

## Climate Change and Bolivia

Bolivia is one of Latin America's poorest and least developed countries, but it is engaging forcefully in international debates on climate change and sustainable development. Although responsible for only 0.04% of global greenhouse emissions, the impact of climate change is already being felt across Bolivia's diverse climatic regions, ranging from mountainous highlands to Amazonian forest.

Since the social and environmental impacts of climate change often overlap or interconnect, many Bolivians face a series of deteriorating conditions that hit those who are already in situations of poverty and vulnerability hardest.

### Glacial melt and water scarcity

- Increasing temperatures, due to global warming, have resulted in glacial melt and retreat in the Bolivian Andes. A recent scientific study shows that 376 glaciers collectively lost 48% of their surface area between 1975 and 2006.
- Glacial melt is leading to potential problems of water scarcity as many rivers and reservoirs are fed by run-off from Andean glaciers.
- This has serious implications for the provision of potable drinking water and the generation of hydroelectric energy.
- The *Tuni* and *Condoriri* glaciers provide drinking water for the cities of La Paz and El Alto. However, *Tuni* and *Condoriri* are expected to have fully disappeared by 2025 and 2040 respectively.
- Hydroelectric plants fed by run-off from the *Zongo* glacier provide a quarter of Bolivia's electricity supplies. It is estimated that *Zongo* is currently receding by 33 feet a year.
- In rural areas, water scarcity is affecting agriculture. Diminishing water supplies raise the likelihood of permanent rural depopulation.

### Weather unpredictability and extreme conditions

- Increasing climatic unpredictability is leading to the destabilisation of agricultural production.
- In the highlands, the annual seasons are no longer defined by specific weather characteristics such as the rainy or icy seasons. Rains arrive late and irregularly. Hailstorms and frosts are becoming more frequent and can happen at any time.
- From flooding to drought, increasing climatic unpredictability is increasing the frequency and magnitude of extreme weather conditions and the risks of 'natural' disasters.



Bolivia's *Chacaltaya* glacier in July 1996 (left) and July 2009 (right) (BBC/Edson Ramirez)

- The worst flooding in 25 years engulfed the Bolivian lowlands in 2007. According to the International Red Cross, 40 people were killed and 340,000 people were affected and displaced. Dengue fever outbreaks increased.
- The Bolivian government reported a \$400 million loss from its 2007 GDP as a result of the flooding.
- In 2008 the southern parts of Potosi and Tarija departments experienced dramatic water shortages, causing the onset of severe drought.

### Agriculture

- Yields of staple crops such as potatoes and the quinoa grain have been decreasing, reducing the capacity of domestic food production. This is due to both weather unpredictability and crop destruction owing to extreme weather conditions.
- New diseases, originally from warmer lowland sub-tropical and tropical regions, are damaging highland crops and livestock elsewhere.
- Native flora and fauna, which act as indicators for sowing or harvesting seasons, are becoming extinct. As a result centuries-old, ancestral methods of "knowing the climate and the land" are becoming inapplicable.

### Health

- Research has demonstrated links between changes in climate and increasing water-borne, respiratory and vector-borne diseases including malaria, dengue fever and Chagas disease.
- In Bolivia, dengue is of particular concern. The 2009 dengue fever outbreak reached areas not previously affected.

The Bolivian government and civil society are responding to climate change with approaches which include local scale initiatives, national programmes and international lobbying. President Evo Morales, in particular, is projecting Bolivia's position in the international arena, with arguments in favour of respect for the environment and rejection of excessive consumerism.

### International policy

The Bolivian government's strategy to tackle climate change involves four main objectives:

- **Integrated global financial system.** 'Developed' countries should give at least 1% of their GDP to help 'developing' countries make the necessary adaptations to achieve a low emission economy and society. This 1% should be in addition to existing overseas aid commitments. The key objective should be to hold 'developed' countries accountable for their historical responsibility for greenhouse gas emissions.
- **Technology transfer.** New green technologies should be made easily available and affordable for 'developing' countries so that they can make the necessary adaptations.
- **Mitigation and adaptation.** These should prioritise community and local interventions, heeding the UN Declaration on the Rights of Indigenous Peoples.
- **A World Environment and Climate Organisation** should be formed to promote an alternative, environmentally-friendly model of development that ends the dominance of existing multilateral trade and finance institutions.

### National policy

The Bolivian government's National Programme on Climate Change was founded in 1995. Its strategies focus on adaptation, mitigation and investigation.

- **The National Climate Change Adaptation Programme** aims to promote socio-economic development, especially in rural areas, in sustainable ways. Adaptation programmes are focused in five key areas: water resources, food security, health,



Flooding in eastern Bolivia, February 2008 (Photo: CAFOD)

natural resource management and ecosystem adaptation.

- **Mitigation policies** emphasise clean development programmes, using renewable and green technologies, which are facilitated by technology transfer and financial support from 'developed' countries.
- Continued **investigation** into the impacts of climate change in Bolivia, financed by both public and private sectors, so as to better inform mitigation, adaptation and climate change projects.

### Civil Society

The Bolivian Civil Society Platform on Climate Change is an initiative coordinated by the key social and indigenous movements. It aims to:

- Provide a unique space to discuss climate change issues and give a voice at both the national and international level to those who are already suffering the impacts of climate change.
- Influence national policy making so that plans for mitigation and adaptation to climate change respond to the needs of those most affected.
- Use the platform in ways that inform international decision making, so that policy is geared towards those who are most vulnerable and exposed to climate change.

### Some examples of national level policies

- ⇒ The recent discovery of an estimated 5.4 million tonnes of lithium in Bolivia's southern highlands provides great hope for the development of green technologies on Bolivian soil. Lithium, the key ingredient in renewable technologies such as electric cars, has the potential to be a key resource for a low-carbon future. The government is currently developing a trial project of lithium extraction and plans to construct battery production plants in Bolivia itself.
- ⇒ Given the likely increase in natural disasters, the government has passed a law stating that up to 0.15% of General Treasury funds can be used to provide emergency relief following natural disasters, including outbreaks of disease.
- ⇒ The government is moving towards the decentralisation of energy sources to replace large-scale energy-intensive electricity plants. In the sub-tropical town of Coroico, micro-scale hydropower plants have been built that can provide energy for up to twenty families and a small production mill.