Global Warming (Climate Change)

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Global warming has become perhaps the most complicated issue facing world leaders. Warnings from the scientific community are becoming louder, as an increasing body of science points to rising dangers from the ongoing buildup of human-related greenhouse gases — produced mainly by the burning of fossil fuels and forests.

Global emissions of carbon dioxide jumped by the largest amount on record in 2010, upending the notion that the brief decline during the recession might persist through the recovery. Emissions rose 5.9 percent in 2010, according to an analysis by the Global Carbon Project, an international collaboration of scientists. The increase solidified a trend of ever-rising emissions that scientists fear will make it difficult, if not impossible, to forestall severe climate change in coming decades.

However, the technological, economic and political issues that have to be resolved before a concerted worldwide effort to reduce emissions can begin have gotten no simpler, particularly in the face of a global economic slowdown.

For almost two decades, the United Nations has sponsored global talks, known as the United Nations Framework Convention on Climate Change, an international treaty signed by 194 countries in 1992 to cooperatively discuss global climate change and its impact.

The conferences operate on the principle of consensus, meaning that any of the participating nations can hold up an agreement. In recent years, the meetings have often ended in disillusionment. The conflicts and controversies discussed are monotonously familiar: the differing obligations of industrialized and developing nations, the question of who will pay to help poor nations adapt, the urgency of protecting tropical forests and the need to rapidly develop and deploy clean energy technology.

Answer the following questions based off of the previous section:

1. According to this article, what is contributing to global climate change?
2. Why is global climate change a concern?
3. What is discussed at the United Nations Framework Convention on Climate Change?

At this year's meeting, which began on Nov. 28, delegates from 194 nations gathered in Durban, South Africa, to try to advance, if only incrementally, the world's response to intensifying climate disasters. But expectations were low.

The negotiating process itself has been under fire from some quarters, including the poorest nations who believe their needs are being neglected in the fight among the major economic powers. Criticism has also come from a relatively small but vocal band of climate-change skeptics, many of them sitting members of the United States Congress, who doubt the existence of human influence on the climate and ridicule international efforts to deal with it.

But scientists warned that the squabbling served only to delay actions that must be taken to reduce climate-altering emissions and to improve vulnerable nations' ability to respond to the changes they say are surely coming.

One of the issues that is most contentious and least likely to be resolved at this year's meeting involves the future of the Kyoto Protocol, the 1997 agreement that requires major industrialized nations to meet targets on emissions reduction but imposes no mandates on developing countries, including emerging economic powers and sources of global greenhouse gas emissions like China, India, Brazil and South Africa.

The United States is not a party to the protocol, having refused to even consider ratifying it because of those asymmetrical obligations. Some major countries, including Canada, Japan and Russia, have said they will not agree to an extension of the protocol next year unless the unbalanced requirements of developing and developed countries are changed. That is similar to the United States' position, which is that any successor treaty must apply equally to all major economies.

Answer the following questions based off of the previous section:

1. Do all nations believe that human activities are influencing climate change?
2. What is the Kyoto Protocol?
3. Why do some countries (including the United States) have an issue with the Kyoto Protocol?

2010 Global Talks in Cancún

Last year's U.N. conference on climate change in Cancún, Mexico, produced only modest achievements but ended with the toughest issues unresolved. The package that was approved, known as the Cancún Agreements, set up a new fund to help poor countries adapt to climate changes, created new mechanisms for transfer of clean energy technology, provided compensation for

the preservation of tropical forests and strengthened the emissions reductions pledges that came out of the U.N. climate change meeting in Copenhagen in 2009.
The conference approved the agreement over the objections of Bolivia, which condemned the pact as too weak. But those protests did not block its acceptance. Delegates from island states and the least-developed countries warmly welcomed the pact because it would start the flow of billions of dollars to assist them in adopting cleaner energy systems and adapting to inevitable changes in the climate, like sea rise and drought.

But left unresolved was where the promised aid from wealthy nations — $100 billion in annual climate-related funds — would come from.

Answer the following questions based off of the previous section:

1. What is the Cancun Agreements?
2. Why did the least-developed countries want the Cancun Agreements?

The U.S. and Climate Change
The United States has been criticized at the U.N. gatherings for years, in part because of its rejection of the Kyoto framework and in part because it has not adopted a comprehensive domestic program for reducing its own greenhouse gas emissions. President Obama has pledged to reduce American emissions 17 percent below 2005 levels by 2020, but his preferred approach, a nationwide cap-and-trade system for carbon pollution, was passed by the House in 2009 but died in the Senate the next year. United States emissions are down about 6 percent over the past five years, largely because of the drop in industrial and electricity production caused by the recession.
In January 2011, the Environmental Protection Agency began imposing regulations related to greenhouse gas emissions. The immediate effect on utilities, refiners and major manufacturers was minor, with the new rules applying only to those planning to build large new facilities or make major modifications to existing plants. Over the next decade, however, the agency plans to regulate virtually all sources of greenhouse gases, imposing efficiency and emissions requirements on nearly every industry and every region.

Answer the following questions based off of the previous section:

1. Why has the United States been criticized by the United Nations?
2. Why are emissions down by 6% in the United States over the last five years?
3. What is the Environmental Protection Agency doing to reduce greenhouse gas emissions?

Steps Toward a Response
The debate over climate questions pales next to the fight over what to do, or not do, in a world where fossil fuels still underpin both rich and emerging economies.
With the completion of the United Nations Framework Convention on Climate Change at the Earth Summit in 1992, the world's nations pledged to avoid dangerously disrupting the climate through the buildup of greenhouse gases, but they never defined how much warming was too much.

Nonetheless, recognizing that the original climate treaty was proving ineffective, all of the world's industrialized countries except for the United States accepted binding restrictions on their greenhouse gas emissions under the Kyoto Protocol, which was negotiated in Japan in 1997. That accord took effect in 2005 and its gas restrictions expire in 2012. The United States signed the treaty, but it was never submitted for ratification in the face of overwhelming opposition in the Senate because the pact required no steps by China or other fast-growing developing countries.

It took until 2009 for the leaders of the world's largest economic powers to agree on a dangerous climate threshold: an increase of 2 degrees Celsius (3.6 degrees Fahrenheit) from the average global temperature recorded just before the Industrial Revolution kicked into gear. (This translates into an increase of 1.3 degrees Fahrenheit above the Earth's current average temperature, about 59 degrees.)

The Group of 8 industrial powers also agreed in 2009 to a goal of reducing global emissions 50 percent by 2050, with the richest countries leading the way by cutting their emissions 80 percent. But they did not set a baseline from which to measure that reduction, and so far firm interim targets — which many climate scientists say would be more meaningful — have not been defined.

At the same time, fast-growing emerging economic powerhouses, led by China and India, opposed taking on mandatory obligations to curb their emissions. They said they will do what they can to rein in growth in emissions — as long as their economies do not suffer.

In many ways, the debate over global climate policy is a result of a global "climate divide." Emissions of carbon dioxide per person range from less than 2 tons per year in India, where 400 million people lack access to electricity, to more than 20 in the United States. The richest countries are also best able to use wealth and technology to insulate themselves from climate hazards, while the poorest, which have done the least to cause the problem, are the most exposed.

Answer the following questions based off of the previous section:

1. What is the dangerous climate threshold that the world's economic powers agreed upon?
2. What is the goal to reduce global emissions by 2050?
3. What is the emission of carbon dioxide per person in the United States?
4. How does that number (question 3) compare to India's?

Background

Scientists learned long ago that the earth's climate has powerfully shaped the history of the human species — biologically, culturally and geographically. But only in the last few decades has research revealed that humans can be a powerful influence on the climate, as well.

A growing body of scientific evidence indicates that since 1950, the world's climate has been warming, primarily as a result of emissions from unfettered burning of fossil fuels and the razing of tropical forests. Such activity adds to the atmosphere's invisible blanket of carbon dioxide and other heat-trapping "greenhouse" gases. Recent research has shown that methane, which flows from landfills, livestock and oil and gas facilities, is a close second to carbon dioxide as an impact on the atmosphere.

That conclusion has emerged through a broad body of analysis in fields as disparate as glaciology, the study of glacial formations, and palynology, the study of the distribution of pollen grains in lake mud. It is based on a host of assessments by the world's leading organizations of climate and earth scientists.

In the last several years, the scientific case that the rising human influence on climate could become disruptive has become particularly robust.

Answer the following questions based off of the previous section:

1. When did the world's climate start to warm?
2. What are some examples of humans contributing to climate change?

Some fluctuations in the earth's temperature are inevitable regardless of human activity — because of decades-long ocean cycles, for example. But centuries of rising temperatures and seas lie ahead if the release of emissions from the burning of fossil fuels and deforestation continues unabated, according to the Intergovernmental Panel on Climate Change, a group that shared the 2007 Nobel Peace Prize with former Vice President Al Gore.

In addition, a report released by the I.P.C.C. in November 2011 predicted that global warming will cause more dangerous and "unprecedented extreme weather" in the future.

Despite the scientific consensus on these basic conclusions, enormously important details remain murky. That reality has been seized upon by some groups and scientists disputing the overall consensus and opposing changes in energy policies.

For example, estimates of the amount of warming that would result from a doubling of greenhouse gas concentrations (compared to the level just before the Industrial Revolution got under way in the early 19th century) range from 3.6 degrees to 8 degrees Fahrenheit. The intergovernmental climate panel said it could not rule out even higher temperatures. While the low end could probably be tolerated, the high end would almost certainly result in calamitous, long-lasting disruptions of ecosystems and economies, a host of studies have concluded. A wide range of economists and earth scientists say that level of risk justifies an aggressive response.

Other questions have persisted despite a century-long accumulation of studies pointing to human-driven warming. The rate and extent at which sea levels will rise in this century as ice sheets erode remains highly uncertain, even as the long-term forecast of centuries of retreating shorelines remains intact. Scientists are struggling more than ever to disentangle how the heat building in the seas and atmosphere will affect the strength and number of tropical cyclones. The latest science suggests there will be more hurricanes and typhoons that reach the most dangerous categories of intensity, but fewer storms overall.

Answer the following questions based off of the previous section:

1. Is all climate change contributed to human activity?
2. What are some possible problems that will result due to warming of the world?
3. Give your thoughts/opinions to this article. Some issues to consider:
    a. How can nations come together to solve the issues of global climate change?
    b. How involved should the United States be in solving global climate change issues?
    c. How will the world be impacted if we do not stop global climate change?