

USAID WORK IN REFORESTATION WITH PROGRAMMATIC EXAMPLES

OVERVIEW

USAID works with countries to protect, manage, and restore their forests. Sound management of environmental and natural resources is integral to a country's development, resilience, and self-reliance. Forests provide a wealth of benefits. Forests protect water resources and biodiversity, improve health and nutrition, sequester carbon, provide timber and other products that contribute to people's livelihoods, and protect communities from weather and climate extremes.

USAID focuses its biodiversity and sustainable landscapes programs on the conservation of globally important forests and the benefits they provide. Whenever possible, programs work across an entire landscape to achieve results at scale. Landscape-level programs often center around the protection of natural standing forests, complemented by sustainable management and reforestation in surrounding areas. Protecting mature, natural forests provides the most benefit for the least cost, especially with regard to biodiversity conservation, carbon sequestration, and water resources preservation.

PHOTO: December 2017. Tikal National Park at sunrise. Tikal, Guatemala. USAID Measuring Impact Conservation Enterprise Retrospective (Guatemala; Rainforest Alliance). Photo by Jason Houston for USAID.

USAID Reforestation Activities

Reforestation is a complementary approach to protection for maintaining the Earth's forests. In some countries and landscapes, forests are highly degraded or have been completely cleared, and reforestation is necessary. Reforestation is the intentional restoration or natural regeneration of forests on deforested land, and there are several ways to approach it.

USAID has targeted efforts in 11 countries. In all cases, USAID considers the policy and financial environment to inform how best to scale up reforestation and maintain restored forests and newly planted trees. This may involve clarifying property or tenure rights of land and trees to give those caring for them an incentive to be good stewards (eg, in some countries ownership of planted trees has traditionally reverted to the state). Additionally, economic incentives need to be in place to encourage investment in tree planting or forest management.

Private-sector engagement is critical to scaling up and sustaining reforestation efforts. This may be a commitment to purchase sustainable forest products, an approach employed in the Guatemala, Congo, and Indonesia examples below; private sector interest in purchasing certified carbon credits, as mentioned in the Indonesia and India examples; or private sector willingness to pay or provide seedlings in kind, as the India example illustrates.

REFORESTATION APPROACHES AND ILLUSTRATIVE RESULTS

Natural regeneration of forests can be facilitated by protecting and better managing areas to allow naturally occurring young trees to reach maturity. Compared to agroforests or plantations, natural forests provide greater ecological benefits such as carbon sequestration, biodiversity conservation, and watershed resilience.

USAID helped the Government of Guatemala and indigenous communities in the Maya Biosphere Reserve establish forest concessions that are sustainably managed. This forest concession system, which allows communities to manage forests and harvest sustainable amounts of timber, has become a global model for community-based forest management. Over the last 25 years, these concessions reduced deforestation and fires and increased tree cover on more than 350,000 hectares, with community businesses protecting their concessions from illegal incursions and tree-cutting. Tree cover increased by 1,088 hectares by 2017 as a result of natural regeneration. By producing high-value certified forest products, enterprises were able to supply companies such as Gibson Brands, Inc. with high quality mahogany. These sales generated \$500-\$10,000 per household per year, helping to reduce poverty and out-migration.

Active forest restoration involves reconstructing environmental conditions such as water table levels, fire regimes, or soil fertility, removing invasive species, and planting native tree species to enable forests to recover. This approach can be more expensive than natural regeneration, but is sometimes necessary in more degraded lands

USAID supported the active restoration of 406 hectares of mangrove forest in a broader, 25,000-hectare mangrove protection region along the east coast of North Sumatra and Aceh Provinces, working with the Indonesian NGO Yagasu and local researchers. This community-based work included planting mangrove saplings and developing more sustainable and profitable uses for mangrove forests. Restoring mangrove forests made the coastal communities more resilient to extreme weather events and increased fish production by 27 percent over three years. Local families' income rose by 57 percent from 2009 to 2016--from \$128 to \$212 per family per month. Yagasu and USAID also helped women there develop businesses selling mangrove fruit food products and fabrics locally and internationally, and the NGO certified 5,000 hectares of restored mangrove forest for the voluntary carbon market under the internationally recognized Verified Carbon Standard.

Agroforestry can be used to restore deforested and degraded land to agricultural systems that include trees for production, resilience, or conservation purposes. Agroforests often generate more income for landowners, but they provide fewer ecological benefits than natural forests

One of the greatest conservation challenges in the Congo Basin is creating ways to generate income that do not degrade forests and maintain forest cover. USAID has supported 3,861 farmers to initiate shade cocoa plantations in the Democratic Republic of Congo in key areas at risk of continued deforestation. The farmers developed cocoa agroforestry plantations with shade trees on deforested and degraded land. Through partnerships with private-sector cocoa exporters and a local cooperative of cocoa producers, communities have delivered 520 tons of cocoa to the private sector in 2.5 years. Satellite-based analyses showed that deforestation has slowed in areas where shade-grown cocoa is farmed. USAID is training an additional 200 farmers in the Republic of Congo in sustainable cocoa production, and more than 5,000 farmers participated in other forms of agroforestry across four other landscapes in those two countries.

Plantations can be established on deforested and degraded land to create productive areas, which may range from monocultures of a single tree species to a mix of tree species. These species may not be native to the region. Like agroforests, plantations often generate more income for landowners in the short term. However, plantations generally store less carbon and generate fewer ecological benefits than natural forests.

India has set a target for itself to create an additional sink of 2.5 to 3 billion metric tons of carbon dioxide by expanding forest and tree cover by 2030. Together with the Government of India, USAID developed a strategy to mobilize domestic private-sector finance for establishing tree plantations for environmental and rural livelihood benefits. This strategy was piloted in Madhya Pradesh, where USAID facilitated a partnership between the state government, local communities in Harda District, and Grow-Trees, a Mumbai-based company that uses tree certificates to raise funds from the private sector to cover farmers' costs to plant trees indigenous to the region. The initiative mobilized \$20,000 to plant 308,817 trees on more than 250 hectares of deforested riverbanks and the state government funded the land preparation. The tree plantations provided erosion control during the monsoon season and wood that can be harvested. They also allowed the private sector funders to offset carbon emissions.