

Montreal is the host city for the World Congress of Environmental and Resource Economists that will be held at UQAM from June 28 through July 2. This international Congress is held every four years (Kyoto, 2006; Monterey, 2002; Vienna, 1998) and some 1000 participants are expected to attend. The spirit of the meetings is multidisciplinary as reflected by the choice of celebrated keynote speakers who have contributed to economics, the study of biological systems, industrial organization and management. To underscore this importance of this conference, CIRANO has organized various preliminary events that have been taking place throughout this year under the leadership of Bernard Sinclair-Desgagné, CIRANO Fellow and Professor at HEC Montreal. It is our Year of the Environment.

We recently interviewed Professor Sinclair-Desgagné [see <http://www.cirano.qc.ca/environnement/>] and began naturally enough by exploring his views on sustainable development. These can be succinctly described: sustainable development concerns meeting the needs of the current generation without compromising those of future generations. The conditions for sustainable development are, on his view, minimal involving the analysis of the basic requirements for such development. This work should not be confused, as is often done, with what he terms is desired development. The latter is normative in nature, reflecting social and political choices as to the most appropriate approach to economic development. By contrast, sustainability attempts to describe the minimal economic conditions for development that meet the twin intergenerational constraints previously discussed.

This task is far from straightforward. One issue that animated a vigorous discussion in the aftermath of the publication of the Stern Report on The Economics of Climate Change published in England in 2006 concerned the size of the discount factor that is used to assess the claims of future benefits/costs within the present-day context of resource allocation. The algebra of discounting entails that a discount rate of 0 evaluates a future dollar as a dollar; a discount rate of 0.03 evaluates the current value of a dollar twenty-five years from now as 48 cents. Of course, this calculation is only part of the picture: we must also translate proposed environmental mitigation costs through considerable future uncertainty to arrive at benefits that must then be discounted back to be compared with these proposed costs. Economists, to no

one's surprise, divide on the issue: Yale's William Nordhaus used simulation models to illustrate that the Stern discount factor was too low; the Nobel laureate Kenneth Arrow found the Stern approach acceptable if the mitigation costs were no more than 1% of current GDP.

As Professor Sinclair-Desgagné describes in his interview the recent debate has turned to the issue of whether such cost-benefit analysis was even meaningful. An influential paper by the Harvard economist Martin Weitzman that was published last year but has been in circulation for several years argues that uncertainty concerning high-impact low-probability events (or, catastrophes) undermines traditional economic analysis as we face in these circumstances indefinitely large expected losses. This result has become known as the Dismal Theorem, a decidedly contemporary contribution of economic analysis. The jury does remain out on its relevance, however. Nordhaus concludes a recent critique of the result with the observation that it serves primarily to make a cautionary point about the choice of distribution and preferences used in the analysis of decision making under uncertainty. References to some papers on the Dismal Theorem can be found in the link cited above.

Professor Sinclair-Desgagné concludes his interview with an overview of the environment oriented presentations and research that are ongoing at CIRANO. For example, later this spring we will be hosting an afternoon around the theme of markets (as in Europe) for trading carbon emissions derivatives. A similar workshop will concentrate on the economic aspects and challenges associated with garbage control and disposal.

In a different vein, Lydia Yakonowsky, Research Professional and Economist (who conducted the interview), has taken the lead in organizing and presenting two transfer endeavours. The first is a Kyoto update that gives a detailed account of the carbon-reduction commitments undertaken by all the Annex I signatories to the Kyoto protocol along with an update of the extent to which each country is meeting its engagement. Here we can readily learn that Japan's Kyoto commitment for a 6% reduction from baseline emissions came into effect in 2005, but that in 2006 emissions had risen by 5.3% from its 1990 levels. Ms. Yakonowsky has also constructed a *Question de société* on the environment that presents in a user-friendly and interactive way different perspectives on the issues. Both these initiatives can be accessed from <http://www.cirano.qc.ca/environnement/>.