Titanic Risks

Roxana Julia

Manhattan Underwater: a computer generated image of Manhattan in a sea-level-risen, hurricane plagued world of 2050 (from Cullen, H. 2010: ìThe Weather of the Future: Heat Waves, Extreme Storms, and Other Scenes from a Climate-Changed Planetî, via http://climatesanity. wordpress.com/category/hurrincane/).(i)

The sinking of the Titanic is one of the most cited technological tragedies of the 20th century, and has become a metaphor for the potentially catastrophic consequences of blind belief in the technological advancements that characterized Edwardian times: what was built to be a masterpiece of engineering achievement (an ìunsinkableî ship) sank on its maiden voyage after hitting an iceberg, causing over 1500 deaths (Annas and Sherman, 1999). Compromises made during early project stages, and enormous operational risks led to serious flaws in this supposedly perfect ship: its speed was steadily increased as it approached the ice field, radio ice warnings were not passed in a timely fashion, lookouts were posted without binoculars, and there were not enough lifeboats to bring all passengers to safety (Kozak-Holland, 2005). Because of the poor handling of risks that led to an unprepared ship and crew the tragedy is often conceptualized as a case of poor risk management, and studies abounded in the shipping industry in the years that followed, most likely in response to societyís demand for new and improved regulations and standards aimed at preventing from similar accidents and losses to occur (Alario and Freudenburg, 2010).

While early studies on risk management associated with technological tragedies like the Titanicís were dominated by their physical and engineering aspects, more recent ones emphasize their social context. Perhaps the most striking social aspect of the Titanic tragedy is that the passengersí chances of survival were correlated with their socio-economic status: the percentages of women, children and men travelling in first class that survived were 97, 100, and 33 respectively, while the percentages for the same categories travelling third class were 46, 34 and 16 (Lord Merceyís Report, 1912). Alario and Freudenburg (2010) propose calling low-probability but high impact risks that resemble this pattern, that is, do not transcend socio-economic classes, ìTitanic risksî (in relation to the Titanicís socio-economic context rather than the magnitude of the tragedy) and they emphasize the applicability of this concept to 21st century environmental risks, in particular the most global of all: risks associated with climate change.

It is now a scientific consensus the assertion that the observed increases in global average temperatures since the mid-20th century are ìvery likelyî to be anthropogenic and directly related to the use of fossil fuel technologies and the consequent accumulation of carbon dioxide and other greenhouse gas emissions in the atmosphere (IPCC, 2007). Average global temperatures are now about 0.8 ∞C (1.4 ∞F) above what they were in pre-industrial times and, according to the Intergovernmental Panel on Climate Change (IPCC) projections, will likely rise somewhere between 1.4 ∞C (2.5 ∞F) and 5.8 ∞C (10.4 ∞F) by the year 2100. Possible risks related to these increases include higher frequency of extreme events, sea-level rise due to the melting of ice caps, and a reversal of ocean currents which in turn, can have significant effects on global food and water security, health, human habitat (particularly in small island nations) and biodiversity loss. Even though these events are usually framed as ìrisksî (i.e., these are known effects of global warming, as are their respective probabilities or chances to occur) the issue is indeed one of true uncertainty. Uncertainty implies a much less clearly defined understanding of possible outcomes and related probabilities than risks; there is great uncertainty among the scientific community about how much carbon dioxide and other greenhouse gases are contributing to the climate change problem, how they interact with each other, and what levels they will reach in the future, all factors that correlate, as far as we know, with changes in climate. These uncertainties are all reflected in the wide range of future emission scenarios, projected global average temperatures and related physical and social-economic events that the IPCC and the scientific community has produced. A critical implication of a state of uncertainty is that it opens up the possibility of abrupt, unexpected and potentially irreversible events to occur. The recent discovery, for example, that a million square miles of permafrost in western Siberia is now melting raises the possibility that billions of metric tons of methane (a powerful greenhouse gas) will be released to the atmosphere; the effects of this increase, while unknown, may profoundly impact the earthís ecosystem and severely affect conditions for human life. Furthermore, these effects may prove irreversible (Dumas, 2009).

Climate risks (and uncertainties) are not likely to transcend socio-economic differences across nations: a study conducted by the United Nations Development Program reported that an overwhelming 98 % of people affected by climate disasters during the period 2000 to 2004 lived in the poorest nations of the world. In Organization for Economic Co-operation and Development countries (the ìdevelopedî countries) one in 1,500 people was affected; the comparable figure for developing nations was one in 19, which makes them 79 times more likely to be exposed (UNDP, 2007). Not only is the risk of exposure to a climate disaster higher in poor nations, but also is the vulnerability to cope with them. With limited access to formal insurance, income, and assets, poor nations have to deal with risks to climate-related shocks under highly constrained conditions. ëCountries will adapt to changes in climate and respond to climate catastrophes as far as their resources and knowledge allow. But developing countries lack the infrastructure, financial means and access to services that would otherwise help them adaptí (Stern, 2007).

Climate risks (and uncertainties) are characterized by socio-economic inequalities in their creation as well: the developed, industrialized nations account for about 72% of total carbon dioxide emissions that accumulated in the atmosphere between 1950 and 2000 (Parker, 2008). The separate treatment of developed and developing nations under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol (an international agreement that sets binding emission targets for industrialized countries) is indeed a reflection of an early consensus on the responsibly that developed countries have on bearing (most of) the costs of mitigation. Inequalities in the creation of climate risks are observed not only within a generation, but across generations alike: future generations will bear the costs of damages imposed by past and current generations if no action is taken to mitigate the extent of global warming and/or no investment is made to build capacity to overcome future climate-related damages.

These ìTitanicî dimensions of climate change risks and uncertainties pose challenges for the design and implementation of global economic policies aimed at preventing from further warming (ìmitigationî policies) and coping with the aftermath (ìadaptationî policies), and raise important questions about social justice, equity and human rights not only across countries, but across generations alike. Issues of intra and intergenerational equity, responsibilities and obligations of the industrialized nations to reduce emissions and aid in the developing nationsí adaptation process are indeed at the center of international economic policy discussions, as they could exacerbate an already uneven global distribution of wealth. While some mitigation policies and initiatives are already in place at the national and regional level (such as the European Emissions Trading System), there is considerable disagreement about what policies should be introduced (if any) at a global scale, how aggressive they should be, and how responsibilities across nations should be allocated. Disagreements are rooted in the reality that as it stands, the conventional (ìbusiness-as-usualî) path from poverty to prosperity - and from prosperity to further economic growth - entails an increase in per-capita consumption of fossil fuels, and any effective policy aimed at curbing emissions and reducing climate risks demands a reduction on those (Baer et al., 2009). Decoupling fossil fuel use from the development process may prove to be crucial to meet emission targets needed to mitigate climate risks and/or stabilize global average temperatures at a ìmanageable levelî. (ii) Disagreements are also due to the state of risk and uncertainty that characterizes the climate change problem, which opens the doors for skepticism and debate over whether to embark on mitigation policies now as opposed to waiting until at least some uncertainty is resolved. Many argue that because of these disagreements, policies written in the Kyoto Protocol fall short of what is needed to meet the binding targets. It is argued, too, that developing countries face a weak negotiating position in the UNFCCC that has led to outcomes contrary to the interests of the poorest and most vulnerable countries, but that rather favor the larger developing country emitters.

The Titanic tragedy taught us that low probability, unexpected events can actually happen, and that actions aimed at preventing and/or coping with them can lower their impact and diminish the extent of losses. Low probability risks and uncertainties are many in the climate change issue; it is certain, however, that they have the potential to deliver powerful systemic shocks to human development across a large group of countries that can translate into lost opportunities for health and education, diminished productive potential, and loss of vital ecological systems that may prove irreversible (UNDP, 2007). Although global negotiations needed to implement climate policies that could help manage climate risks and uncertainties are complex and controversial in lieu of their ìTitanicî dimensions, representatives of the world's governments, international organizations and the civil society continue to engage in talks hoping to deliver some progress on their architecture and implementation. We certainly canít afford inaction on a global issue that may have catastrophic and irreversible consequences and that, like the Titanic tragedy, places the most vulnerable at highest risk.

References

Alario, Margarita V. and William R. Freudenburg. 2010. ìEnvironmental Risks and Environmental Justice, Or How Titanic Risks Are Not So Titanic After All.î Sociological Inquiry, 80(3): 500ñ512

Annas, George J. and Sheridan Elias. 1999.î Thalidomide and the Titanic: Reconstructing the Technology Tragedies of the Twentieth Century.î American Journal of Public Health, 89(1)

Baer, Paul, Tom Athanasiou and Silvan Kartha. 2009. ìThe Right to Development in a Climate-Constrained World.î In Twenty-First Century Macroeconomics: Responding to the Climate Challenge, Johnatan M. Harris and Neva R. Goodwin. (eds.) Cheltenham, UK: Edward Elgar Publishing Limited.

Dumas, Lloyd J. 2009. ìUnderstanding the Challenge of Global Warmingî In Twenty-First Century Macroeconomics: Responding to the Climate Challenge, Johnatan M. Harris and Neva R. Goodwin. (eds.) Cheltenham, UK: Edward Elgar Publishing Limited.

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: Synthesis Report. Geneva (Switzerland): IPCC.

Jianjun Yin, Michael E. Schlesinger and Ronald J. Stouffer (2009). Model projections of rapid sea-level rise on the northeast coast of the United States. Nature Geoscience (2): 262 - 266

Kozak-Holland, M. 2005. Titanic Lessons for IT Projects. Multi-Media Publications Inc.

Lord Mersey's Report , 1912. Shipping Casualties (Loss of the Steamship "Titanic") British Parliamentary Papers. London: His Majesty's Stationery Office, via http://www.anesi.com/titanic.htm

Parker, Larry and John Blodgett. 2008. ìGreenhouse Gas Emissions: Perspectives on the Top 20 Emitters and Developed Versus Developing Nations.î Congressional Research Service Report for Congress (Order Code RL32721). Washington DC: CRS.

Stern, Nicholas. 2007. The economics of climate change: the Stern review. Cambridge, UK: Cambridge University Press.

United Nations Development Program (UNDP). 2007. Human Development Report 2007/2008. Fighting Climate Change: Human Solidarity in a Divided World. New York: UNDP. Available from http://hdr.undp.org/en/reports/glolba/hdr2007-2008/

(i) Driven by changes in ocean circulation, sea levels around New York City will experience rapid increases, which in turn will bring higher risk of damage from hurricanes and winter storm surges (Jianjun Yin et al., 2009).

(ii) The objective of the last UNCCC Climate Conference in Copenhagen was to agree on policies that would stabilize carbon dioxide concentrations at a binding level that would ensure a maximum global average temperature increase of 2∞C.