Case Study: Forests as a Natural Solution to Climate Change

Financing REDD+ in South America

Klaus Köhnlein, KFW
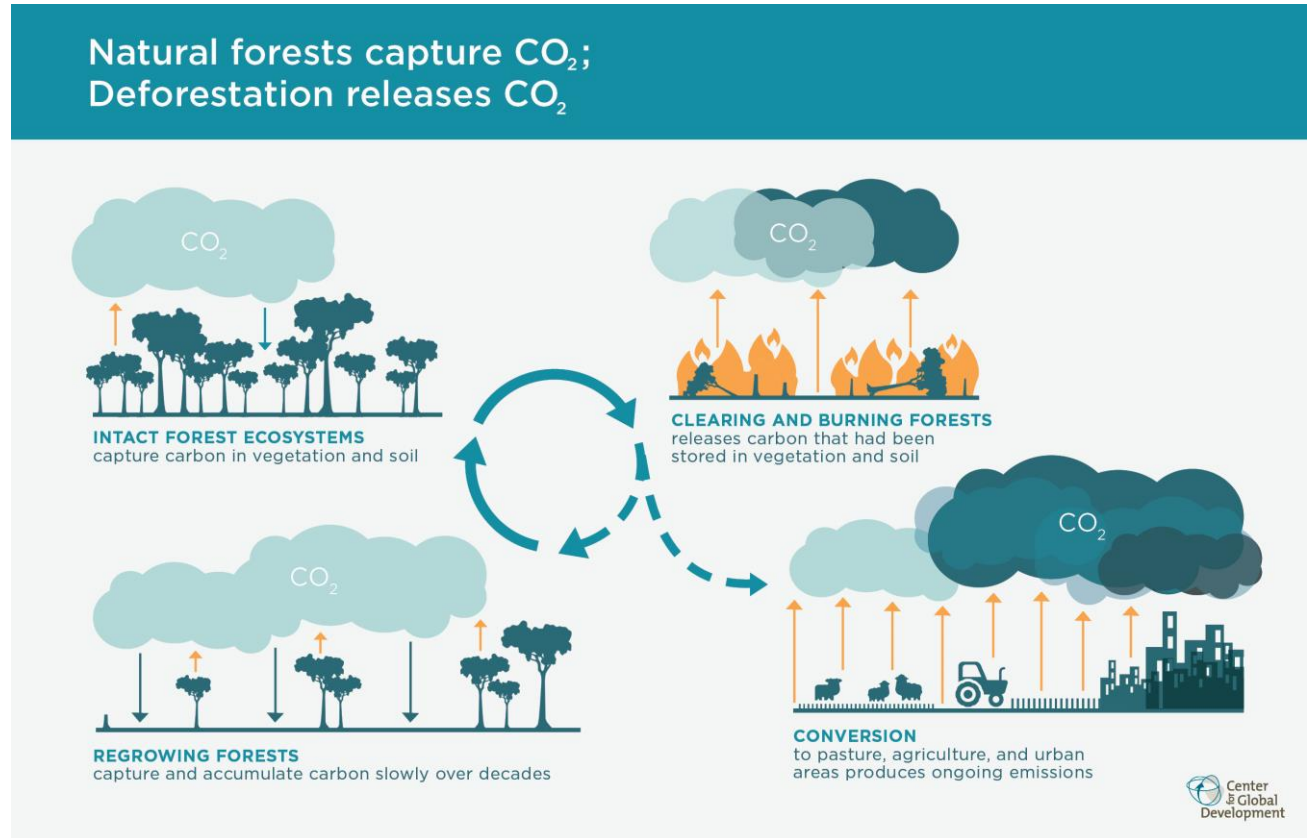
Nature-Based Solutions
From planning to successful governance and implementation

Forests: Climate Solution or Climate Problem?
A few facts about forests and deforestation

- Forests – especially tropical forests – are a major carbon sink.
- Deforestation causes 11% of global CO_2 emissions.
- Worldwide 7.6 million ha of forest are lost every year (size of Bavaria).
- Agriculture and cattle ranching are main drivers of deforestation in tropical countries.
- Forests are home to 80 % of all known terrestrial animal and plant species.
- More than 1/5 of all people depend on forests for their livelihoods.
- Forest protection combines protection of climate and biodiversity.
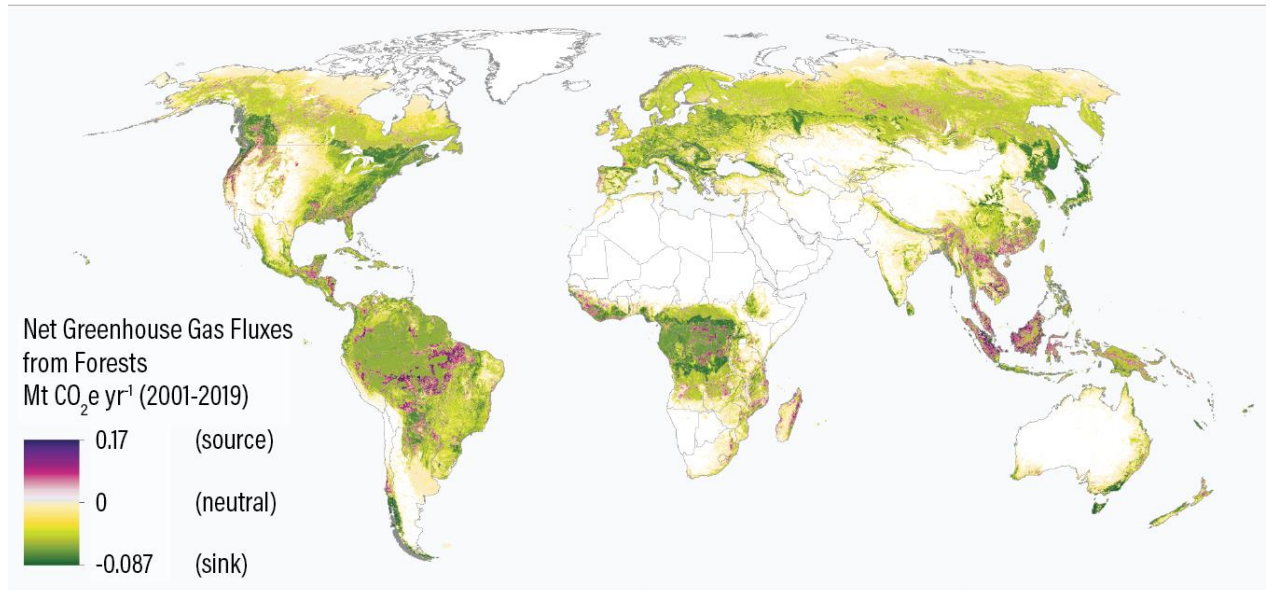- Each US$ invested in forest protection saves US$ 5.40 of other climate mitigation measures.

Natural forests capture CO_2; Deforestation releases CO_2

INTACT FOREST ECOSYSTEMS capture carbon in vegetation and soil

CLEARING AND BURNING FORESTS releases carbon that had been stored in vegetation and soil

REGROWING FORESTS capture and accumulate carbon slowly over decades

CONVERSION to pasture, agriculture, and urban areas produces ongoing emissions

Center for Global Development

Source: Centre for Global Development

Forests: Carbon Sinks or Carbon Sources?
Climate mitigation potential of global forests is unevenly distributed

− World's forests sequestered about twice as much carbon dioxide as they emitted between 2001 and 2019.

− Forests absorb a net 7.6 billion tonnes of CO_2 per year, 1.5 times more carbon than the US emits annually.

− Of the three largest tropical rainforests, only Congo River Basin remains a strong carbon sink.

− Amazon rainforest may reach tipping point in near future.

− Map shows major deforestation fronts (pink and purple areas)

− Global Forest Watch (GFW) website provides most up-to-date and comprehensive data on the world's forest

Forests: Carbon Sinks or Carbon Sources?

Net Greenhouse Gas Fluxes from Forests
Mt CO_2e yr⁻¹ (2001-2019)

0.17   (source)
0   (neutral)
-0.087 (sink)

Source: Harris et al. 2021
20.01.21

GLOBAL FOREST WATCH

WORLD RESOURCES INSTITUTE

Source: World Resources Institute

The Role of REDD+ in Climate Mitigation

Reduced Emissions from Deforestation and Forest Degradation

+ conservation, reforestation, sustainable management of forests & enhancement of forest carbon stocks

- Goal: Leave forests intact and restore where necessary
- IPCC: 1.5°C target will only be achievable if emissions from deforestation and degradation are reduced and coupled with reforestation measures.
- UNFCCC process: Montreal (2005) – Warsaw Framework for REDD+ (2013) – Paris Agreement, Article 5 (2015)
- First programmes were grant-based (Official Development Assistance)
- Carbon markets now include climate mitigation from forests, e.g. US$ 1 billion LEAF Coalition, to mobilise private finance
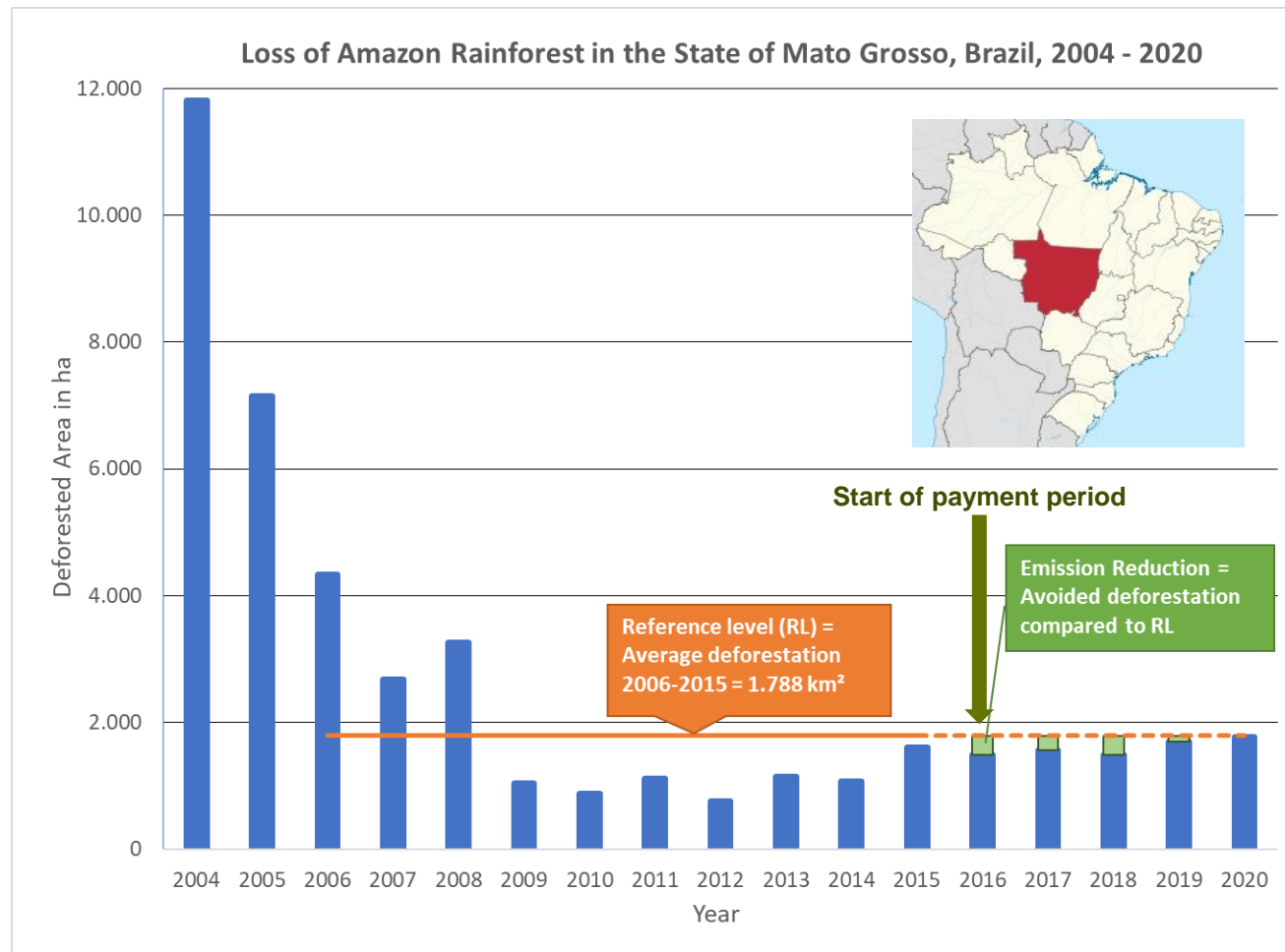- Evolved from a carbon focus to become multi-objective
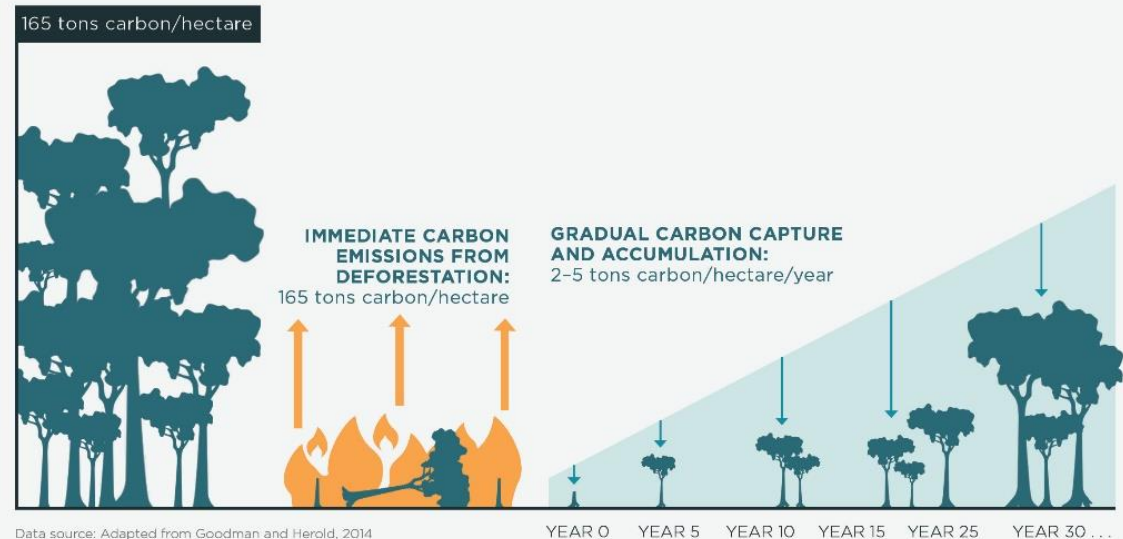
Source: Centre for Global Development

REDD+ Financing
How does it work? Example from Mato Grosso, Brazil

- Payment for results: Money only flows for verifiable reduction in deforestation

- Success is quantified in tons of carbon dioxide (CO_2) that are not released into the atmosphere because they remain safely stored in forests.

- Avoided deforestation (in ha) is converted into Emission Reductions (ER) expressed as tCO_2e.

- Each ton is paid at a negotiated price, e.g. US$ 5 per ton CO_2e.

- Money is reinvested in benefit sharing schemes for forest governance and protection and for projects with local and indigenous communities

Loss of Amazon Rainforest in the State of Mato Grosso, Brazil, 2004 - 2020

Reference level (RL) = Average deforestation 2006-2015 = 1.788 km²

Start of payment period

Emission Reduction = Avoided deforestation compared to RL

REDD Early Movers Programme | REM
Rewarding pioneers of forest and climate protection

- Created in 2011 by **BMZ** (German Ministry of Economic Cooperation and Development)
- Implemented by **KfW** (carbon finance) and **GIZ** (technical assistance)
- First contract with Brazilian state of Acre in 2012
- Today programmes in **Ecuador**, **Colombia** and **Brazil** (states of Acre and Mato Grosso)
- Co-financing from Norway and UK
- Total finance volume **€ 321.5 m**
- Climate mitigation by 2020 = **79 m tCO_2e**
  - 41 m tCO_2e **rewarded** at US$ 5 per ton
  - 38 m tCO_2e **retired** to account for risks of reversal and leakage
- No carbon offsetting. CO_2 savings count towards country's own NDCs.

REM Programmes in South America

Colombia
(2015 - € 93 m)

Ecuador
(2018 - € 42 m)

Brazil
Acre (2012 & 2017 - € 55 m)
Mato Grosso (2017 - € 44 m)

REDD Early Movers Programme | REM

How does REM work?

- **Measurement** of deforestation by remote sensing (MRV system)
- Historic average of deforestation: **Reference Level**
- Experts validate **Results** (verified Emission Reductions)

- **Results-based payments** are disbursed into a special fund in the partner country
- **High** social, environmental and management **Standards**
- **Audits**

- Funds are reinvested in **Benefit Sharing** Programme
- Strong **governance** and **fair & equitable share**
- **Multiple beneficiaries**
- **High impact:** At least 50% spent at local level

REDD Early Movers Programme | REM
Story: The awakening of Diego Duque – from farming to ecotourism

− Diego Duque is a farmer in the Colombian Amazon. He used to clear forest for farming.

− A fire started by his neighbor destroyed large part of his farmland.

− Diego: "*This experience has awakened the desire in me to start projects that make a positive contribution to the environment. Seeing how nature is consumed by fire, not only here but in many places in the Amazon, is a wake-up call*".

− His big dream is to build an "ecolodge" for tourists.

− *"My dream is that visitors of the Cheyenne Farm can walk along ecological paths through this paradise on earth".*

− Today, with funding from REM/Visión Amazonía, Diego Duque and his father dedicate themselves to planting native species, which they grow in their own tree nursery.

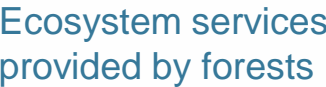Source: Minambiente Colombia

REDD Early Movers Programme | REM
Lessons Learnt for effectiveness of forest finance

- Money alone will not protect forests and climate.
- REDD+ will be successful if a national or sub-national approach is followed.
- Privately financed REDD+ projects at small scale are not achieving the desired extensive reduction in deforestation.
- REDD+ will only be effective if results-based incentives are embedded in coherent national policy and legal reforms.
- Policy measures for forest conservation need to be implemented across all sectors (agriculture, mining, etc.) to address the drivers of deforestation instead of limiting them to only the environmental sector.
- Equitable benefit-sharing and environmental and social safeguards are crucial to protect livelihoods and develop sustainable forest-based economies.

Source: Minambiente Colombia

Food for thought

If REDD+ financing is nature-based, for whom is it a solution?

Ecosystem services
provided by forests

Source: BMZ: The world needs forests

Source: REDD-Monitor: Our Nature is Not Your Solution!

Further Reading

Links to sources, websites and documents

– Center for Global Development: Why Forests? Why Now? A Preview of the Science, Economics, and Politics of Tropical Forests and Climate Change, 11/10/2014 [Link]

– Global Forest Watch: Forest Monitoring Designed for Action – Website [Link]

– WWF: Deforestation Fronts: Drivers and Responses in a Changing World, 2021 [Link]

– UN-REDD Programme: Working together to advance forest protection for people and planet – Website [Link]

– BMZ: The world needs forests: Germany's forest action plan for sustainable development, 03/2017 [Link]

– BMZ: REDD+: Protecting forests and climate for sustainable development, 25/11/2015 [Link]

– KfW: REDD Early Movers Programme – Website and REM Stories [Link]

– KfW: REDD+: rewards for preventing deforestation – how successful is the concept? 02/10/2020 [Link]

– The LEAF Coalition: Lowering Emissions by Accelerating Forest finance – Website [Link]