
Can the International Treaty System Address Climate Change?

WILLIAM R. MOOMAW

One of science's great accomplishments has been to explain how the Earth's temperature is maintained by natural processes: how temperatures change cyclically to produce alternating ice ages and hospitable warm periods and how human activities are altering this long-established process.

The academic study and understanding of climate science began to emerge in 1824 and continues to evolve nearly 190 years later. However, the scientific consensus is clear: throughout a 120,000-year period, the cyclical planetary motions that alter the amount and location of solar energy reaching Earth are associated with long-term warm and cool periods. These small changes are accompanied by the release of carbon dioxide, methane, and other gases during the warm periods and by decreasing concentrations of those gases in the atmosphere during the cool periods. Increases in these gases trap heat radiating from the earth and raise its temperature.

The world has been in an optimal warm period for the past 10,000 years, which has spawned agriculture and remarkable population growth. However, since 1850, human activity has increased the concentration of heat-trapping gases in the atmosphere substantially—above any level

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measured for the past 800,000 years. There has been an accelerating rise in global temperatures; a dramatic melting of sea ice, glaciers, and ice fields; and a rise in sea levels associated with this human-induced global warming. Many species and disease organisms have shifted from the tropics to temperate zones, and droughts and storms are no longer isolated incidents

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but part of a pattern of more frequent extreme weather. Most scientific studies conclude that there is a direct connection between the heat-trapping gases released by human activities and the observed rise in temperature.¹

While individual weather events are not attributable to global warming, the prevailing climate does define weather patterns. Today's climate is measurably warmer than that of fifty or one hundred years ago, and this has affected everything from the intensity of storms and droughts, to the accelerating rise in sea level, to the rapid melting of Arctic Sea ice and of the world's glaciers and ice fields.² These changes are consistent with the projected results of climate change and provide us with a preview of what might happen if global temperatures continue to rise.

INTERNATIONAL CLIMATE DIPLOMACY

In the mid-1980s, the emerging science convinced an international group of scientists that the release of heat-trapping gases into the atmosphere by fossil fuel combustion, rice cultivation, livestock, and deforestation was creating adverse consequences for the environment, including potentially uncontrollable global warming. To systematize climate assessments, the United Nations created the Intergovernmental Panel on Climate Change (IPCC) in 1988, which was charged with providing an independent assessment of climate change for governments. The United States has played a major role in the IPCC since its inception. In fact, the first official action by the U.S. State Department under President George H.W. Bush in 1989 was to convene the inaugural IPCC meeting. The job of the IPCC is to examine evidence of man-made, or anthropogenic, climate change and assess its likely impacts. The IPCC also identifies and assesses, but does

not recommend, proposals for technologies, policies, and measures that address mitigation and adaptation. It has released four climate assessment reports; several special reports on such topics as renewable energy, carbon dioxide capture and storage, land use change, and forestry; and a set of possible future scenarios—from modest to catastrophic climate change—under different assumptions of population, economic development, and technological choices. The IPCC's initial findings, released in 1990, motivated the UN to create a negotiating committee to develop a “framework convention,” or a roadmap for assessing future actions on climate change. The UN General Assembly also specified that the treaty should be ready by June 1992, when the largest meeting of heads of government and state in history was to convene in Rio de Janeiro, Brazil, for the UN Conference on Environment and Development (later to be known as the Earth Summit). The resulting UN Framework Convention on Climate Change (UNFCCC) entered into force just eight months after it was signed in Rio, and the United States was the fourth nation to ratify it. The treaty now boasts 193 parties including the European Union.

In 1997, the international community negotiated the Kyoto Protocol, which called for specific emissions reductions by developed countries and established a means for slowing the growth of emissions in developing countries. Strategies for the latter included the Clean Development Mechanism, emissions trading, and joint implementation of projects among developed countries (a more detailed discussion of these mechanisms follows below). The Kyoto Protocol came into force only after Russia ratified it in 2005. The Protocol currently boasts 191 parties plus the European Union. The United States, however, has not ratified it.³

ROLE OF THE UNITED STATES⁴

The United States played a central role in negotiating both the UNFCCC and the Kyoto Protocol, but it has been unwilling to ratify the Kyoto Protocol and take on its binding commitments. While the United States was supportive during the negotiations for the framework treaty—which had no binding commitments and gained unanimous support for ratification in 1992—its attitude changed dramatically during negotiations over the Kyoto Protocol, under which the United States would have been required to implement modest emissions reductions.

During the Kyoto Protocol negotiations, the United States insisted on a market-based mechanism for emissions trading among developed countries (Annex B in the Protocol). This allowed countries that could

easily reduce their emissions to sell their “surplus” reductions to countries that had more difficulty meeting their targets, which American negotiators argued would create a more cost-effective system for meeting overall goals. The United States argued and won the debate to change Brazil’s proposed Clean Development Fund to assist developing countries in reducing emissions into a Clean Development Mechanism. Instead of being funded through penalties assessed when countries failed to meet targets, the Clean Development Mechanism requires developed countries to pay for projects in developing countries in order to receive credit. The United States supported joint implementation, whereby developed countries could work together to reduce emissions. The European Union applies this principle in its “emissions bubble,” which allows poorer European countries to increase their emissions as long as EU-wide emissions decrease by the prescribed eight percent below 1990 levels during the first commitment period from 2008 to 2012.

Despite these compromises, the United States still was not able to raise political support for the Kyoto Protocol at home. In July 1997, following a year of intense lobbying by U.S. auto and fossil fuel companies through the “Global Climate Coalition,” the U.S. States Senate passed the Byrd-Hagel resolution, which stipulated that the United States could not ratify the Kyoto Protocol unless China and India had the same reduction obligations within the same time period. This resolution passed 95-0. In doing so, it flew in the face of the UNFCCC’s treaty obligations that called for “common but differentiated responsibilities” among nations with the greatest financial capacity to respond to climate change. For developed countries such as the United States, these responsibilities meant leading the way in reducing emissions. Yet, until 2006, the United States was the world’s largest emitter of heat-trapping gases and it remains the largest historical cumulative emitter. China is now the largest annual emitter, but its per capita emissions remain only about one-half those of the United States.⁵

For a short time, U.S. political commitment looked promising. The Clinton administration was determined to act on climate change; as negotiations on the Protocol lagged, Vice President Al Gore flew to Kyoto and agreed that the United States supported the original intent of the treaty. Then, President Bill Clinton signed the Kyoto Protocol, but the treaty never made it through the Senate ratification process. Moreover, in 2000, George W. Bush campaigned for president favoring action on climate change. Yet, after he defeated Al Gore, President Bush “unsigned” the Kyoto Protocol claiming to undo President Clinton’s commitment—a somewhat dubious process in international law.

The one aspect of the UNFCCC that has been followed without exception is the annual “Conference of the Parties” hosted by a different country each year and named for the city in which the meeting is held. Although the United States is not a party to the Kyoto Protocol, it still manages to affect its implementation by other nations. For example, at the 13th Conference of the Parties (COP 13) in Bali in 2007, the United States hindered formation of a post-Kyoto regime by refusing to accept the emerging consensus to retain the common but differentiated responsibility language of the original Protocol. As a major international power and large emitter of carbon dioxide, it is difficult for the international community to ignore the United States, even when it has no official role in the Kyoto process. However, a dramatic intervention by the ambassador from Papua New Guinea shamed the American representatives into agreeing not to impede the consensus and allowed the process to move forward. He called for U.S. leadership, but stated that if it was not forthcoming to “get out of the way.”

WHERE DOES THE PROCESS STAND NOW?

The 15th Conference of the Parties (COP 15) in Copenhagen in 2009 generated high expectations for a binding agreement that would provide for further emission reductions following the conclusion of the Kyoto first commitment period that ended in 2012. However, two years of meetings since Bali failed to produce a treaty text that all parties could accept. The meeting teetered on total collapse. President Obama had already departed following his speech, but returned and entered a meeting of presidents of major emerging powers including China, India, Brazil, and South Africa. In the closing hours, these leaders hammered out the “Copenhagen Accord” that created a set of voluntary commitments with a goal of keeping global temperatures from rising more than two degrees Celsius. At the behest of island nations, a statement was added about the desirability to limit temperature rise to 1.5 degrees Celsius to avoid destructive sea level rise. The emission reduction commitment pages were left blank and were filled in later. An analysis of the voluntary commitments that were submitted would allow global temperatures to rise by nearly four degrees Celsius (double the politically agreed upon goal).⁷ The Accord was never adopted, but rather it was “noted” by the parties because of the way it was produced. The “Accord” was seen as a violation of the UN consensus building process as it was gavelled through at the end of the meeting despite vocal objections. The COP 16 Cancun negotiations in 2010 managed to salvage the diplomatic process, but no substantive agreements were reached.

Unfortunately, the North-South divide and the outside status of the United States have prevented any forward movement. The South demands that the North live up to its commitment to act first on climate change, as well as to provide financial and technological assistance to the South's

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Moreover, common but differentiated responsibilities have allowed China to become the largest global emitter without any penalty and allowed India has led a blocking coalition of G77 states.⁸ India has not changed its fundamental position since negotiations began over twenty years ago: developed countries must reduce their emissions and, in the name of equity, developing nations should be allowed to use fossil fuels to further develop. India argues further that each

individual has a right to emit into the atmosphere, and calls for "convergence," in which per capita emissions in developed countries would decrease to the world average and per capita emissions in developing countries would likewise rise to the average. The problem with this formulation is that the world continues to emit about five times the amount of heat-trapping gases than what is allowed for the global temperature to rise by two degrees Celsius specified in the Copenhagen Accord and reaffirmed at every Conference of the Parties since. A recent analysis demonstrates that it is impossible to meet both the "equity goals," as defined by China and the G77, and the "effectiveness goals" that would protect the climate system.⁹

In the COP 17 meeting in Durban in 2011, the cohesion of the G77 alliance cracked. African nations announced that India did not speak for them and that they wanted climate adaptation assistance from developed countries. A group of forty-four small island states from the Pacific, Atlantic, and Indian Oceans and the Caribbean regions—including the Maldives, Palau, Samoa, Jamaica, and Barbados—reemphasized their position on the need to limit climate warming to 1.5 degrees to avoid a sea level rise that would destroy their nations' existence.

At the same meeting, the European Union also began to echo the argument made by the United States, stating that reductions in emissions

from large emitters in the developing world were essential to meeting global climate reduction goals. The issue of developing countries “graduating” to commitments as they become richer is a major chasm between developing countries wishing to avoid mandatory action on emissions (or differentiated responsibilities) and developed countries that have specific obligations. It is clear that the per capita gross domestic product (GDP) of countries like Singapore, South Korea, and some oil-producing states exceeds that of many of the developed countries that are required to make emissions reductions.

China had previously offered to reduce the carbon intensity of its economy by forty-five percent in its twelfth five-year plan.¹⁰ In fact, China’s carbon intensity has been falling, even though its total emissions continue to grow. At COP 18 in Doha in 2012, it was agreed to begin negotiating a new agreement by 2015 in which more countries would take on binding commitments, but the nature of those commitments was left deliberately vague.

Unfortunately, the goal of making additional commitments had already been undermined in 2011 by other states. Right after the Durban meeting, Canada announced that it would abandon its present commitment under Kyoto and withdraw from the treaty, as it was the only party failing to meet its emission reduction target. Previously, Canada, Russia, and Japan had likewise announced in 2010 that they would not participate in future binding emissions reduction agreements.

The news is not all negative, however. The European Union, as a whole, is very likely to meet its stated goal of a five percent reduction in heat-trapping gas emissions, even though the United States and Canada are not complying. Likewise, despite not having signed on to the Protocol, U.S. emissions have slowed in recent years. In fact, carbon dioxide emissions from the energy sector in the first quarter of 2012 were comparable to those of 1992.¹¹ This has less to do with national government climate policy (which is largely absent), and more to do with improved auto efficiency and the dramatic replacement of coal in power plants with cheap natural gas and wind power. Nevertheless, the United States will fail to meet the original Kyoto target. Yet ultimately, the current approach cannot possibly meet the much larger emission reductions required to meet a two degree Celsius limit on temperature rise.

In brief, governments have been unable to reach an agreement on a post-Kyoto emissions reduction plan; in fact, the “first commitment period” ended on December 31, 2012. Instead, an agreement was reached in Durban to negotiate a treaty by 2015 that would enter into force by 2020, reconfirmed in Doha in 2012. However, the Intergovernmental

Panel on Climate Change finds that the scientific consensus *requires* major emissions reductions to begin by 2015, or it will be impossible to stay within the target two degree limit.

WHERE MIGHT ACTION ON CLIMATE CHANGE MOVE IN THE FUTURE?

After twenty years of the existing climate regime, it should be clear that the current approach is not likely to achieve the eighty percent reduction in heat-trapping emissions necessary to keep temperatures from exceeding

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the agreed-upon limit. Furthermore, all countries are reluctant to make strong commitments to reducing heat-trapping gases in the future.

Numerous arguments have been given for why this state of affairs exists. In a recent paper by Moomaw and Papa, the authors summarize commonly stated reasons and add four more.¹² Below, I highlight these arguments and present suggestions for how these narratives can be addressed, and how the international community might move forward in a manner that

might be more likely to lead to a more effective climate change treaty.

Argument 1: *Governments want energy-driven economic development, and they equate the use of fossil fuels and their carbon dioxide emissions with economic growth and development. Hence, any restriction on emissions is seen as a limitation on economic development.*

Response 1: The availability of energy is an important driver of economic growth and development, but the usual analysis fails to grasp why. It is not only because the energy sector's contribution to the economy increases GDP. What is important is the effectiveness of the energy services that are provided in creating income and wealth. These include lighting, cooking, space comfort, safe water, electrical and mechanical work, and mobility. These services can be supplied in various ways that require more or less energy by the end user (or end use efficiency), the use of alternative forms of energy that require more or fewer conversion steps, and the use of energy sources that are higher or lower in their emissions of heat-trapping gases.

For example, day lighting of an office or home requires no external

source of energy and produces zero heat-trapping gases. That is why it is used in the world's most efficient skyscraper recently built in New York City at 1 Bryant Place. Light from an incandescent lamp represents less than one percent of the heat released from the burning of coal in a steam turbine power plant. Burning coal also produces large quantities of heat trapping carbon dioxide and a large amount of air pollution, requires copious amounts of water to cool the power station, and leaves behind massive piles of toxic ash. The negative externalities of coal burning and use go well beyond climate change.

Providing safe water in the developing world often involves boiling the water using firewood. This leads to deforestation, requires a great deal of labor, and releases carbon dioxide, while the loss of trees reduces the ability of forests to absorb carbon dioxide. An innovative system consisting of a large tank with an ultraviolet lamp inside and a solar panel on top can provide bacteriologically safe water for a family at a cost of only half a cent per cubic meter, and it produces no carbon dioxide or deforestation.¹³ Moreover, there are many examples of low carbon dioxide options for providing energy services at every level of development.¹⁴

Argument 2: *The problem is misdiagnosed as a pollution problem, and the present climate regime is basically a pollution-control agreement that limits pollution of heat-trapping gases by setting emissions reduction targets and timetables.*¹⁵

Response 2: As the example of energy services illustrates, climate change is not a pollution problem, but an unsustainable development problem. It will always be costly to continue the same processes using the same technologies and later clean up the pollution those processes have created. Fossil fuels do not pay for the damage arising from climate change or any other negative externalities. In short, they appear to be a cheap way to fuel development because they do not pay their full damage costs to society or to the environment. As the previous response illustrates, one can identify alternative means for meeting human needs, ensuring development, and improving the human condition without resulting in adverse consequences such as climate change.

Argument 3: *The agreement reached at Kyoto, and subsequent efforts, are all about limitations on what a nation can do or, as the negotiators term it, "burden sharing." Taking a page from negotiations principles, negotiators see only burdens to bear rather than opportunities to share. There are no mutual gains for any of the parties other than protecting the climate system from disruption.*

Response 3: No one likes to deal with limitations, and burden

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emissions while the other parties do not, they would be at a relative economic disadvantage.

Response 4: The lack of trust among countries and the unwillingness of governments to make emissions reduction commitments within an international treaty can be addressed in several ways.

The current system requires universal consensus of all participating governments. While it would be a major departure from conventional treaty diplomacy, obtaining an agreement among only those governments willing to make binding commitments would avoid the ability of a single country to block an agreement favored by a large group of governments. Yet, there could still also be a way to engage non-party countries in achieving treaty goals such as emissions reductions or adaptation support in the climate regime.

Parties who do not trust that others will meet their obligations and cannot obtain a domestic consensus to commit to an international treaty will not become parties to the agreement. Governments like the United States, Canada, Japan, Russia, and China might still be willing to take actions domestically but without making international binding commitments by ratifying the treaty. They could still be permitted to participate in the actions specified in the treaty if they passed domestic legislation and demonstrated that they are achieving treaty goals during the specified time frame. This process might be called "participation through autonomous action."

Nations that met their goals or provided technology and financial

that serves the mutual interests of all parties. UN Secretary General Ban Ki Moon has proposed a program called Sustainable Energy for All, which would double the amount of renewable energy and double energy efficiency.¹⁶ Unfortunately, the proposal does not require cutting carbon dioxide in half and it does not focus on energy services instead of energy.

Argument 4: *A lack of mutual trust exists among the parties who fear that others will not live up to their obligations. If they took actions to reduce*

emissions while the other parties do not, they would be at a relative economic

assistance would be eligible to count all of the earned credits as if they were a party to the treaty and participate in certain practices such as emissions trading. This is essentially what the United States has done regarding some of the pollutants under the Long Range Transport of Air Pollution (LRTAP) treaty. The United States has met many of the targets with domestic legislation even though it has not ratified specific LRTAP protocols. This is the same approach as used by the United States with other treaties; for example, as a non-party to the land mines treaty, the United States is still the largest funder of clearing operations and works with the treaty partners to eliminate land mine use worldwide.

All developing country governments that agree to take on mitigation and adaptation goals would be eligible for technology transfer and economic assistance to develop and implement systems that would supply needed low-carbon energy services. This process would have to be accelerated and simplified from the cumbersome requirements that held back the Clean Development Mechanism, for example; under the Clean Development Mechanism, it often took years for a developing country to demonstrate that any emission reductions from its project would be in addition to those that would otherwise take place. Financing would need to come from a portfolio of sources including the World Bank (which has recently announced that climate change will become a major component of their development effort), regional development banks, private foundations, individual donors, individual countries—and, if it can be established, a UN Climate Fund. This portfolio approach is already being initiated for forest projects.¹⁷

CONCLUSION AND RECOMMENDATIONS

I am skeptical that the current climate regime will lead to effective action. A change in approach and structure is required. It is essential for the United States and China to participate, since taken together, the two countries account for over forty percent of global carbon dioxide emissions. China's willingness to potentially take on some obligations could be a real breakthrough. I would argue that their willingness is, in part, a result of Chinese manufacturing's incredible success with renewable energy: solar electric photovoltaic panels, wind turbines, and solar hot water systems. In less than a decade, China has become the world's leading producer of these technologies. A global low-carbon climate regime would provide vast markets for Chinese manufacturers. They have entered the development side rather than the pollution side of the climate issue. They see the bene-

fits of their newly found industries and have identified a nearly unlimited potential in the developing world, in which they are investing heavily to obtain energy and mineral resources and in the developed world where

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they are outcompeting American and European manufacturers. Therefore, a reconfigured international approach is essential to achieving a global solution to climate change, but it needs to be led by actions of the G2: the United States and China.

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 Domestically, the United States has a post-presidential elections opportunity to act on climate change through executive orders. The Obama administration has put in place regulations to control greenhouse gases and added additional regulations on the use and extraction of coal, which has the highest carbon dioxide emissions of any fossil fuel. Along with policies favorable to renewable energies such as wind power and the availability of cheaper and lower-emitting natural gas, the United States is experiencing a dramatic drop in coal consumption. Coal accounted for fifty-one percent of U.S. electric power generation in 2003, but only thirty-eight percent in 2012.¹⁸ In the wake of two years of intense heat, drought, and fires in the American West and Grain Belt, and the devastating toll of Hurricane Sandy, there may be more receptiveness to climate legislation within the Congress. Substantial numbers of Americans from both political parties now agree that action should be taken to address climate change. As John Holdren, President Obama's science and technology advisor, has stated, there are three possible responses to climate change: mitigation actions to reduce its intensity, adaptation to reduce its impact, and suffering.¹⁹ The time may have come when Americans feel that suffering is too high a price to pay. ■

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