



Tropical Deforestation and Global Warming: A Solution

Tropical deforestation accounts for about 15 percent of the world's global warming pollution—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+) will 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 85 percent of the world's emissions—but the problem cannot be solved if the 15 percent of emissions from tropical deforestation is ignored.

Reducing deforestation also addresses 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 is not only 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+ is an acronym for a set of policies aimed at reducing emissions from deforestation and forest degradation in developing countries (REDD) and restoring forests and increasing carbon storage in existing forests (the "plus"). Developing countries led by Papua New Guinea and Costa Rica proposed this innovative 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 are compensated if they reduce their carbon emissions from forest clearing. This can be verified by remote sensing technology (e.g., satellite images) that has already been used to monitor deforestation. A strict set of criteria must be adhered to in order to certify the reductions, and once a country reaches its emissions target and the reductions are certified, it is eligible for monetary compensation.

In order to create enough economic incentive for developing nations to reduce the clearing of their tropical forests, these nations 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+ Is Funded

Funding for REDD+ comes from a combination of three sources.[2] The first, **voluntary funding** from countries, individuals, or organizations, helps developing nations build up the capacity needed to protect tropical forests,

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measure their reductions, and make national plans for how to reduce deforestation. Training and technology transfer will be needed along with programs designed to ensure that certifiable reductions are made. In 2009, 12 countries pledged more than $4 billion in voluntary funding for REDD activities over three years (2010–2012). Voluntary funding is already having a large impact; Brazil, for example, announced in 2010 that it has greatly reduced its rate of deforestation over the last five years, in large part due to voluntary funding.

A second source is **market-linked funding**, such as the revenue generated by a "cap-and-trade" program. Under a cap-and-trade program (such as those programs already in place in California and 10 Northeast states), companies that produce global warming pollution are required to buy "allowances" to cover the amount of heat-trapping emissions they expect to produce in a given year. Every year thereafter, fewer allowances are made available, forcing companies to cut their emissions over time. Allowances are 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 developed 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 useful in the future once tropical countries have built up the capacity and experience to ensure that any carbon offsets made available through REDD+ meet strict 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 necessary[3] without addressing the emissions produced by tropical deforestation and forest degradation. In international climate meetings, the United States and countries from around the world have made great progress on creating guidelines for strong REDD+ policies.

Congress should support this work through **voluntary funding in the appropriations bill**. By fulfilling the United States' $1 billion pledge (as part of countries' $4 billion total contributions; see "How REDD Is Funded") through appropriations funding and devoting additional voluntary funding, the United States would help countries gain access to the training and technology needed to begin reducing their emissions from deforestation and degradation.

Additionally, state, regional, or federal cap-and-trade legislation should include:

- **Revenue for REDD+.** A strong cap-and-trade system should allocate a percentage of the revenue from cap-and-trade allowance auctions for the purpose of protecting tropical forests.
- **Carbon offsets.** The system should also allow for small amounts of offsets that can be certified as the product of reduced emissions from tropical deforestation.

REDD+ 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 United Nations Environment Programme report *The emissions gap report: Are the Copenhagen accord pledges sufficient to limit global warming to 2°C or 1.5°C?*, online at *www.unep.org/publications/ebooks/emissionsgapreport*.

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An online version is available at *www.ucsusa.org/REDD*