SilvaCarbon

Partnering to Measure Forest Carbon

April 2016

PROGRAM OVERVIEW

A flagship program under U.S. fast start financing for REDD+

A U.S. contribution to the GEO Global Forest Observation Initiative (GFOI)

SilvaCarbon works to:

- **Partner** with developing countries to **improve monitoring** of forest and terrestrial carbon
- **Improve understanding** of methodologies and collection and dissemination of data
- **Coordinate US** science, innovation, and technical **expertise**

SILVACARBON PARTNERS

- U.S. Agency for International Development
- U.S. State Department
- U.S. Geological Survey
- U.S. Forest Service
- NASA
- U.S. Environmental Protection Agency
- NOAA
- Smithsonian Institution

As well as U.S. universities, NGOs, donors and industry

PARTNER COUNTRIES

Engagement through **bilateral** and **regional** activities, **research**, and **in-country technical advisors**

PROGRAM ESTRUCTURE

- Steering Committee
- Technical Team
- Global Program
    - Secretariat
    - Communication Specialist
- Regional and Country Teams – Regional Coordinator

Regional Programs

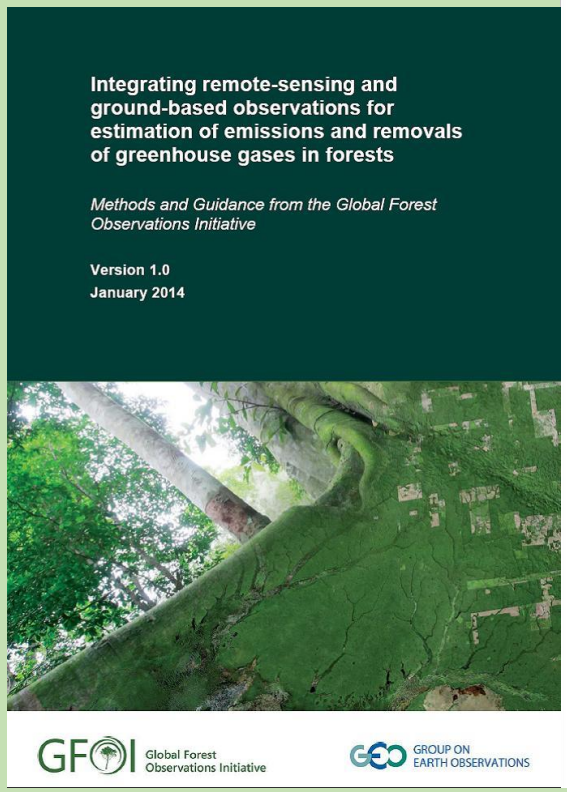
- GFOI regional workshops
    - 14 LatinAmerica
    - 5 SE Asia
    - 3 Central Africa
- Hands on workshops

Country Programs

- Detailed workplan

GFOI Regional Workshops

- South – South Collaboration
- Showcase new and cutting edge methodologies
- Planning and brainstorming
- Show field methods
- Audience broader than Government officials



COORDINATION WITH US SUPPORT

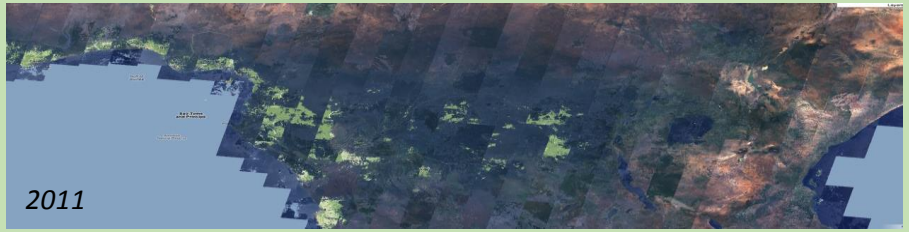
Global:
- WRI Global Forest Watch
- SERVIR (NASA)

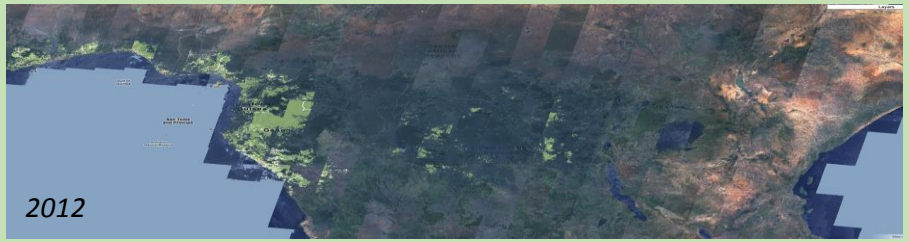
Regional:
- Central Africa Regional Program for the Environment (CARPE);
- The Initiative for Conservation in the Andean Amazon (ICAA)

Bilateral
- Mexico's Reduced Emissions from Deforestation and Degradation Program(M-REDD)
- BIOREDD (Colombia)

TECHNICAL AREAS

- Improved Forest Inventories
- Improved remote sensing
- Integration of remotely sensed and *in situ* data
- GHG inventory and reporting (ALU tool)

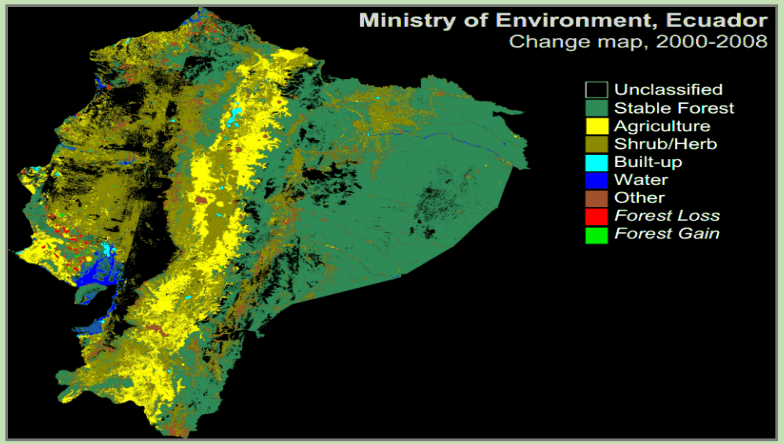




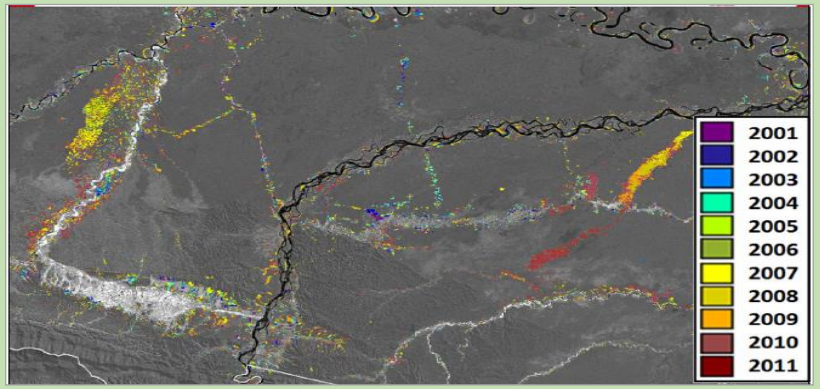
Example Mosaics of Cloud Free of 2011 and 2012 Landsat-7 Computed by Earth Engine

US AGENCIES AND ACADEMIA COLLABORATION

Agencies involved: USGS, USFS, and EPA
Countries: Colombia, Ecuador and Peru

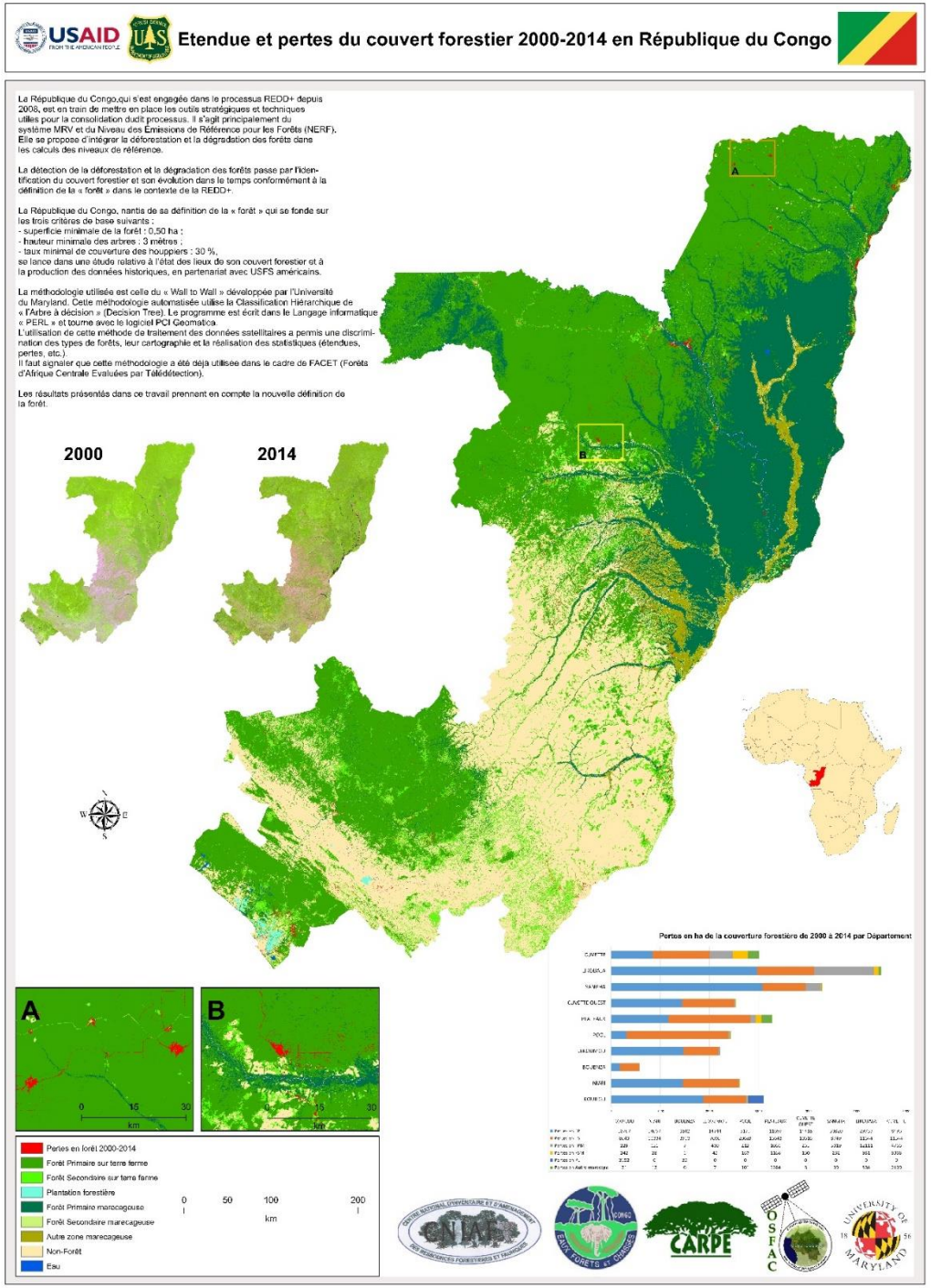


Land Cover Change Map
Source: Ministry of Environment, Ecuador



Forest lost by mining in Madre de Dios
Source: Ministry of Environment, Peru

- Forest change maps
- Six IPCC land cover classes map
- Accuracy assessment and validation of maps

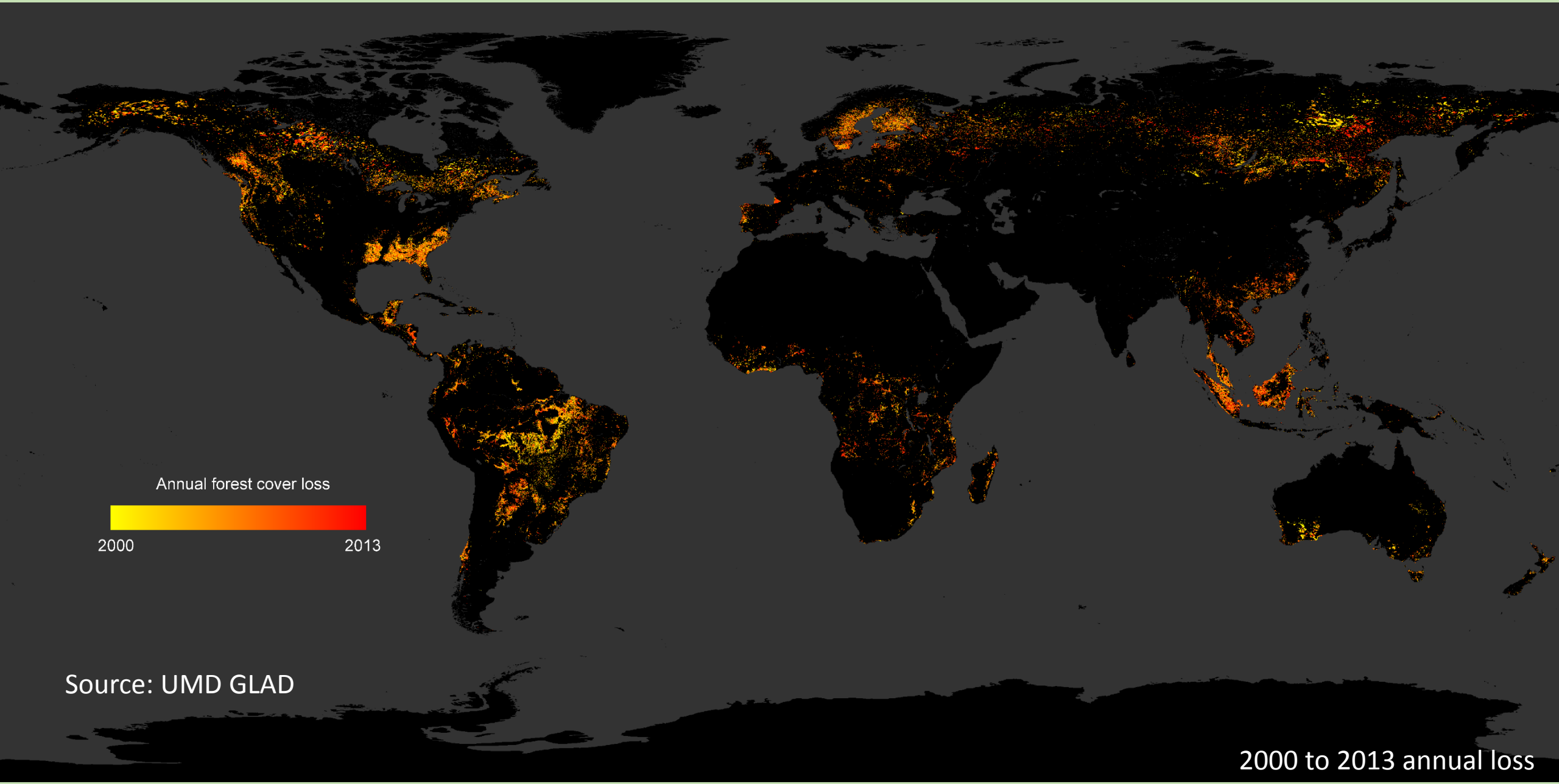


Working with national partners - SilvaCarbon

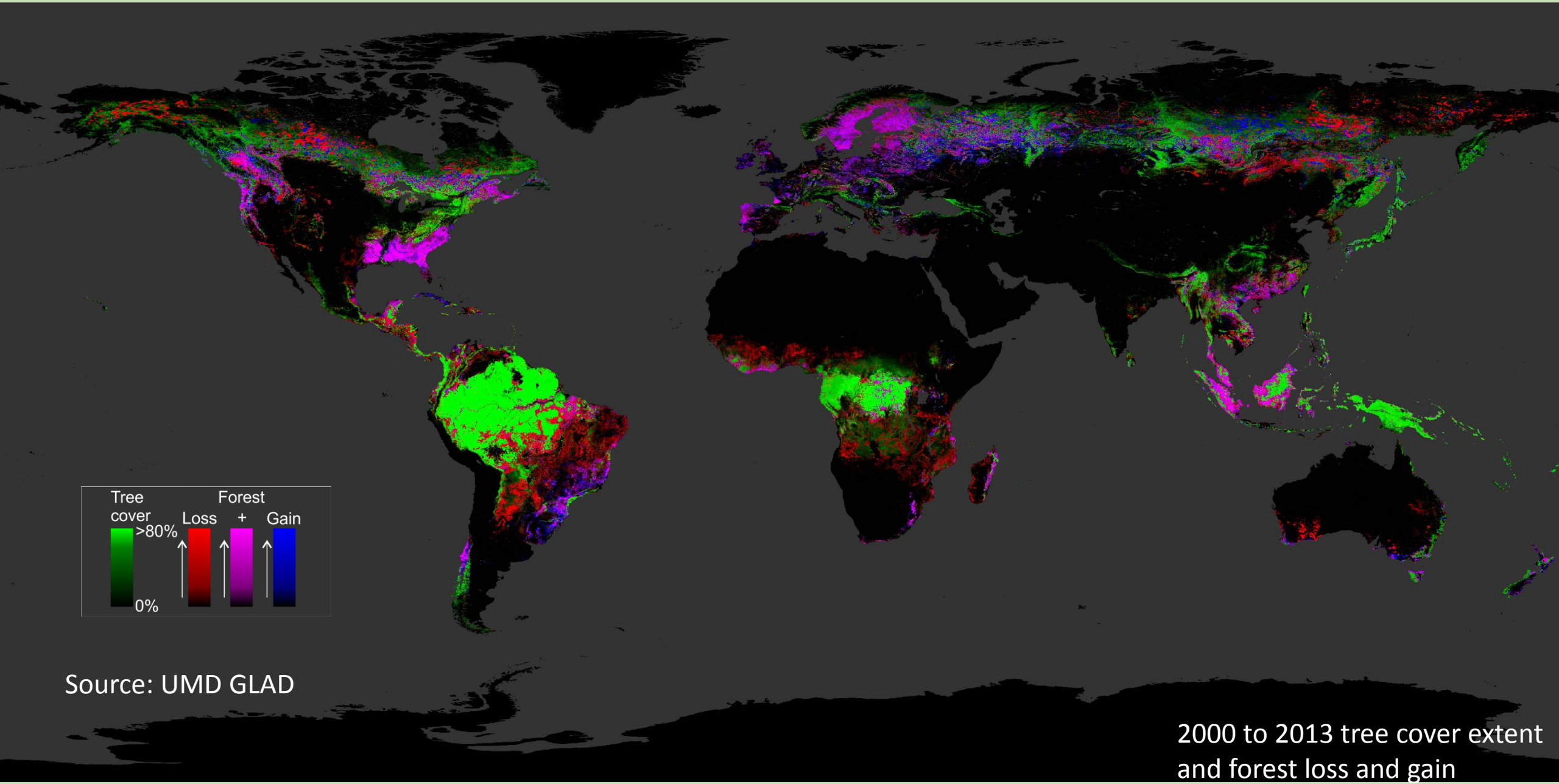
- Peru
- Colombia
- Ecuador
- Republic of Congo
- Democratic Republic of the Congo
- Bangladesh
- Indonesia
- Vietnam

Source: UMD GLAD

Global land-cover products



Global land-cover products



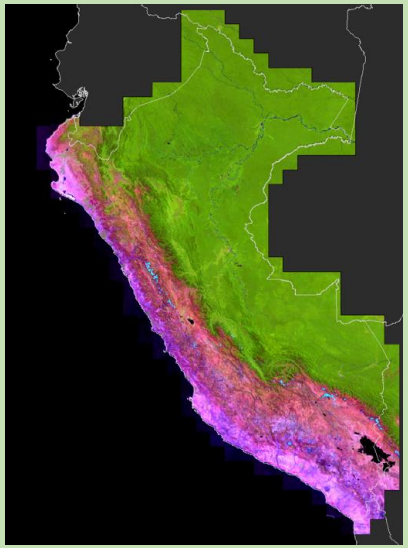
Source: UMD GLAD

2000 to 2013 tree cover extent and forest loss and gain

Forest cover change validation

National scale forest loss mapping and sample-based validation in Peru

1



Landsat data composites and metrics

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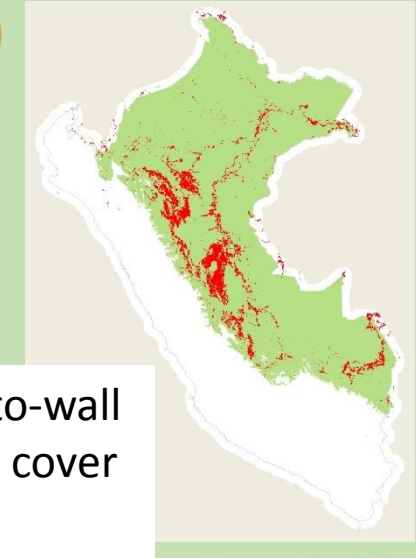

Wall-to-wall forest cover loss

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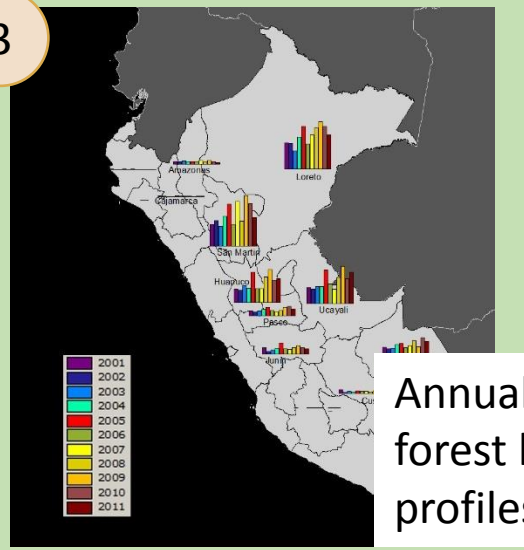

Annual forest loss profiles

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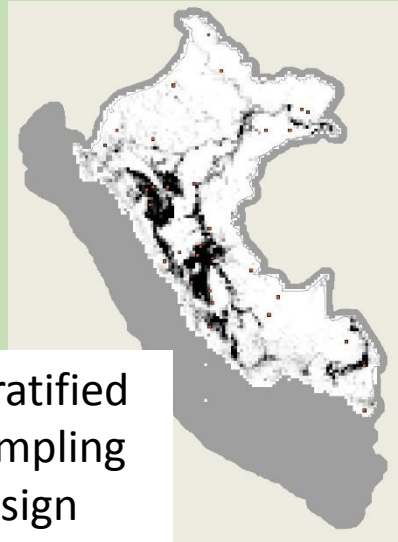

Stratified sampling design

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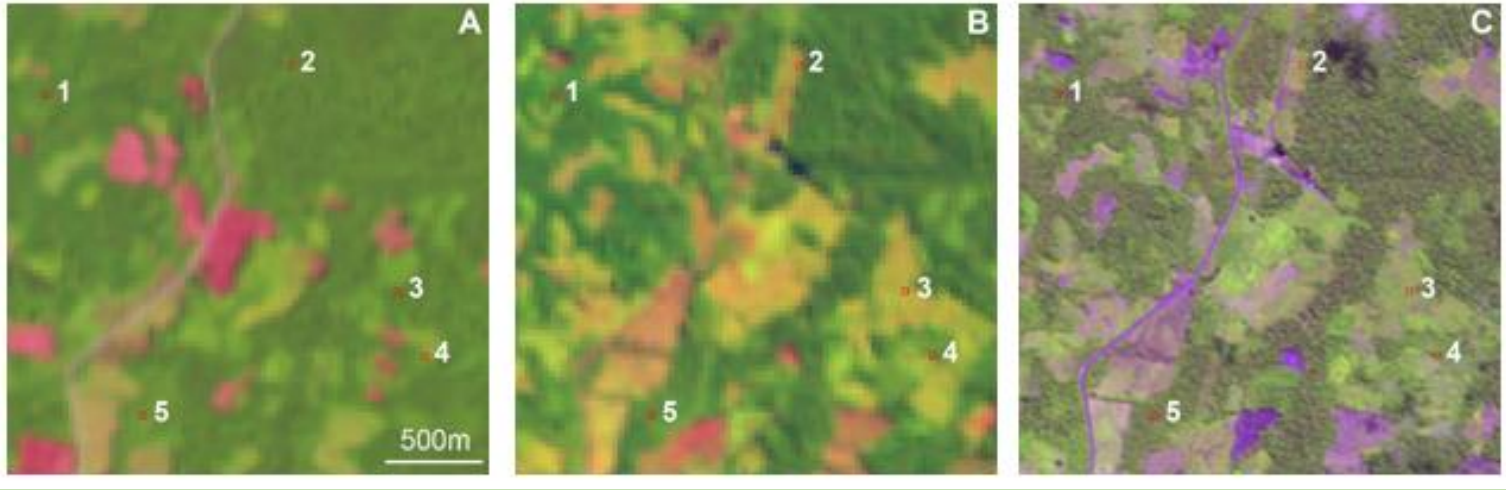

Sample block analysis using Landsat and RapidEye data

GLAD GLOBAL LAND ANALYSIS & DISCOVERY

Source: UMD GLAD

RESEARCH AGENDA

- **Partnership with CIFOR and Wageningen University**

  A Community-based interactive monitoring system for effective REDD+ implementation in Peru

- **Parnership with USFS, Penn State and Universidad Nacional Amazonia Peruana**

  Evaluate the potential of extracting biomass information utilizing in-situ tree-plots, SRTMDEM data, Landsat Imagery, and high resolution imagery.

- **USFS and Michigan Technological University**

  Utilization of Landsat imagery and Shuttle Radar Topography Mission (SRTM) digital elevation model (DEM) data to identify potential areas of doming.

- **2014 SilvaCarbon funded 11 grants**

  Potential additional funding for remote sensing of forest carbon at SilvaCarbon sites.

- **SilvaCarbon is partnering with NASA - SERVIR**

KEY ACCOMPLISHMENTS

- USG Inter-agency coordination
- International coordination in the REDD+ MRV arena
- Leveraging funding
- Supporting regional and national programs (e.g. LEAF, ICCC)
- Provision of data
- Strengthening national science partnerships
- Technical advisory role to nations and US policy

LOOKING FORWARD

FY17-19 strategy

- Geographic priorities
  - Increase bilateral engagement
  - Enhance synergies with existing multilateral programs (ie, ISFL, FCPF, REDD Early Movers)

- Key technical support areas
  - Support Nationally Determined Contributions (NDCs)
  - Development of baselines for REDD+ reference levels and NDCs
  - Expanding beyond forests/REDD+ to the landscape scale
  - Integration of subnational activities with national strategies

Key points for continuing capacity building
SilvaCarbon phase II

- Remote sensing
- Working with Academia (BU, UMD, Pen State, and Wageningen)
- Consider other lands emissions into capacity building priorities (ALU tool, Collect Earth, others)
- Leverage funds with other programs (GOFC GOLD, FAO, SERVIR)
- Target specific country needs
- Reduced number of GFOI regional workshops – 2 per region per year
- Use existing tools for hands on workshops
- Provide specific guidance link to training - MGD

SOUTHEAST ASIA

Regional activities (Philippines, Nepal, Bangladesh, Thailand, Indonesia, Laos, Cambodia, and **Vietnam**)

- GEO GFOI workshop (5 workshops)
- Remote sensing training through RSAC and Boston University

Supporting bilateral activities in Bangladesh, Philippines, Nepal, and Indonesia

Partnership with other USG Programs, including LEAD, LEAF, and SWAMP

Currently coordinating Workplan with FAO and other Donors

SilvaCarbon regional coordinator is located in SERVIR hub

VIETNAM

Partnership with FIPI developing capacity using **Portable Data Recorder (PDR) training** in the use of software for forest inventory data processing and analysis.

Partnership with VNFOREST developing capacity in forest inventories, monitoring and assessment of forest resources, and the sustainable management of forests.

New partnership with University of Maryland and FIPI for mapping forest change

USAID peer program

*Vietnam work is facilitated by a SilvaCarbon country coordinator

LOOKING FORWARD

(SOUTHEAST ASIA REGION)

FY17-19 strategy

- Support countries to develop national products to meet countries land use planning needs
- Support for improved GHG reporting from the land use sector through integration of remote sensing and ground data
- Continue to improve the access to Earth Observation data, including open source methods and applications
- Maintain, strengthen and diversify the regional plots of specialist

2016 Plan

(SOUTHEAST ASIA REGION)

- Continue with the GFOI series of workshops
- Regional workshop on mangrove mapping
- Hans on trainining:
  - Lidar
  - Other topics depending on interest
- Collaboration with SERVIR-Mekong on their Regional Land Cover Monitoring Model
- More specific country support
  - MGD training in Philippines
  - Biomass mapping support for Nepal
  - UMD time series systems for forest mapping in Nepal and Vietnam

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More information available at

www.SilvaCarbon.org