TESTIMONY BEFORE THE US SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

Submitted by
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Honorable Chairperson of the Committee, Senator Barbara Boxer, Honorable Members of the Committee, colleagues, distinguished ladies and gentlemen. I am grateful for the opportunity to testify before this Committee to provide an "Update on the Latest Global Warming Science". I submit to the Committee this written testimony and other material that I have presented on other occasions, including a presentation I was privileged to make before this very Committee on January 30, 2008.

The IPCC Fourth Assessment Report (AR4), completed in November, 2007, represents the most comprehensive, updated assessment of the science related to climate change in all its dimensions. One of the findings of this report states "Warming of the climate system is unequivocal". The objective and transparent manner in which the IPCC functions, mobilizing the best talent available across the world, should convey conviction on the strength of its findings to all rational persons, and provide the knowledge base for early action to meet this challenge. The AR4 has emphasized that "delayed emission reductions significantly constrain opportunities to achieve lower stabilization levels and increase the risk of more severe climate change impacts". Some examples of these impacts are:

- The number of people living in severely stressed river basins would go up from 1.4 to 1.6 billion in 1995 to 4.3 to 6.9 billion in 2050.

- Roughly 20-30% of species assessed are likely to be at increasingly high risk of extinction as global mean temperatures exceed 2 to 3 degrees C above pre-industrial levels.

- In some countries of Africa, yields from rainfed agriculture could be reduced by 50% by 2020.

Overall, the differential nature of climate change impacts and the existence of other stresses leave the poor of the world particularly vulnerable. The ethical aspects of this reality need to be considered in the context of economic and political choices that we need to exercise today with a sense of urgency. The global record of mitigation of greenhouse gas (GHG) emissions has not been inspiring. Between 1970 and 2004, for instance, there has been an increase of 70% in GHG emissions and 80% in carbon dioxide emissions.

Yet, mitigation of GHG emissions is economically attractive, particularly since it carries several co-benefits apart from the advantage of stabilizing the concentration of GHGs and, hence, the earth's climate. The IPCC has assessed, for instance, that if temperature increase has to be limited to 2.0 to 2.4 degrees C, then carbon dioxide emissions must peak by 2015, and decline thereafter. The cost of this stringent path of mitigation would

not exceed 3% of the global GDP in 2030. And, if we were to add all the co-benefits that would accrue, such a path of mitigation may actually involve negative costs; in other words, such a path may imply a net increase in economic output and employment, with consequent increase in human welfare. Co-benefits associated with mitigation may include lower pollution at the local level with large health benefits, higher energy security, higher yields in agriculture and greater employment, such as through larger use of renewable energy technologies.

Our knowledge of the scientific aspects of climate change, as brought out in the AR4 of the IPCC, clearly establishes the rationale for early action and the benefits associated with it. It also reveals the heavy cost of inaction that human society and all species would have to incur in the form of increasingly serious impacts of climate change. In this context it would be relevant to quote President Barack Obama :

"Now is the time to confront this challenge once and for all. Delay is no longer an option. Denial is no longer an acceptable response."

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