

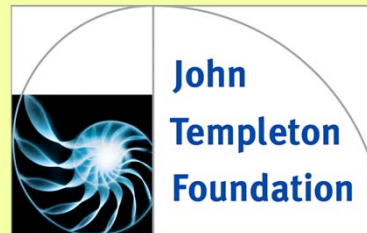
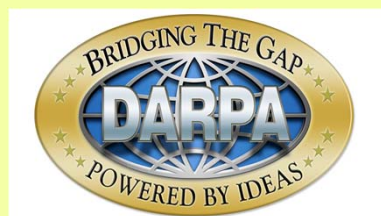
The social dimensions of accepting decarbonization



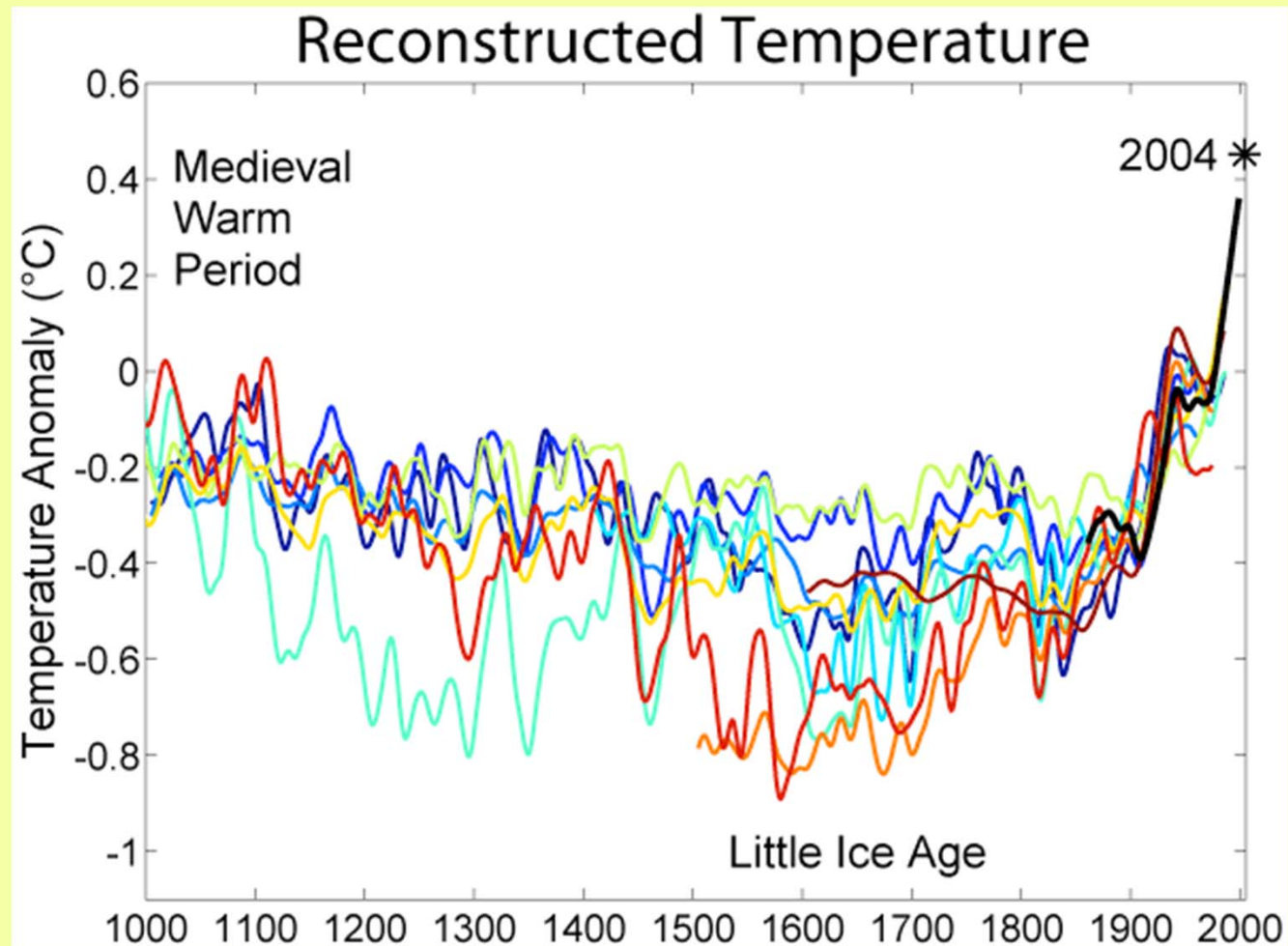
Venezia 2019

(Image credit: kwest / [Shutterstock](#))

With thanks to



Scientific consensus is strong on climate change



Robert Rohde, for [Global Warming Art](#)

But adequate action to address them has been lacking

- Primary limitations to solutions not scientific knowledge, but rather
- Willingness of people and governments to commit to the common good
- And to cooperate in finding solutions that benefit all



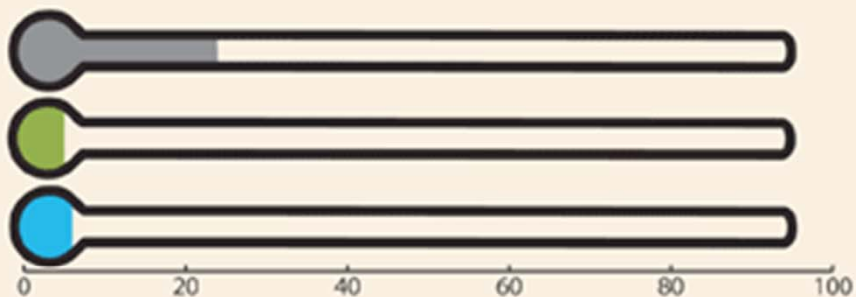
ATTITUDES TOWARD CLIMATE CHANGE

RFF

A Multiple Country Study

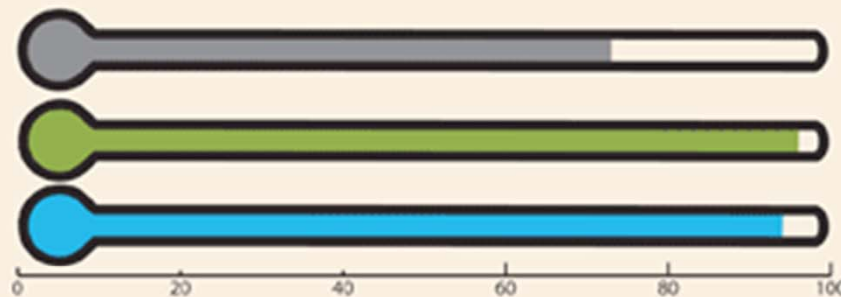
(Share of Respondents Agreeing with Each Statement)

The temperature has not increased globally.



U.S. 24% CHINA 5% SWEDEN 6%

Humans have affected the temperature increase.



U.S. 73% CHINA 96% SWEDEN 94%

We cannot do anything to stop climate change.



U.S. 17%

CHINA 10%

We can stop climate change.



U.S. 11%

CHINA 9%

rff.org



COLLECTIVE ACTION

Social norms as solutions

Policies may influence large-scale behavioral tipping

By Karine Nyborg, John M. Anderies, Astrid Dannenberg, Therese Lindahl, Caroline Schill, Maja Schlüter, W. Neil Adger, Kenneth J. Arrow, Scott Barrett, Stephen Carpenter, F. Stuart Chapin III, Anne-Sophie Crépin, Gretchen Daily, Paul Ehrlich, Carl Folke, Wander Jager, Nils Kautsky, Simon A. Levin, Ole Jacob Madsen, Stephen Polasky, Marten Scheffer, Brian Walker, Elke U. Weber, James Wilen, Anastasios Xepapadeas, Aart de Zeeuw

Climate change, biodiversity loss, antibiotic resistance, and other global challenges pose major collective action problems: A group benefits from a certain action, but no individual has sufficient incentive to act alone. Formal institutions, e.g., laws and treaties, have helped address issues like ozone depletion, lead pollution, and acid rain. However, formal institutions are not always able to enforce collectively desirable outcomes. In such cases, informal institutions, such as social norms, can be important. If conditions are right, policy can support social norm changes, helping address even global problems. To judge when this is realistic, and what role policy can play, we discuss three crucial questions: Is a tipping point likely to exist, such that vicious cycles of socially damaging behavior can potentially be turned into virtuous ones? Can policy create tipping points where none exist? Can policy push the system past the tipping point?

In small groups, social norms can facilitate

See supplementary materials for author affiliations. Email: karine.nyborg@econ.uio.no

cooperation (1). Solutions can be specific to context (e.g., small-scale irrigated rice paddies in Nepal) and local in nature. Yet social norms can affect behavior on larger scales, e.g., cessation of smoking in public places (2, 3), abandonment of foot-binding in China (4), and changed fertility norms (4)—all striking large-scale transformations of social (dis)approval and behavior.

The concept of social norms varies across disciplines [e.g., psychology (5) and economics (4)] and that creates an obstacle to interdisciplinary communication. We define a social norm as a predominant behavioral pattern within a group, supported by a shared understanding of acceptable actions and sustained through social interactions within that group (1). We focus on recurrent behavioral patterns that are widely conformed to but are also widely perceived as the right thing to do. Social feedback helps make norms self-reinforcing and thus stable.

When norms do change, however, that can happen abruptly. Ecologists have developed a thorough understanding of tipping points—and the role feedbacks play in crossing them—that is highly relevant

to understanding social norm changes (6). Here, we try to integrate these views.

IS THERE A TIPPING POINT?

For vicious and virtuous behavioral cycles to arise, people must be more willing to choose a behavior the more widespread it is. The tipping point is where a vicious cycle turns into a virtuous one, or vice versa. Social, economic, and technical factors often invoke a need for people to coordinate their behavior. Striking cases are provided by network externalities, in which a good's value to the individual increases with the frequency of others consuming that same type of good. For example, if few own electric cars, charging stations are rare and few will buy electric cars; if most cars are electric, gas stations are rare, and few buy gas-fueled cars.

Similar coordination benefits occur in social life. Diet variation across countries cannot be fully explained by prices, incomes, and nutrition content (7); it appears that other forces, like norms, are involved. Differing diets make cooking shared meals cumbersome. If people tend to prefer the foods they are used to, sticking to the most common diet is convenient. The availability and quality of particular foods in stores and restaurants may increase with demand. Hence, if a less meat-intensive diet became the norm, individuals might conform partly owing to social pressure or a wish to be environmentally friendly; but a primary motive may simply be to enjoy pleasant and convenient joint meals.

When behavior is easily observable (e.g., smoking), social sanctioning can create tipping points. If norm followers sanction norm violators, the social sanctioning of violators increases as the share of followers grows (2). Other mechanisms inducing people to act like others include conditional cooperation—an often observed willingness to cooperate more when others cooperate more (8)—and social learning of personal moral responsibility through observing the behavior of others (9).

Social, economic, and other feedbacks can be intertwined and hard to disentangle. What matters for behavior is their combined effect. For example, recycling of household waste with curbside collection requires little cost and effort and is easily observable by neighbors. A modest social feedback, like conformity, may thus suffice to create a tipping point. In other cases, counteracting factors dominate: Misuse of antibiotics is not easily observed by peers, and perceived medical benefits can be substantial. Firms' and individuals' greenhouse gas emissions originate from a plethora of actions; many of which are



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Essay

The Evolution of Norms

Paul R. Ehrlich, Simon A. Levin*

Over the past century and a half, we have made enormous progress in assembling a coherent picture of genetic evolution—that is, changes in the pools of genetic information possessed by populations, the genetic differentiation of populations (speciation) (see summaries in [1,2]), and the application of that understanding to the physical evolution of *Homo sapiens* and its forebears ([3]; e.g., [4,5]). But human beings, in addition to being products of biological evolution, are—vastly more than any other organisms—also products of a process of “cultural evolution.” Cultural evolution consists of changes in the nongenetic information stored in brains, stories, songs, books, computer disks, and the like. Despite some important first steps, no integrated picture of the process of cultural evolution that has the explanatory power of the theory of genetic evolution has yet emerged.

Much of the effort to examine cultural evolution has focused on interactions of the genetic and cultural processes (e.g., [6], see also references in [7]). This focus, however, provides a sometimes misleading perspective, since most of the behavior of our species that is of interest to policy makers is a product of the portion of cultural evolution [8] that occurs so rapidly that genetic change is

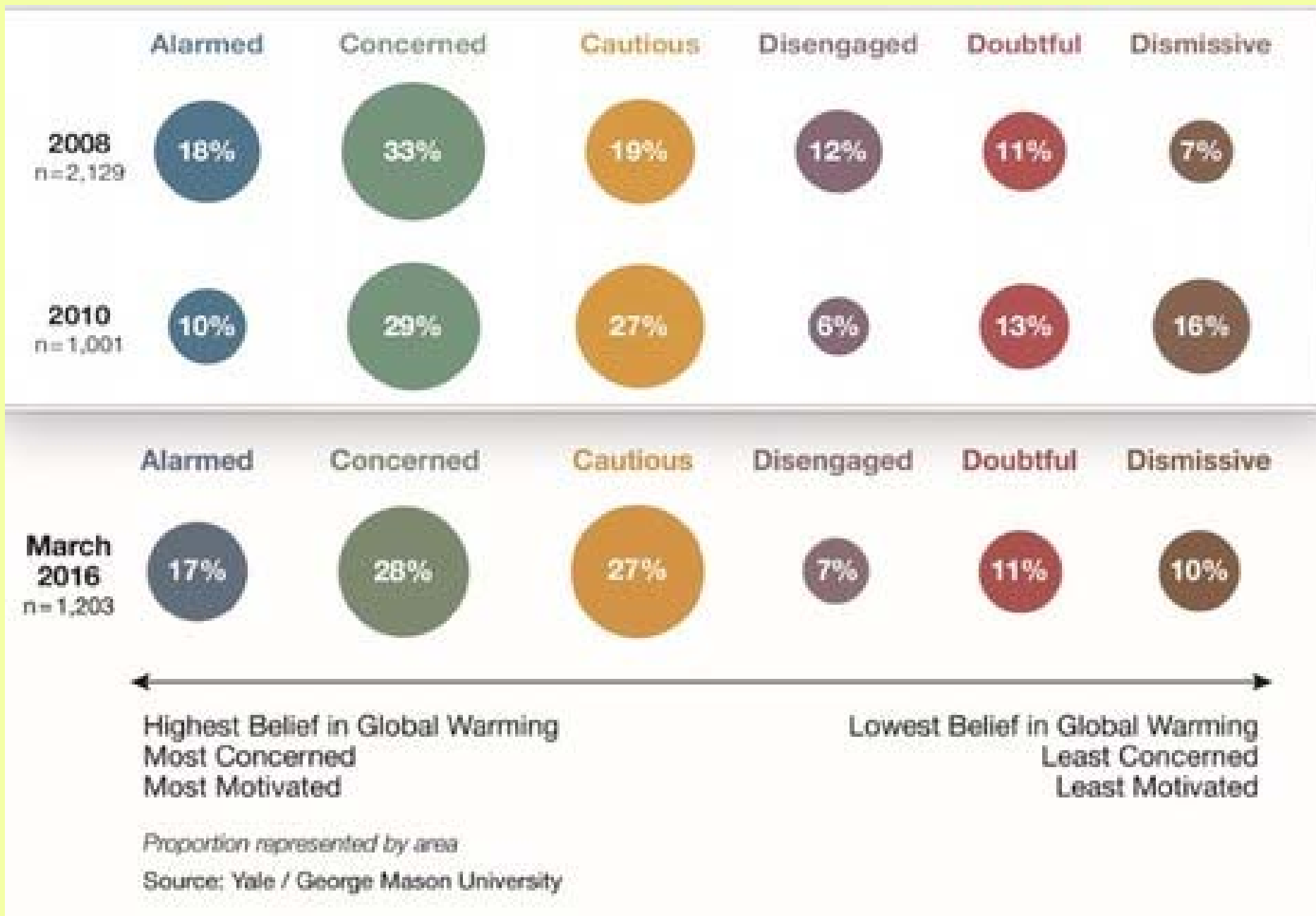
and humanely guided efforts to influence cultural evolution. While most of the effort to understand that evolution has come from the social sciences, biologists have also struggled with the issue (e.g., p. 285 of [10], [11–16], and p. 62 of [17]). We argue that biologists and social scientists need one another and must collectively direct more of their attention to understanding how social norms develop and change. Therefore, we offer this review of the challenge in order to emphasize its multidisciplinary dimensions and thereby to recruit a broader mixture of scientists into a more integrated effort to develop a theory of change in social norms—and, eventually, cultural evolution as a whole.

What Are the Relevant Units of Culture?

Norms (within this paper understood to include conventions or customs) are representative or typical patterns and rules of behavior in a human group [18], often supported by legal or other sanctions. Those sanctions, norms in themselves, have been called “metanorms” when failure to enforce them is punished [17,19,20]. In our (liberal) usage, norms are standard or ideal behaviors “typical” of groups. Whether these indeed represent the average behaviors

argue that progress will depend on the development of a comprehensive quantitative theory of the initiation and spread of norms (and ultimately all elements of culture), and introduce some preliminary models that examine the spread of norms in space or on social networks. Most models of complex systems are meant to extract signal from noise, suppressing extraneous detail and thereby allowing an examination of the influence of the dominant forces that drive the dynamics of pattern and process. To this end, models necessarily introduce some extreme simplifying assumptions.

Early attempts to model cultural evolution have searched for parallels of the population genetic models used to analyze genetic evolution. A popular analogy, both tempting and facile, has been that there are cultural analogues of genes, termed “memes” [22,23], which function as replicable cultural units. Memes can be ideas, behaviors, patterns, units of information, and so on. But the differences between genes and memes makes the analogy inappropriate, and “memetics” has not led to real understanding of cultural evolution. Genes are relatively stable, mutating rarely, and those changes that do occur usually result in nonfunctional products. In contrast, memes are extremely mutable, often transforming considerably with each

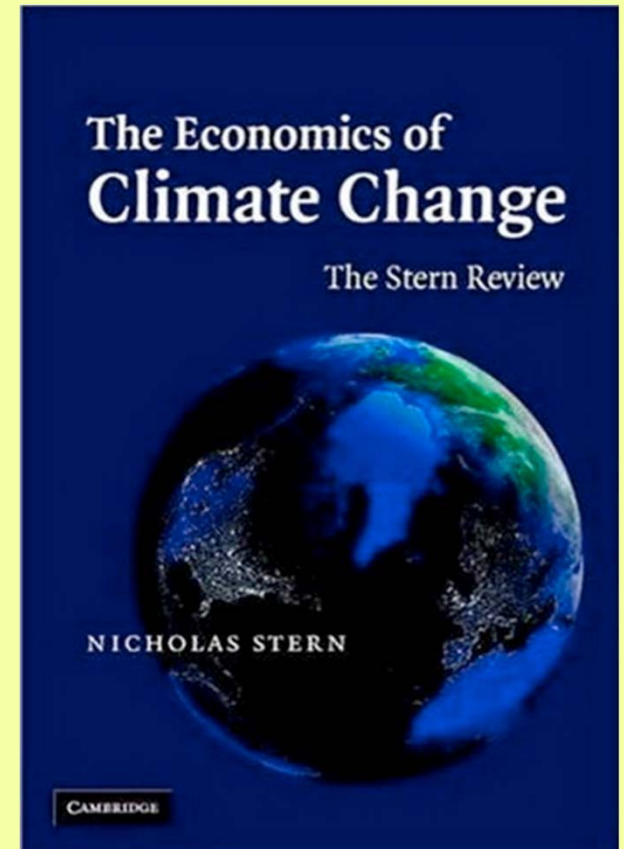


The central issues are issues of behavior and culture

- Intergenerational and intragenerational equity
- Cooperation in the Commons
- Social norms and institutions

Equity: We discount

- The future



We discount

- The future
- The interests of others



Princeton India Decarbonization Project, Research Questions

1. What are plausible scenarios for India's long term electricity demand growth?
2. What energy system techno-economic challenges are associated with deep penetration of VRE and how are these best overcome?
3. What are the socio-economic implications of deep penetration of VRE for incumbent thermal generators ? How can negative implications be minimized?
4. What policy and/or regulatory solutions can maximize the pace of electricity system decarbonization transitions, over the next half century?

Modeling approaches can capture norm shifts



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Can stable social groups be maintained by homophilous imitation alone?

Richard Durrett^a, Simon A. Levin^{b,*}

^a *Department of Mathematics, Cornell University, Ithaca, NY 14853, USA*

^b *Department of Ecology and Evolutionary Biology, Princeton University, Princeton, NJ 08544-1003, USA*

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Weber,
Vasconcelos

Abstract

Ostrom: Climate change

A Polycentric Approach for Coping with Climate Change

Elinor Ostrom

Indiana University

This paper proposes an alternative approach to addressing the complex problems of climate change caused by greenhouse gas emissions. The author, who won the 2009 Nobel Prize in Economic Sciences, argues that single policies adopted only at a global scale are unlikely to generate sufficient trust among citizens and firms so that collective action can take place in a comprehensive and transparent manner that will effectively reduce global warming. Furthermore, simply recommending a single governmental unit to solve global collective action problems is inherently weak because of free-rider problems. For example, the Carbon Development Mechanism (CDM) can be ‘gamed’ in

Addressing social acceptance of decarbonization remains a big challenge

