

Tropical Deforestation and Global Warming: A Solution

Tropical deforestation accounts for about 20 percent of the world's global warming pollution—an amount equivalent to the total emissions of China or the United States, and more than that produced by every car, truck, plane, ship, and train on Earth. This fact sheet explains how tropical deforestation contributes to global warming, and how actions to protect tropical forests (including a set of policies known as REDD) can reduce global warming while providing many additional benefits.

Why Tropical Forests Are So Vital

Tropical forest trees, like all green plants, take in carbon dioxide and release oxygen during photosynthesis. During respiration they emit carbon dioxide, but in generally smaller amounts than what they take in during photosynthesis. The remaining carbon is stored in the tree, allowing it to grow bigger. That stored carbon is released into the air as carbon dioxide if the tree is burned or cut down and allowed to rot.

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Since carbon dioxide is the principal gas trapping heat in Earth's atmosphere, tropical deforestation is an important contributor to global warming. Tropical forests must therefore be protected from deforestation and degradation if we are to reduce carbon emissions to the levels needed to avoid the most dangerous and expensive global warming impacts. Ending deforestation will not solve global warming by itself—urgent action is needed to lower the other 80 percent of the world's emissions—but the problem cannot be solved if the 20 percent of emissions from tropical deforestation is ignored.

Reducing deforestation would also address concerns that extend beyond global warming. Tropical forests are home to many species of plants and animals that could become extinct (such as the jaguar) if we do not act to protect their habitat. In addition, tropical forests are crucial sources of food, medicine, and clean drinking water for people in developing countries, and help prevent both floods and droughts by regulating regional rainfall. Thus, reducing deforestation would not only be beneficial in reducing global warming pollution, but also in preserving biodiversity and protecting the quality of life of many people in the region.

How REDD Works

REDD, an acronym for reducing emissions from deforestation and forest degradation in developing countries, is an innovative approach to protecting tropical forests. Developing countries led by Papua New Guinea and Costa Rica proposed this approach at the international climate negotiations in 2005, and it has been gaining momentum since then as an affordable way to reduce global warming pollution. REDD could not only help reduce heat-trapping emissions but also support sustainable development in the world's tropical nations.

The basic idea is that tropical countries would be compensated if they reduce their carbon emissions from forest clearing. This would be verified by remote sensing technology (e.g., satellite photos) that has already been used to monitor emissions from deforestation. A strict set of criteria would be developed to certify the reductions, and once a country reaches its emissions target and the reductions are certified, it would be eligible for monetary compensation.

In order to create enough economic incentive for developing nations to reduce the clearing of their tropical forests, these nations would need to be paid more than they could make by clearing the land and using it for activities such as raising cattle or crops. It turns out that REDD is an affordable solution for reducing global warming pollution because the cost of compensating tropical nations is considerably lower



than the current costs of reducing carbon emissions from industries, vehicles, and power plants.¹ REDD can greatly reduce tropical deforestation, and thus reduce global warming, with relatively modest funding.

How REDD Would Be Funded

Funding for REDD can come from a combination of three sources.² The first, **voluntary funding** from countries, individuals, or organizations, would be

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the fastest way for developing nations to build up the capacity needed to protect tropical forests, measure their reductions, and follow the required certification process. Training and technology transfer will be needed along with programs designed to ensure that certifiable reductions are made. Some countries have already begun voluntarily funding REDD programs; Norway, for example, provides more than \$500 million yearly.

A second source is **market-linked funding**, such as the revenue generated by a “cap-and-trade” program in industrialized nations including the United States. In this type of system, companies that produce global warming pollution would be required to buy “allowances” to cover the amount of heat-trapping emissions they expect to produce in a given year. Every year thereafter, fewer and fewer allowances would be made available, forcing companies

to cut their emissions over time. Allowances would be sold each year in an auction, and a portion of the revenue from these sales could be used to fund REDD. This arrangement, therefore, would lower the global warming pollution produced by industrialized nations and also provide funding to reduce pollution from tropical deforestation in developing nations.

The third source is **direct carbon-market funding**, which also derives from cap-and-trade systems, but in a different way than market-linked funding. As fewer allowances are offered at auction in a cap-and-trade program, some companies will want a way to acquire additional allowances if they have not yet found a way to reduce their emissions. They could, for example, be permitted to buy allowances from a REDD program that has succeeded in reducing emissions, thus offsetting the higher pollution produced by companies in the cap-and-trade program. This type of funding will be more useful in later years because tropical countries will have built up the capacity and experience to ensure that any carbon offsets made available through REDD meet strict certification criteria and are therefore associated with real emissions reductions.

How the United States Can Help

The world will not be able to meet the aggressive emissions reduction targets that scientists tell us are necessary³ without addressing the emissions produced by tropical deforestation and forest degradation. Negotiations over the next international climate treaty have begun, and U.S. negotiators should work for the inclusion of strong REDD policies in the treaty.

In addition, Congress should adopt the following policies to help reduce global warming pollution by protecting tropical forests:

- **“Four for Forests.”** A strong climate bill should allocate at least four percent of the revenue from cap-and-trade allowance auctions for the purpose of protecting tropical forests.
- **Carbon offsets.** The bill should also allow for small amounts of offsets that can be certified as the product of reduced emissions from tropical deforestation.
- **Voluntary funding.** The United States should allocate foreign aid money for developing countries that are establishing programs to protect tropical forests.


Such policies will strengthen the United States’ position in the international climate treaty negotiations and help us return to a leadership role in setting global policy. More importantly, these policies will help slow global warming, preserve biodiversity, and protect precious natural resources—some of the most serious problems facing the world in the twenty-first century.

Endnotes

- 1 See the UCS fact sheet *Estimating the Cost and Potential of Reducing Emissions from Deforestation* and the UCS report *Out of the Woods: A Realistic Role for Tropical Forests in Curbing Global Warming*. Both are available online at www.ucsusa.org/REDD.
- 2 See the UCS fact sheet *Filling the REDD Basket: Complementary Financing Approaches*, online at www.ucsusa.org/REDD.
- 3 See the UCS report *How to Avoid Dangerous Climate Change: A Target for U.S. Emissions Reductions*, online at www.ucsusa.org/global_warming/solutions/big_picture_solutions/a-target-for-us-emissions.html.



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