

An Analysis and Perspective related with Global Warming

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ABSTRACT

Actuaries are becoming more aware of the combined impact of climate change and limitations of resources – two separate and very significant issues – putting at risk the sustainability of the current socio-economic systems that support our way of life. Climate change is more than global warming. The rise in average temperature is only one indicator of broader changes also translating into extreme temperatures, drought, flooding, storms, rising sea levels, impacts on food production, and infectious diseases. Although the scientific community has been aware of the link between greenhouse gases (GHGs) and climate change for many years, world leaders have been slow to react and implement measures to mitigate the risks. The potential impact on actuarial methods and assumptions, especially future growth expectations, is pervasive in the work of actuaries and affects traditional life and non-life, health and pensions areas, investment practices, and newer areas like enterprise risk management.

Keywords: Stratospheric-ozone depletion, photochemical oxidants, aerosols, acidification, toxic metals, ecologically active substances, hot-spot regions, chemical time bombs, long-range transports of air pollutants, organic substances.

INTRODUCTION

Extensive discussions are taking place throughout the world in all forms of media on the subjects of global warming and climate change. These discussions point to the global dangers posed by the earth's warming. Global warming will not only be felt many decades from now – it is already happening and its impacts are clearly visible.

Globalizing the environmental policy agenda must not divert attention from concerns about unresolved, regional environmental problems. Global warming, albeit with unclear manifestations in regional and local climates, is likely to aggravate impacts from already existing environmental stress (including acidification, rising tropospheric oxidant levels, stratospheric ozone depletion, the flux of heavy metals in soils and waters). International law not only recognizes that there is evidence that climate change is caused by human beings, but generally that human beings or countries have been the greatest contributors to climate change

METHODOLOGY

What is Climate Change?

Climate change is the subject of how weather patterns change over decades or longer. Climate change takes place due to natural and human influences. Increases in global temperatures may have different impacts, such as an increase in storms, floods, droughts, and sea levels, and the decline of ice sheets, sea ice, and glaciers

Extreme events

It is difficult to blame a particular extreme weather event (such as a heat wave, flood-producing storm, or drought) on global warming, since weather fluctuates naturally. However, climate theory and models predict that global warming will increase the frequency and/or intensity of some types of extreme events.

Indirect and Direct Effects

Among the most obvious areas of concern to societies worldwide, with respect to facing the effects of climate change, is agriculture. Perhaps the challenges involved are often seen as one of agricultural sensitivity to "global warming as such", i.e., to increasing temperatures in terms of global averages. Values of meteorological parameters (temperature, precipitation, etc), the real implications of climate change may very likely pertain to shifts in the frequency distribution of these parameters.

Recognition of Risks

Due to the nature of the subject, the international discussions on climate change are driven by worldwide climate scientists. There would be a few members of the CIA who would have a good understanding of the issues involved. But the majority of actuaries may not have such understanding. Global warming is no longer just a pre-diction—it is actually happening. It is undisputed that the average temperature at the surface of the Earth has increased over the past century by about 1°F(0.6°C), with both the air and the oceans warming. Precisely determined how much of the recent warming was caused by human activities, the consensus among climate scientists is that most of the warming over the past 50 years was probably caused by human-produced greenhouse gases.

Torrential rains and flooding

According to the available data, a significant increase in the intensity of precipitation events occurred over the second half of the 20th century. Since higher temperatures speed up evaporation and increase the amount of water vapor in the air, leading to heavier downpours.

Process of Global Warming

Earth receives energy through radiation from the sun. Play an important role of trapping heat, maintaining the earth's temperature at a level that can sustain life. This phenomenon is called the greenhouse effect and is natural and necessary to support life on earth without the greenhouse effect, the earth would be approximately 33°C cooler than it is today. In recent centuries, humans have contributed to an increase in atmospheric GHGs as a result of increased fossil fuel burning and deforestation. The rise in GHGs is the primary cause of global warming over the last century.

Global action to address climate change

1. UN Framework Convention on Climate Change- There is currently only one single universally legally-binding treaty governing international action to address climate change. This is the UN Framework Convention on Climate Change. They discussed the

need for a binding commitment to and the setting of measurable objectives and timelines for greenhouse gas reductions by developed countries, establishing a financial mechanism for climate action, ensuring technology transfer from developed to developing countries.

2. International Human Rights Law

Human Rights and Climate Change - Recent Initiatives United Nations Human Rights Council addressed the link between climate change and human rights in a specific resolution. In the resolution, the Council also recognized that "human beings are at the centre of concerns for sustainable development and that the right to development must be fulfilled so as to meet equitably the development and environmental needs of present and future generations." Several other international and regional human rights bodies have also addressed climate change. For example, the Committee on the Elimination of Discrimination against Women adopted a Statement on Gender and Climate Change and the plenary parent body of the Inter-America Commission for Human Rights, the General Assembly of the Organization of American States also adopted a resolution on Human Rights and Climate Change.

3. Mitigation and Adaptation for Climate Change

Keeping Global Warming under 2°C. An international agreement had been reached at Copenhagen that global warming should be limited to 2°C.

Mitigation Measures for Reducing Carbon Emissions

The need for reducing the CO₂ equivalent emissions will affect many sectors of the economy: energy creation, transport, buildings, industry, agriculture, human settlements

Energy Creation

Availability of adequate energy supply is fundamental to modern living. Currently, a major portion of the energy is generated using fossil fuels—coal, oil, and natural gas (in decreasing order of CO emissions). These will need to be replaced by low or zero carbon fuels, such as wind, solar, and nuclear

Transportation

Advancements will need to take place in areas of energy efficiency, improved vehicle performance, use of electrical vehicles,

Carbon Pricing

Cap and Trade is a carbon pricing system where the government sets a cap on the amount of emissions, and companies can meet the cap by reducing their emissions or paying another entity to do so.

Trading of emission allowances enables emissions to be reduced at a lower cost than requiring each company to lower their own emissions.

Carbon Tax

This is a tax on carbon emissions, based on the carbon content of the fuel. This would, for example, add more to the price of coal than to the price of gasoline, due to the higher carbon content of coal

CONCLUSION

Global warming has wide-ranging effects on many aspects of human life. It threatens economies, lives and traditional ways of life. Although individual events or phenomena may not always be easy to link to global warming, the increase in frequency and intensity of such phenomena, and their simultaneous occurrence around the world, provides stronger evidence for such a linkage.

Conflicts of interest: The authors stated that no conflicts of interest.

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