

# Climate Change and Conservation

## Protecting Ecosystems for a Healthy Planet

**Around the world,  
every species and  
every ecosystem  
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to survive.**

Human-induced global climate change is the greatest threat to the long-term health of the Earth and all its biological diversity, including people. The Nobel Prize-winning U.N. Intergovernmental Panel on Climate Change (IPCC) has documented how global warming harms biological diversity—the web of life on Earth—and projects worsening conditions in coming decades.

Around the world, every species and every ecosystem depends on specific climatic conditions to survive. People depend on these abundant species and healthy ecosystems for their daily sustenance, including clean air, fresh water and food. In the current climate change crisis, species and ecosystems are under severe strain, with the world experiencing the highest extinction rates in human history.

Earth's natural ecosystems have historically regulated the global climate. Now the addition of huge amounts of human-induced greenhouse gases has overwhelmed the planet's ability to maintain a healthy climate. A logical, cost-effective and immediate climate change strategy is to protect healthy ecosystems while aggressively reducing greenhouse gas emissions.

Even if instant remedies were possible, some irreversible damage already is occurring. Temperatures are rising, causing greater frequency of environmental disturbances such as hurricanes, flooding, fires and drought. Ocean warming is melting the polar ice caps, raising sea levels and bleaching coral reefs, and increased extinctions of species harms functioning ecosystems and the natural benefits they provide.

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### CI's Mission

Conservation International believes that the Earth's natural heritage must be maintained if future generations are to thrive spiritually, culturally, and economically. Our mission is to conserve the Earth's living heritage — our global biodiversity — and to demonstrate that human societies are able to live harmoniously with nature.



IGUACU FALLS NATIONAL PARK, ATLANTIC FOREST, BRAZIL ©CI/JOHN MARTIN

**Conservation International (CI) believes it is the responsibility of everyone – governments, international organizations, corporations, private citizens – to work together to prevent the potential catastrophic impacts of climate change.** The response needed is far greater than what has occurred so far. The U.N. Framework Convention on Climate Change (UNFCCC) COP 13 meeting in Bali, Indonesia, offers a crucial late-hour opportunity for global agreement on the way forward to protect our planet, the only home we have.

The UNFCCC adopted the Kyoto Protocol in 1997, committing the participating industrialized countries to reduce their collective emissions 5 percent below 1990 levels by 2012. Developing countries are not required to reduce greenhouse gas emissions under the Kyoto Protocol, but can generate reductions and sell them to developed countries interested in offsetting their own fossil fuel emissions. Today, there is a wider public awareness of the issue and increasing appreciation of what must be done to tackle it. The Kyoto Protocol expires in 2012, and the UNFCCC COP 13 in Bali is expected to determine the parameters for a framework to succeed it.



**FIRES IN THE AMAZON ©CI/HAROLDO CASTRO**

## What must be done?

Human-induced CO<sub>2</sub> emissions are the largest contributor to current climate change, accounting for approximately 70 percent of total greenhouse gas emissions. These emissions are from a variety of sources, including fossil fuels such as coal that provide energy, gasoline that powers transportation, and the burning and clearing of tropical forests for agriculture, grazing and industrial development.

Scientific assessments call for stabilizing the concentration of greenhouse gases in the atmosphere at 450 parts per million or lower to prevent catastrophic environmental harm.

Achieving that level will require immediate and aggressive reductions in emissions by all major sources. By incorporating new and innovative solutions – particularly those traditionally overlooked – we can achieve significant gains in the near term at reasonable cost.

Industrialized countries must achieve greater emissions reductions than ever considered in the past. Developing countries, meanwhile, need improved land-use policies and agriculture practices, investment in new clean-energy technologies and proper accounting for the environmental impact of infrastructure and other development. In addition, all planning and strategies must recognize that climate change has the greatest negative impact on the world's poor, who are most vulnerable. The underlying motivation of a global climate change strategy must be the realization that failing to act effectively today will bring exponentially greater costs in the future.

## Mitigation

Actions to halt and revert the process and impacts of climate change, known as mitigation, focus on direct steps to reduce greenhouse gas emissions. One of the most significant long-term mitigation strategies involves reducing human dependence on fossil fuels for industrial and societal development. The most recent UNFCCC meeting, in Vienna in August 2007, suggested that industrialized countries should set emissions reduction targets of 25 to 40 percent below 1990 levels by 2020. CI supports formal adoption at the Bali meeting of this target, or an even more aggressive one. In addition, **CI supports binding emissions reductions targets for all industrialized countries, and encourages agreement on emissions reductions targets for developing countries.**

Without the participation of all stakeholders, there is little chance of stabilizing and reducing greenhouse gas emissions in time to save threatened biological diversity and restore functioning and healthy ecosystems. All major emitters and sources must be included in a post-2012 agreement on climate change, and all major industrialized nations should join such an international agreement.

**A new global climate change agreement also must recognize and respond to the role of tropical deforestation in climate change.** Tropical deforestation is the largest greenhouse gas emission source excluded from the Kyoto Protocol, and the international community must not again overlook reducing emissions from deforestation as an essential mitigation strategy. As noted by the Stern Review on the Economics of Climate



ORANGUTAN IN TREE ©CI/HAROLDO CASTRO

Change in 2006, reducing deforestation combined with restoring degraded landscapes and encouraging good forest and land management practices is a cost-effective and immediate way to decrease global greenhouse gas emissions.

## Adaptation

Climate change is happening now, requiring immediate and substantial efforts to help humans and all other life on Earth adapt to altered environments. Warming and acidification of the global ocean, as well as changes in the Earth's temperature and weather patterns, are affecting freshwater availability, food security, habitats, economic opportunity, recreation and general well-being—often in critical ways. The IPCC indicates that global warming and sea level rise will continue for centuries even if emissions were to stabilize today. Therefore, adaptation actions are essential to help communities and ecosystems moderate, cope with, or take advantage of actual or expected climate changes.

**Adaptation activities must include projects specifically designed to preserve ecosystems and the biological diversity on which we rely.** For example, mangroves prevent salinization of freshwater as sea levels rise; coral reefs buffer coastal areas from increasingly intense storm surges; and forests recharge aquifers and maintain soil moisture even as precipitation patterns change. In addition, adaptation measures should be for economic as well as environmental benefit. Conserving healthy ecosystems and the services they provide, such as fresh water, is much less expensive than trying to replicate them.

**CI believes that current adaptation investments and financing are insufficient to deal with the scale of the**

**problem, and supports the creation of a sufficiently funded global financing mechanism for this purpose.**

## The role of deforestation in climate change

The United States, China, the European Union countries, Indonesia and Brazil account for more than half the world's greenhouse gas emissions, mostly CO<sub>2</sub> from combustion of fossil fuels for industrial processes, and methane and nitrous oxide emissions from agriculture, livestock and waste. However, Indonesia and Brazil are unique among top emitters because most of their CO<sub>2</sub> output comes from the burning and clearing of tropical forests.

In fact, tropical deforestation accounts for at least 20 percent of total greenhouse gas emissions, which is more than all the world's cars, trucks, trains and airplanes combined. Rain forests have a complex role in climate change. Through photosynthesis in plants, they absorb and store atmospheric CO<sub>2</sub> in the form of living biomass, woody debris, litter and soil organic matter. Existing and growing tropical forests have a positive climate-regulating role by actively removing and storing atmospheric CO<sub>2</sub>. When destroyed, however, they release and emit their stored carbon into the atmosphere, along with carbon from the soil below them.

Protecting tropical forests also conserves the biological diversity they contain and helps poor people who depend on them to better cope with the impacts of climate change such as more powerful storms, drought and species extinctions. In addition, tropical forest conversion for any other use, such as grazing and agriculture, inevitably results in a net increase in CO<sub>2</sub> emissions from both the carbon released in destroying the original forest and the activities of the altered land use.

## Protecting tropical forests as a mitigation and adaptation strategy

CI believes that deforestation emissions must be included in any post-2012 climate change framework. Under the Kyoto Protocol, only the carbon storage of newly planted or replanted forests is eligible for credits that can be traded for offsets. This prevents carbon-rich but cash-poor developing nations from marketing a revenue-generating carbon service. A new global climate change framework must correct the oversight by also making the potential emissions of intact tropical forests eligible for tradable credits.

In addition, combining reforestation/restoration activities with efforts to prevent the cutting and burning of standing tropical forests brings economic benefits to local communities while reducing atmospheric carbon and protecting biological



COMMUNITY MEMBER LIVING NEAR THE SAPO NATIONAL PARK ©CI/MICHAEL MATARASSO

diversity. CI supports global financing mechanisms to help prepare tropical forest-rich countries to participate in future global climate agreements.

CI also believes a mechanism to reduce emissions from tropical deforestation must include nations that have traditionally been high emitters from deforestation, such as Brazil and Indonesia, along with those with low deforestation and huge areas of standing tropical forests, such as Guyana and Democratic Republic of Congo. Without incentive to protect their forest resources, the low deforestation countries are likely to succumb to increasing pressure from traditional drivers of deforestation such as the international timber trade and biofuel production. The resulting shift in deforestation from one place to another, known as leakage, prevents any net reduction in greenhouse gas emissions and imperils the biological diversity of areas that so far have remained relatively intact.

## CI's expertise on climate change

- CI experts and partners have completed wall-to-wall deforestation mapping (1990-2000) for 10 countries and regions.
- CI has a long history in building capacity in local government and non-governmental organization partners in GIS and remote sensing along with implementation in monitoring natural forest habitats.

- CI scientists are leaders in climate change modeling to understand the impacts on terrestrial and marine habitats.
- CI has unparalleled experience in protected area management, forest conservation and reforestation.
- CI is establishing a global network of Tropical Ecosystem Assessment and Monitoring (TEAM) sites that examine the impacts of climate change on plant and animal diversity. These sites, currently in Latin America and Madagascar but planned to eventually number 50 all over the world, provide daily information for the first real-time global database on tropical forests.

## CI's avoided deforestation and forest restoration activities

- Partnerships with governments, local non-government organizations and others in more than a dozen active or planned forest carbon initiatives across three continents (Africa, Asia and South America). These initiatives include forest protection, restoration and reforestation activities.
- Partnered to develop the first approved small-scale afforestation/reforestation project under the U.N. Climate Change Convention's Clean Development Mechanism. With the Madagascar government and local partners, CI also contributed to the development of the first avoided deforestation project selected by the World Bank's BioCarbon Fund.
- Founding member and convener of the Climate, Community & Biodiversity Alliance (CCBA), a partnership among the world's leading companies and non-government organizations. The alliance produced and promotes the CCB Standards to evaluate land-based carbon mitigation projects in the early stages. To earn approval under the CCB Standards, projects must satisfy 15 criteria to demonstrate net benefits for fighting climate change, conserving biological diversity and improving socio-economic conditions for local communities.
- Established the Indigenous and Traditional Peoples Initiative (ITPI), which focuses specifically on the intersection of conservation with indigenous issues, rights and policy. Currently ITPI is working with international and regional indigenous groups to build a coalition to address indigenous capacity on climate change-related topics at local to international scales.