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RADICAL TEACHER

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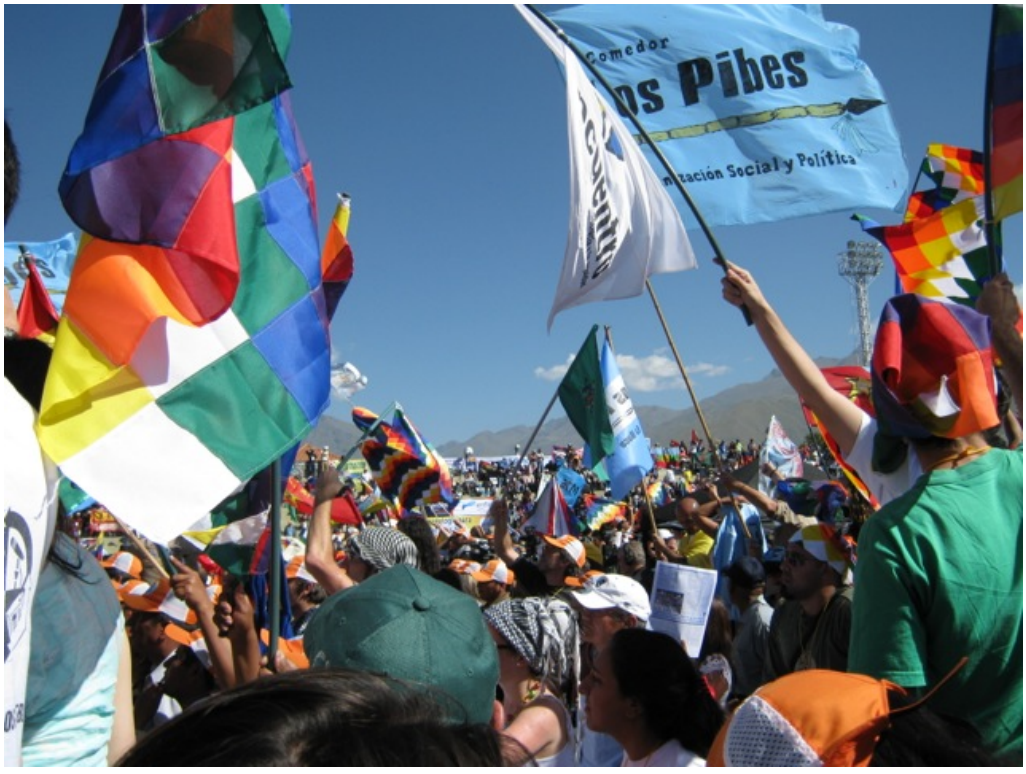
Ignorance/ Denial-Fear/ Paralysis/ Engagement/ Commitment: Reflections on a Decade Teaching Climate Change Law

by Eleanor Stein



COCHABAMBA, BOLIVIA, CLIMATE CONFERENCE, 2010
PHOTO: JEFF JONES

Teaching about climate change at any level means introducing students to the fearsome realities of our rapidly changing earth. But more than transmitting curriculum content, this teaching requires opening a space where students can investigate, research and interrogate the logic of the media, corporate, and government discourse on climate change.

In this process, we uncover the underlying systemic causes of climate change and its disparate effects on different populations, as well as our individual responsibilities and the moral imperative and potential for action. There are always moments, after learning about the science of climate change and the intransigence of the United States in countering it, when students ask two questions: "Isn't climate change really caused by capitalism?" and "Isn't it unfair that the countries that are suffering most from climate change aren't those that caused the problem?" Reaching that point in the course then leads ineluctably to the follow-up question: "What can I do about it?" These are the teachable moments.

Teaching climate change law requires teaching climate science; teaching the world—simulating the global climate change negotiations as a way to teach the global picture; teaching law as one practical tool for challenging the refusal of the United States to constrain its greenhouse gas emissions; teaching the intersection of climate change, environmental justice, and human rights; and enabling student participation in climate change movements. The starting point is that teaching climate change is a moral imperative: young people have a right to know that our generation and those before us have left them a deadly legacy, and they have a right to hold us collectively accountable. And they also will need the tools not just to understand this legacy but to demand responsible action from government.

Embrace the Science: Learning and Teaching the Truth

In the last decade the warnings of the world's climate scientists have become more and more grave, until the most recent global report card, the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), leaves no doubt that the rapid transformations in weather are due to global climate change.[1] And the report establishes beyond any doubt that the change in the world's climate is the result of anthropogenic (human-made) activity. At the core of this destructive human activity is the burning of fossil fuel for energy, heat, and transportation.

The year 2014 closed as the warmest year on record since humans started keeping track and in February 2015 the concentration of carbon dioxide in the atmosphere exceeded 400 parts per million for the first time in human history. The warmest years in our records are 2014, 2010, and 2005. However, the much older natural archives—such as Arctic ice-core samples—reveal a trend toward warming beyond any temperatures evidenced in the last 800,000 years. And we no longer need to rely on climate modeling to see the results. They are before our eyes in every part of the globe. Just in the United States, the American Midwestern breadbasket is moving to Canada, as warmer temperatures make growing wheat less viable over the next 20 years. If you are a gardener, a glance at the back of your seed packet will reveal that you no longer live in the zone you are accustomed to: for New Yorkers, we have been moved to zone 6— where peaches grow—from zone 5. Species are becoming extinct at a rate not seen in millions of years, as the combination of climate change and habitat destruction literally drives them off the planet. There are hundreds, thousands of examples like these, chronicled in Elizabeth Kolbert's remarkable *Sixth Extinction*. As Bill McKibben demonstrates in *Eaarth*, we no longer live on the planet where we were born. That planet will never return. Earth is, quite literally, a different place.

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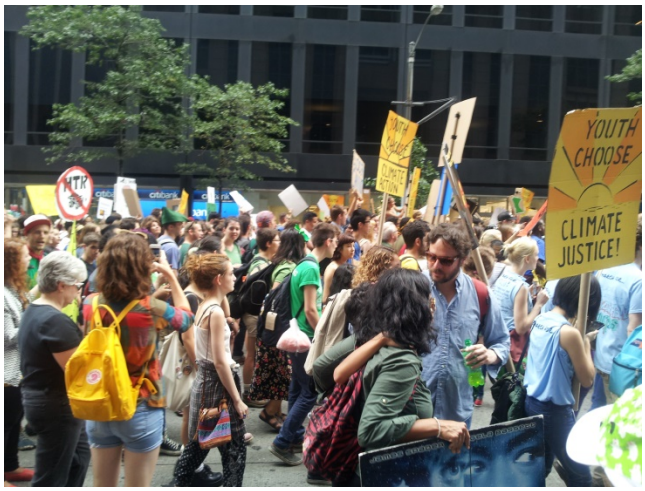
In addition, we are feeling the devastating effects of climate change in our cities and towns: Superstorm Sandy in October 2012 killed 50 New Yorkers, toppled trees in neighborhoods, plunged 400,000 into darkness for over a week, forced the evacuation of hospitals. Lower Manhattan's streets reverted to the canals they had once been in Dutch and early English times, and power distribution infrastructure was devastated. In 2005 Hurricane Katrina led to almost 2,000 deaths and the permanent disappearance of African-American communities. These climate catastrophes will become more and more severe. Even were we to stop burning fossil fuel tomorrow, the accumulated carbon in the atmosphere and in the ocean would continue to generate disruption at least at the levels we are seeing now, and very likely quite a bit more for generations to come. And clearly we will not stop burning fossil fuel tomorrow.

Critical as these facts are, they are largely unknown or ignored by a significant proportion of Americans. While some teachers and some schools are teaching the history and science, and television and news coverage—especially the weather reporting—has improved over the last couple of years, the impact of fossil fuel industry-financed climate denial has set climate science and policy education back a generation in the United States. Recent polling indicates this trend is reversing, with a majority of Republican

respondents acknowledging climate change. Fortunately, climate denial is our homegrown product: the debate in the rest of the world has long been over.

Teaching climate change begins with the fundamentals of the science. Nothing is more valuable than using an interdisciplinary approach and teaming with climate scientists to bring the first-hand science into the classroom. In my classes, experienced practicing climate scientists have generously given their time to political science and liberal arts majors, and to law students, to introduce them to climate science and its methods. Find the climate scientists in your institution or your community and bring them into your classroom to explain the simple fundamentals of climate science and to answer the tough questions with authority. From these scientists students learn (1) that there is no real dispute about climate change—the discourse of scientific dispute is purely a construct to distract and confuse; and (2) there is no argument to be had with physics: introduction of carbon into the atmosphere by burning fossil fuels has raised and will continue to raise global temperatures. To keep that



PEOPLE'S CLIMATE CHANGE MARCH, SEPTEMBER 21, 2014, NYC. PHOTO: LEONARD VOGT

increase below 2 degrees Centigrade, as measured since pre-industrial times, has been defined as the urgent limit by the world's countries. Yet that agreed-upon limit—which many scientists agree is itself far too high and therefore dangerous—is slipping or has already slipped from our grasp. In order to stay below that limit, humanity as a whole has to live within its carbon budget, which is 565 billion tons of carbon to last us until the end of this century. Every increase beyond that number will put us on a planet unlike any humanity has lived on before. It is, as McKibben says, a science experiment where no one knows the outcome. What we do know is that the world's fossil fuel corporations and oil-producing countries are already banking on, and have assured their shareholders—in their proven reserves—more than six times that amount. Scientists predict a range from 4 degrees to 6 degrees warming if all the world's countries manage to fulfill to the letter the greenhouse gas reduction pledges they made in Copenhagen in 2009, even as nations are retooling similar pledges for the critical Paris climate summit in December 2015.

The science brings home both the scale of the catastrophe and, critically, the disparate global and domestic impacts. This provides the basis for a climate justice approach. From the science, the history emerges as a striking indictment of Western imperial capitalism. Energy from coal provided the foundation for the industrial revolution; oil fueled the growth of U.S. post-war domination and the oil monarchies of the Middle East supported by the West.

From this industrial revolution grew an environmental catastrophe on an unimaginable scale, one caused directly by the industrialization of the global North and suffered disproportionately by the developing global South. Climate change would be an allegory if it weren't real.

Students can't be forced to learn this meta-lesson. It must be revealed one step at a time. So the introduction to the science is an essential first step. They will raise serious questions: What about sun spots? What about El Niño? Isn't it already too late, too difficult, too expensive to do anything about it? Isn't it impossible to remove the emissions once they are in the atmosphere? Why not geo-engineering: a giant umbrella around the planet? Man-made winters or dust-storms that shelter us from ultraviolet radiation?

But as they take in the profound seriousness of the crisis, students are angry and disillusioned that these truths have been kept from them. They realize the irresponsibility of previous generations, they get angry with their teachers, and they begin to despair about their own futures.

Who Are the Students and How Do They Learn?

I teach this course to undergraduates at the State University of New York at Albany (SUNYA), a public university with roughly 13,000 undergraduates. Most are New Yorkers—Long Islanders predominate—from lower-middle-class or working-class families and half receive financial aid; half are white, with 15 percent African-American, 14 percent Hispanic, and about 8 percent Asian students. Students come to the course primarily because they are pre-law political science majors or, often, atmospheric science majors adding a law and policy component to their science studies. Many graduates go on to teaching, social work, and criminal justice. I also teach a similar course at Albany Law School, where the legal component is far stronger and more rigorous although the same political questions are at issue. At the law school my students developed final projects involving legal research papers for Salvadoran non-governmental organizations tackling climate adaptation and sustainable agriculture.

The work of this course is lawyer work: students read primary sources, including Supreme Court decisions and treaties. They represent client nations in the treaty

negotiation simulation and U.S. clients in other parts of the course. Their writing assignments are briefing a case or writing a memo to a client. The course opens with climate science, and then surveys climate change law in four modules. The first is international law focused on the global treaty negotiations; the heart of this module is the treaty negotiation simulation discussed below. The second is U.S. federal law, and this module is organized around the following construct. A room full of like-minded legal advocates against climate change cannot agree on one single strategy: one third favors seeking comprehensive climate change legislation in Congress; another third seeks judicial action to force the Environmental Protection Agency (EPA) to take aggressive action on climate and regulate greenhouse gases the same way it regulates air pollution under the Clean Air Act; and the final group also seeks redress from the courts, but they want to go directly after the nation's largest polluters—the big coal-burning power plants—rather than sue the executive branch to do something about them. Based on this construct, students read and we explore two Supreme Court decisions on climate change, the Obama administration's clean power plan and other EPA action, and Congress's failure to act.

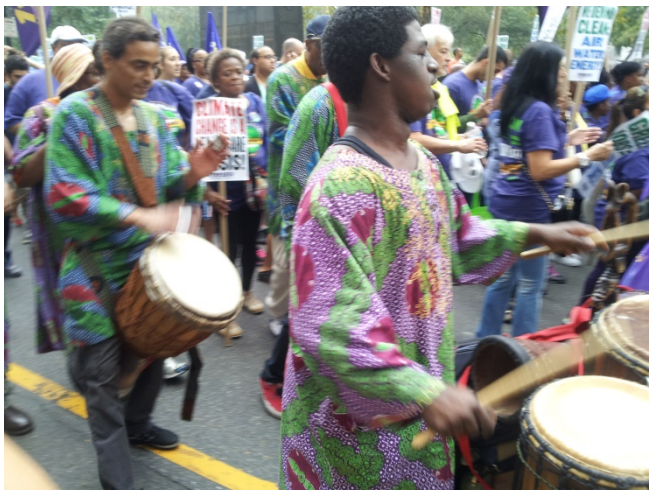
In the third module we read and analyze New York and California state and local law demonstrating initiatives to reduce greenhouse gas emissions and protect residents by climate adaptation, and study the catastrophic consequences of Katrina and Sandy and the imperative to adapt our cities to unavoidable climate impacts. If time allows, we do a simulated litigation of a case about siting a windmill farm in a scenic local area, with students representing the power company that wants to build the windmill farm, an environmental group that supports the windmills because they will reduce the use of electricity generated from fossil fuels, and a local opposition coalition which includes the area's oldest families as well as environmental opponents of marring the landscape in any way.

Finally, the fourth module addresses the human rights dimension of climate change, both internationally and domestically, and we learn about the Inuit challenge to the United States at the Interamerican Commission on Human Rights in 2005, and current lawsuits brought by children against state governments, claiming that the states are violating their obligation to hold the natural resources of the state, including climate, in trust for future generations.

Teaching the World

A practice-based curriculum will bring to life the international context. In December 2015, the world's nations will meet in Paris to consummate—or not—a lengthy negotiation process that began in Rio with the United Nations Framework Convention on Climate Change (UNFCCC) more than two decades ago. The Kyoto Protocol to that framework treaty obligated the participating wealthy nations (the United States was not among them) to reduce their greenhouse gas emissions consistent with given targets. Developing countries had no emission reduction obligations. Those targets were to lead cumulatively to a 5% reduction worldwide. Although some countries and regions met their targets, most did not, and today's largest emitters—China and the United States—evaded the obligation. This December the world will meet in Paris, to consider a new kind of global agreement built upon greenhouse gas reduction goals established by each country, based on its domestic potential and political process.

We have great opportunities to bring this rather remote world process home to students. First, they must read the Framework Convention and the Kyoto Protocol—these are short documents, 20 to 30 pages, but deconstructing them empowers students to grasp the tools of global discourse, compromise, and the exercise of power.



PEOPLE'S CLIMATE CHANGE MARCH, SEPTEMBER 21, 2014, NYC.
PHOTO: LEONARD VOGT

The United Nations process is transparent: at http://unfccc.int/2860.php, all the participant nations' positions and proposals are available, and students can watch the negotiation process unfold. After simulated negotiation games, students thrive by inserting themselves into this real drama. Students are assigned in groups of 4 or 5 to represent one country or a group. Some combination of the United States, China, India, Brazil, South Africa, Bolivia, Europe (which negotiates collectively in this simulation), and the Small Island States provides a good range from which to choose. These countries offer the whole range of positions: the United States opposes a legally binding emission target, preferring to self-police, and would prefer to eliminate the distinction between developed and developing countries that has been the defining characteristic of the earlier treaties. The Small Island States face near-term destruction of their land mass from rising sea levels, and are already experiencing salinization of their water supplies. Bolivia urges creation of a global Climate Justice Tribunal to prosecute nations for their failures to reduce emissions.

To bring the global climate negotiations to life in the classroom, simulating the actual talks with a climate negotiation game has proved effective in my classes.

Students research the next international climate meeting (preparatory meetings are held in Bonn every spring and in December summits convene at designated locales). Students divide into groups representing the nations and blocs of nations currently engaged in the global climate negotiations. They study the substance of their nation's actual positions on climate change issues through the United Nations climate change treaty website. Based on this learning, they negotiate with other nations on their country's behalf. During and after the People's World Congress on Climate Change and the Rights of Mother Earth, held in Cochabamba, Bolivia in April 2010, students representing Bolivia soon learned about the country's devotion to Pachamama—sacred mother earth—and Bolivia's call for the developed world to commit to reduce emissions drastically, to pay its climate debt to the developing countries, and to indemnify the world's poorest nations against the loss and damage caused by climate-related disasters. This practice reveals the fundamental conflicts between the United States and the developing world; the radical view of Bolivia; and the complex antagonism between the wealthy developing nations and the most vulnerable.

There are resources in every community to bring local climate change issues into the classroom and to demonstrate the power and practice of work on all levels and in all spheres. My classroom has welcomed the university's sustainability coordinator, young regional organizers for community energy use, representatives of the fossil fuel divestment campaign, Capitol Hill lobbyists on climate change, delegates to the global negotiations, and climate justice leaders.

Weeks of preparation, including an exercise in negotiation skills, culminate in one negotiation session where one or two issues that are before the summit are addressed, with opening and closing statements by each country, and some rousing horse-trading in between. The students learn concretely about the devastating effect of climate change in the global South. They often devise more creative solutions than the actual summit negotiators, and they take away the awareness that this common problem can only be tackled meaningfully on the global stage.

Unfortunately, the most likely outcome in Paris is an agreement that the world's heaviest emitting nations will make modest and non-binding pledges to reduce emissions, with a cumulative target falling far short of what the science requires. This realization can have a paralyzing effect on students as they realize how little their government is doing to protect their future. They can turn to cynicism, or despair.

So the next challenge is to reveal to students tools and examples of engagement for taking the future into their own hands.

Teaching That Law Can Be a Tool for Change

Legal strategies have been developed to challenge the U.S. failure to act on climate change since the petroleum-based George W. Bush administration. These strategies included failed attempts at passage of a comprehensive climate change law in Congress in 2009, as well as the challenges to EPA inaction that resulted in a resounding 2007 U.S. Supreme Court victory: the decision that the EPA was required to regulate greenhouse gases should it find they endangered human health and welfare. Specific current disputes and cases can be studied in depth to bring the climate issues home directly. A case study of Hurricane Katrina and its aftermath provides an object lesson in environmental racism and the urgency of climate justice; a close examination by environmental justice advocates of New York City's responses to Superstorm Sandy reveals uneven recovery and disparate treatment. A local fight over the siting of a wind farm reveals the difficulties in developing renewable resources in a fossil-fuel dominated economy and culture.

The study of international human rights challenges can also enlighten us about climate effects and their causes, even when just causes lose in court. In 2005, the Inuit Circumpolar Conference, an indigenous alliance spanning polar communities in Alaska and Canada, brought a petition against the United States before the Inter-American Human Rights Commission in Washington, D.C. The Inuit Petition detailed the devastation to coastal and subsistence hunting communities by the rapidly warming Arctic. The accompanying Arctic Climate Impact Assessment detailed, for the first time, the impacts of climate change on a single region, establishing that the climate change impacts at the pole were twice as severe as elsewhere on earth. Changing sea ice, freezing patterns, and melting permafrost exposed Inuit towns to winter storms and made subsistence hunting perilous. The Inuit petition charged the United States with failing to discharge its responsibility to reduce its greenhouse gas emissions, resulting in the dire conditions they now face. Although the petition was dismissed, the charges put the Inuit plight and their case against the United States before the world.

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Finally, it is valuable to provide opportunities for students to work on behalf of communities or climate organizations as class projects. In my last class, six students wrote papers researching legal issues of concern to community climate adaptation organizers in rural El Salvador. They analyzed a U.S. aid program that threatened the food security and sustainability gains of a Salvadoran movement to sell indigenous corn and bean seeds to the government of El Salvador for distribution to poor farmers. With periodic conference calls to our Salvadoran principals, what the students learned was the sagacity and determination of the Salvadoran organizers. And in the end the United States agreed to a hands-off policy regarding the indigenous seed program.

Combating Despair

During the Cold War, Dr. Benjamin Spock advised parents that in his incomparable experience, the best way to address their children's fears of nuclear warfare was by demonstrating that they, the parents and the children, were taking action to prevent it. Seeing our engagement, and being encouraged to find their own ways to participate, is the only way to bring solace to students moved by and grappling with the enormity of climate change..

Other than that, we have only historical experience to draw upon. We know that there can be seismic upheavals in cultural values and in what our nation thinks is right and wrong. The stranglehold of slavery made abolition appear inconceivable for generations; but with the abolitionist movement and leadership of freed slaves, slavery itself began to be seen as inconceivable. It takes massive mobilization of opinion to make such a sea change, but it has happened in the past and perhaps we are beginning to see it happening in the United States today. We need to look, with our students, to the dozens of cities and towns with zero-carbon goals, to the emergence of climate activists in local politics and as national spokespeople, to the development of the movement to divest fossil fuel holdings on campuses and by state pension funds, and to the third of a million people who took their message to the streets of New York City in September 2014.

By the end of the semester, almost all students comprehend the exponentially increasing danger of climate change and the human actions and decisions that fuel it. Many have become committed to changing their own or their families' carbon footprint and some realize the need for collective action to pressure government. The course lays bare the corporate and historical capitalist and imperialist roots of the climate crisis. However, only a relatively small fraction of the class considers this something they can act upon; for others, it is a source of cynicism. For these, as for the minority who remain climate deniers, the social and economic cost of making fundamental changes in our society is too daunting to contemplate.

In the classroom these differing views are the subject of an open and ongoing discourse, although a know-nothing approach to the science is not tolerated. Everyone reads and learns the same science, yet each brings her own worldview into the classroom and often out of it as well. When students raise the cost of taking action on climate, I see my role as revealing the real and disparate costs of inaction, which has brought us to the precipice on which we teeter today. In that process, we can also see that weaning our society from fossil fuel dependence and a rapacious economic growth culture can free us to develop sustainable communities and to develop cooperative values.

My teaching is rooted in my own long-time experience as a participant in the movements for civil rights and against the Vietnam War. We had some understanding that the world's resources were rapaciously wrested by the First World from the Third, and consumed in waste. Yet, like mainstream society, we assumed that earth's bounty was infinite: our concern was with inequitable distribution. To study and to teach climate change is to experience a rapid disabusing of that idea. The carrying capacity of the earth is not only limited: it is shrinking rapidly. And the societies and populations that benefited least from industrial development are now suffering the greatest from its consequences. This is not only a historical issue, or a legal issue, or a political or scientific issue. It is profoundly a moral issue. In the final analysis, this is what we hope our students come to see and what they take away from our classes.

NOTES

[1] IPCC Fifth Assessment Report (2014), http://www.ipcc.ch/report/ar5/wg1/ .

BASIC CLIMATE CHANGE RESOURCES FOR TEACHERS

Michael B. Gerrard and Jody Freeman, eds. *Global Climate Change and U.S. Law* (2d Ed American Bar Association, 2014) (for concise summaries of legal areas).

Mark Hertsgaard. *Hot: Living Through the Next Fifty Years on Earth*. (New York: Houghton Mifflin Harcourt, 2011).

Naomi Klein. *This Changes Everything: Capitalism vs. The Climate*. (New York: Simon & Schuster, 2014).

Elizabeth Kolbert. *Field Notes from a Catastrophe: Man, Nature, and Climate Change*. (New York: Bloomsbury USA, 2015).

Elizabeth Kolbert. *The Sixth Extinction: An Unnatural History*. (New York: Henry Holt, 2014)

Bill McKibben. *Eaarth: Making a Life on a Tough New Planet*. (New York: Times Books, 2010).

Bill McKibben. "Global Warming's Terrifying New Math." *Rolling Stone,* July 19, 2012. http://www.rollingstone.com/politics/news/global-warmings-terrifying-new-math-20120719.

United Nations Framework Convention on Climate Change, http://unfccc.int/2860.php— to keep track of the global climate negotiations.