

Natural Disasters are on the Rise

By Karen Shilo

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This past decade, natural disasters have become more frequent and devastating, and they are setting new records. In 2002, natural disasters caused \$85 billion in economic losses worldwide, an increase of 36 per cent from 2001. During the summer of 2002, Western Canada suffered its worst drought ever recorded. In 2003, earthquakes, volcanoes, floods, droughts, storms, fires and landslides killed about 83,000 people, 30,000 more than the number of deaths 13 years earlier. There were 337 natural disasters in 2003, 76 more than in 1990, according to the International Strategy for Disaster Reduction. In 2003, I stood on the picturesque shoreline of Phi-Phi Island off the coast of Thailand. In 2004, the Indian Ocean Tsunami completely decimated the region with the longest reported undersea faulting ever observed.

Global warming, or the average increase in temperature in the atmosphere near the earth's surface, involves severe disruption of the complex global climate system. We now know that this is because human activity has led to dramatically increased concentrations of CO₂ in our atmosphere. According to Scientific American, seven billion tons of carbon are released into the atmosphere each year. By 2056, unless we make some dramatic changes, population growth and corresponding consumption of energy will double the emission of carbon into the atmosphere, placing it at 14 billion tons each year. There is almost unanimous agreement in the scientific community of the direct relationship between the growth of greenhouse gas emissions and the dramatic rise in average temperature that has occurred over the past several decades. Al Gore recently presented data that "2005 was the hottest year ever measured, and the 12 months ending this past summer, June of 2006, was the hottest 12-month period ever measured in the United States of America."

The exponential increase in the average temperature of the earth's surface is having devastating effects. The retreat of glaciers, thinning of Arctic ice, and in turn, rise in sea levels, is increasing the threat of damaging floods to humans and wildlife. Skiers and others are at increasing risk of avalanches, as rising temperatures release giant blocks of snow and ice in mountainous regions. Rising temperatures are increasing the rate of droughts and causing famines, the most recent being the 2005 famine in southern Niger. Wildfires are increasing in hot and dry regions across North America, Australia, and southern Europe.

Global warming will very likely lead to a rise in the number of hurricanes, which are formed in warm waters. Although land heats up more quickly, water requires longer periods to cool down. The combination of warm water and water vapor can create a grouping of thunderclouds that are set spinning by the rotation of the earth and polar winds. 2005 saw record average sea temperatures in the tropical Atlantic. The 140 mph winds of Hurricane Katrina in 2005 grew in strength over warmer waters, creating

a storm surge that was the most destructive and expensive natural disaster in U.S. history.

Of course, understanding the workings of the climate system is only the prelude to finding solutions to global warming and addressing the rise in natural disasters. Some problems must be addressed quickly, such as the lack of efficient communications and disaster warning systems in undeveloped and other areas of the world. When the Indian Ocean Tsunami struck in 2004, no warning system in the Indian Ocean was in place. Thousands of deaths could have been prevented if people had had even a few minutes of advance warning. Much work still needs to be done to develop better emergency response systems, community disaster relief programs, government risk reduction programs, and a global tsunami warning system.

We cannot prevent the occurrence of natural disasters that are due to changes that have already been set in motion. But we can begin to alter the adverse imprint that the human population has on nature. In the meantime, we will be coping with more and more severe floods, droughts, and storms. Even as the number of humans on the planet continues to increase, we can modify coastal development projects, reduce energy consumption and pollution, and make our coastal areas less vulnerable. After all, we humans have only one life-sustaining planet.

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