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CLIMATE CHANGE: TECHNOLOGY AND POLITICS

**A Mexican Perspective in a North American Context
Lorenzo Rosenzweig**

Good morning, everybody! Yesterday, we had an interesting session on security and foreign policy and I was happy to hear John Deutch say that he had no clue about how to bridge the dilemma between the issue of past emissions from developed countries and the potential for development of emerging countries. So that makes two of us who don't have a clue. I will do my best to shed light on the Mexican perspective, on this issue.

While driving from the airport two days ago, I saw something engraved on a stone column on a bridge, somewhere close to here that said: "The multitude of the wise is the welfare of the world." The next day, while browsing in one of the book stores, I found a quote from rural leader Marcos Orozco that said: "Better one good idea in a 100 heads than 100 ideas in one good head." Both statements seem to fit very well with the subject of global warming and climate change, and when we get to our conclusions, you will see why.

Most of yesterday's time was spent talking about the Iraq crisis. I see several strong parallels between Iraq and climate change (CC). These issues have many things in common and a different perspective in terms of urgency.

- Not enough resources are being invested to solve the problem early on; the more we wait, the larger the catastrophic scale potential will be.
- In both emergencies we have the options to 1. "Stay the course" (stabilize CO2 emissions); 2. Escalate (increase CO2 emissions), or 3. Disengage (reduce emissions to below 1990 levels).
- Involving other countries would help find the solution.
- Terrorism and induced CC are both violent episodes against humanity. One is local and the other is global. In terms of scale, although less dramatic, global warming has a much, much larger destruction potential.
- Iraq is an attention sink that prevents the United States from paying attention to other international issues. CC will eventually also be an attention sink (that can be solved by deploying carbon sinks and reducing emissions).
- Terrorism has a strong influence on migratory issues, especially in a country like the United States. CC will have a larger influence on inter-country migratory phenomena, at scales and levels no one has ever imagined, due to the droughts, diminished food production capacity, sea level rise and political turmoil.

Going back to the core subject of this presentation, I want to pose a key question: Is the debate over the validity of global warming-climate change over? Apart from a handful of skeptics, there is virtual worldwide scientific consensus on the urgency and validity of this problem, so we have a closed case.

A few facts and statistics that support this statement follow:

Approximately 25 billion tons of CO₂ that have been accumulating in the atmosphere since the Industrial Revolution are of anthropogenic origin. The red line you see here is the seasonality of CO₂ concentration in the atmosphere but overall the rate of increase is constant. If you trace this graph back to much longer spans of time like, for example, 400,000 years ago, the evidence in the ice cores shows that the CO₂ increase is a recent (200 years) phenomenon.

We have a tendency to think that “long term” is six years, eight years, depending on the stage of life we are in. If you're a student, maybe “long term” is the next exam. From an evolutionary or planetary perspective (hundreds of thousands of years), we're going through the roof with the increase in CO₂. This will bring damaging consequences for the regulatory capacity of the atmosphere.

There is a net increase in the global average temperature from 1880 to 2005. There is no discussion about this. The Larsen B Ice Shelf just cut loose not too long ago, sea levels are rising, and by lowering the salinity of the oceans through the meltdown of glaciers and ice shelves, we might alter the ocean currents that control the world's weather. Even if we were to stabilize emissions today, there are lag times that go beyond our reasonable scales of time as humans.

After this brief introduction, I will talk about vulnerability and adaptation to climate change in Mexico; I will talk about mitigation opportunities (biomass sequestration, technology and renewable energy) and I will present some efforts that don't measure up to what the real need is, but nevertheless, it's a beginning.

I will talk, probably a quarter of the presentation, about the drivers of climate change politics, industry, private sector initiatives, the philanthropic sector, and then I will go into a few slides on Mexico's leadership in the region, and conclude with some closing remarks.

Mexico in 2002 had a level of emissions of approximately 643 million tons of carbon dioxide equivalent. Most of our emissions are from energy, and a relatively large share comes from the land use, land use change and forestry (LULUCF) sector.

The increase from 1990 to 2001 (excluding LULUCF) was from 425 million to 553 million of tons of equivalent CO₂, and while emissions increased, gross domestic product also increased, so if you make the adjustment, we have a reduction in emissions intensity, which in technical language means that we are being, as a country, more efficient.

Also, the projected growth of greenhouse gas (GHG) emissions for Mexico for 2025 in the low end is 68 percent of current emissions and 215 percent of current emissions on the high end.

From a sectoral perspective, transport accounts for 18 percent, energy production 24 percent, and the rest from other activities like agriculture and industrial processes. One important distinction is that global warming is not caused only by CO₂ but by other gases. The second most important GHG would be probably methane. This light gray would be the percentage of CO₂, which is 74 percent of the global warming gases, and the rest would be methane and other minor gases like nitrous oxide.

Mexico contributes about 1.5 percent of global emissions—compared to the U.S., 20.6 percent, and Canada, 2 percent. It ranks 14th in the list of world's largest emitters, with the U.S. being the first, and Canada the eighth. It is the largest emitter in Latin America and ranks fifth in non-Annex I country emissions, behind China, India, South Korea and Brazil. It's 76th on a per capita basis. The U.S. rises to sixth place when expressing this on a per capita basis and Canada goes to seventh place.

Mexico is very vulnerable to climate change, what we call differential vulnerability, and this means that many people who live below the poverty line (54% of population) will be among those most affected by climate change impact. We have also an important percentage of the country that has been eroded already because of poor land use practices, so that changes in precipitation and climate patterns would exacerbate that. The disruption of winter and summer precipitation, which happened with El Niño in 1998, was coincident with the worst wildfire season ever. It had also had a huge impact in lost crops, especially corn, and the increased frequency and force of tropical storms. In Mexico, a significant part of the population lives in disaster-prone areas.

In terms of mitigation, this is different for every country because it has to do with the economic profile. If you have the profile of the emissions of a country, you can tell immediately if it's a developed country or if it's a developing country. Developing countries tend to have much more methane and other gases and be less dependent on combustion, CO₂.

Mexico has three opportunities for mitigation. The first is the LULUCF sector which must be changed from being a net carbon source to being a carbon sink. In other words, we, as a country, should take advantage of our tropical forests and our temperate forests and, instead of making them a source of fuel, we should make them a sink. The second opportunity relates to technological improvements in the energy and transport sectors and the improvement of energy efficiency through the substitution of fuels. The third one is, of course, renewable energy, which currently represents a very small fraction and depends heavily on money for research and subsidies.

Two-thirds of the Mexican mitigation potential is in the forestry sector, but we have one of the highest deforestation rates in the world at 1.3 percent per year, so our forests are a net source of carbon instead of a sink of carbon. The principal agents of change are agricultural expansion, land clearing, commercial wood use, and household use of firewood.

Let me stop here for a second. In Mexico, firewood is an important cooking fuel, but there are other regions in the world, especially in Africa, where wood is the only source. In Mexico, for example, the use of firewood for cooking is the biggest consumer of wood from our forests.

Technology offers a big list of possibilities. Cogeneration, energy efficiency, fuel distribution, reduction of positive emissions, geological sequestration—mentioned by John Deutch a while ago, transport and, of course, cost-effective but minor efforts, such as residential lighting, pumping, commercial lighting, to mention a few.

In terms of renewable energy, the most interesting alternative at the moment, after hydroelectric, would be wind energy. We have very good potential in some regions in Mexico like "la Ventosa" in the State of Oaxaca.

But energy still remains a state monopoly. Our panel, during lunch, will tell us about the political outlook of Mexico and how privatization of the energy sector could bring some changes into this arena.

What are the drivers of climate change politics in Mexico? Mexico is an active and cooperative supporter of global initiatives, and first of all, we are the first relatively large oil-producing developing country to ratify Kyoto and to submit second and third national communications to the United Nations Framework Convention on Climate Change.

As a developing country, we must keep a delicate balance between brown and green environmental issues and socioeconomic development, embracing at the same time, the principle of common but differentiated responsibilities. Simone Pulver [*Climate Politics in Mexico in a North American Perspective*] wrote an

excellent account of the ups and downs of Mexico in terms of climate change politics and how we are affected by decisions from our partners in North America. This author has described what has resulted in a "stop-and-go" policy, where our level of interest varies according to the availability of carbon finance and possibilities for technology transfer. We lag behind other non-Annex I countries in project development.

A key development in terms of climate change policy in Mexico was the incorporation on April 25th of this year [2006] of an Intersecretarial Committee for Climate Change. PEMEX and CEMEX are leading innovative greenhouse mitigation initiatives but this is only a minor effort.

Mexico could be a leader for the Latin America region in terms of climate change mitigation. This graph—the source of this is the Mexican Institute for Competitiveness— shows that the private sector in Mexico has recognized that there are many factors influencing competitiveness for the economic development of a country. The second most important factor – the first one is reliable and objective legal system which is basically the rule of law—is sustainable management of our environment and this includes all renewable and non-renewable natural resources. This is really important, because the private sector has recognized the importance of the environment as an envelope and an enabling condition for the long-term economic and social development of Mexico. The environment is our life-supporting envelope, but the truth is that the environment usually falls victim to political priorities. However, political priorities are influenced by strong constituencies. Framing the issue right is key for developing constituencies, so climate change is not an environmental issue after all—it's a health, economy and national security issue. Thank you very much.

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