SilvaCarbon

Partnering for Improved Forest and Landscape Monitoring

Tropical deforestation and forest degradation threaten people, economies, and biodiversity worldwide. Tropical forest loss reached the highest level ever recorded in 2016, and in 2018 the tropics lost some 30 million acres of tree cover including 9 million acres of primary rainforest, an area the size of Belgium. The dramatic fires currently impacting the Amazon highlight the increasing risks to forests and forest communities globally, and underscore the need for strategic, long-term intervention.

To reduce tropical forest loss, decision makers and the public must have access to credible information about where and when it is occurring. Forest monitoring is key to combatting forest fires and illegal logging as well as developing targeted conservation policies and programs, strengthening land use management and planning, and implementing sustainable development mechanisms such as Reducing Emissions from Deforestation and Forest Degradation (REDD+).

Many tropical forested countries have committed to developing national forest monitoring systems but need technical assistance to accomplish their goals. Forest monitoring systems integrate remote sensing and satellite data with on-the-ground forest measurements to provide accurate, transparent information about landscape changes such as deforestation and forest degradation, and changes in forest carbon stocks and emissions.

Recent advances in remote sensing technology present tremendous opportunities for forest monitoring, but require significant technical capacity to use effectively. Developing countries face challenges implementing cost-effective monitoring tools and methods that can support their long-term needs. With this in mind, US Government agencies have joined together to create the SilvaCarbon program.

What is SilvaCarbon?

SilvaCarbon is an interagency technical cooperation program of the US Government to enhance tropical forested countries' capacity to monitor, measure, and report carbon in their forests and other lands.

SilvaCarbon draws on the expertise of multiple US Government agencies and partners to advance the generation and use of better information related to forest and terrestrial carbon. US agencies that contribute to SilvaCarbon include the US Agency for International Development (USAID), US Department of State, US Forest Service (USFS), US Geological Survey (USGS), US Environmental Protection Agency (EPA), and National Aeronautics and Space Administration (NASA).

Geographic Scope

Current SilvaCarbon Countries (2019 -2020)

SilvaCarbon has worked with 25 tropical forested countries to build forest and landscape monitoring capacities, promote South-South collaboration and knowledge sharing, and facilitate technical coordination globally.

Costa Rica
Dominican Rep.
El Salvador
Guatemala
Honduras
Mexico

Colombia
Ecuador
Paraguay
Peru

Cameroon
Dem. Rep. of the Congo
Rep. of the Congo
Ethiopia
Zambia

Bangladesh
Cambodia
Indonesia
Lao PDR
Nepal
Philippines
Thailand
Vietnam

Program Areas

SilvaCarbon builds country capacities across three key technical areas, and helps integrate each area into holistic national systems:
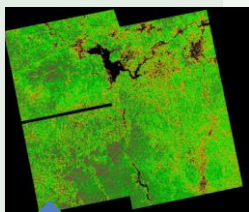
Remote Sensing

New remote sensing technologies can be powerful tools for tracking forest change over time. By providing remote sensing expertise from USGS, NASA, USFS, and others, SilvaCarbon helps countries adopt nationally appropriate tools and methods, and integrate satellite data with field data for more cost-effective monitoring. SilvaCarbon also works with partners under the Global Forest Observations Initiative (GFOI) to coordinate international donor support focused on the availability and use of Earth observation data.

National Forest Inventory

Ground-based forest inventories are essential for tracking forest resources and assessing forest carbon stocks. SilvaCarbon draws on the forestry expertise of the USFS and other partners to build countries' capacity to design and implement national forest inventory systems that are accurate, affordable, and tailored to meet their national needs for natural resource information.

Greenhouse Gas Inventory

Many nations are committing to transparency and accountability through the tracking of greenhouse gas (GHG) emissions from the land use sector, which comprises the largest share of emissions in some tropical forested countries. Through SilvaCarbon, subject experts assist countries with the development of accurate, robust GHG inventories that are consistent with international standards and reporting requirements.

Illustrative Results and Accomplishments since 2011

- 24 countries with accurate and sustainable national forest inventory methods
- 18 countries with upgraded, cost-efficient remote sensing tools
- 13 countries with enhanced international GHG reporting capabilities (improved from IPCC Tier 1 to Tier 2)
- 13 countries presented forest GHG baselines, i.e., forest reference emission levels, for assessing REDD+ performance

- Assisted **Vietnam** to compile its national GHG inventory for the land sector using free tools (2015-2019), and implement an enhanced national forest inventory (2018-2019)
- Worked with **Bangladesh** to establish its first national forest inventory (2014-2019)
- Supported **Nepal** to produce annual forest cover change maps for 2000-2016 (2018-2019)

- Assisted **Peru** to finalize its first large-area forest change map and first phase of its national forest inventory (2014)
- Supported **Colombia** to generate its first annual estimates of forest cover change and first national forest inventory design (2015)
- Helped the **Republic of the Congo** produce a forest cover change map for 2000-2014 (2014)

- Assisted the **Democratic Republic of the Congo** to incorporate peatlands and wetlands in its national forest inventory (2018)
- Developed land monitoring **tools and guidance**, including the Collect Earth Online platform for analyzing satellite data (2019)
- Delivered complete archives of Landsat **Earth observation data** to 24 countries