

# Tropical Deforestation & Climate Change

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## Creating Economic Incentives to Conserve Forests through REDD

### What is REDD?

Tropical deforestation contributes more than one-sixth of the man-made carbon emissions that cause global warming, making tropical forests critical to efforts to halt climate change.

**Reducing Emissions from Deforestation and Forest Degradation (REDD)** is a policy approach that is emerging in global climate talks as the best way to mitigate carbon emissions from deforestation and conserve tropical biodiversity on a large scale.

REDD policies can establish economic incentives for large-scale tropical forest conservation by valuing standing forests for the ecosystem service they provide to the climate system through carbon storage. Without such incentives for conservation, the powerful economic forces that drive deforestation will continue to cause people to convert living forest to timber, charcoal, pasture and cropland.

REDD is rapidly gaining traction in national and international climate discussions, and will likely be an important part of domestic and international climate policies being finalized this year.

- **At the international level**, REDD is a key feature of climate talks under the United Nations Framework Convention on Climate Change (UNFCCC). The talks are expected to produce a new global climate agreement in Copenhagen this December. The UNFCCC has formally recognized that action on REDD cannot be delayed.
- **In the United States**, the House of Representatives passed a new climate and energy bill that establishes a domestic cap and trade system for carbon dioxide, with robust international REDD provisions. The 2009 American Clean Energy and Security Act (ACES) now goes to the Senate and could be approved as early as December.



Deforestation's advance: five percent of tropical forest is lost each decade. (Amazon forest, Pará state, Brazil)

### Why is REDD urgent?

#### Climate Change Mitigation

To avert the worst global-scale impacts of climate change, developed and developing nations must reduce their emissions—both from fossil fuels and from deforestation.

- Atmospheric CO<sub>2</sub> concentration is nearing 400 ppm and is on course to surpass the 450 ppm threshold—increasing the risk of the worst global-scale impacts of climate change—even if all industrial nations cut emissions to zero by 2050.
- At current rates, deforestation will increase CO<sub>2</sub> concentration by nearly 130 ppm over the next century.

#### Tropical Forest Conservation

REDD offers critical co-benefits for the planet, including:

- **Biodiversity conservation:** Because tropical forests house more than half of the world's species, deforestation threatens the biological diversity of the entire world. Loss of these forests is proceeding at a rate of about 5% per decade. REDD can help protect these natural storehouses.
- **Maintenance of critical ecosystems:** Tropical forests drive global weather and hydrologic cycles and protect watersheds on which millions depend. Conserving tropical forests maintains these functions for the planet.
- **Poverty alleviation:** REDD can help ease poverty by compensating indigenous peoples and forest-dependent communities

for the ecosystem services they provide. It can also help them protect their most valuable economic and cultural resources.

### Spurring Global Action

- Engagement by developing and industrial nations is key to mitigating climate change. REDD is a powerful tool for engaging developing nations in a global agreement.
- REDD can help break the standoff over who should act first by providing funding for reducing deforestation on a scale previously unavailable.

### How will REDD work?

REDD counters the economic drivers of deforestation by creating economic incentives to make existing forests worth more alive than dead. REDD can be implemented affordably using available technologies and can be financed with public funding and carbon markets.

### Funding

**Market and non-market funding are needed for REDD to succeed on a global scale.** Development assistance from donor countries will be needed to help some nations put effective REDD programs in place. But only market-based financing—from trading forest carbon credits in national and global carbon markets—can provide funding on the scale needed to stem deforestation worldwide. Market-based financing is key to ensuring developing countries do not have to depend on donors to maintain forest protection activities. Several key elements are needed to ensure REDD programs achieve their goals:

### Program Design

- **National-level accounting:** Nations must be able to establish scientifically-determined baseline rates of deforestation and reduce deforestation below those baselines. This ensures deforestation is not simply shifted from one area of the country to another.
- **Monitoring:** Monitoring forest cover and biomass is needed to determine if REDD goals are met (i.e. real reductions in forest emissions) and, together with independent verification, can ensure forests are protected.
- **Bottom-up participation:** Developing country governments and forest communities must participate in the design, implementation and payment systems for REDD to ensure their needs are recognized.
- **Significant and sustainable financing:** Nations need adequate and dependable financing to ensure forests that are protected today are not cleared tomorrow. Both market-and non-market sources can provide this funding.

### The Technology for REDD

Forest mapping and monitoring can be done by satellite, enhanced by ground checks and data analysis. Although some obstacles remain, satellite-based forest monitoring has made great advances in recent years:

- A wide range of optical, radar and lidar satellite sensors, with high, medium and low resolution, are being used for tropical forest monitoring efforts.
  - Existing satellite mapping technologies have proven practical for determining baseline deforestation rates.
  - New satellites designed for even more detailed biomass mapping will become operational within a few years.
  - Satellite monitoring of changes in carbon stocks is advancing rapidly. New satellite sensors and data mining techniques are providing unique information about vegetation structure and above-ground biomass.
  - Methods for monitoring forest degradation—where only a portion of the forest stock is removed—have been developed, allowing for large-scale, cost-effective monitoring of selective logging.
- **Developed countries must make deeper commitments** in national and international climate policies to ensure adequate funding for reducing deforestation.

### What's next for REDD?

REDD is being integrated into national and international climate change policies.

- **U.S. policy:** The House bill passed in June allows carbon credits from reduced deforestation to trade in a U.S. carbon market. EDF is working to encourage Senators to maintain high-quality REDD provisions as it drafts its climate and energy bill.
- **Brazil policy:** Brazil, a world leader in mapping forests and deforestation, has pledged to reduce deforestation by 70 percent over the next decade. EDF works with partners in Brazil to help forest communities, indigenous peoples and local government officials implement best practices for REDD.
- **International policy:** Nations hope to reach a new global climate deal this December, and REDD will be part of that deal. EDF works with governments, individuals and non-profits at the national and international levels to ensure the agreement includes REDD to reduce global emissions from deforestation.