CLIMATE CHANGE 101

Evangelical Lutheran Church in America
God's work. Our hands.

"The earth is a planet of beauty and abundance; the earth system is wonderfully intricate and incredibly complex. But today living creatures, and the air, soil, and water that support them, face unprecedented threats. Many threats are global; most stem directly from human activity. Our current practices may so alter the living world that it will be unable to sustain life in the manner we know." (ELCA, "Caring for Creation: Vision, Hope, and Justice," 1993)

What is climate change?

A report released in 2007 by the Intergovernmental Panel on Climate Change (IPCC), a group of leading scientists from around the globe who have been studying data on climate for decades, confirmed that global average temperatures are growing warmer due to increasing levels of carbon dioxide and other heat-trapping gases in Earth's atmosphere, and that human use of fossil fuels is the main source of the increase in these gases. Every time we burn gasoline by driving a car, use electricity from coal- or gas-fired power plants, or heat our homes with oil or natural gas, we release carbon dioxide and other "greenhouse" gases into the air. At normal levels greenhouse gases make our temperatures moderate enough to support life, but at these increased, and human-caused levels, more and more of the sun's heat is trapped by our atmosphere and less escapes back into space. The increase in trapped heat changes the climate, causing altered weather patterns that can bring unusually intense precipitation, droughts and more severe storms.

Though Americans make up just 4 percent of the world's population, we produce 25 percent of the world's carbon dioxide emissions. Coal-burning power plants are the largest U.S. source of carbon dioxide pollution—they produce 2.5 billion tons every year. Automobiles, the second largest U.S. source, emit nearly 1.5 billion tons of carbon dioxide annually.

What are the impacts of climate change?

Climate change is already affecting many parts of the globe. A 2007 IPCC report confirms that the intensity and extent of droughts have increased in the past four decades "particularly in the tropics and subtropics." Climate change has been linked to changes in sea surface temperatures, wind patterns, and decreased snowpack and snow cover. The IPCC report also confirms that the Arctic ice area has shrunk by about 2.7 percent per decade since 1978 and that "average Arctic temperatures increased at almost twice the global average rate over the past 100 years."

If nothing is done to halt this trend, we will see even more serious impacts around the globe. As the climate grows warmer, food insecurity will increase in places where

food is already scarce, like many countries in Africa, and will also rise in parts of the world that have seen progress in the fight against hunger, like Latin America. An additional 90 million people who already live in poverty could be at risk of hunger and malnutrition in this century. One to two billion people will face water scarcity this century and by 2020 approximately 250 million will face water scarcity in Africa. Millions of individuals around the world will be at greater risk of contracting diseases such as malaria, dengue fever, and West Nile virus because of climactic changes and increasing ranges for the insects that carry these disease vectors.

Climate change impacts will fall most heavily on those living in poverty and other vulnerable populations who are dependent on their natural environment for their day-to-day survival. Wealthy countries like the United States will be better able to adapt to these changes, but as Hurricane Katrina proved in 2005, even in our country, low income people are highly vulnerable.

What can we do?

Climate change's impact already falls, and will continue to fall, most heavily on the people around the world who are least able to mitigate the impacts—people living in poverty in the U.S. and in developing countries. As a leading industrialized nation that has disproportionately contributed to greenhouse gas emissions, it is incumbent upon us to rectify this injustice through national legislation to reduce global warming that meets the following goals:

- Follow the recommendations of the scientific community to reduce greenhouse gas emissions. Currently this means legislation must ensure that we do not increase the Earth's temperature by more than two degrees Celsius by reducing emissions by between 20 and 40 percent by 2020 and by 80 percent by 2050.

- Protect those living in poverty in the U.S. from the impacts of climate change and climate legislation. Legislation must ensure that low income Americans do not bear the disproportionate burden of increases in energy costs, must ensure that any increased costs do not push more people into poverty, and must provide for those whose jobs are impacted by climate legislation.

- Provide adaptation assistance for those living in poverty abroad. Those living in the most vulnerable developing nations around the world bear little responsibility for global warming and are already feeling the burden of climate change, with little ability to adapt. Through adaptation assistance, the U.S. can prevent the destruction of vulnerable communities around the world and help with climate relief.

Learn more

- IPCC, "Climate Change 2007: The Physical Science Basis, Summary for Policymakers" (February 2007), and IPCC, "Climate Change 2007: Impacts,

Adaptation and Vulnerability, Summary for Policymakers" (April 2007) (available for download at http://www.ipcc.ch/)

- Center for Climate and Energy Solutions, "Global Warming Facts and Figures" (www.c2es.org)
- Union of Concerned Scientists, "Global Warming 101" (www.ucsusa.org)