Will the Paris Climate Accord and Future Climate Treaties Be a Vision or a Roadmap?

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The twenty-five-year history of climate change as a policy issue has seen a mix of modest international goal setting and accomplishments, and a very uneven set of climate initiatives at the subnational level and by corporations and civil society. In an on-line discussion hosted by the science journalist Andrew Revkin, a distinction was made between climate policy instruments that were visions and those that were roadmaps to a potential future climate agreement.[1] The path to a climate agreement is filled with both types, and the likely outcome for the Paris Climate Accord in December 2015 is being framed as an alternative set between these two poles. Writing this article as governments move through the negotiation process (see the interview with UN Climate Summit Co-Chair Dr. Daniel Reifsnyder in this issue) provides an opportunity to ponder this distinction

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on the development of climate policies that might reduce the extent of climate change.

There is now little doubt that the climate is changing and that humans are responsible for altering the climate system. The atmosphere contains 43 percent more carbon dioxide and 140 percent more methane than in preindustrial times; human activity has added additional heat-trapping industrial gases, methane, and nitrous oxide.[2] Direct measurements now demonstrate that less radiant heat is escaping earth and is instead making the land and the oceans warmer.[3] Global average land and sea temperatures have increased, and continue to rise.[4] The five-year running average has increased by 0.9°C since preindustrial times. 2014 was by a narrow margin the warmest year in the 140-year thermometer record, and all but one of the warmest fifteen years have occurred in the twenty-first century. Night temperatures have warmed faster than daytime temperatures and seasons have shifted in response to changing temperatures.

Futhermore, the Arctic is warming at several times the rate of the global average, and both summer minima and winter maxima of sea ice cover were recorded in 2012 and 2014 respectively. Glaciers are retreating worldwide and the Greenland ice sheet is melting at four times the rate it was in the 1990s. A major part of the Antarctic ice sheet appears to have disconnected from its support and irreversibly committed the world to a rise of sea level exceeding one meter. In 2012, Arctic summer sea ice fell to just half its area in 1979. Water vapor in the atmosphere has increased, while sea level rise has accelerated to double the rate of the 1990s.[5]

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Amidst these drastic changes, the Intergovernmental Panel on Climate Change (IPCC) reported in the 2013 Fifth Assessment Report that there was a 95 percent probability that climate change was occurring and that humans were responsible.[6]

The primary cause of rising temperatures is the release of heat-trapping greenhouse gases (GHGs) into the atmosphere from the extraction and combustion of fossil fuels for heat, electric power, and transportation; from the release of industrial gases from industry and commerce; and from land use change including deforestation, land degradation, and agriculture.

The response of the international treaty system has been to treat the emissions from energy production and other human activities as pollution and

to propose pollution reductions through targets and timetables. In previous work, I have argued that this "pollution control" strategy is at the root of the failure to achieve any significant reductions in emissions.[7] Government negotiators refer to these efforts as "burden sharing," and national leaders equate emissions from fossil fuel combustion with economic growth and development.[8] Virtually all national leaders argue that they cannot do more to reduce emissions because it will "restrict their ability to develop."[9] This is analogous to extoling air and water pollution as a sign of modernization and progress during the industrial revolution and into the twentieth century in Europe and the United States, a practice that continues today in much of the developing world.

The initial climate agreement, the UN Framework Convention on Climate Change (UNFCCC), represents a call to action and an administrative structure for doing so, but without any requirements or roadmap for getting there. Article 2 sets a visionary goal very clearly:

> The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.[10]

Yet, it also sets conditions on what needs to be protected in doing so: nature, agriculture and economic development.

> Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.[11]

In fact, this fear that mitigating climate change might cause problems for development evolved into a cottage industry within the negotiations. Some governments tried to use this concern to halt any real progress on mitigation. I once had to write an entire report on how serious this threat might be, and I concluded that it was not something to which much attention should be devoted. In the end, this fear puts roadblocks in the way of actually creating a functioning road map.

The UNFCCC, clearly more vision than roadmap, has near universal participation with 195 governments and the European Union as parties. It does contain provisions for reporting and for meeting to address climate change, but lacks a specific roadmap for action. It created a context that set the tone for the next twenty years of negotiations by calling on developed countries to

take actions (without setting requirements of any kind) and assuring developing countries that their (economic) development process took precedence over addressing climate change. The concept of common but differentiated responsibilities for developed and developing countries has remained a mainstay of the "vision" for responding to climate change. It is important to note that while this concept is inherent in other international agreements, it does not let developing countries off the hook. In treaties that address ozone depletion, for example, developing countries are simply given more time to comply with the agreement's overall goals.

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The Kyoto Protocol, meanwhile, has 191 governments and the European Union as parties. The United States signed but never ratified the agreement, and then claimed to "unsign" it. Canada, on the other hand, outright withdrew from the treaty and remains the only signatory to have done so. The Kyoto Protocol is a classic pollution control treaty that provides a roadmap for developed countries by setting emission reduction targets and timetables for all developed countries.

However, the Kyoto Protocol presents only a vision for developing countries. They should develop with lower emissions of heat trapping emissions, and the Clean Development Mechanism could involve lower emission development projects paid for by developed countries, but there are no requirements for developing countries to take action. The First Commitment Period from 2008 to 2012 required country-specific reductions for the set of developed countries. As a group, these countries met their stated overall target of a 5 percent reduction below 1990 emission rates by the end of 2012. Another group of thirty-seven countries, including the twenty-eight members of the EU, have made commitments to further reductions within the Second Commitment Period by 2020. Several countries that participated in the First Commitment Period, including Japan, New Zealand, and Russia, have stated that they would not participate in the Second Period, and some of those who signed on have indicated that they are having second thoughts.

The Kyoto Protocol therefore presents a vision with specific goals, but also provides a roadmap for reducing emissions. In addition to making direct reductions through domestic actions, transnational collaboration is encouraged through the Kyoto mechanisms. These include emissions

trading among nations, the Clean Development mechanism whereby emissions-lowering projects are carried out in developing countries (and are paid for by a developed country that receives the credit), and projects are implemented jointly among developed countries. However, the national commitments were decided not on principles, but instead on a negotiated willingness to reduce emissions by specific amounts.

The tepid response to a second round of commitments (other than from the EU) and the contentious negotiations and failure to achieve a post-Kyoto agreement in Copenhagen in 2009, suggests the need for a new approach. It has been suggested that the premise of the Kyoto Protocol misdiagnoses the problem as pollution and presents a framework that requires what diplomats refer to as "burden sharing."[12] All governments, regardless of their state of development, argue that they cannot do more to address climate change because it interferes with their economic development. But equating successful economic development with higher greenhouse gas emissions is misguided, since the underlying problem is unsustainable development.[13]

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Indeed, there needs to be a shift in vision—to one of opportunity sharing—that would provide energy services without the attendant carbon dioxide emissions and health threatening pollutants associated with the combustion of fossil fuels. The Sustainable Energy for All initiative of the Secretary General of the UN is an example of a positive development approach that sets a goal of doubling the use of renewable energy and doubling the efficiency of energy use, and making these technologies available to all. Such an approach could transform how future climate agreements are designed and implemented.

This brings us to the Paris accord. The world has changed substantially since the UNFCCC was completed in 1992. At that time, developed countries were contributing the bulk of annual emissions of GHGs, and the UNFCC and Kyoto Protocol specifically recognized these countries' responsibility for the majority of accumulated emissions and their capacity for reducing them. Since the developed countries were responsible for most of the heat trapping emissions, and had the financial and technological capacity to address them, it was agreed that they should begin the process of reducing emissions, and should support developing countries through economic and financial assistance.

However, by 2007, China surpassed the United States as the largest *annual* national emitter, even though United States' *cumulative* emissions are still the greatest of any nation. Chinese per capita emissions are now equal to those of the European Union, but U.S. emissions are more than double those.[14]

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And annual emissions from developing countries now exceed those of the developed world. By 2010, the combined emissions of developing countries were 48 percent of cumulative emissions and are projected to exceed the share of developed countries by 2020.[15] This has implications for the established principles discussed above that shielded developing countries from committing to specific emissions reductions.

At the Council of Parties (COP 20) in Lima, developing countries agreed that they must also act to address climate change. But commitments made under the Kyoto Protocol are considered legally binding within international law,[16] and neither those developing countries nor China are willing to take legally binding commitments. They are joined by the United States, which, for all practical purposes, has shown that it is incapable of making legally binding commitments on issues of climate change because of its fractured political system.

At the sixteenth session of the Conference of the Parties to the UNFCCC, countries committed to a "maximum temperature rise of 2 degrees Celsius above pre-industrial levels."[17] In the 2013 IPCC report, this has been translated into a carbon budget that concludes the world can release only about 1 trillion tonnes of carbon dioxide equivalent. That is equivalent to about thirty years of emissions at current rates, or realistically a reduction in emissions of about 80 percent by 2050.

In preparation for Paris, China and the United States, who together account for 40 percent of current carbon dioxide emissions, announced a joint plan for reductions. The United States will cut its emissions by 26 to 28 percent from 2005 levels by 2025, and China will begin decreasing its emissions no later than 2030. Remarkably, China reduced its emissions by 2 percent from 2013 to 2014 while increasing its GDP by over 7 percent, and the United States is already 10 percent below its 2005 levels. Each country promised to continue what it is already doing. The EU has promised to reduce its emissions by 20 percent by 2020 and by 40 percent below 1990 levels by 2030. It is already more than halfway to its 2020 goal. Mexico has announced conditional reductions of 40 percent below baseline emissions by 2030. Unfortunately, few other nations have committed thus far.

These commitments to date are still largely visions and not yet a roadmap. They are goals. The United States does, however, have a somewhat defined roadmap. Improved fuel economy standards for automobiles and trucks are already in place, and the clean power plant initiative to reduce emissions from the electricity sector is being implemented, as are mandatory reductions in emissions from federal agencies. States including California and Massachusetts have begun implementing real roadmaps, as have the Canadian provinces of Quebec and British Columbia, even though their national governments have fallen behind. Nations like Germany, Denmark, and China are following roadmaps too, and are moving swiftly to increase renewable energy production and to decrease their use of coal.

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Work by Amory Lovins (see *The Fletcher Forum's* interview with Mr. Lovins in this issue) suggests that these goals are likely to be met because of the rapid improvement in the efficiency of all forms of energy production, as well as improved end use efficiency and the rapid replacement of fossil fuels by renewable energy sources. His book, "Reinventing Fire," provides a compelling vision of what a low carbon future with a highly productive economy might be like.[18] As the cost of low carbon renewables plummets, the marketplace is moving in this direction. However, traditional high emitting energy sources are fighting a rear guard action. The greatest danger is that sunset industries, such as coal, will capture the political process and thwart the expansion of sunrise industries such as renewable energy. It is unclear what the roadmap for a climate favorable outcome might be.

All this is not to say that visions are not important—indeed visions have inspired a great deal of action. Many cities, states, and even Tufts University used the goals of the Kyoto Protocol "to meet or beat the Kyoto goals whether the U.S. ratified it or not."[19] Many corporations such as Unilever, Apple, Google, and Ikea have taken major actions to reduce their emissions and address climate and other global environmental goals.[20] Similarly, roadmaps are enormously helpful in laying out for governments a set of procedures and rules for meeting specific goals. And in truth, most "legally binding" treaties lack true enforcement mechanisms; the WTO being a notable exception. No government nor the UN is going to institute a police action for failing to honor a treaty.

Even though the Paris round will not produce a legally binding

treaty, it may represent a new beginning for nations to propose what they believe they can do rather than having to meet restrictions imposed by an international agreement. Whether these "politically binding" agreements will be effective remains to be seen. ***f***

ENDNOTES

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