

# United Nations Framework on Climate Change: COP 22

## Position Paper

Bolivia is a small nation in South America. Nestled between Peru, Chile and Brazil, it is one of poorest countries on the continent. But what it lacks in wealth, it makes up for in ecological diversity. Bolivia is home to the Andes mountain range, Amazon rainforest, plains and many lakes and rivers. But climate change threatens it all, and the 10.67 million people living there. Climate change has already had a very negative impact, melting water-giving glaciers, drying lakes, spreading diseases and driving people out of their homes. Climate change needs to be negated, and Bolivia must adapt to the changes already occurring. To do this an analysis of the impact climate change has had and will have on the land, human health and living needs to be done. A generic plan for adaptation has been developed, along with a National Disaster Emergency Plan. There are already laws in place to guard against further destruction to the environment.

Bolivia is especially vulnerable to climate change. The effects are felt acutely in the environment. The surface-temperature rise has tripled since the 1970's, which has lead to the increasing speed of melting of glaciers in the mountains. These glaciers provide water and hydroelectric power to Bolivians. The glaciers in the Andes regions have already melted 40%, and the effects are already stressing the water and hydropower supply. Tuni Condoriri, the principal glacier providing water and power to the capital city La Paz and its neighbor El Alto, is predicted to be fully melted by 2045. That is 2 million people in an impoverished country who will have even more limited water and power supplies. The melting glaciers and shortened water supply have already begun to stress the agriculture in Bolivia, a land already ill-suited to agriculture. This is further reducing food security. While this is adversely affecting everyone, it is especially taxing for the women and children. They are already vulnerable and do not have the means to support themselves without climate change cutting their food supply. The changing weather patterns -a short rainy season followed by a long drought- is making crops more vulnerable to disease and pests. One of the most productively grown crops in the Bolivian highlands, barley, is being endangered by the long droughts. The highland droughts are also affecting all the other crops grown. These droughts are getting increasingly harder and longer. The long droughts have also increased the risk of forest fires. The drought events of 2005 and 2010 have rendered the Amazon rainforest carbon-neutral, which means that the forest is not taking in more carbon than it absorbs, which it did before. 50% of Bolivia is Amazonian, and deforestation of the Amazon is adding to the effects of climate change. Not only is cutting down the trees ruining one of the world's largest carbon sinks, but is also increasing the risk of flooding. Bolivia has experienced 10 of its worst natural disasters

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within 3 years, and with climate change continuing to wreak havoc on the land, the worst is yet to come.

The threat to human health due to climate change runs parallel to the threat to the environment. In addition to the melting glaciers reducing power and water supply, the decrease in food security and the worsening air quality, climate change has also lead to an increase in vector-borne disease. Before the temperature rose, much of the Andes region of Bolivia was too cool for disease vectors to survive. But with the rising temperature, the vectors have started to spread to those regions, and have brought the disease with them. The primary vector that has spread is the mosquito. The mosquitoes that spread to the Andes also carry Malaria, a disease which has never been a problem in the highlands. Due to the lack of experience with this disease, the people located there do not have the means to treat Malaria. The recent rise of temperatures are the cause for the spread of Malaria. People who contract the disease must be brought to the urban areas for treatment, which promotes the spread of many other illnesses. The rise in temperatures also may encourage the re-emergence of diseases already under control or eradicated.

The effect of climate change on Bolivia is being felt by everyone, giving rise to 'climate refugees'. These 'refugees' are, in reality, internally displaced persons (IDPs). 60% of Bolivia's population are indigenous peoples, and they are the ones being forced to leave their lands. Because of the severe poverty in both urban and rural settings, the IDPs are often forced to live in dangerous, unsanitary shanty-towns. Two prime cases of IDPs are the Uru-Murato peoples of Lake Poopo/ and the rural farmers around El Alto. Since January 2016, Lake Poopo/ has all but dried up. The fish had all been killed in previous years when a storm stirred up silt in the shallow lake, and when the lake dried, all the ducks and flamingoes died. The Uru-Murato had lived there for centuries, living off the fish and waterfowl supported by the lake. But with Lake Poopo/ gone due to rising temperatures and increasingly frequent El Nino events, the people have nothing to live on. This prompted a mass exodus to the urban cities. In the 1950's El Alto was a village; now it has more than 1 million people. The land around El Alto was used for farming, but climate change has pushed people away from their failed crops and into the impoverished city. These two significant cases of IDPs are not the only people made vulnerable by climate change. If there is no decline in climate change and improvement of ecological conditions, it is predicted that there will be many more IDPs in Bolivia.

Climate change cannot be negated in a very short period of time, and to survive in that period of time requires adaptation. Bolivia has laid out a general adaptation plan which involves four sectors: the environment, food security, water security, and human

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health. Environmental adaptation works to preserve the environment as much as possible. This includes establishing protected zones, biological corridors, and to monitor microclimate. A large part of keeping the environment steady is regulating land usage. Water safety is a large concern, and many adaptation techniques are focused on storing water or finding a new source. Building water collection and treatment facilities for periods of heavy rainfall, regulate water usage, research for new water sources and research into adopting indigenous techniques for sourcing and retaining water. Food security will be strengthened by developing a warning system for food shortages, short term and long term resource management, and implementing new irrigation techniques, which involves overlap with water safety. Human health is more complicated, as IDPs and vector-borne disease patients coming into cities creates complications. There will be more monitoring of disease to limit spread. A change to the healthcare system and infrastructure would need to be made to give rural communities access to healthcare better prepared to deal with vector-borne diseases. There would need to be better urban planning to accommodate the people coming into the cities. The shanty-towns constructed by the migrants are dangerous to health. Inequality between the richer and the impoverished and between men, women and children would also need to be dealt with.

Bolivia's National Disaster Emergency Plan (NDEP) has very similar goals to their adoption plan. The people living in rural areas are the ones who would feel the effects most strongly. Building better infrastructure between rural communities and urban cities is a priority. When it rains more heavily than usual during the wet season, all the current roads and paths flood, effectively isolating rural communities without supplies. With proper infrastructure, flooding will have less of an effect on people's movements between communities. Better access to healthcare in rural communities is also part of the plan. This would enable people to get local treatment. Giving ill people treatment in their communities will keep them from going to cities for treatment and help prevent the illness from spreading. Better meteorological detection is necessary. Natural disasters and extreme weather events cause the most severe short-term damage. The number of extreme weather events has been increasing with climate change, and having equipment to detect weather events would give people time to prepare for a weather disaster.

Bolivia is responsible for only 0.04% of the world's carbon emissions, but is still implementing laws and ways to reduce its carbon emissions and protect its environment. While the environmental issues caused by poverty and inequality are extremely difficult to solve, issues caused by deforestation, mining, etc. are easier to resolve. Bolivia's Law of Mother Earth states that living systems (humans and

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ecosystems together) have legal rights to clean air and water. With climate change, carbon emissions and pollution at the current levels, those will soon be violated. The New Constitution is another Bolivian law stating that people have the right to live in a clean environment. The law contains some environmental goals, and a clause, which states that people also have the right to free information regarding these goals and how to implement them. This law encourages Bolivians to keep participate in limiting their environmental impact and spreads awareness of climate change and other issues. Several non-governmental organizations (NGOs) are working to on climate change and environmental issues. Some of these NGOs receive donor support from a Swedish-supported network organization called LIDEMA. But Bolivian government has deviated somewhat from these laws and goals. The Unity Pact, signed by the government and indigenous peoples which protects land rights and reforms, is one example of this. Two indigenous groups have formally left the pact, claiming that the government is listening and ratifying only its own proposals. The government has also privatised a portion of its natural resource sector, which brings in money, but relieves the well-being of the land out of their concern. There are many conflicts regarding the conservation of the land and who the land and resources actually belong to. The Bolivian government has also become lax in assessing, requiring and submitting reports regarding climate change and the preservation land. That will need to change to push for more compliance to the laws.

Bolivia is a country gravely affected by climate change. The effects are felt throughout the environment and are manifesting as reduced carbon absorption, melting glaciers, violent weather, and an increase in vector-borne diseases. This is all negatively affecting human health by spreading diseases people are not prepared for, limiting water, power and food supply, and displacing people from their homes. A climate change adaptation plan has been laid in place and closely correlates with Bolivia's NDEP. Both cover human health, the environment, water safety and food safety as their main concerns and goals. Bolivia has already developed several laws to protect the environment and encourage people to do their part, though some corruption and privatization is inhibiting the positive effects of the laws. One of the largest issues holding back the country is the mass poverty and inequality. Though Bolivia has far to go in strengthening and implementing their policy, they have taken steps in the right direction.

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### Works Cited

Bolivia Climate Change Poverty and Adaptation | CAKE: Climate Adaptation Knowledge Exchange. (n.d.). Retrieved November 09, 2016, from <http://www.cakex.org/virtual-library/bolivia-climate-change-poverty-and-adaptation>

Bolivia: Impacts by Sector. (n.d.). Retrieved November 06, 2016, from <https://www.weadapt.org/knowledge-base/national-adaptation-planning/bolivia-impacts-by-sector>

@. (2016, July 11). Bolivia's Lake Poopó Is Dry, Another Victim of Climate Change. Retrieved November 06, 2016, from <https://weather.com/news/climate/news/lake-poopo-bolivia-dries-up>

BOLIVIA NATIONAL CLIMATE CHANGE ADAPTACIÓN MECHANISM. (n.d.). Retrieved November 5, 2016, from [https://unfccc.int/files/adaptation/sbsta\\_agenda\\_item\\_adaptation/application/pdf/bolivia\\_rome\\_poster.pdf](https://unfccc.int/files/adaptation/sbsta_agenda_item_adaptation/application/pdf/bolivia_rome_poster.pdf)

Casey, N. (n.d.). Climate Change Claims a Lake, and an Identity - The New ... Retrieved November 6, 2016, from <http://www.nytimes.com/interactive/2016/07/07/world/americas/bolivia-climate-change-lake-poopo.html>

Climate Change. (n.d.). Retrieved November 07, 2016, from <http://www.boliviainfoforum.org.uk/inside-page.asp?section=3&page=48>

Climate change impacts: Bolivia - Oxfam GB. (n.d.). Retrieved November 9, 2016, from [http://www.oxfam.org.uk/~media/Files/Education/Resources/Making the Change/Climate Change Impacts.ashx](http://www.oxfam.org.uk/~media/Files/Education/Resources/Making%20the%20Change/Climate%20Change%20Impacts.ashx)

Environment and Climate Change in Bolivia. (n.d.). Retrieved November 6, 2016, from <http://sidaenvironmenthelpdesk.se/wordpress3/wp-content/uploads/2013/06/Bolivia-Environmental-Policy-Brief-Final-May-2013.pdf>

In the Crosshairs: Climate change vulnerability in Bolivia. (n.d.). Retrieved November 09, 2016, from <http://climatechange.democracyctr.org/in-the-crosshairs-climate-change-vulnerability-in-bolivia/>

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JOINT MITIGATION AND ADAPTATION MECHANISM: 'SUSTAINABLE FOREST LIFE'

(n.d.). Retrieved November 7, 2016, from

[http://unfccc.int/files/meetings/ad\\_hoc\\_working\\_groups/lca/application/pdf/submission\\_bolivia\\_redd.pdf](http://unfccc.int/files/meetings/ad_hoc_working_groups/lca/application/pdf/submission_bolivia_redd.pdf)

Kinver, M. (2016, July 22). Drought 'shuts down Amazon carbon sink' Retrieved November 06, 2016, from <http://www.bbc.com/news/science-environment-36856428>

Slunge, D., & Walter, S. V. (n.d.). Environment and Climate Change in Bolivia. Retrieved November 7, 2016, from

<http://sidaenvironmenthelpdesk.se/wordpress3/wp-content/uploads/2013/06/Bolivia-Environmental-Policy-Brief-Final-May-2013.pdf>

Vidal, J. (2011). El Alto, city of rural migrants whose crops failed when the climate changed | John Vidal. Retrieved November 09, 2016, from

<https://www.theguardian.com/global-development/poverty-matters/2011/apr/12/bolivia-crop-failure-climate-change>