SOCIALCARBON®

Financing conservation in the long term

The need to look beyond REDD+ and towards incremental carbon stock growth.

25th October 2022

Acknowledgements

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About SOCIALCARBON

SOCIALCARBON is an international Greenhouse Gas (GHG) standard focused on Nature-Based Solutions. Utilising leading technology and science, it facilitates the restoration and conservation of natural ecosystems through embedding local communities into projects to ensure lasting sustainable development. www.socialcarbon.org

Contents.

Executive Summary.

REDD+ offers an essential tool to tackle deforestation and/or degradation, but it comes with challenges and is not a panacea.

Reducing Emissions from Deforestation and forest Degradation (REDD+) is a carbon methodology type. Unlike Afforestation, Reforestation, and Revegetation methodologies which focus on measuring changes in carbon stocks, REDD+ analyses the reduced emissions from preventing forecasted deforestation and/or forest degradation.

Adoption of REDD+ has increased over the past decade, with approximately 87 REDD+ projects registered on the VCS registry as of September 2022. This indicates its increasing use as a tool for finance conservation efforts, however it is not without its criticisms.

In this paper we examine the core components of REDD+, results achieved so far, criticisms, and assess whether it offers a long term solution for conservation finance.

Our analysis highlights that REDD+ is an important tool to tackle deforestation and forest degradation, however enhancements are needed to increase the veracity of emission reductions achieved, in particular:

- Calculate weighted historical deforestation and/or degradation rates, with the most recent data holding a higher weighting; and
- Calculate baseline emissions using the project area itself, not reference areas; and
- Limit REDD+ project duration to a maximum of 20 years.

The need for a hybrid approach

To tackle deforestation and/or forest degradation a hybrid approach is required. REDD+ should be used to stem deforestation and/or forest degradation at pace in areas are experiencing high rates of deforestation and/or forest degradation. Once managed, climate finance should be generated through more conservative, measurable approaches that assess a landscape in a more holistic manner. Doing so will not only facilitate the conservation of the area, but will ensure that carbon credits generated by the project are conservative and backed by real results.

1. An overview of REDD+

Underlying Principles of REDD+.

REDD+ projects generate reductions in emissions from deforestation and forest degradation.

Since 2000, the world has lost about 10% of its tree cover[1], becoming a major driver of climate change. The consensus among climate scientists is that CO2 from tropical deforestation now makes up less than 10 percent of global warming pollution[2]. REDD+ is a mechanism designed to incentivise reduced deforestation and degradation through the quantification of emission reductions and thus generation of carbon credits.

Deforestation versus Degradation

The Verified Carbon Standard (VCS) defines deforestation as "the direct, human induced conversion of forest to non-forest land". For example, deforestation occurs when forests are converted to agricultural or to developed lands.

By contrast, degradation is defined by VCS as "the persistent reduction of canopy cover and/or carbon stocks in a forest due to human activities such as animal grazing, fuel-wood extraction, timber removal or other such activities, but which does not result in the conversion of forest to non-forest land (which would be classified as deforestation), and qualifies as forests remaining as forests, such as set out under the IPCC 2003 Good Practice Guidance."[3]

Deforestation involves the conversion of forest to another land-use, while degradation involves reductions in forest carbon stocks without a change in land-use.

Definition of Forest

Two internationally accepted forest definitions, namely the UNFCCC host country forest definitions or the FAO forest definitions, are required to distinguish between deforestation and degradation.

UNFCCC	
Minimum land area:	0.05 – 1.00 ha
Minimum tree crown cover:	10-30%
Minimum tree height:	2-5 meters

FAO	
Minimum land area:	>0.50 ha
Minimum tree crown cover:	>10%
Minimum tree height:	>5 metres

Types of REDD+ activity

Existing REDD+ methodologies distinguish between activities that are designed to stop or reduce "planned (designated and sanctioned) deforestation and/or degradation" and those that are designed to stop or reduce "unplanned (unsanctioned) deforestation and/or degradation"

Avoiding Planned Deforestation and/or Degradation (APDD)

Activities to avoid planned deforestation are those activities that reduce GHG emissions by stopping or reducing deforestation on forest land that is both legally authorized (by relevant government authorities) and documented to be converted to non-forest land. Voluntary Carbon Standards such as VCS require that projects demonstrate that the baseline agent has permission as well as intent to deforest the project area to ensure that APDD baselines are credible and not spuriously set to be self-serving.

Avoiding Unplanned Deforestation and Degradation (AUDD)

Activities to avoid unplanned deforestation and degradation (AUDD) are those activities that reduce deforestation and/or degradation on forest land that is either not legally authorized or is not documented for conversion to non-forest land. Unplanned deforestation and degradation typically occurs due to poor law enforcement or lack of property rights that result in piecemeal conversion of forest land to non-forest land.

Baseline Scenarios

All REDD+ projects, as with other GHG methodologies, must document the baseline scenario in the project area. In the case of REDD+ this involves the assessment of historical deforestation and/or degradation rates in the project reference area, in addition to the agents and drivers of the deforestation and/or degradation.

As opposed to other methodologies, the baseline scenario and forecasted baseline emissions are a critical component of REDD+. The emission reductions achieved by a project are based on the forecasted baseline emissions in the business-as-usual scenario in the absence of the project activity. The baseline emissions for REDD+ projects is comprised of:

1. **Land-use and land-cover (Lu/LC) change.** This examines the historical trends observed over the previous (usually) 10-12 years in the reference area that are used to make future projections of deforestation.
2. **Carbon stock change (emission factor).** This examines the carbon stock change between different land-use/land-cover scenarios, thus the resulting emissions.

Reference areas / regions

To examine the historical land-use/land-cover changes, the project area alone is not analysed, but a reference area / region. This structure and geographic location of this reference area / region is dependent on the REDD+ methodology applied. In some cases the project area must be located in the reference area, in others it does not need to be.

This reference area/region is used to determine the historical land-use/land-cover change which the baseline emissions will be determined.

Leakage

As with other GHG methodologies, leakage must be considered to minimise emissions from outside the project area attributable to the project activity. In REDD+, two types of leakage are typically considered:

1. **Activity Shifting Leakage.** This occurs where agents shift their deforestation / degradation activities outside the project area.
2. **Market Leakage.** Market leakage occurs when the project activity reduces the production of a commodity that results in an increase in production elsewhere to meet continuing market demand.

Quantification of GHG Emission Reductions

The GHG emission reduction for REDD+ are calculated as follows:

GHG Emission reductions	=	Baseline Emissions	-	Project Emissions	-	Leakage	-	Uncertainty	-	Non-permanence risks

Similarly to other GHG methodologies, REDD+ project must undertake an additionality analysis, alongside regular monitoring and uncertainty analysis.

Results achieved so far.

REDD+ activity has grown significantly in the past decade, but non-carbon benefits are small and greater local participation is needed.

Significant estimated emission reductions

According to the VCS Registry in September 2022, approximately 87 REDD+ projects are registered, with a combined estimated annual emission reductions of over 72 million tCO2e. This value is exclusive of jurisdictional programmes under VCS or TREES which have the potential to significantly increase the annual emission reduction estimates.

Limited non-carbon effects

The emission reductions quantified under project-level REDD+ projects is significant, however studies has highlighted that non-carbon effects are small or insignificant. A meta study in 2018[4] examined 45 articles from scientific literature to understand the outcomes of REDD+ interventions on the ground in terms of local participation in REDD+ and its carbon and non-carbon goals (e.g. tenure, well-being, biodiversity). This study found that non-carbon effects are small or insignificant and local participant needed to be boosted to help achieve positive outcomes.

In some case studies, REDD+ projects have been shown to result in negative outcomes for local people. An analysis from Tanzania showed that projects intended to improve local socio-economic well-being have instead undercut livelihoods and potentially deepened poverty because the intended beneficiaries were also identified as the principal threat to forests and were targeted for displacement[5]. Other studies have flagged the potential risk of REDD+ leading to the alienation of forestlands from local stakeholders with the associated loss of livelihood options, a process they refer to as “green grabbing”, which involves “the restructuring of rules and authority over the access, use and management of resources”[6]. Other researchers have identified how the limited representation of local opinion in the implementation of REDD+ projects can “reshape” community forestry objectives, thereby undermining livelihoods and restricting local access to forest benefits[7].

It must be noted that since the studies were published the price of voluntary carbon credits has increased significantly which may result in different outcomes today, particularly with regards to profit sharing.

Criticisms of REDD+.

REDD+ is an important tool to tackle deforestation and/or degradation, but it has flaws which can be exploited.

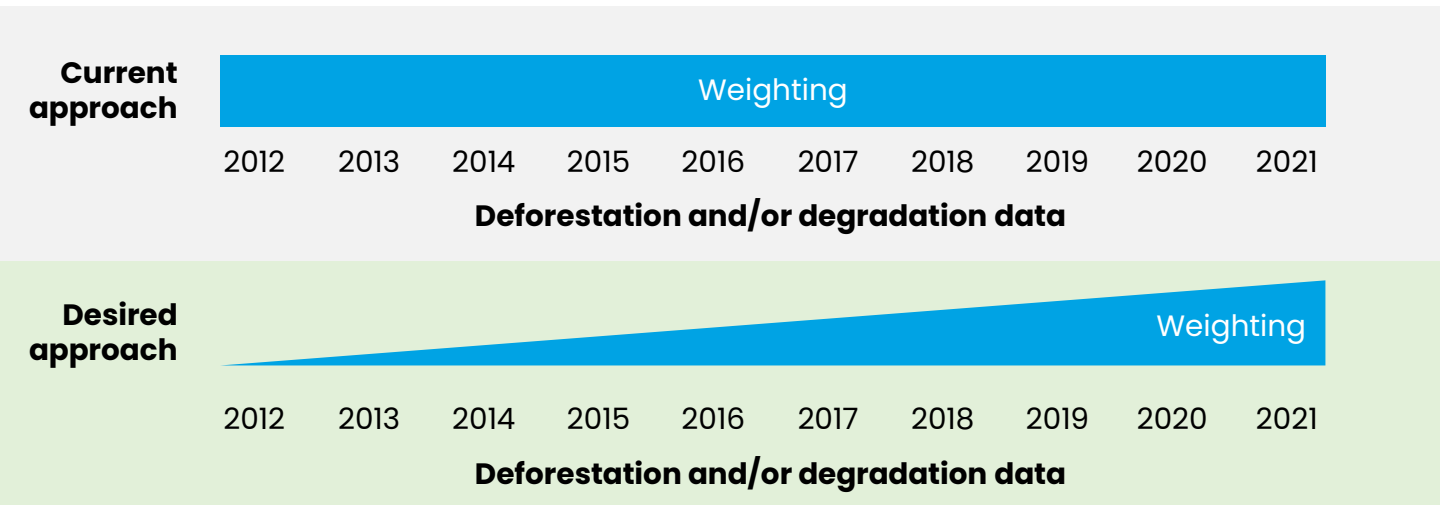
Several project-level REDD+ methodologies exist; VCS has four REDD+ methodologies each with a different set of eligible project activities, project boundaries and reference areas / regions. Whilst variations exist, key principles apply across all methodologies that have the potential to be exploited. This section will examine the core vulnerabilities of existing REDD+ methodologies, with a particular focus on sub-national REDD+ projects and not jurisdictional REDD+.

Historical Deforestation and/or Degradation rates

All REDD+ methodologies require a look back period to analyse historical trends related to land-use/land-cover change. VCS requires at least the previous 10 years in the reference area to be analysed.

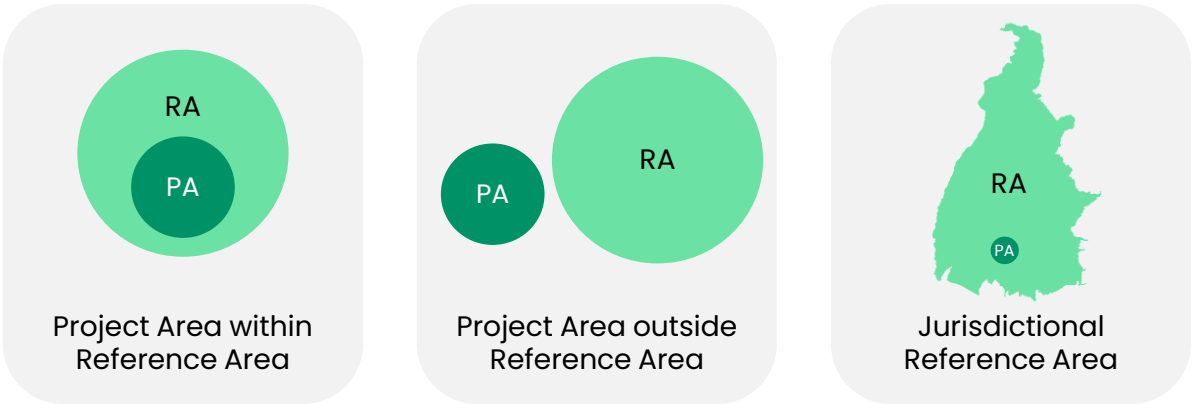
Whilst a minimum 10 year look-back is essential to conduct a sufficient analysis, there is currently no requirement to weight the historical values used to determine the average rate of deforestation and/or degradation in the reference area. This can often lead to over-estimation of deforestation and/or degradation rates with older data skewing the calculated average.

Instead the historical rates should be weighted, whereby the oldest data has the lowest weighting and the most recent data has the highest weighting. This ensures that the baseline scenario is weighted based on the most recent data and ensures conservativeness of results. This approach should be the same even if jurisdictional data is used.



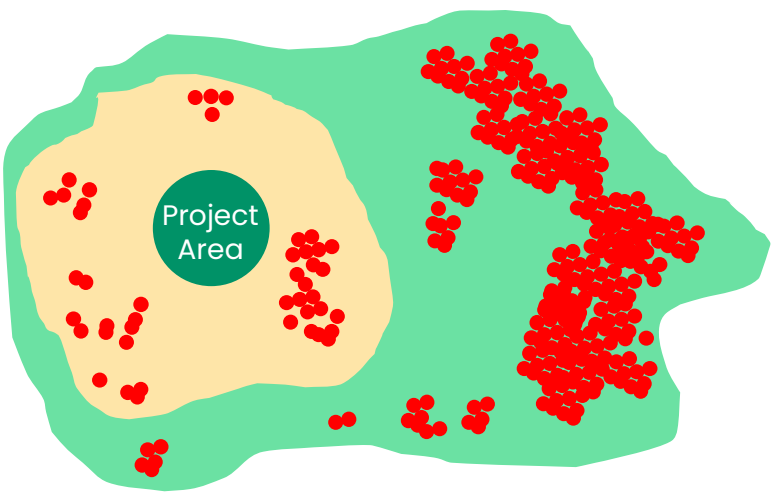
Reference areas

Following on from baseline scenarios, historical land-use/land-cover change rates are not based on the specific project area, but on reference areas. The reference area is determined based on the methodology used. In some methodologies the reference area must include the project area (e.g. VM0015), in others it may not include the project area (e.g. VM0009). With the growing interest in jurisdictional REDD+, it is increasingly likely that project-level REDD+ will need to align with jurisdictional data. If a jurisdictional rate is not applied, the reference area can range in size. In some methodologies it must be at least greater than the project area, in others it must be at least twice the size.



Irrespective of the reference area design, the issue is that the deforestation and/or degradation rate used to calculate baseline emissions is not based on values exclusively from within the project area. This means that projects with relatively low deforestation and/or degradation prevalent in their project area, but located in a region with high deforestation and/or degradation rates, are able to generate emission reductions. These emission reductions are often not real and undermine climate action; in the best case scenario they are over-estimating emission reductions if deforestation and/or degradation is present in the project area.

Due to the varying size of eligible reference areas there is also the incentive to select reference area sizes based on which will generate the highest baseline emissions. This also increases the risk of over-crediting. The following example demonstrates this.



Key:

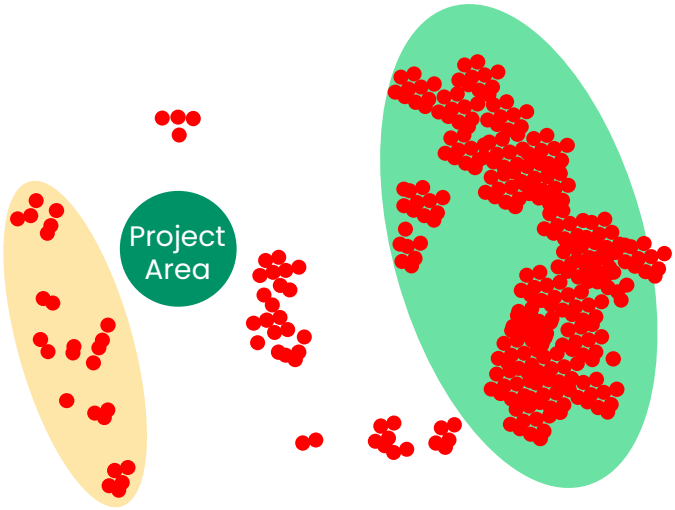
Reference Area Option 1

Reference Area Option 2

Occurrence of deforestation

In this example, the project is incentivised to choose the larger reference area (green), over the other eligible reference area (yellow) to increase the baseline emissions.

The same applies, and can be even worse, when the project area is not within the reference area. In this case, the project developer is incentivised to select a reference area that has higher rates of deforestation and/or degradation, as shown below.



Key:

Reference Area Option 1

Reference Area Option 2

Occurrence of deforestation

In this example, the project is incentivised to choose reference area option 2 (green) to increase the baseline emissions.

Beyond manipulation of reference areas to increase baseline emissions a longer term challenge with project-level REDD+ exists: cannibalisation of reference areas.

The ability for REDD+ projects to generate carbon credits at (typically) a lower cost that Afforestation / Reforestation project activities means that land within high deforestation and/or degradation risk areas is desirable. Unless a jurisdictional baseline scenario is applied there is the risk that reference areas used by nearby REDD+ projects, will themselves be developed for REDD+. As a result, the baseline emissions of the nearby projects will be void, particularly if the reference area is developed within a short time period after the nearby projects' crediting period begins.

This further creates risks of over-crediting; when the baseline scenario only needs to be re-assessed every 10 years, there is potential for several vintages of credits to be issued based on invalid forecasted baseline emissions.

Project longevity

REDD+ projects, as with other AFOLU projects, have the potential to run for up to 100 years provided the project is able to demonstrate additionality and has valid baseline scenarios when re-assessed. However, if a project has been unable to eliminate or sustainably control deforestation and/or degradation within 20 years of operations, something is seriously wrong.

In the case that deforestation is eliminated, but projects are able to continue generating carbon, again due to their reference area, we must ask the question – are these emission reductions real?

Perverse incentives

A perverse incentive exists with REDD+, whereby areas that have high deforestation and/or degradation are able to receive climate finance, meanwhile areas that have been preserved are often not eligible.

The strict requirement for additionality, i.e. carbon reductions/removals would not have happened under a business-as-usual scenario, is essential for the carbon market. However, it unfairly impacts those most eligible for financial compensation for environmental conservation. Indigenous communities that has preserved their land for generations often cannot claim any carbon credits. Under this model, the ability of an indigenous community to continue preserving their land will only diminish over time; cultures will diminish over generations and the constant temptation of selling parts of their land to logging companies will persist. These communities need to be compensated for their tireless work preserving essential natural habitats.

A limited focus on biodiversity

Biodiversity has been largely overlooked in the carbon markets, including REDD+. Whilst co-benefit standards can be applied to REDD+ projects, it is not mandatory. Often the cost of the additional monitoring and the co-benefits certification process deters project developers from assessing this essential component of projects.

Ignoring biodiversity in nature-based solutions leads to the ineffective conservation, whereby the forest appears healthy at face value, but is declining under the surface. Biodiversity is an integral component of healthy ecosystems. If it is not monitored, preserved and nurtured, the ecosystems cannot survive, undoing all the emission savings achieved by projects.

REDD+ does not consider declining biodiversity within an area as a form of degradation, therefore this key metric is overlooked.

2. Jurisdictional REDD+

Underlying Principles of Jurisdictional REDD+.

Jurisdictional REDD+ offers the potential to address deforestation and/or degradation at scale.

Jurisdictional REDD+ refers to government-led REDD+ activities at the sub-national or at the national level. Whilst there is growing discussion about Sovereign REDD+, for the purpose of this document we consider Sovereign REDD+ to be a national level jurisdictional programme.

Jurisdictional REDD+ is comparable to project-level REDD+ in its core principles with the primary difference between the two approaches being the baseline scenario. Unlike a project-level REDD+ project, jurisdictional programmes assess the historical deforestation and/or degradation rates in the jurisdiction itself, rather than a reference area.

At present, two jurisdictional REDD+ methodologies exist: VCS and TREES (The REDD+ Environmental Excellence Standard). The programme configuration differs depending on the methodologies used; the two methodologies have different approaches to manage non-permanence risk and re-assess baseline scenarios, along with other variables.

Benefits of a jurisdictional approach

1. **Governments have the authority to control land-use change.**

   Halting and reversing deforestation and forest degradation on a large scale usually requires actions that only governments can perform. Where forest loss is due to illegal activity, only governments can enforce the law. A jurisdictional approach incentivises the policy change requires for impact at scale.

2. **Jurisdictional performance can incentivise better social and environmental integrity to emission reduction credits.**

   A jurisdictional approach reduces the risk of non-additionality, leakage and reversals because the programme is implemented at greater scale with broader considerations beyond a specific area.

3. **Public and private funding.**

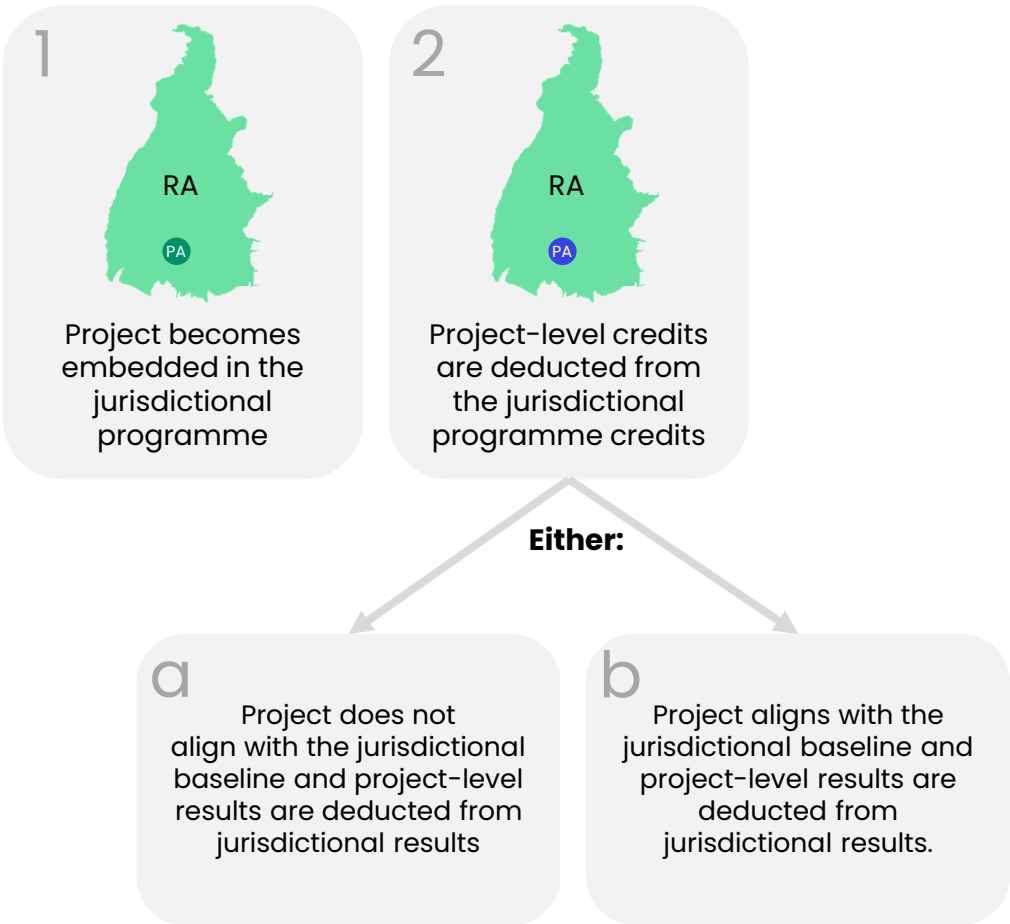
   The growing demand for carbon credits internationally offers a way for emerging countries to access new sources of income that promote sustainable development without a heavy reliance on debt instruments or public funding.

Nesting of projects.

Project 'Nesting' is an important component of jurisdictional programmes, but more clarification is needed.

Project 'nesting' is where REDD+ projects within a jurisdiction are 'nested' into the overall programme to prevent double counting of emission reductions. At present, challenges exist related to how this will work in practice. TREES does not prescribe how the jurisdictional programme nests projects[8] and does not directly credit project-level activities, instead it adjusts the jurisdictional accounting to ensure no double counting. Under VCS, there is a move towards aligning nested projects to the jurisdictional baseline scenarios.

Nesting scenarios



Challenges to come.

Jurisdictional REDD+ has promise, but is not without its challenges.

As with project-level REDD+ challenges exist with the jurisdictional approach. Whilst the baseline scenario is less vulnerable to manipulation, results are based on baseline emissions which are re-assessed at a maximum every 5 years. Other challenges include:

- Nesting of project-level REDD+
- Governance
- Long term sustainability and results
- REDD+ not being a panacea

Nesting of project-level REDD+

As stated earlier, there is still uncertainty related to nesting of project-level REDD+. This is not an easy fix and complexities vary across geographies and with local context.

Mandated alignment with jurisdictional baselines

If projects are mandated to align to jurisdictional baselines there is a risk that projects located in the highest risk areas within the jurisdiction are negatively impacted; they must use baseline scenarios that under-represent their specific project area.

Divergence between methodologies used

If projects do not align with the jurisdictional baseline approach and use an over-estimated baseline scenario that is still compliant with the methodology used, the jurisdictional programme must compensate for the over-estimation. This would result in the jurisdictional programme issuing less carbon credits than deserved. This scenario may escalate conflict between jurisdictional and project-level REDD+ initiatives.

Over-crediting

Where existing projects becomes nested in a jurisdictional programme and have been operational for more than five years, there is a strong likelihood that they will be have significantly reduced emissions in their project area. As stated in the REDD+ project criticisms, the risk is that these projects are no longer reducing deforestation and/or degradation and therefore there may be concerns over how real the emission reductions are.

Governance

The scale of jurisdictional programmes by default requires significantly more complex governance structures and management. Developing a REDD+ project on a million hectare area with a number of stakeholder groups is challenging, scaling this to the jurisdictional level takes the challenge to another stratosphere.

Another challenge with governance is associated with how the net proceeds are distributed. Communities must be compensated for their commitment towards forest preservation and restoration, including indigenous communities, who themselves are responsible for a significant portion of preserved habitats globally. However, the communities that have historically preserved their forests will likely receive less financial benefits from the jurisdictional programme than those that have historically not managed their forests effectively.

Long term sustainability and results

Conservation is not a short term solution, it is a long term initiative that requires sustainable funding to maintain operations. REDD+ offers an opportunity to quickly access significant finances to support conservation efforts. However, and as stated previously, for individual project areas, if deforestation and/or degradation has not been managed within 20 years of operations, something is not right. Once the threat of deforestation and/or degradation have been managed, what happens if the project is no longer able to generate carbon credits? In this situation, the credits generated through REDD+ are no longer real. Once carbon credit revenue dries up, what is to stop the local stakeholders from returning back to their historical land management practices? A different approach to quantifying the value of conservation is needed to ensure long term conservation finance.

REDD+ not being a panacea

The drivers of deforestation and/or degradation are complex and often cannot be resolved through pure REDD+ initiatives. For example, the expansion of agricultural land is a common driver of deforestation in Latin America. REDD+ project activities may incentivise the farmers from no longer expanding their agricultural land, but this is not addressing the core driver of land-use/land-cover change.

Instead, if the farmer were to be incentivised to adopt regenerative agricultural practices that improve the productivity of their land and reduce the need to access more fertile land, the long term driver would be managed. This type project activity under REDD+ is often not implemented, and whilst education on forest management is important, local stakeholders must receive broader benefits from changing their land management practices beyond income through the proceeds of sale from carbon credits.

3. An alternative to REDD+

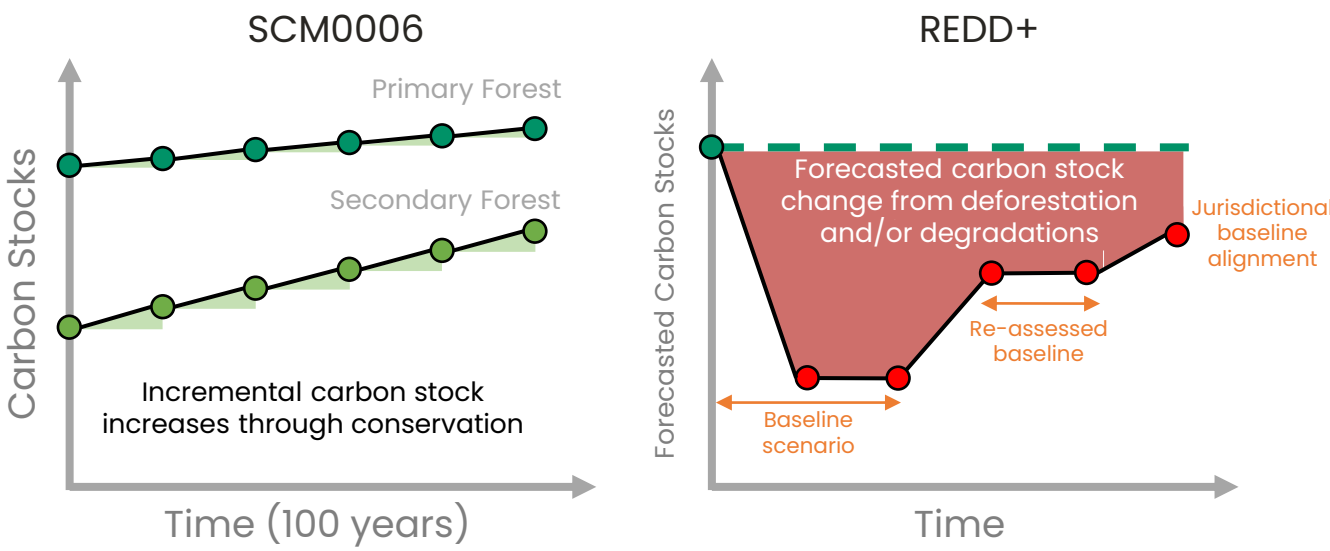
Measuring incremental carbon stocks.

Measuring incremental carbon stocks from biomass growth offers a more robust and real approach to measure carbon benefits from conservation efforts.

Incremental carbon stocks from biomass growth is calculated by monitoring the biomass and thus their carbon stocks between two time periods. The growth in incremental carbon stocks varies across biomes and their maturity; primary forests (old, relatively untouched forests) has significantly lower growth rates than secondary forests. However, studies have shown that the increased greenhouse gas levels in our atmosphere is actually fuelling additional growth[9]. Carbon credits based on real, measurable removals achieved through biomass regeneration and growth, rather than forecasts ensures the following:

- Greater conservativeness
- Verifiable results
- A long-term approach to monitor the benefits of conservation and access climate finance

SOCIALCARBON's methodology SCM0006, provides an approach to quantify the incremental carbon stock growth, thus emission removals within a biome.



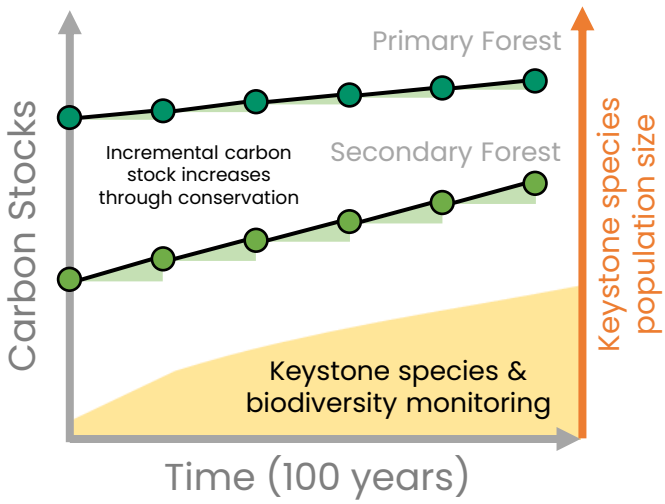
The importance of measuring biodiversity.

Biodiversity loss is a form of degradation – it must be considered and requires ongoing monitored.

Degradation of a land-cover within a biome is only looking at half of the issue. Degradation of biodiversity inhabiting a biome is essential to accurately assess its health. Keystone species, which are species that have a disproportionally large effect on their natural environment and help define an entire ecosystem, must be monitored; if these species decline, the biome will be impacted significantly.

To address this, SOCIALCARBON's SCM0006 – methodology for the conservation of areas of biodiversity importance, has been designed to include a decline keystone species as a form of degradation. This enables projects that experience poaching of keystone species within their area to be eligible for climate finance.

As with all SOCIALCARBON projects, biodiversity and social impacts of the project must be measured and monitored alongside carbon impacts. This not only ensures that biodiversity is continually monitored to track biome health, but provides additional data to validate the value delivered through the conservation efforts of the project. An integral component of SOCIALCARBON is local stakeholder involvement within project design and implementation, this is not only essential for successful project delivery, but long-term conservation efforts.



A hybrid approach.

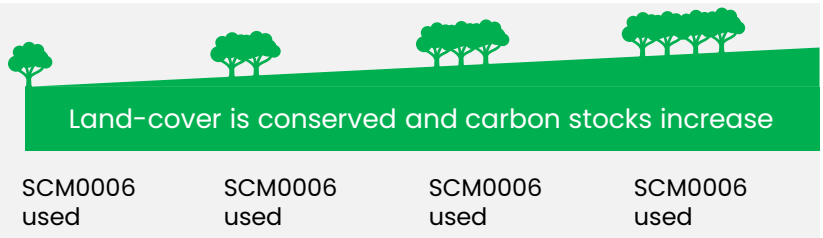
A hybrid approach is needed between REDD+ and conservation efforts to deliver long term results.

There is no question that REDD+ offers a tested approach to finance efforts to tackle deforestation and/or degradation, particularly at a project level (at present limited jurisdictional programmes have been implemented). However, two challenges of REDD+ need to be addressed: baseline emissions and project duration.

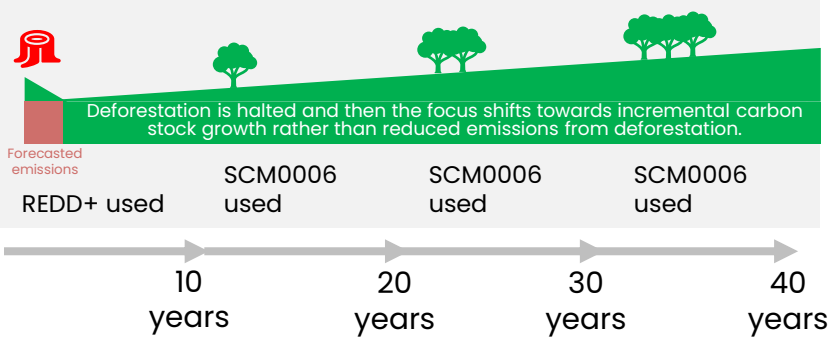
Baseline emissions should be based on historical deforestation and/or degradation rates **within the project area** and not reference areas. This rate should be weighted to ensure the latest data has the greatest weighting when determining the historical average. By eliminating reference areas, REDD+ will only be applied in areas where deforestation and/or degradation are present and intervention is required. This also ensures baseline emissions cannot be manipulated by reference areas and results are real; the project is based on deforestation within the project area.

The project baseline should be re-assessed every 10 years. If deforestation and/or degradation has not been sustainably managed within the initial 10 years, the project can extend for another 10 years. If the project has not sustainably managed deforestation and/or degradation within the second 10 year period the project cannot be renewed – it clearly is not effective. In the scenario that the project successfully manages deforestation and/or degradation, the project should then transition away from REDD+ and towards conservation. The following example outlines this.

Scenario 1:
Low Deforestation / Degradation exists



Scenario 1:
High Deforestation / Degradation exists



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