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An Arctic Alarm: Time To Act

Effects of global warming are examined in two articles, *Climate Change* and *Future of the Arctic*. Recent scientific studies have concluded that weather patterns are significantly more severe and intense as carbon dioxide (CO₂) emissions accumulate in the Earth's troposphere. While long-term effects will be felt over Earth's entire surface, far greater temperature rises will be observable in the Arctic making it an important region for scientific research. Yet, the human costs will be borne by those of living in peripheral countries, and lesser so to polar residents.

Warming is expected to generate more intense tropical hurricanes while deserts found in subtropical zones will ultimately become drier. With the bulk of Earth's population living in these moderate latitudinal zones, according to World Bank, the underdeveloped countries are improperly prepared for potential climate related disasters. Along with internally displaced persons and refugees because they lack means to provide sufficient healthcare and welfare services to those having lost their livelihoods due to resource scarcity, famine, conflict, and infectious disease. More simply put, climate change threatens the basic needs of the already distressed poor. Consequently, humans living in deep poverty, on less than \$1 per day, are already victims of vulnerable economies located in Sub-Saharan Africa and South Asia.

Still, today, mass effects have yet to be witnessed. Ephemeral glimpses into the Earth's future are becoming more frequent, but increasing Arctic temperatures are permanently impacting nations located in the polar reaches (where human populations remain low) but biota flourish. Here, glaciers and ice sheets melt at an accelerated pace due to anthropogenic forces changing the once frontier landscapes of Alaska, Canada, Northern Europe, and Russia as creeping coastlines are subject to large-scale landslides, mudslides, and floods.

Maintaining a vast presence of Arctic ice is crucial for albedo to naturally deflect insolation waves, but also for protecting global coastal areas from the estimated 1-3 foot sea level rise by 2100. In addition, when the sea is covered by an ice sheet, polar easterly storms are not able to stir the large swells which pound glacial calving faces but also minimize strong winds that cumulatively exacerbate storm surge devastation. Given the sound estimate of half of Earth's population living within 100km of a coastline, this equates to nearly 4-billion people potentially losing their homes, family members, and/or necessary food and water supplies due to climate change. As a telling example of what is to come, look to a native village on the Chukchi Sea where several structures have sunk and erosion continues to threaten key facilities including the only airport, water treatment plant, and sewer storage facility which provide basic needs and connectivity. Climate change will force these and other unique cultures to relocate, assimilate, or disappear as risks continue to rise in the absence of pragmatic global solutions. Waiting to act on Earth's single largest issue will only lead to hasty, often costly, reactive public policies, ill planned implementation efforts, and further political divisions among nations who are to blame for carbon pollution versus those suffering its consequences.

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Work Cited

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