A new approach to making climate treaties work

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International collaboration on climate change mitigation depends to a great extent on how agreements are designed. Credit: Petty Officer 3rd Class Patrick Kelley/USCG

(Phys.org) —Why can't global leaders agree on a broad, effective climate change pact? More than 20 years after they began, international negotiations based on the United Nations Framework Convention on Climate Change have resulted in only one legally binding treaty. That agreement, the Kyoto Protocol, has not been ratified by the United States, historically the world's largest carbon emitter.

The path from futility to progress likely lies in the way that climate change agreements are designed, according to a new study co-authored by Kenneth Scheve, a political science professor affiliated with the Stanford Woods Institute for the Environment and a senior fellow with the Freeman Spogli Institute for International Affairs.

The study found that architects of global climate treaties can significantly increase public support – even among those who generally oppose international climate cooperation – by adopting features that resonate with norms of reciprocity and distributional fairness, such as maximizing country participation and including enforcement mechanisms. The findings were published online July 25 in *Proceedings of the National Academy of Sciences*.

"The scientific community has intensely examined climate policy structures, cost scenarios and reduction targets," the study's authors write. "So far, however, we know very little about which types of climate agreements the public prefers."

Scheve and his co-author, Michael Bechtel of the University of St. Gallen in Switzerland, carried out survey experiments on 8,500 people in the United States, France, Germany and the United Kingdom. They found, unsurprisingly, that people are more willing to support climate agreements that involve lower costs, the most important factor affecting public opinion.

What is surprising, and unlike previous studies' findings, is that there are a number of international climate treaty design features that make individuals more willing to support costly mitigation efforts. Moreover, the study reports that residents of countries that have differing levels of support for climate change efforts largely agree on what parts of an agreement are important and to what extent.

For example, when it comes to treaty design elements, survey respondents in Germany, where support for climate mitigation is relatively high, are in alignment with respondents in the United States, where support is relatively low.

Across the board, an increase in average household costs to support climate mitigation from 0.5 percent to 1 percent of gross domestic product decreases public support by 10 percentage points, according to the study. Meanwhile, an increase in the number of countries participating in an agreement from 20 countries to 80 boosts support by about 15 percentage points.

The study also found that while cost is of paramount concern, people are swayed by treaty features that make cooperation more effective, distribute costs more fairly, involve a higher number of participating countries, penalize countries that

fail to meet emission reduction targets and include monitoring by an independent third party.

Changes in an agreement's design can lead to noteworthy shifts in public support, the study's authors write. These shifts were enough to turn the tide from majority rejection to majority acceptance of hypothetical agreements in three of the four countries surveyed. In the fourth country, the United States, these shifts increased support from 29 percent to 47.

"One of the things that we found exciting about our results was that despite the sensitivity of support to costs across all four countries, treaty designers can enhance the political support for climate agreements by adopting features that are perceived to make agreements both more effective and more fair," Scheve said. Bechtel and Scheve said they hope that future research will use their study's methodology to estimate demand for climate cooperation in developing countries, evaluate the impact of different policies and assess the sensitivity of various estimates to changing economic and political situations.

More information:
www.pnas.org/content/early/201 …
/1306374110.abstract

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