



# esperanza CLIMATE INITIATIVE

## LATIN AMERICA AND CLIMATE CHANGE

*Fact Sheet by the Evangelical Environmental Network*



Photos by NMO

### INTRODUCTION

Esperanza, the largest Hispanic Evangelical network in the United States, is aware of the problem the world is facing because of global warming. Experts say that the pollution produced from burning fossil fuels is creating an ecological unbalance, causing harsher hurricanes, storms, and floods, which are becoming more common everyday. The climate changes are seen and felt around the globe, but our Latin American brothers and sisters are some of the most affected by this problem. Because of this, and through a partnership with the Evangelical Climate Initiative, Esperanza has made a national Hispanic Evangelical call to action to address global warming. Esperanza's efforts will focus on educating the Hispanic faith community on climate change and on advocating for legislation that will help solve the problem. The organization is developing educational resources for Hispanic pastors, to help them heighten awareness of this issue within their congregations, and to advance action to better protect the environment.

**Latin America** faces serious threats from unchecked global warming. Cities and villages, farms and forests,

mountains and coastlines will experience the impacts of climate change in different ways. Our scientific understanding of why and how global warming occurs is very good, but predicting future impacts of climate change at regional and local levels is much more difficult. Nevertheless, much research has gone into understanding vulnerability to global warming in Latin America. This fact sheet explains some recent scientific assessments of regional climate change impacts.

### Longstanding Climate Vulnerability

Though Latin American countries have made great recent strides in development, poverty and inequality are still problems in many areas. In addition, urbanization, rapid land use change, and a high degree of dependence on

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natural resources mean that much of the population is already vulnerable to disturbances such as extreme weather events. Thirty to forty percent of employment is in the agricultural sector. Much of the socioeconomic progress that has been made is at risk from climate change.

### **Climate Variability**

Climatic variability and extreme weather events have been severely affecting Latin America over recent years. Scientists believe that one effect of global warming is to amplify this variability, to make droughts harsher and longer, and to make floods more serious. This is worldwide phenomenon, and can be seen, for example, in the intense rainfall and flooding in Venezuela in 1999 and 2005 and in the Argentinean pampas from 2000-2002. The Amazonian drought in 2005 is another example.

Many of the current climate change studies indicate that the frequency in the occurrence of extreme events will increase in the future. Many impacts of climate change will be realized as the result of a change in the frequency of occurrence of extreme weather events such as windstorms, tornados, hail, heatwaves, gales, heavy precipitation or extreme temperatures over a few hours or several days.

### **El Niño**

The El Niño/Southern Oscillation (ENSO) is the main driver of short term climate variability in Latin America, and has large impacts on the economy and the well-being of people. El Niño has been associated with increased risk of floods and droughts. The strong El Niño event in 1982-3 was associated with economic losses of up to US\$14 billion worldwide, and up to US\$2 billion just in Peru due to the devastating effects on fish stocks. Scientists believe that climate change will increase the frequency and severity of El Niño events.

### **Agriculture, Food and Nutrition**

Agricultural crop production could suffer by as much as 30% in Mexico because of global warming, according to crop-simulation models, depending on climate variability. Heat stress and dry soils could reduce yields by up to a third in tropical and subtropical regions where crops are already at their maximum heat tolerance. By 2050, fifty

percent of agricultural lands in Latin America and the Caribbean could be subject to desertification and salinization, affecting food supply and nutrition for many people. As demand for irrigation water increases, agricultural uses will compete with domestic uses of water, raising prices and decreasing supply

### **Water**

Over 70 million people in Latin America are already without safe water supply. In the next decade scientists are very sure that the Andean inter-tropical glaciers are likely to disappear compromising water availability in the region. Combined with other changes in rainfall, within two decades, tens of millions more people could be experiencing water stress due to climate change. By the 2050s the number could climb to 100 million or more people experiencing water stress. To avoid water stress, many of these people could decide to migrate to other areas, raising the potential for social conflict.

### **Coastal Areas**

The rates of sea-level rise have been increasing in the past 10-20 years, and will have an adverse impact on low-lying areas, coastal areas dependent on tourism, mangrove and estuary systems which are nurseries for economically important fish populations, and which will create salt-water intrusion on fresh water supplies and groundwater supplies in vulnerability areas. Coral reefs in Mexico, Belize, and Panama, important for fish production, will be particularly hard hit, as will the location of fish stocks in the southeastern Pacific.

### **Tropical Storms and Hurricanes**

Hurricane Mitch hit Central America in 1999 and caused economic destruction in Honduras and Nicaragua equal to their combined GDPs. Only 25% of rural households had sufficient food after the hurricane. Warmer oceans are expected have an effect on the strength, and perhaps on the duration, of hurricanes. Stronger winds and more intense rains are fueled by warmer sea surface temperatures. Frequency of hurricanes may not be affected.

### **Disease and Health**

The main climate impacts on human health other than hunger and water stress will be in the areas of heat stress,

malaria, dengue, cholera and other water borne diseases, and deaths from flooding in coastal areas. Changes in the incidence of malaria are uncertain and depend on geographic location. Models predict a substantial increase in the number of people at risk from dengue fever in Mexico, Brazil, Peru and Ecuador. In Bolivia, El Niño events have precipitated cholera and salmonella episodes, and in Venezuela and Columbia El Niño events have been shown to be correlated with malaria cycles.

As elsewhere in the world, warming will contribute to an increased frequency of forest fires, which aside from their destructive economic impact have strong effects on those with breathing problems. The urban “heat island” effect is exacerbated by deforestation, urbanization and global warming, and high atmospheric temperatures over urban areas lead to thermal inversions and the accumulation of air pollution such as smog, which strongly influences asthma.

## Conclusion

Along with national and international efforts to control climate change by limiting the emissions of greenhouse gases, adaptation assistance to regions like Latin America should be a high priority. Development strategies must take account of the climate impacts and dangers which are already more likely to occur, and efforts to make development “disaster-proof” are necessary. There are many components to an adaptation strategy, including “conservation of key ecosystems, early warning systems, risk management in agriculture, strategies for flood, drought, and coastal management, and disease surveillance systems.”

Christians in the U.S. have many personal relationships and cultural ties with Latin Americans, and they care deeply for Latin America through their support for missionaries, relief and development workers, local Latin American churches, and helpful government policies. Global warming will make the efforts of Christians and others to help the poor and improve the lives of average Latin American much more difficult. Hard-fought gains will be wiped out, successes turned to losses. The conclusion is obvious: anyone concerned for the people of Latin America should work now to reduce the impacts of climate change.

## About Esperanza

Esperanza is the largest Hispanic evangelical network in the United States. With a national network of 12,000 Hispanic faith-based and community organizations, Esperanza is one of the leading voices for Latinos in America. The organization has made a difference on thousands of lives and hundreds of organizations since its inception in 1987. Committed to the spiritual, educational, and social development of the Hispanic community, Esperanza works to assist low and moderate income families and individuals through out the United States, with a variety of services focused on Community Development, Capacity Building, Workforce Development, Education, and Advocacy. Esperanza’s mission is to strengthen the Hispanic community by serving and advocating for the “least of these” (Mathew 25:40), the underserved and marginalized. For more information about Esperanza, visit us at [www.esperanza.us](http://www.esperanza.us).

We thank our partners, the **Evangelical Environmental Network** and their Evangelical Climate Initiative (ECI) for the creation of this resource.

## FOOT NOTES

1. *UK Department for International Development (UK-DFID), Key Sheet on Climate Change and Poverty, Chapter 12, “Climate Change in Latin America”, <http://www.dfid.gov.uk/pubs/files/climatechange/12LatinAmerica.pdf>*
2. *Magrin, G., C. Gay Garcia, D. Cruz Choque, J.C. Gimenez, A.R. Moreno, G.J. Nagy, C. Nobre, and V. Villiamizar, 2007: Latin America. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel of Climate Change, M.L. Parry, O.F. Canziani, J.o. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 583.*
3. *P. 594*
4. *IPCC 2007 Latin America Chapter, p. 584.*
5. *UK-DFID, p. 2.*
6. *IPCC 2007 Latin America Chapter, p. 597*
7. *P. 583*
8. *Between 7 and 77 million people, IPCC 2007 Latin America Chapter, p. 583*
9. *IPCC 2007 Latin America Chapter, p. 597*
10. *IPCC 2007 Latin America Chapter, p. 584*
11. *UK-DFID, p. 2.*
12. *IPCC 2007 Latin America Chapter, p. 599*
13. *UK-DFID, p. 3*
14. *IPCC 2007 Latin America Chapter, p. 600.*
15. *IPCC 2007 Latin America Chapter, p. 584*