Lecture given at the

WCS Workshop on Land Change Modeling for REDD

October 25– 29, 2010

Wildlife Conservation Society - Bronx Zoo
Bronx, New York, USA

Hosted by

Clark Labs and the Wildlife Conservation Society

This workshop was generously supported by the American people through the United States Agency for International Development (USAID), under the terms of the TransLinks Cooperative Agreement No.EPP-A-00-06-00014-00 to the Wildlife Conservation Society (WCS). TransLinks is a partnership of WCS, The Earth Institute, Enterprise Works/VITA, Forest Trends and the Land Tenure Center. The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States government.

Climate Change Mitigation Challenge
Intro for LCM course

October 26, 2010

Executive summary

Climate change is real, and threatens to destroy wild places and accelerate species extinction

- Up to 20% of global carbon emissions derive from land transformation, including deforestation

WCS's Climate Change Mitigation Challenge aims to mitigate climate change by addressing land use changes

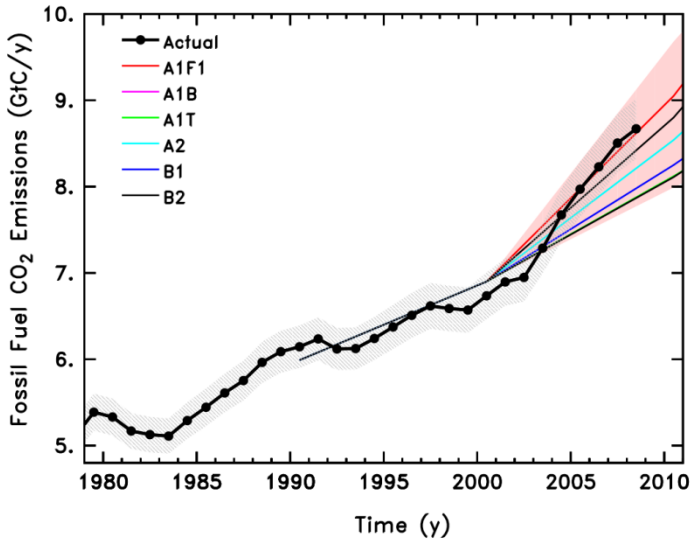
- REDD+, Reducing Emissions from Deforestation and Degradation, focuses on forests threatened by high levels of deforestation or degradation; Also allows for improvement of carbon stocks through reforestation, restoration and improved land management

For all of our REDD+ work, WCS is driven by our conservation mission to...

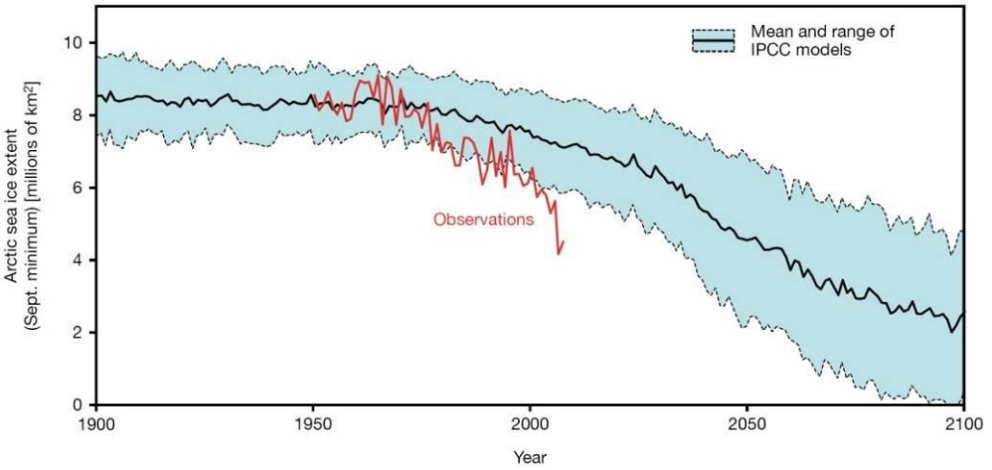
- Contribute to climate change mitigation
- Conserve biodiversity
- Support local communities

Climate change is a reality, and worse than we expected

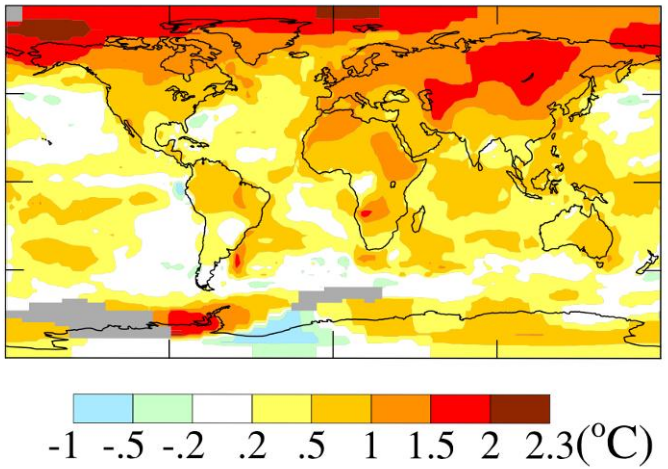
Global CO_2 Emissions from Fossil Fuels



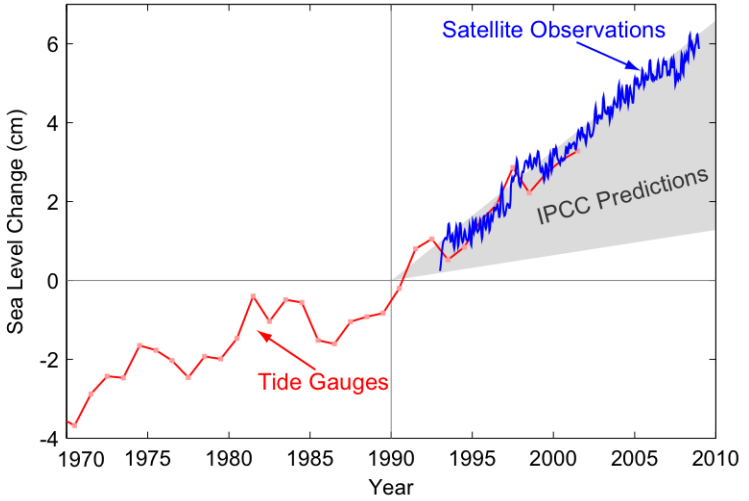
Observed and modeled Arctic sea-ice extent



Mean temperature change between 1950's and 2000's



Sea-level change 1970-2010



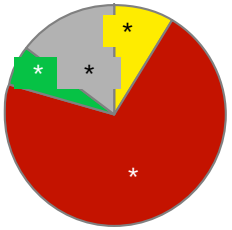
Source: The Copenhagen Diagnosis

Climate change threatens to destroy some of the last intact wild places and accelerate species extinction

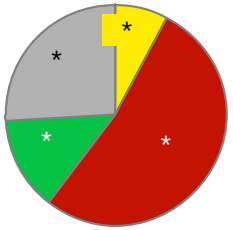
Catastrophic threat to wildlife and biodiversity

Species susceptibility to climate change[1]

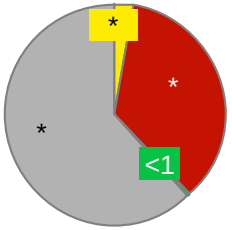
Corals: Warm-water reef-building (799 species evaluated)



Amphibians (6,222 species evaluated)



Birds (9,856 species evaluated)



Threatened
Susceptible
Data deficient
None of the above

Early indications for wildlife[2]

- **Categories of changes in wildlife behavior**
  - Poleward and elevational range shifts
  - Changes in the timing of events, such as breeding
- **Recent observations**
  - Migratory bird species are arriving at the wrong time, finding little food or nesting opportunities
  - Predators are changing their life cycle schedules more slowly than prey thereby disrupting events such as pollination
  - Sea-ice dependent Adelie and emperor penguins have nearly disappeared from their northernmost sites around Antarctica
  - In the past decade, large scale mass die-offs of corals from extreme heating events have occurred across the globe in all three of the world's tropical oceans

1. Based on the IUCN Assessment of Species Susceptibility to Climate Change Impacts, 2008 2. Sources: IPCC; "Where the Wild Things Were: How Conservation Efforts Are Faltering," Sanderson, 2009; "Ecological and Evolutionary Responses to Recent Climate Change," Parmesan, 2006; "Trophic level asynchrony in rates of phenological change for marine, freshwater and terrestrial environments," Thackeray, 2010.

WCS response to Climate Change

Adaptation

An adjustment in natural or human systems in response to expected climate stimuli… which moderates harm or exploits beneficial opportunities (IPCC)

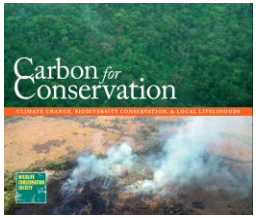
WCS response

Helping wildlife and the ecosystems that sustain them adapt to climate change

Mitigation

Human intervention to reduce the sources or enhance the sinks of greenhouse gases (IPCC)

WCS response



Reducing deforestation and other land-use change (through REDD-plus)

What is REDD+?

REDD+ is changes to CO_2 emissions that the atmosphere sees

Avoided land-use change
- Deforestation
- Degradation
- Other (peat, grasslands)

Increasing carbon stocks
- Reforestation
- Afforestation
- Natural regeneration

Site-based results

REDD+ at different levels

Project

Province or state

National

Enabling environment

REDD funding

Private Sector // market
- "Offset your flight"
- Future compliant market

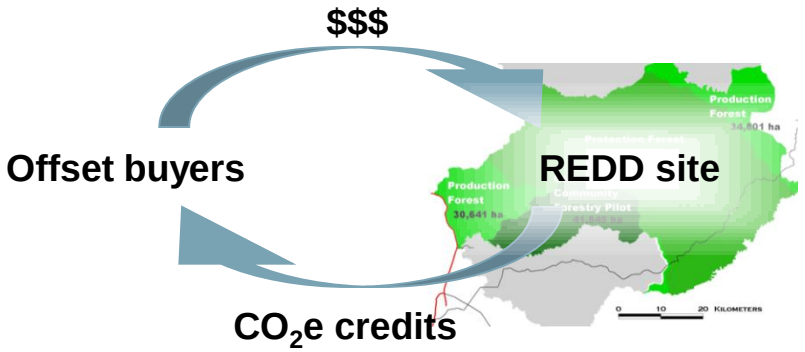
Foundation

Bilateral
Multilateral

Funding

Recent experience highlights need for greater government involvement in REDD

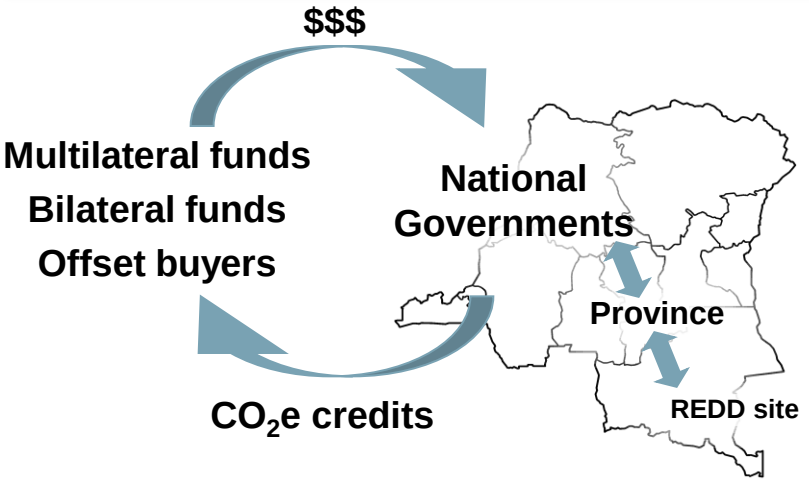
Old structure



- Arrangement only requires accounting at site level
- VCS methodology governs transactions
- Government involved to extent it is carbon owner

Key hurdle: Securing funds

New structure



- Demonstration sites are government partnerships
- Site based accounting must be nested in provincial or national baselines
- Outcomes must contribute to national REDD strategies

Key hurdle: Effectively partnering with governments

WCS Climate Change Mitigation Team

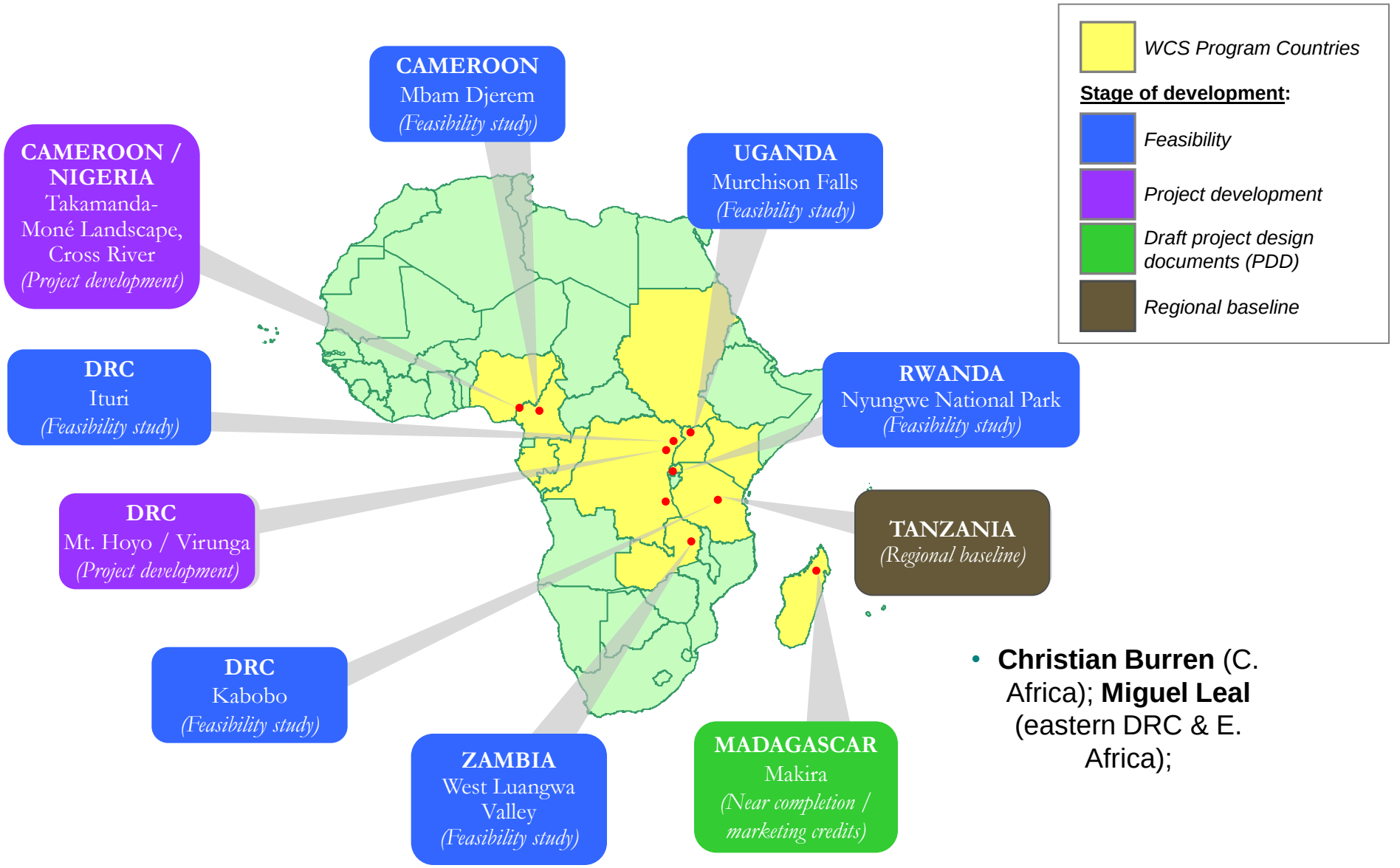
Scope

- WCS currently working in REDD in 15 countries, 19 landscapes

Team

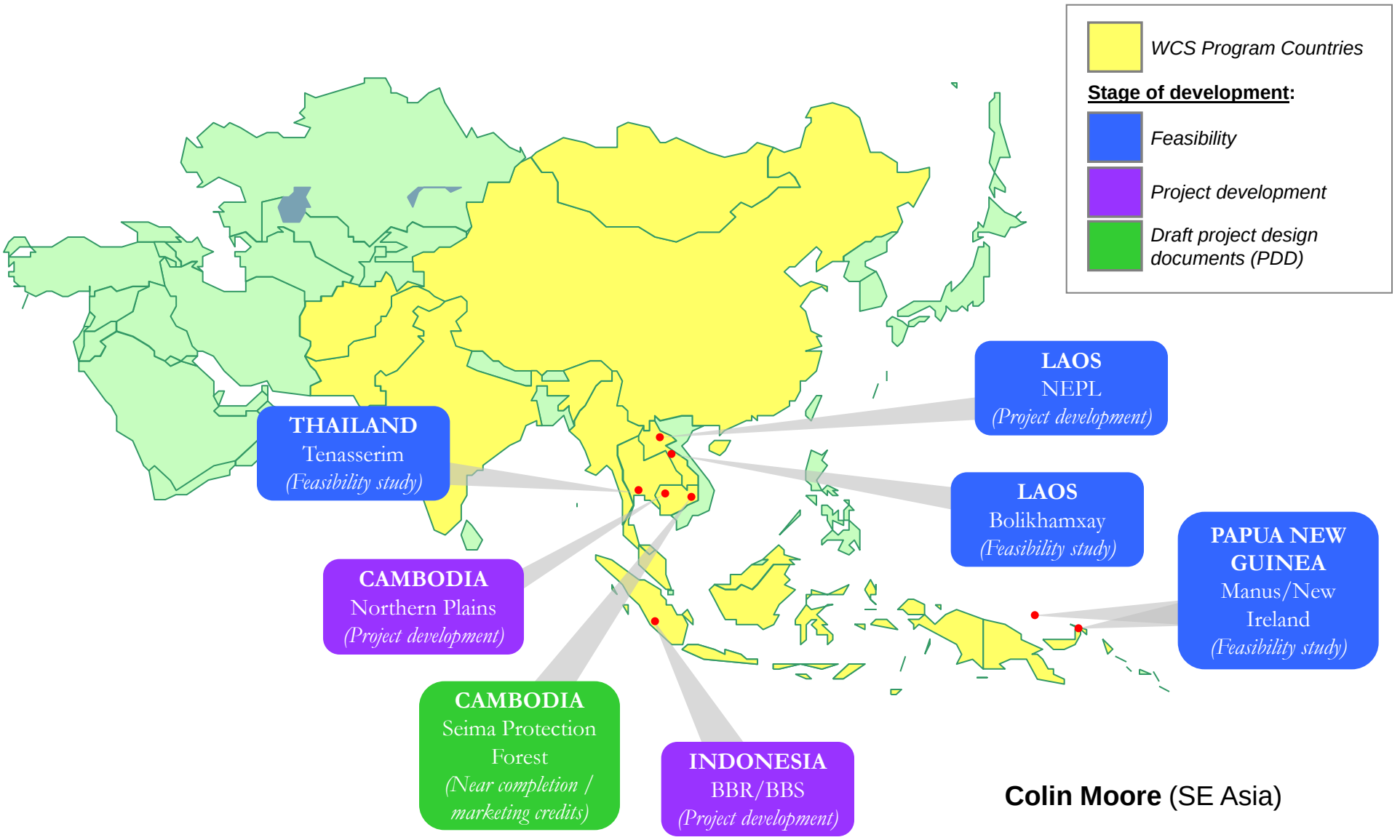
- **Todd Stevens:** CCM director
- **Marisa Arpels and Mary Johnson:** Coordinators;
- **Christian Burren** (C. Africa); **Miguel Leal** (eastern DRC & E. Africa); **Colin Moore** (SE Asia)
- Experts in policy and sustainable financing
- **Rob Rose:** Remote sensing expertise

REDD projects in Africa: Total 11



- **Christian Burren** (C. Africa); **Miguel Leal** (eastern DRC & E. Africa);

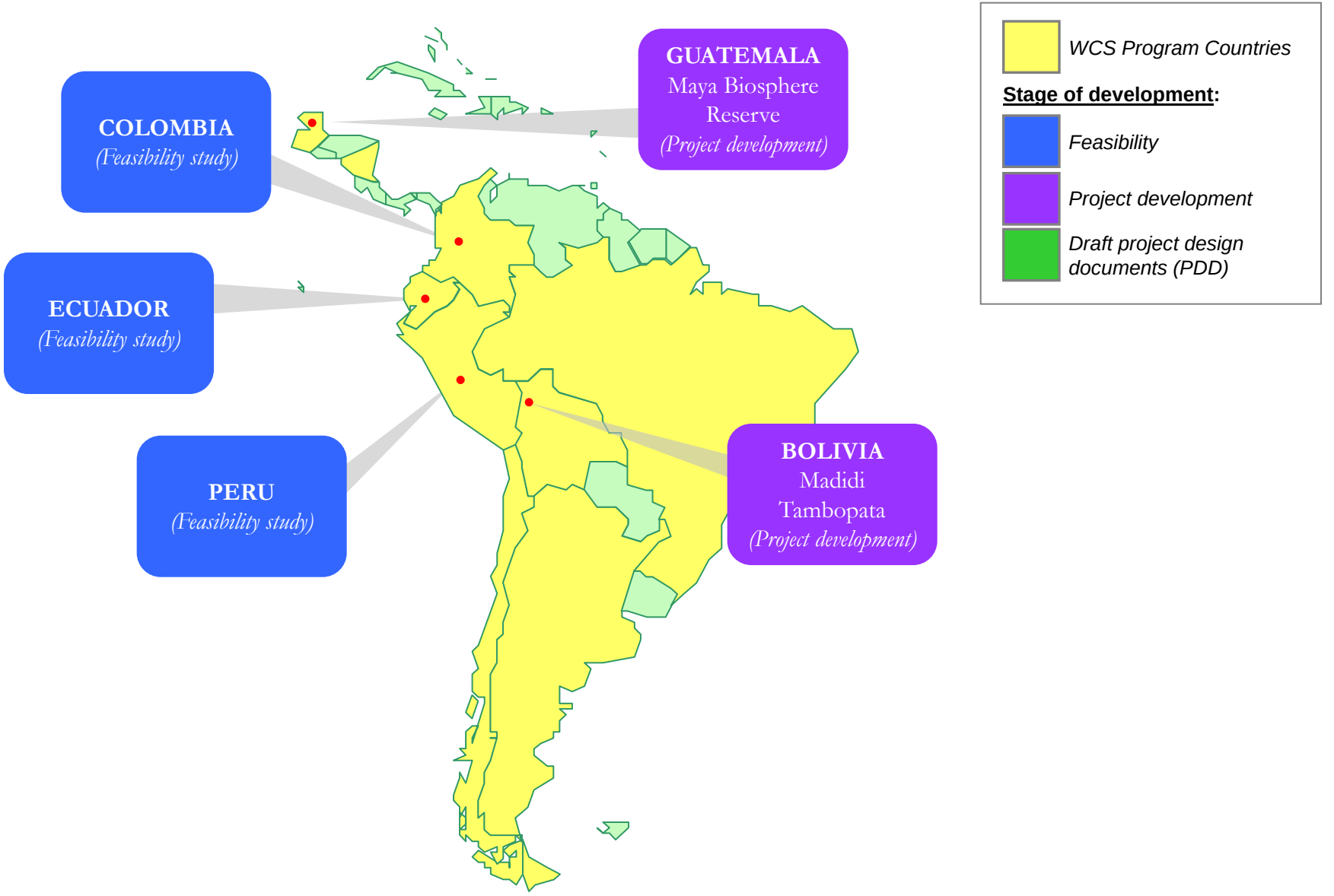
REDD projects in Asia: Total 7



Colin Moore (SE Asia)

Note: Russia is also a WCS Program Country, but is excluded from this map

REDD projects in Latin America: Total 5



WCS REDD projects provide "triple benefits"

1 Mitigating Climate Change

WCS carbon projects use the Voluntary Carbon Standard (VCS), the most rigorous standard to ensure transparent, certifiable and registered emission offsets

2 Protecting Biodiversity

WCS carbon projects directly contribute to conserving priority WCS landscapes, which are strongholds for wide-ranging, endangered species

3 Supporting Local Communities

WCS carbon projects protect natural resources that the rural poor depend upon by providing economic incentives for people to reduce deforestation and pursue sustainable livelihoods

All WCS REDD projects are integrated into national strategies

WCS's long history in-country and technical experience lowers REDD project development costs

WCS has built the essential infrastructure and experience

Long-term commitment to our priority landscapes

- $44 million invested into core conservation work over the last 5 years in the 18 REDD landscapes

Trusted long-term working relationships with key government ministries and communities

- MOUs with governments in all landscapes where WCS works
- Landscapes, and the carbon they contain, are owned by the governments

Experience in REDD – Makira and Seima

Significantly lower "transaction costs" to develop REDD projects with greater likelihood for success

Investments include:

- Capital city and site offices
- Infrastructure / equipment
- MOU with government
- Legal registration
- PA establishment and management
- Local community livelihoods
- Village-level land-use planning
- Training and integration of local staff

Together WCS's projects offer models for combatting deforestation in different circumstances

Thematic Focus	Location	Focus	Status
Governance:	BBR/BBS, Indonesia	Multi-governance REDD	Concept developed for Government of Indonesia
	Cross River, Nigeria and Cameroon	Trans-boundary REDD	Landscape level feasibility ongoing
Land Management:	Makira, Madagascar	Community land use planning	Completing VCS and CCBA PDDs;
	Andean-Amazon Piedmont, Colombia	Land use planning with indigenous groups	Conducting analysis of historic and current threats; community mapping with indigenous groups
	Ituri, Dem. Republic of Congo	Agricultural Intensification	Concept developed; Recognized national pilot
	West Luangwa Valley, Zambia	Sustainable Agricultural Land Management	Calculating emission reduction potential of agriculture practices
	Takamanda, Cameroon	Reduced Impact Logging	Landscape level feasibility ongoing
	Northern Plains, Cambodia	Landscape Scale Sustainable Forest Management	Feasibility study completed
	Bolikhamxay, Lao PDR	Landscape Scale Sustainable Forest Management	Feasibility study completed; Recognized national pilot
External Factors:	Virunga, Dem. Republic of Congo	Conflict Mitigation	Beginning analysis for PDD
	Maya Biosphere Reserve, Guatemala	Fire Management	Creating provincial baseline analysis: recognized national pilot
Protected Status:	Murchison Falls, Uganda	Corridor Management	Feasibility ongoing
	Nam-Et-Phou Louey, Lao PDR	New Reserve and Management plan	Feasibility ongoing
	Misotshi-Kabogo, Dem. Rep. of Congo	New Protected Area	Concept developed
	Nyungwe, Rwanda	Buffer Zone	PDD ongoing; recognized national pilot

Conclusion

WCS's Climate Change Mitigation Challenge aims to mitigate climate change by addressing land use changes

- REDD+, Reducing Emissions from Deforestation and Degradation, focuses on forests threatened by high levels of deforestation or degradation; Also allows for improvement of carbon stocks through reforestation, restoration and improved land management

We do this through

- Landscape level demonstration projects
  - Address drivers
  - Models for benefit sharing, MRV, assessing social and environmental benefits
  - Opportunity to test tools can be used at national level

- Provincial level intevensions
  - Provincial baselines and planning

- National level
  - Support to government to develop strategies
  - Integration of lessons learned from demonstration projects
  - Development of social and environmental safeguards
  - Ensure that conservation areas are considered in strategies