A Shadow Climate Regime

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Publisher's Note: On Dec. 1, Robert Engelman, president of the Worldwatch Institute, unveiled his promising proposal for breaking through the nation-oriented, stalled climate treaty process.
Writing from Dakar while his climate/energy director was in Durban for the UN climate talks, Engelman welcomed Culture Change's republishing his proposal that appeared in ChinaDialog.net.
Engelman presents the case for a new framework to address climate change, without the distinction between “developed” and “developing” nations. - JL

Greenhouse warming and the associated acidification of the atmosphere are the products of the scale of humans’ presence on the planet, along with the particular way that we have developed over the centuries to direct our lives toward ever greater degrees of comfort and mobility. We continue to intensify our alteration of both: our population is still growing and a large portion of this population is becoming more affluent—with China being the most populous and obvious example of this. People have not yet found or developed any realistic alternative to a global economy based on the use of carbon-based energy and an agricultural and industrial system that releases billions of tonnes of carbon dioxide and other heat-trapping gases.

There are now 392 parts per million by volume of carbon dioxide in the atmosphere, compared to 280 when the industrial era began. And when one adds all the other greenhouse gases the effective concentration is more like 425 parts per million—a level dangerously close to 450 parts per million. Some scientists have identified this concentration as a likely threshold above which society may be unable to avoid a global temperature increase of 2 degrees Celsius above pre-industrial times and potentially catastrophic impacts on the earth’s environment.

Balanced against this continuing growth in the concentration of greenhouse gases in the atmosphere is the fact that almost all governments have been involved for most of the past two decades in a global process aimed at slowing human-caused climate change so that it does not pass critical points of danger to ecosystems and humanity itself. Some governments—those of most of Europe and those of China and Brazil, for example—have made significant commitments to reduce their own carbon dioxide emissions.

Government efforts are often even more ambitious at provincial and local levels. Voters in the state of California have affirmed a pledge to slash the state’s greenhouse gas emissions even though the US government has refused to make any such commitment. Some cities are setting up public bicycle systems to encourage carbon-free urban transport or are upgrading public transportation in other ways. At the level of individual behavior, a small but growing number of people in the richer countries, and increasingly in some of the poorer ones, are foregoing unnecessary consumption simply because they know their behavior has an impact, and they want to make a positive difference. Perhaps most helpful of all, women worldwide have an average number of children that is half that of their grandmothers. Average family size has shrunk from five children per woman in 1960 to midway between two and three today, and the slowing of human population growth makes a truly sustainable society much more likely later this century than it would otherwise be.

Despite all these encouraging signs, however, the environment continues to deteriorate dangerously, and the future we

face is genuinely frightening to anyone who is paying close attention. Climate change in particular is proceeding more rapidly in recent years than most scientists had expected. The Greenland icecap is melting dramatically, with more than 200 cubic kilometres now streaming into the north Atlantic ocean in most years. The number of extreme weather events—“hundred-year” floods and droughts, for example, that are happening more like every five or ten—is well beyond what most scientists had predicted for this time period.

Perhaps worst of all, given how much we’ve altered the earth’s atmosphere already, global greenhouse-gas emissions are in recent years greater than the upper scenarios projected by the Intergovernmental Panel on Climate Change (IPCC) in past assessment reports. Even during the global economic downturn, recent years have seen more greenhouse-gas emissions than the year before. Alarmingly, due to the momentum built into the earth’s climate system, the impacts we are already experiencing today from human-caused climate change come largely, in delayed fashion, from the emissions we released decades ago.

Where today’s emissions will lead us in coming decades we can only fathom by consulting computer models, and what they show is frightening. Perhaps worst of all, after the failure of the Copenhagen climate summit in 2009 there is no longer any international mechanism that offers a serious likelihood of slowing climate change any time soon. Few governments are showing any enthusiasm for real action that would stabilise global climate at less than a 2-degree increase. In the United States, president Barack Obama, once thought to be progressive and environmentally aware, recently delayed but declined to kill construction of a pipeline that will transport billions of barrels of petroleum extracted with massive carbon emissions from the tar sands of western Canada. Put simply, we are turning up to “high” the burners that will fry the planet, and despite the warnings of almost every climate scientist, we are taking no significant steps to shift the burner controls toward “low” or “off”.

Much of our dilemma comes from the fact that human-induced climate change is a global problem in a world of nations. How can countries, whose emissions play little role in their own weather, induce other countries in the same circumstance to radically reduce greenhouse-gas emissions? The world will need a framework – or an evolving series of frameworks – that will reduce net human-caused greenhouse-gas emissions to negligible levels. Then the frameworks will need to hold down these emissions for the rest of humanity’s time on earth. Looking at the coming century and beyond, what is needed is an enforceable deal agreed to by all nations covering all greenhouse-gas emissions and all humanity without exception.

Yet the gap between what is needed on climate change and what is possible in today’s world of nations is huge. First, climate negotiations to date have failed to address nations’ rational self-interest in minimising any constraints on emissions no matter how severe and damaging climate change becomes. Each nation is like the farmer whose livestock graze on a pasture land owned collectively by the entire village. Even if the pasture land deteriorates, the farmer knows that she will get no private benefit from seeing her animals go hungry, while any benefit to the pasture by her forbearance will be shared equally by all the farmers. The rational self-interest of individuals or nations confronting such a “tragedy of the commons” is amply documented in economic and other social literature, but it has yet to inform and influence international climate negotiations. Only when global negotiations acknowledge and accommodate this rational national self-interest will significant emissions cuts become possible.

Second, is the absence of any consideration of proportion in national and per-capita emissions and the unhelpful categorisation of just two classes of national climate actors. The United Nations Framework Convention on Climate Change (UNFCCC) does not categorise countries based on their actual emissions, but only in terms of whether they are “developed” or “developing”. A proportional approach to reducing emissions would plot countries along a graduated ranking based on present and possibly historic emissions, ideally based on per-capita emissions rather than those of entire nations, which vary greatly by population size. Obligations would then be proportional to responsibility for emissions.

Third, and as implied by this last statement, there should be recognition that per-capita rather than national emissions are the logical and fair basis for assessing proportionality, determining who bears the greatest responsibility for cutting emissions, and allocating emissions constraints. Nations, after all, are in effect accidents of history, with artificial borders that may enclose fewer than 100,000 human beings or, in the case of India and China, more than 1 billion. Moreover, nations are artificial, unconscious entities, unlike people, who are self-aware and self-evidently the living units of all

human experience. Only because politics and recent history have so conditioned us to think in terms of nations, and because there is no higher form of government, do we insist on treating climate change and greenhouse-gas emissions as nation-specific when these are much more logically globe-specific and rooted in individual behavior and experience.

Finally, climate negotiations to date lack any framework of human rights, never asking if human beings have the right to develop economically or use the global commons to dispose of waste. How can we attempt to reduce emissions of greenhouse gases when we have never discussed whether anyone has a right to emit them in the first place? Even on a semantic level, we can't establish whether greenhouse-gas emission is "pollution," caused by industry, or an everyday activity of individual human beings grown to planet-changing scale by our numbers and affluence. Paradoxically, one basis for a truly effective climate agreement, ignored to date, may lie in recognition of the right of all people to do precisely what must be all but eliminated: emit greenhouse gases into the atmosphere. The most promising strategy for reaching an ultimately successful climate pact is to begin with a declaration of the universal human right to the global commons that is the atmosphere. This principle could resemble the treatment of the world's oceans in the Law of the Sea, which uses the phrase "the common heritage of all mankind" and denies nations the right to allow their interests to override those of the world's entire human population.

Just as the atmosphere is a global commons belonging equally to all people, the greenhouse-gas emissions that most deserve consideration in global climate frameworks are those that individual human beings rather than nations produce. Basing climate agreements on per-capita emissions is all but inevitable if a framework is to last. What national government, after all, would agree to a formula by which its citizens' per-capita emissions are permanently capped below those of another country?

How we get there

Let me sketch out the elements of the proposed human-caused climate-change elimination framework that I believe—and I write only partly in jest—the world will eventually accept and enforce.

In this proposed framework, there would be no emissions caps for nations or individuals. All would be free to emit whatever they wanted, but they would accept that there would be economic implications in these emissions. A global emissions target would be set for "carbon dioxide equivalent" (CO2e)—the full basket of greenhouse gases standardised by their warming power, with carbon dioxide the standard unit of emissions "currency."

This emission target would shrink gradually on an agreed-upon schedule to drive the world toward an emissions trajectory calculated to make human influence on climate change essentially negligible. Nations would agree to set a uniform global price per ton of CO2e aimed at providing economic incentives to drive global use close to or below the target annual global emissions cap. Payment would be tabulated on a national basis but would be based on the per-capita emissions of each nation. Ideally, individuals and nations would eventually also receive credit for greenhouse gases withdrawn from the atmosphere and effectively sequestered, but the concepts around this will require future scientific validation. That is also a problem for CO2 emissions beyond those related to fossil-fuel combustion and the production of cement—mostly those involved in deforestation and other land-use changes. Our capacity and determination to monitor both "positive" and "negative" emissions of all greenhouse gases, however, will no doubt grow with time.

An international body of scientists, probably selected through the Intergovernmental Panel on Climate Change (IPCC), would apply best-available research methods and data to establish a gradually decreasing level of global greenhouse-gas emissions aimed at achieving anthropogenic atmospheric stability by the end of this century. (By "anthropogenic atmospheric stability" I mean that gas concentrations might vary naturally, but not significantly due to human influence.) A global per-capita emission rate would be calculated by dividing the world population into the global emission total. This

number would shrink if world population grows and it would increase if world population contracts in any given year—which we can hope it will be doing by the end of the century. Then this global average for per-capita emissions—let us call it, for lack of a better term, the “global average climate-sustainable per-capita emission”, or GASPE—would be compared to each country’s per-capita emissions. These would be calculated based on the previous year’s national emissions divided by that year’s national populations. Nationally averaged per-capita emissions above or below each year’s GASPE would determine the size of each nation’s per-capita payment into or withdrawal from a Global Climate Change Mitigation Fund. The total national payment would be calculated by re-multiplying per-capita payments.

Payments could be made through any combination of private or public contributions from nations. After a pilot phase, or grace period, such payments would be considered national obligations under international law. Withdrawals from the fund would be made by governments of under-emitting nations, unless another body is delegated for the purpose, and would be transparent and dedicated to uses on which all countries agree—low-carbon energy development, for example, health and education, or possibly rebates to citizens. National self-interest would dictate that withdrawn funds be applied to building social well-being and economic growth that preserves to the extent possible poorer nations’ under-emitting status so that the source of income is preserved as long as possible. Non-economic and bilateral CO2e trading, along the lines of the Kyoto Protocol’s Clean Development Mechanism, might be possible as well, but would require rigorous verification. With growing urgency to stop climate change and acceptance of the system, the price per CO2e tonne would rise progressively. The levels of international transfer payments eventually would nonetheless decline as global economic development proceeds, wealth gaps diminish, and technologies for reducing per-capita greenhouse-gas emissions proliferate. At some point, ideally, global emissions would become too negligible to account for, and the transfer system would fade away out of irrelevance.

This system is simple and uniform. It is anchored in individual rather than abstract national or economic sector-specific experience. The need for separate national “commitments,” emissions “base years,” sector-by-sector emissions reduction goals and a Clean Development Mechanism evaporates. So does most incentive for high-emitting industries to move to countries where their emissions won’t matter, since emissions savings will have the same value in all countries. It is the fairest and most practical way to reduce emissions in wealthy and poor countries alike, while stimulating economic development and social well-being and reducing extremes of wealth and income. All nations, no matter how high their current per-capita emissions and irrespective of their emissions history, have an equally valued incentive to reduce per-capita greenhouse-gas emissions. Yet none are forced to do this. Over-emitting nations are free to continue over-emitting, but to do so they will have to allow significant amounts of their wealth to be redistributed among under-emitting nations.

Practical experience trying to make this regime work would stimulate development of new thinking and new institutions for global cooperation, poverty reduction, and environmental restoration. It can be replicated within countries and at any level of community (subject to accurate quantification), facilitating similar equitable development and further emissions reductions on these scales. It could be initiated at any time voluntarily to build international public understanding. Initially this could take the form of a purely informational or pedagogical construction without financial obligation, perhaps managed by a coalition of NGOs. In a second phase, modest fund transfers could begin, but on a voluntary and even a private or philanthropic basis. These early efforts would set the stage for the entry of government or comparable actors and significant sums of money as climate change evolves and becomes more dangerous. The need for transparency for such a system could actually stimulate the development of democratic economic instruments and social equity and justice. The need for accurate data collection and verification could stimulate an explosion of educational efforts and generate jobs for young people in every nation.

The initial value for a CO2e tonne could be set negligibly low, to illustrate how the system would work without unduly shocking over-emitters. Countries would be free to constrain greenhouse-gas emissions internally however they saw fit—or not to constrain them at all, if they could afford to pay other nations for these emissions. And that money will itself work through national economic self-interest to constrain emissions elsewhere in the world.

Moreover, there is no need for the system to be the sole or even major vehicle for emissions reductions until the world is ready. It can operate as a non-binding and illustrative “shadow regime” while conventional national commitments are made and perhaps acted on, until such time as publics in all nations become convinced a per-capita trading regime deserves to become the primary approach to driving down global emissions. Other efforts to drive down emissions can help the per-capita trading approach work better and require less transfer of money whenever it eventually is called into play as a

binding system. All parties are advantaged rather than penalised for emissions reductions made before the system is put into place. Its existence even as a shadow scheme that may someday be implemented will encourage all countries to drive down greenhouse-gas emissions in anticipation of future implementation—a further argument for beginning to discuss the concept now.

This idea is obviously far from politically feasible today. But it deserves discussion, elaboration, and—very soon—the development of a “shadow climate regime” that could be administered and publicised by an international consortium of civil society organizations. The Worldwatch Institute and I stand ready to begin to work with others on moving this idea forward among the community of nations.

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This article originally appeared in ChinaDialogue, the world's first fully bilingual Chinese-English website devoted to the environment.

Publisher's comment: Regarding the author's statement in his first paragraph, "People have not yet found or developed any realistic alternative to a global economy based on the use of carbon-based energy and an agricultural and industrial system that releases billions of tonnes of carbon dioxide and other heat-trapping gases."

-- He is correct as far as this global economy is based on cheap energy. We don't have an alternative to it because renewable energies are not so cheap and mainly supply electricity (and not other benefits of petroleum). But, there is a realistic alternative, and alternatives plural, to the global economy. This is what needs to be pursued. Or, at least simply recognized, as the system convulses from too many consumers, the end of cheap energy, and climate disruption. - Jan Lundberg