The Nature Conservancy
Protecting nature. Preserving life.™

Combating Climate Change in Bolivia

The loss of forests and other land use changes contribute about one-fifth of the carbon dioxide (CO_2) released into Earth's atmosphere each year. Protecting standing forests is a necessary and important part of any comprehensive approach to decreasing atmospheric CO_2 levels and reducing the impacts of climate change.

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Protecting Forests to Reduce Global Warming

Noel Kempff Mercado Project Snapshot

Location: Noel Kempff Mercado National Park, Bolivia

Size: 1.5 million acres (642,500 hectares)

Emissions Reduction: Prevents the release of 5.8 million tons of CO_2 over 30 years

Conservation Benefit: Preserves a diverse forest ecosystem

Community Benefit: Provides alternative, sustainable economic opportunities

Partners: Fundación Amigos de la Naturaleza (project manager); Government of Bolivia, American Electric Power Company, BP, PacifiCorp (investors); Winrock International Institute for Agricultural Development (carbon monitoring); Société Générale de Surveillance (verification)

The Noel Kempff Mercado Climate Action Project in Bolivia is designed to simultaneously address climate change, conserve biodiversity and bring sustainable development benefits to local communities by avoiding logging and agricultural land conversion. The 1.5 million acre project in the Noel Kempff Mercado National Park is the largest effort of its kind, expected to prevent the release of up to 5.8 million tons of carbon dioxide into the atmosphere over 30 years.

In 2005, Noel Kempff Mercado was the first forest emissions reduction project to be verified by a third party based on international standards, demonstrating that protecting forests can achieve verifiable emissions reductions by preventing the release of carbon that is stored in the living biomass of forests. In addition to reducing carbon emissions, the project:

- Doubles the range for species requiring large tracts of land including the Brazilian tapir (*tapirus terrestris*) and jaguar;
- Decreases soil erosion and future agricultural runoff into the park's rivers;
- Provides a community support program that aids in the development of sustainable management and use of natural resources, as well as job opportunities in the park; and
- Assists local communities in their efforts to attain legal status as indigenous people and to secure land tenure.

Validating Emissions Avoided by Noel Kempff Mercado Climate Action Project

In 1997, The Nature Conservancy and Fundación Amigos de la Naturaleza created the Noel Kempff Mercado Climate Action Project to protect 1.5 million acres of tropical forest that were threatened by timber harvesting and deforestation. Together with the Bolivian government and three energy companies, the partners terminated the logging rights and incorporated the land into a national park. The partners also enforced a deforestation ban in protected areas within the park by reducing slash-and-burn agriculture and initiating alternative income programs for the surrounding communities.

Additionality: The project provides carbon financing to stop logging in the park and deforestation around communities. Without this funding, these activities would have continued, leading to the loss of forest cover and release of carbon dioxide. To determine the total emission reductions that are additional to business as usual activities, baseline rates of deforestation were developed by calculating historical deforestation rates (detected from satellite images) and applying those rates in a detailed land use change model to project future deforestation. Also a detailed national-scale model of Bolivian timber markets was created to develop baseline rates of logging.

Leakage: The project was designed specifically to address the risk of leakage. An agreement with the former timber concessionaires requires them to report on the compensatory funds they received to cease operations and to cooperate on sustainable forestry practices on their logging concessions outside the project area. Project partners are also working with local communities to create economic opportunities that provide an alternative to encroaching on other forest lands.

Validating Forest Carbon Projects

Additionality: Refers to the amount of carbon dioxide captured, stored or prevented from reaching the atmosphere compared to what would happen under business as usual practices.

Leakage: Occurs when the project causes carbon-emitting activities to be shifted to another location, canceling out a portion or all of the project's carbon benefits.

Permanence: Refers to how robust the project is to potential changes that could allow the stored carbon to be emitted, as well as to the ability of the project to offset any emissions associated with such changes. The most desirable carbon sequestration projects are those where the protected land is likely to remain intact indefinitely.

Carbon inventories and monitoring: Refers to the periodic assessment of the net difference between carbon stored with the project activities and the carbon that would have been stored without the project activities. The difference, when extrapolated across the project area and adjusted for leakage, represents the greenhouse gas benefit of a project.

Verification: Occurs throughout the life of a project to ensure it meets its intended goals of carbon sequestration, increased biodiversity and sustainable livelihoods.

The baseline land use change model was applied to a reference area adjacent to the project boundary. The land use change model, when coupled with monitoring based on satellite images, is used to detect potential leakage of deforestation activities outside the project boundaries. The national-scale baseline model of Bolivian timber markets was applied to quantify leakage that might develop across Bolivian timber concessions arising from the setting aside of the forest concessions in the project boundaries. From 1997 to 2005, project partners calculated a loss of 171,618 tons of CO_2 from leakage and this loss was factored into the calculation of the net carbon benefits from the project.

Permanence: The project's carbon benefits are expected to last in perpetuity as the site lies within the newly expanded national park and a permanent endowment has been established to fund protection activities throughout the 30-year life of the project and beyond.

Monitoring: The project design includes a comprehensive plan to monitor forest carbon stocks, socioeconomic impacts, development of timber markets and deforestation rates. Monitoring and third-party verification show that from 1997 to 2005, 1,034,107 metric tons of CO_2 that are stored in the forest would have been released into the atmosphere if not for the project.

Verification: In 2005, the Noel Kempff Mercado Climate Action Project was the first forest emissions reduction project to be verified by a third party, Société Générale de Surveillance, applying rigorous standards based on those used in the Clean Development Mechanism of the Kyoto Protocol.

Allocation of Carbon Credits

The Government of Bolivia, American Electric Power, BP, and PacifiCorp share the reporting rights to the emission reductions associated with the project.

Forest Carbon: A Credible and Critical Climate Change Solution

Forest carbon projects, such as the Noel Kempff Mercado project, demonstrate that forest carbon is an effective and feasible part of an overall solution to climate change. The Nature Conservancy believes that effective international and U.S. climate change policy frameworks must achieve significant reductions in emissions from all major sources, create incentives to reduce emissions from deforestation and to absorb carbon from the atmosphere by restoring forests, and support nature-based strategies and funding to help people, plants and animals adapt to the impacts of climate change.

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