Making Natural Climate Solutions crediting programs effective and equitable: innovations and challenges

MIT Global Change Forum
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Natural climate solutions could contribute 29% of net reductions needed to be on a 2-degree consistent pathway in 2030.

3.6 Gt per year from avoided deforestation and peatland impacts

Adapted from Griscom et al (2017)
Need to act now on deforestation to avoid (almost) irreversible loss
It is possible: Success in the Amazon…

Schwartzman et al (2021)
Beyond tropical deforestation: Global Potential NCS Storage

- IPCC 2019 – Special Report on Climate Change and Land
- NASEM 2018

- Afforestation/Reforestation: 10.1 Gt CO2-eq/yr
- Soil Carbon Sequestration in Croplands and Grasslands: 8.6 Gt CO2-eq/yr

- Coastal Wetlands: 0.1 - 0.8 Gt CO2-eq/yr
- Forest Management

https://www.silvistrum.com/bluecarbon

The global use of carbon markets could allow nearly doubling climate ambition at same cost, relative to current NDCs.

Source: EDF
Why use ‘markets’?

Means to transfer resources toward those who can protect and restore natural carbon stocks.

- particularly to developing countries and local communities and indigenous people within them

Enable and incentivize action

- Engage a wide set of actors – mobilize their skills and local knowledge
  - Article 6 (UN), Compliance markets, Voluntary markets

Mobilize capital to support change

Complement and finance non-market efforts
Massive scaling up required

Would involve 2-4 billion tons of emission credits traded annually to 2035 (Piris-Cabezas et al, 2019)

$50 per ton implies $100-200 billion of funds transferred annually from developed to developing countries

In contrast, 4 billion units have been created cumulatively under the Clean Development Mechanism since 2001

most considered low integrity

We need new mechanisms.
Pricing can work for forestry (NZ experience)

lagged impact on planting
‘deforestation’ responds to next years’ price

NZU prices provided by Jarden
Pricing can work for forestry (NZ experience)

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NZU prices provided by Jarden
Challenges with NCS crediting

Environmental integrity

*These challenges apply to all crediting – not just NCS*

- Additionality and leakage – can reduce with scale
- Permanence (duration) – can reduce with scale and avoid climate impact through liability
- Concern that offsetting will lead to reduced effort to lower countries’ and companies’ own emissions
- Measurement – particularly for soil and other ‘new’ NCS options

Equity – in process and distribution of resources

Confusion – what defines ‘good’

Transaction costs – for all
Jurisdictional crediting credible credits for avoiding deforestation at scale

Jurisdictional approaches to forest protection can bring meaningful change at scale. They allow the private sector buyers and public donors to work alongside national and subnational governments, communities, and civil society to achieve social, economic and other environmental objectives across landscapes.

From small forest projects ... ... to entire jurisdictions.
The NCS crediting system

Intermediaries + Facilitators

Standards → Credit Registry

Registered Activities → Credit Issuance

Verification of Emissions Reductions (throughout activity lifespan)

Producers

NCS Activities + Standards Compliance

methodology

methodology

methodology

methodology

Payment + Finance
(up-front NCS activity finance and/or payment for credits generated)

Buyers

Offsetting

+ CO₂e[2021]
+ CO₂e[2022]
+ CO₂e[2023]

= 0 (net)
The NCS crediting system

Intermediaries + Facilitators

Standards

Credit Registry

Registered Activities

Methods:
- methodology
- methodology
- methodology

Verification of Emissions Reductions (throughout activity lifespan)

Payment + Finance
(up-front NCS activity finance and/or payment for credits generated)

NCS Activities + Standards Compliance

Producers

Buyers

Offsets:
- $CO_2e[2021]$
- $CO_2e[2022]$
- $CO_2e[2023]$

rights transfer

credit retirement

= 0 (net)
The NCS crediting system

Intermediaries + Facilitators

Standards

Credit Registry

Registered Activities

Verification of Emissions Reductions (throughout activity lifespan)

Payment + Finance
(up-front NCS activity finance and/or payment for credits generated)

Producers

NCS Activities + Standards Compliance

methodology

methodology

methodology

methodology

Buyers

Offsetting

+ CO₂e[2021]
+ CO₂e[2022]
+ CO₂e[2023]
= 0 (net)

rights transfer
Status of economics and science and the credit market

Foundational science → Crediting rules → MRV

- Ag soil
- Temp Forest
- Trop Forest
- Open Ocean

Market Activity

Economics and Science
How it works

1. Jurisdictions reduce deforestation through national or sub-national scale forest protection programs

2. Emissions Reductions (ERs) verified and issued by ART

3. Transaction of ART credits from jurisdictions purchased or paid for by LEAF Coalition participants via Emergent

4. LEAF Coalition participants pay for ERs from jurisdictions at $10 per ER via Emergent

5. Financial Intermediaries distribute payment to jurisdictions and ensure appropriate fund management.

6. Payments to jurisdictions enable additional forest protection and increased climate ambition.
Addressing additionality and leakage: 2 approaches

1. Jurisdictional Scale
   - law of large numbers improves our ability to predict business as usual as more firms/farms are aggregated
   - Large areas mean leakage is captured within the jurisdiction

2. Require reductions below business as usual in crediting baseline
‘Projects’ that opt in claim high levels of deforestation threat – and are rewarded with credits. Who knows?

CO₂ stored in forest

Non-additional credits?

BAU

Project baselines?

time
For large areas (e.g. a state or country) everyone has pretty much the same information to assess deforestation threats. Also ideiosyncracies wash out.
Require some protection before providing credits – reduces risk of setting baseline too loosely.

CO₂ stored in forest

Crediting baseline

BAU

time
Addressing concerns about ‘permanence’: 5 approaches

1. Reduce pressure to reverse – meet needs in other ways
2. Require replacement of credits if reversal occurs – and monitor and enforce (for a long time)
3. Require ‘insurance’ of some form so someone else holds liability
4. Conservative baseline – buffer
5. Pay only for annual value of reduced emissions
   Require purchase of a future unit to match; or
   Separate from credit market

Best solutions will depend on context.

Problem is not unique to NCS. Reduced extraction of fossil fuel is not necessarily permanent either. Reserves can be extracted later.
‘Duration’ at scale
Key messages

1. Natural climate solutions are important, and possibly extremely important – and in the case of avoiding deforestation, urgent

2. Jurisdictional programs can provide high integrity credits from avoiding tropical deforestation

3. NCS that is implemented within large-scale systems and in ways that also meet human needs can be at least as additional and ‘permanent’ as reductions in fossil fuel extraction.