving compliance. Stiglitz argues that Europe and other countries could coerce the United States into signing the Kyoto Protocol by imposing trade tariffs or sanctions. These sanctions could then be gradually increased until America yielded and agreed to ratify.

The Kyoto Protocol gave countries praise for planting trees, however it did nothing to address deforestation (Stiglitz, 2007:179). Deforestation is detrimental to the atmosphere for two reasons: as wood is burned, the stored carbon inside is released into the atmosphere; and second, deforestation means that there are fewer trees converting carbon dioxide into oxygen (Stiglitz, 2007:178). By encouraging forest growth, you are removing plentiful amounts of carbon dioxide out of the atmosphere. This is Stiglitz second point to address climate change. He argues that countries should receive incentives to maintain their forests (Stiglitz, 2007:179). Instead of paying countries for lumber, they would instead be keeping their forests healthy. Countries, especially those in the tropics, could become Earth's gardeners. This could reverse not only deforestation but lead to rainforest rejuvenation, solving major concerns of biodiversity loss at once.

Addressing the foundering Kyoto Protocol, Stiglitz proposes an alternative framework. Instead of setting national target levels, which are difficult to manage to due to each different circumstances, he advocates a common tax on carbon emissions (Stiglitz, 2007:181-182). The tax would be imposed on household and businesses and they would pay the full price for what they use. Countries would keep the revenue and could use it to reduce other taxes which might stimulate the economy (Stiglitz, 2007:182). Finally, Stiglitz proposes a measure that would combine the fairness of a common tax with the forcefulness of the targets approach. By estimating the resulting reductions in carbon emissions for each country, targets could be assigned by methods such as taxation, or alternative methods such as direct controls on technology, such as requiring higher fuel efficiencies for transportation (Stiglitz, 2007:183).

Humanity are at a crucial crossroads in history. Current outlooks seem bleak, carbon dioxide levels are expected to continue to increase for quite some time yet, while population growth is not expected to

stabilize anytime soon. The condition of water systems do not look much better, aquifers are becoming depleted at rates much faster than they can regenerate, while oceans are being littered with plastics and other forms of garbage. Biodiversity is continually being more stressed each year, and extinctions occur significantly more often than in recent history. The choices made in the next couple of decades will decide how exactly future generations are expected to subsist. If we choose to exploit fossil fuels without adequately researching alternatives, how are future generations expected to adjust if they do not have the energy required to research implement it for themselves.

There are opportunities to correct these issues and there has been considerable progress over the years. Modern airliners have reduced carbon emissions by 70% since the first generation (McNerney Jr., 2008:38). Public awareness and concern grows by the day, and as seen by Stiglitz, practical solutions can be addressed. And of course, if we choose not to act responsibly the environment will undoubtedly correct itself. As Diamond (2010:208) describes, the correction will occur with out without our influence. The only decision to make is whether that choice is on our own terms, through reforms and cooperation, or whether we opt for a more unpleasant option, such as warfare, starvation, or genocides. The choice is ours.

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