Carbon Project Ratings – J-REDD+ Methodology

MSCI ESG Research

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Contents

1. Methodology overview

Objective

MSCI Carbon Project Ratings are composite ratings that independently assess the integrity and risks of carbon credit projects across multiple criteria, including their impacts on the climate, environment and society.

A project with a higher rating has a greater likelihood of having a positive emissions impact and a reduced risk of overestimating its emissions impact. It is also more likely that such an emissions impact will have been implemented in a way that supports positive social and/or environmental outcomes and upholds legal and ethical standards. Consequently, a project with a higher rating has a lower likelihood of incurring reputational risks.

Document description

This document describes the detailed project type-specific methodology used to assess Carbon Project Ratings and Pipeline Carbon Project Ratings (but not Preliminary Carbon Project Ratings) for jurisdictional REDD+ (J-REDD+) programs.

This project type-specific methodology is applied in addition to, and partially in replacement of, the methodology that is described in the overall MSCI Carbon Project Ratings methodology document, "MSCI Carbon Project Ratings and Assessments Methodology." Where an element of the overall methodology is replaced by this project type-specific methodology, it is detailed below. Every element of the overall MSCI Carbon Project Ratings methodology also applies to MSCI ESG Research's assessment of Carbon Project Ratings and Pipeline Carbon Project Ratings for J-REDD+ programs unless explicitly excluded in this document.

This methodology is subject to MSCI ESG Research's methodology governance and update process, as outlined in the overall methodology note. This ensures that updates and refinements to the methodology align with evolving best practices, stakeholder input, and data updates. For details on the governance process, methodology updates, and review timelines, please refer to Section 12 of the MSCI Carbon Project Ratings methodology document.

Section 2 introduces the core concept of carbon credit integrity and why its assessment is important to the development of the global carbon credit market. Section 3 introduces and defines J-REDD+ programs. Sections 4-8 provide details on the project type-specific methodology, including data sources and assumptions, used in MSCI ESG Research's Carbon Project Ratings and Pipeline Carbon Project Ratings assessments for J-REDD+ programs.

2. Introduction to carbon project integrity

What is carbon credit integrity?

Carbon credits have varying quality characteristics. These stem from fundamental differences in project types, but also from which methodologies have been used to define each project and create the credits (these methodologies are among the standards set by carbon crediting programs, and are hereafter called crediting program methodologies) and how rigorously they have been applied. Projects also differ in terms of their potential co-benefits and their legal and ethical characteristics.

This variation in quality was not intended. Standard setting and governance bodies attempted to create a system in which all carbon credits had an equivalent climate benefit (representing a tonne of carbon dioxide equivalent [CO_2e] removed or avoided) which could be used for voluntary or compliance purposes.[1] This effort dates back to the Clean Development Mechanism (CDM) created under the 1997 Kyoto Protocol and has continued with the evolution of the carbon credit market.

A key challenge lies in the quantification of the climate benefit of a project — i.e., whether the carbon credits calculated for a project are genuinely equivalent to mitigating or removing one tonne of carbon dioxide from the atmosphere. This difficulty stems from the calculation method used to determine what would have happened in the absence of a project, i.e., in the "baseline" scenario (sometimes referred to as the "counterfactual" scenario).

Another difficulty is that projects differ significantly in age, size and technology. The science behind some crediting program methodologies has also evolved over time, as has the enforcement of standards and levels of governance.

Readers should note that, within the carbon markets, the words "quality" and "integrity" tend to be used somewhat interchangeably. Through the rest of this document, the word integrity is used when referring to carbon projects.

The importance of assessing carbon credit integrity

Corporate climate action is critical in the fight against climate change, and carbon credits represent an important mechanism for corporates to mitigate their carbon footprint. However, concerns over carbon credit integrity may have held back, and may continue to hold back, the global carbon credit market from reaching its potential. These concerns center around the perception that many carbon credits are of low integrity and are not delivering the benefits they claim to.

In 2021, the Taskforce for Scaling the Voluntary Carbon Market (TS-VCM) found that credit integrity was at the "heart of buyers' hesitancy,"[2] with 45% of buyers identifying it as a "key pain point". Buyer concerns around credit integrity and the related risk of being accused of greenwashing due to the use of low-integrity credits have only grown since then. For example, some 55% of respondents to an April 2023 survey run by the Science-Based Targets Initiative (SBTi) stated that the risk of a greenwashing accusation was stopping them from buying more credits.[3]

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[11] World Bank. (2010). *State and Trends of the Carbon Market 2010*. Washington, DC: World Bank. https://openknowledge.worldbank.org/handle/10986/28493

[2] IC-VCM, "Taskforce on Scaling Voluntary Carbon Markets: Summary of the Public Consultation Report," June 3, 2021.

[3] SBTi, "Beyond Value Chain Mitigation (BVCM) Research," SBTi press release, September 1, 2023.

Concerns over carbon credit integrity have been central to the creation of two major initiatives: the Integrity Council on the Voluntary Carbon Market (IC-VCM) and the Carbon Credit Quality Initiative (CCQI). The IC-VCM aims to create minimum standards of integrity with a set of Core Carbon Principles (CCPs), and the CCQI has developed a comprehensive scoring system for certain project types. Both initiatives primarily assess integrity at the project-type level (primarily based on a project's methodology used) or at the project-registry level (a project registry is an organization that registers mitigation activities and issues carbon credits for the emission reductions or removals achieved by the mitigation activities). Neither initiative assesses integrity at the individual-project level.

MSCI ESG Research's assessment methodology draws on the IC-VCM's and CCQI's approach to assessing integrity, building on their principles to apply a more in-depth evaluation of integrity at the individual-project level.

The key components of carbon project integrity assessment

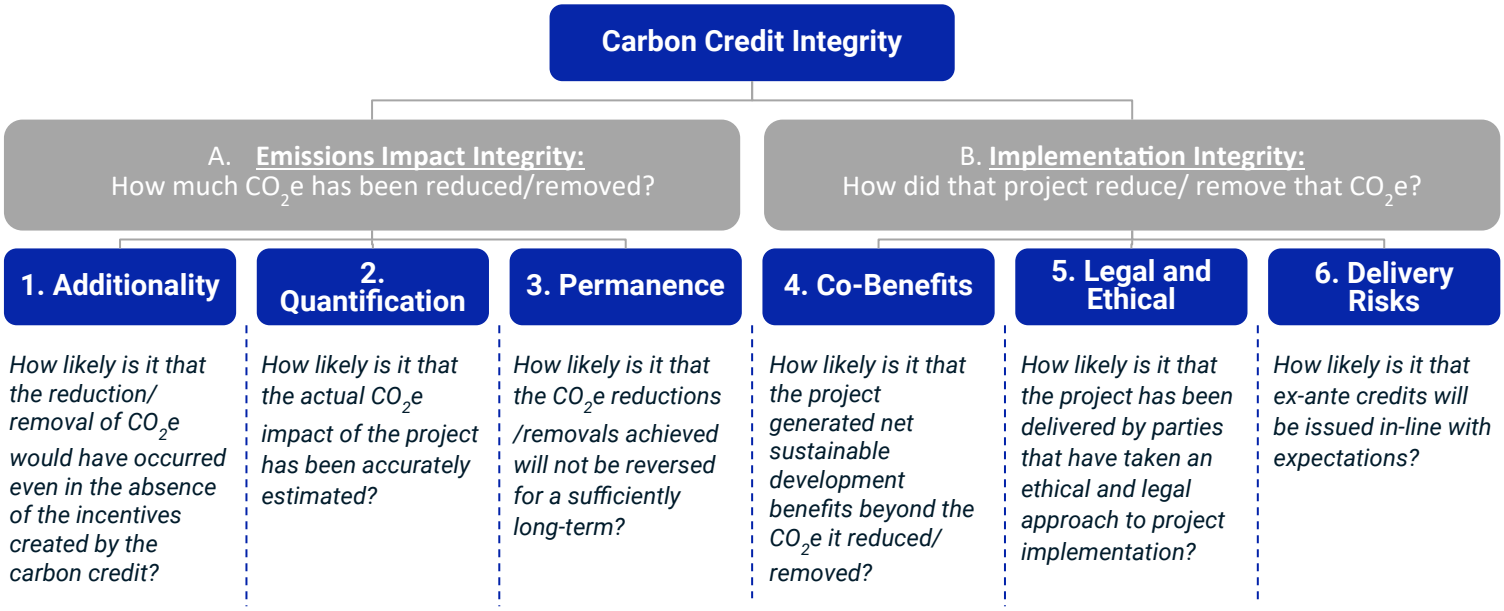
Market approaches to assessing carbon project integrity typically focus on three main issues:

A. **Emissions impact integrity:** How much CO_2e has been reduced/removed?
B. **Implementation integrity:** How did that project reduce/remove that CO_2e?
C. **Usage integrity:** How are the credits then reviewed and used?

Emissions impact integrity and implementation integrity can each be further broken down into three main areas of common concern. These are summarized in Figure 1, and outlined in detail below.

Emissions impact integrity, implementation integrity and usage integrity are each described in more detail in the overall methodology document "MSCI Carbon Project Ratings and Assessments Methodology."

Figure 1: Key components of carbon project integrity



3. Introduction to J-REDD+ programs

What are J-REDD+ programs?

Forests play a critical role for the planet by absorbing CO_2 and supporting a wide range of biodiversity. Protecting them is essential.

Despite zero-deforestation pledges made by governments at COP26, in 2022 alone, the tropics lost over 4 million hectares of primary rainforest — an area roughly the size of Switzerland — at a rate equivalent to 11 football fields per minute. This resulted in 2.7 gigatons (Gt) of carbon dioxide emissions, equivalent to the annual fossil fuel emissions of India.[4]

To incentivize forest protection, the Conference of the Parties of the United Nations Framework Convention on Climate Change established the concept of reducing emissions from deforestation and forest degradation (REDD+) projects that aimed to reduce emissions from deforestation and degradation due to human causes. By utilizing carbon finance, REDD+ projects can address the underlying drivers of deforestation and protect areas from any destruction that would lead to CO_2 being released and other negative environmental consequences (such as biodiversity loss). In this way, carbon revenues help to incentivize communities, companies and/or countries to protect forested areas.

REDD+ projects can be broadly split into three main subtypes that represent different drivers of deforestation:

Project-Scale REDD+

[4] World Resources Institute. 2022. "How much forest was lost in 2022?" https://research.wri.org/gfr/global-tree-cover-loss-data2022.

- **Avoided Unplanned Deforestation (AUD)** – ~80% of project scale REDD+ projects:[5] reducing emissions by protecting forested areas from illegal deforestation, whether from local communities or illegal commercial deforestation.
- **Avoided Planned Deforestation (APD)** – ~20% of project scale REDD+ projects: reducing emissions by preventing deforestation on forested lands where commercial agents have legally authorized plans to convert it to non-forest land. For example, where a local landowner is aiming to convert the land to an alternative use, such as a cattle ranch or timber plantation.

Jurisdictional Scale REDD+

- **Jurisdictional REDD+ Programs (J-REDD+)** – J-REDD+ programs sit alongside AUD and APD projects. They can include both AUD and APD elements as part of a single program. The key differentiating factor is that a J-REDD+ program is usually far larger, covering an entire country or state and is developed and implemented by a government and/or a state-linked body.

Implementing a project on a jurisdictional scale has important implications for how baselines are set, how leakage is accounted for and the impact of policy and regulation, among other differences. This methodology document details how MSCI ESG Research assesses the integrity of J-REDD+ programs. Please refer to the methodology note "MSCI Carbon Project Ratings – REDD+ Methodology" for details on the assessment approach for project-scale REDD+ projects.

Market overview

REDD+ projects have historically been one of the most important project types within the voluntary carbon market. As of December 2023, nearly 550 million tonnes (Mt) CO_2e of credits have been issued by REDD+ projects, representing ~25% of total issued credits in the overall voluntary carbon market. J-REDD+ programs are, individually, far larger than other types of projects in the voluntary market, even the already comparatively large project-scale REDD+ projects.

J-REDD+ programs are a more nascent project type than project-scale REDD+. However, as of February 2024, there are 38 known J-REDD+ programs. The ART-TREES (Architecture for REDD+ Transactions – The REDD+ Environmental Excellence Standard) registry (as of February 20, 2024) had 22 pipeline programs and 1 fully registered program in Guyana, which issued 33 Mt of credits in late 2022, and 7 Mt of credits in February 2024. In addition to ART-TREES, the World Bank's Forest Carbon Partnership Facility (FCPF) J-REDD+ program has now started issuing credits for several projects that it supports directly.

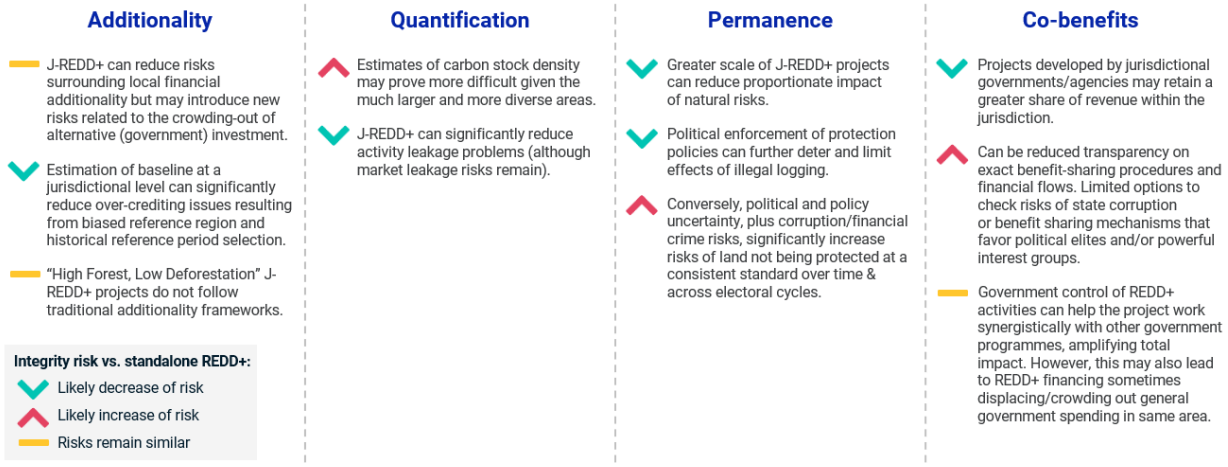
The potential size of J-REDD+ to the overall market is very large. ART registry's programs alone cover five global regions and a total forest area of over 650 million hectares, 20 times larger than all currently registered REDD+ projects combined. MSCI Carbon Market's modelling of J-REDD+ projected supply indicate that the cumulative projected supply from the 23 known ART J-REDD+ programs ranges from 583 Mt to 2,563 Mt. Indeed, MSCI Carbon Market's forecasts indicate that, by the late 2030s, annual issuances of J-REDD+ credits may be up to 30% of total annual issuances from known programs.

[5] Based on registered projects with an MSCI Carbon Project Rating as of February 2025.

Key integrity considerations

The integrity of REDD+ projects has come under significant scrutiny for a number of years, including with renewed vigor in early 2023.[6] The enthusiasm behind J-REDD+ has, in part, been focused on solving for the integrity risks of project-scale REDD+. Therefore, even though the integrity considerations of J-REDD+ programs have many similarities to REDD+, there are some important differences, as shown in Figure 2.

Figure 2: Key Integrity Differences between REDD+ and J-REDD+ Integrity



Assessing the integrity of J-REDD+ programs requires a holistic analysis of each program's activities and assumptions, with risks primarily found in five main areas:

- **Baseline Deforestation:** The emissions impact of J-REDD+ programs is calculated by comparing the actual amount of deforestation that occurs to the rate of deforestation that was expected to have occurred had there been no carbon credit revenue (i.e., the "baseline"). Estimation of baselines at a jurisdictional level can mitigate some key project-scale REDD+ risks that come from biased reference regions and historical reference period selection. However, the validation of the baseline deforestation rate assumption still needs careful evaluation against historic deforestation rates and trends.
- **Carbon Stock:** To convert the area of protected deforestation into a volume of emissions impact, programs must accurately estimate the amount of carbon stored in their forests. Measuring the carbon within a single tree is complex. Measuring the carbon within the forest cover of a jurisdiction usually covering millions of hectares (ha) becomes even more challenging.
- **Leakage:** J-REDD+ mitigates the risk of direct "activity" displacement through its scale but must ensure the risk of indirect "market" displacement is appropriately mitigated and compensated.
- **Permanence:** Nature-based projects carry an inherent risk of reversal from both human and natural causes (e.g., from fire), as any protected forest area could be subject to later deforestation or destruction. Given their scale, J-REDD+ projects naturally carry

[6] Patrick Greenfield, "Revealed: More than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows," *The Guardian*, January 18, 2023.

proportionately low aggregated natural risks, but risks of policy and government changes and reversals are important to consider and evaluate, given future governments may reverse the policy decisions of past governments.

- **Alternative Livelihoods:** J-REDD+ programs revolve around incentivizing communities towards protection, rather than deforestation. However, many local communities rely on deforestation-linked activities for part of their living. Therefore, communities must be sufficiently compensated and supported in alternative livelihoods to ensure they are not made materially worse-off by the programs.

MSCI ESG Research assesses each of these five areas in detail when evaluating the integrity of a J-REDD+ program.

Introduction to HFLD

Another key integrity consideration for J-REDD+ programs is the concept of High Forest, Low Deforestation (HFLD). HFLD refers to countries that have large, mostly undisturbed forest areas and have historically had low deforestation rates. This concept is used by both ART and the FCPF methodologies in the Voluntary Carbon Markets (VCM) to support jurisdictions that still have large-scale, undisturbed forest areas with low rates of deforestation, to protect against the risk that deforestation increases even in relatively undisturbed areas.

For HFLD countries, if historic emissions are already low, under traditional REDD+ methodologies, the jurisdictions will only be able to issue small volumes of credits (if any), and therefore may have low incentive to adopt protection measures. However, under ART and FCPF, HFLD jurisdictions are offered an "HFLD bonus," wherein the jurisdiction's baselines are artificially raised compared to historic levels, enabling HFLD jurisdictions to issue more credits and use the carbon credit market to raise more conservation financing.

The implementation of a HFLD bonus is based on the general assumption that there is a risk that deforestation in undisturbed forests increases in the future, if no specific protection or financial incentivization is put in place. The integrity debate on HFLD is, however, split. Some consider HFLD as a suitable way to protect a jurisdiction against the tail risk that global deforestation trends start to apply in the jurisdiction. But others point out that, as the HFLD is not based on jurisdictional deforestation history, it may over-incentivize HFLD countries and allow for the issuance of credits beyond the emissions reductions that the program is reasonably achieving.

Assessing the suitability of an HFLD-bonus is therefore crucial to perform an integrity assessment of an HFLD J-REDD+ program. MSCI ESG Research's assessment of J-REDD+ programs considers the suitability of the HFLD bonus and its implications within both the program's additionality and co-benefits.

4. Approach to assessing the integrity of J-REDD+ programs

MSCI ESG Research's assessment of J-REDD+ programs builds on the overall MSCI Carbon Project Ratings methodology to provide more in-depth analysis of J-REDD+ programs. This project type-specific assessment includes sub-criteria that are additional to, and partially in replacement of, the sub-criteria of assessment used in the overall MSCI Carbon Project Ratings methodology, as detailed below. These project type-specific sub-criteria evaluate a deeper set of questions, which are focused on the most important, specific drivers of integrity for J-REDD+ programs.

These project type-specific assessments are conducted at the individual project level, including a review of each individual project's data and assumptions. In this way, these assessments represent a more granular, project-level review of J-REDD+ programs than what would be possible using the overall MSCI Carbon Project Ratings methodology alone.

In total, MSCI ESG Research assesses 11 sub-criteria and 20 metrics (see Figure 3) under this project type-specific methodology that are either not assessed or are assessed differently in the overall MSCI Carbon Project Ratings methodology, as illustrated in Figure 4. These sub-criteria are focused on addressing the key drivers of integrity for J-REDD+ programs. Each of these sub-criteria align with and replace corresponding sub-criteria scores in the overall MSCI Carbon Project Ratings methodology.

Figure 3: MSCI ESG Research Overall Carbon Project integrity assessment

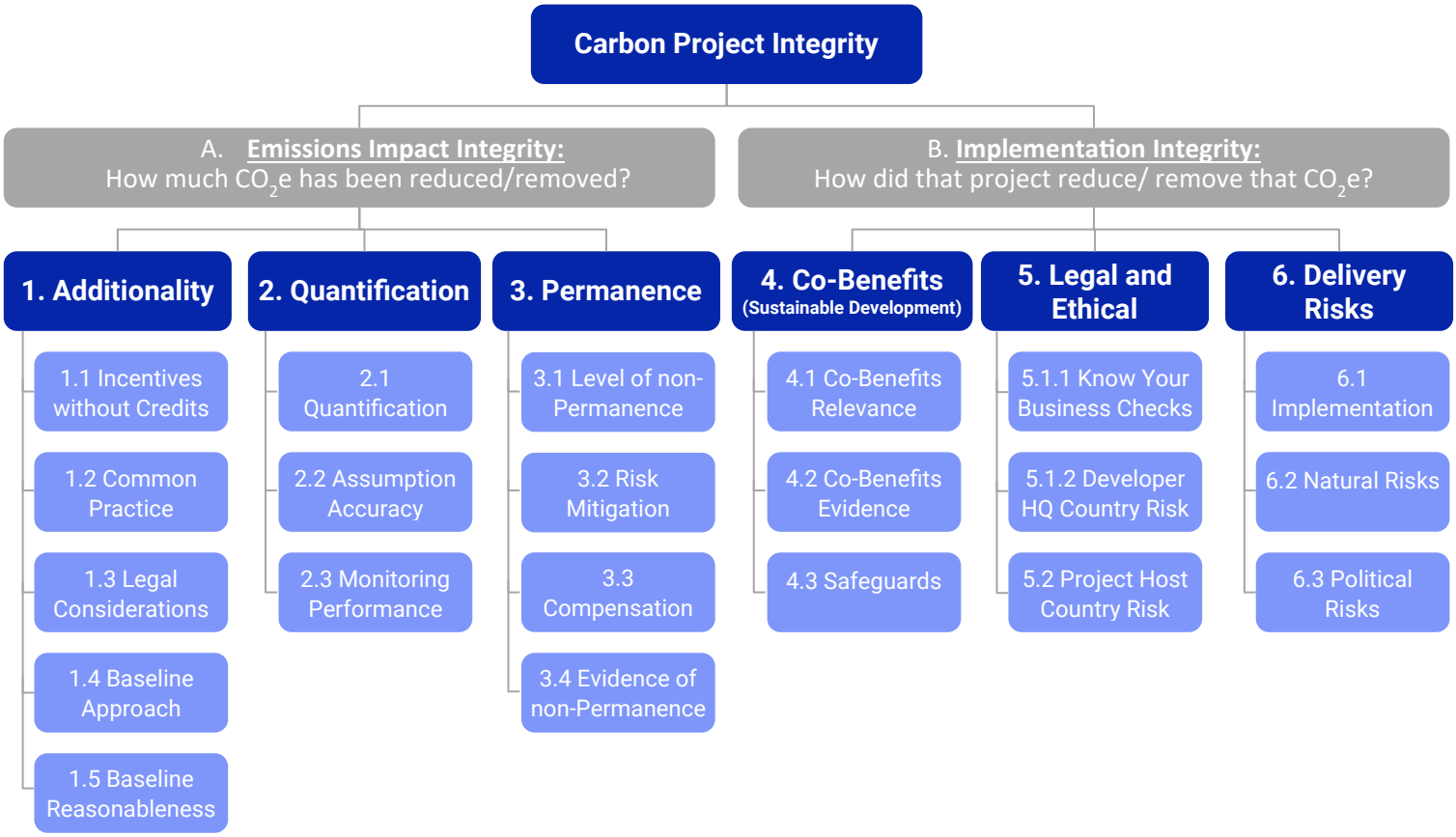


Figure 4: J-REDD+ assessment framework

Assessment of all other criteria and sub-criteria, for example, Criterion 5, Legal and Ethical Risks, and Sub-criterion 1.2, Common Practice, within the J-REDD+ analysis use the same metrics and methodology as in the overall MSCI Carbon Project Ratings methodology framework. The granularity of the overarching framework for those sub-criteria, and the fact that their assessment is consistent across all project types (i.e., with no J-REDD+-specific characteristics), means that no further enhancement is required.

For a detailed explanation of MSCI ESG Research's approach to data quality and update processes — including measures to ensure data accuracy, handle missing data, and update data in a frequent and recurring manner — please refer to our overall "MSCI Carbon Project Ratings and Assessments Methodology" document. It outlines the steps MSCI ESG Research takes to verify data reliability and address any data gaps, ensuring consistency and accuracy across all project types.

5. Criterion 1 – Additionality

If a mitigation activity is not additional, then purchasing carbon credits has not led to any additional reduction or removal of emissions. Additionality is therefore a crucial component of the integrity of carbon credits. A non-additional carbon credit has no direct net positive environmental impact given that the emission reductions/removals would have occurred anyway. However, it is worth noting that funding a non-additional credit may still indirectly help stimulate further investment in the same activity by raising its return.

The additionality of a project is not necessarily binary. Projects may be partly additional, where only a portion of emission reductions/removals are additional. For example, if, in the baseline scenario, some emission reductions would have been achieved anyway, but not as much as was achieved by the project, then only this difference in emission reductions is additional. If credits are issued for the total emission reductions rather than only the reductions that wouldn't have otherwise been achieved, then the credits are only partly additional.

There are two main components to assessing additionality: (i) is it likely a project's activities would have occurred without the incentive of a credit, and (ii) how accurately does a project's baseline scenario represent the amount of the CO_2e reduced/removed in the baseline scenario?

MSCI ESG Research's assessment of the additionality of J-REDD+ programs focuses on evaluating seven key topics. Figure 5 illustrates the sub-criteria and metrics through which the additionality of J-REDD+ programs is assessed, and the overall MSCI Carbon Project Ratings methodology sub-criteria that they refer to. The detailed sub-criteria are described in Figure 6.

Given the probabilistic nature of additionality, MSCI ESG Research scores programs based on the *likelihood* that their emission reductions or removals are additional. To achieve a high additionality score, a program's activities must be 'additional' (Sub-criteria 1.1, 1.2 and 1.3) and its baseline scenario reasonable (Sub-criteria 1.4 and 1.5).

An inverse weighting formula is used to determine a program's overall additionality score, where the combined scores of Sub-criteria 1.1, 1.2 and 1.3 are inversely weighted with the combined scores of Sub-criteria 1.4 and 1.5. As a result, a good score in any one criterion cannot offset a low score in another.

For example, a J-REDD+ program's conservation activities might be very additional given there would be few incentives for implementing patrolling and protection measures without carbon credits. However, if an area is at no risk from deforestation, its baseline scenario should have been zero deforestation, and hence any emission reductions claimed by such a program are likely not additional.

Figure 5: J-REDD+ additionality assessment approach

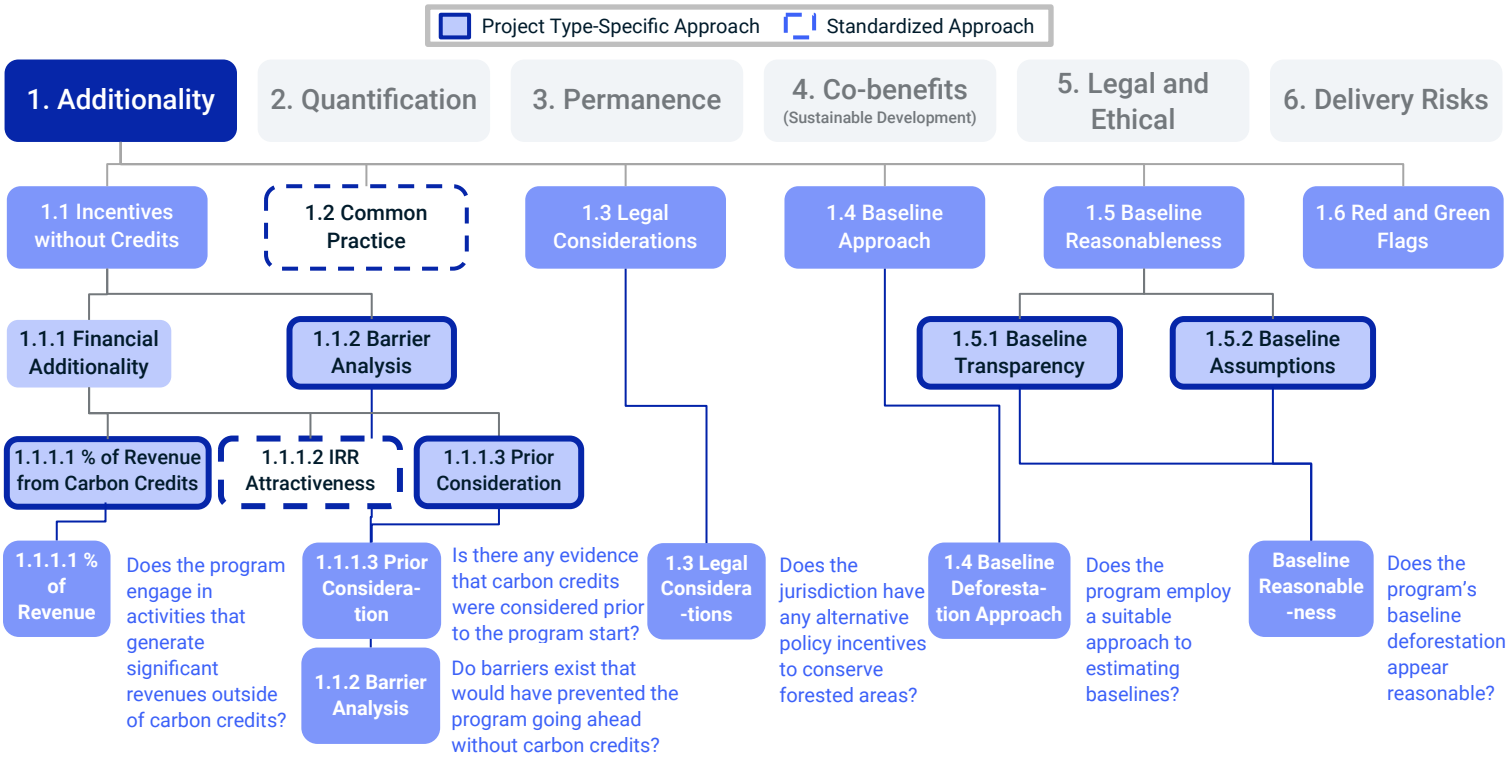


Figure 6: MSCI ESG Research Additionality integrity assessment framework

Sub-criteria		Metrics	Rationale	J-REDD+	REDD+	Renewables	ARR	Cookstoves	Biochar	Landfill Gas	Safe Water	IFM	Waste Mgmt.	Blue Carbon
1.1 Incentives without Carbon Credits	1.1.1 Financial Attractiveness	1.1.1.1 % of Revenue from Carbon Credits	The higher the proportion of a project's revenue that comes from carbon credits, the greater the importance of credits to its financial attractiveness.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		1.1.1.2 IRR Analysis	Credits should play a decisive role in making a project financially attractive that would otherwise have not been.	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		1.1.1.3 Prior Consideration	Carbon credits should have been clearly considered at the time the decision to go ahead with a project was taken.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.1.2 Barrier Analysis	Strength of Barriers	Projects that face high barriers to implementation would be less likely to go ahead without the added incentives of carbon credits.	✓	✗	✓	✗	✓	✓	✗	✓	✗	✓	✓
1.2 Common Practice		Market Penetration	If a practice is already common within a market, it indicates that these types of projects will go ahead without the introduction of carbon credits.	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓
1.3 Legal Considerations		Legal Requirements	Projects that are legally required or incentivized are unlikely to be additional. However, if laws are not enforced, then may still be additional.	✓	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓
1.4 Baseline Approach		Baseline Approach	Each project methodology is scored on the extent to which it mitigates the key risks associated with establishing a baseline scenario.	✓	✓	✗	✗	✗	✗	✗	✗	✓	✗	✓
1.5 Baseline Reasonableness		Baseline Transparency	Transparent detail on a project's assumptions is required to make an objective assessment of a project's performance and additionality.	✓	✓	✗	✓	✗	✗	✗	✗	✓	✗	✓
		Baseline Assumptions	MSCI ESG Research assesses the key baseline scenario assumptions for each project type — for example, for J-REDD+ programs a project's baseline deforestation rates are assessed.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1.6 Red and Green Flags		News scanning	Review of academic papers, industry sources and the news for Red or Green Flags to project's additionality.	✓ *Standardized approach*										

✓ *Assessed* ✗ *Not Assessed*

1.1 Incentives without Carbon Credits

Jurisdictions face fundamentally different additionality risk profiles and incentives than private and local actors. For project-scale REDD+ one can broadly assume that stakeholders may act as rational agents that weigh up different alternative scenarios and select the most financially attractive one, but this is more difficult for jurisdictional programs for two reasons. First, at a jurisdictional level, the risks that local landowners would have conserved the forests anyway are less relevant when aggregated across a vast area that involves many different landowners. Second, jurisdictions have unique financial and nonfinancial incentives for implementing program activities. Financially, revenue for jurisdictional programs almost entirely comes from carbon credits with only a few financial incentives (such as international results-based payments) to implement the program otherwise. However, jurisdictions may still be incentivized to implement protection measures even without carbon credits due to both external and internal policy pressures (covered in 1.3 Legal Considerations).

To evaluate the additionality of activity of J-REDD+ programs, both the financial additionality of activity risks given the program's characteristics and whether any locally specific incentives exist that impact the policy decision are therefore assessed.

The financial additionality risks are summarized by the following three sub-criteria:

- **1.1.1.1 % of Revenue:** The extent to which a program's activities have inherently high additionality, given their fundamental characteristics.
- **1.1.1.3 Prior Consideration:** Whether carbon credits were clearly considered prior to the decision to go ahead with the program's activities.
- **1.1.2 Barrier Analysis:** Whether any significant barriers exist that would have prevented the program's activities from going ahead without carbon credits.

Each program is scored on a 1 to 5 scale on each of these sub-criterion, with an overall score reached through weighting each factor 60%, 20% and 20% respectively.

1.1.1.1 % of Revenue from Carbon Credits

% of Revenue refers to the proportion of a program's total revenue that comes from the sale of carbon credits.

Rationale	The higher the proportion of a program's revenue that comes from carbon credits, the greater the likely importance of carbon credits to the financial attractiveness of the program. If credits only represent a fraction of the financial return for the program, but the program can still claim credits representing 100% of the emission reductions or removals achieved, additionality is more uncertain.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑		
Scoring Definition	Each program is scored on a 1-5 scale, where 1 indicates that a very low proportion of revenue comes from carbon credits and 5 indicates that carbon credits are likely the only direct source of revenue for the program.					

Scoring Approach	MSCI ESG Research conducts a detailed review of program documentation to identify all sources of revenue for a program. Where financial data on the size of these revenue sources is presented, the proportion of total revenue that is estimated to come from carbon credits is calculated based on their estimated annual emissions reductions and the average realized carbon credit price since the program started for J-REDD+ program. Where financial data is not present, the rough proportion of revenue from each revenue source is estimated given the program's activities. Programs then receive a score from 1 to 5 based on the proportion of revenue that carbon credits are estimated to represent in the following way: - 5 = 100% of revenue comes from carbon credits - 4.5 = A very high (95%+) proportion of revenue is estimated to come from carbon credits - 4 = A high (80-95%) proportion of revenue is estimated to come from carbon credits - 3 = A medium (50-80%) proportion of revenue is estimated to come from carbon credits - 2 = A low (10-50%) proportion of revenue is estimated to come from carbon credits - 1 = A very low (<10%) proportion of revenue is estimated to come from carbon credits

1.1.1.3 Prior Consideration

Programs that can clearly demonstrate that carbon credits were considered prior to their decision to start, provide more evidence that credits acted as an important incentive in starting mitigation activities.

Two key sub-criteria are used to evaluate this:

- **1.1.1.3.1 Evidence of Consideration:** Whether any evidence exists that credits were considered prior to the program start.
- **1.1.1.3.2 Registration Gap:** Whether a significant gap exists between the start of the program's activities and the initial registration and issuance date.

The overall score for 1.1.3 Prior Consideration is determined by an equal weighting of these sub-criteria.

1.1.1.3.1 Evidence of Consideration

Evidence of consideration refers to whether the program has specific evidence that demonstrates that the use of carbon credits was considered prior to the program start date.

Rationale	Evidence that carbon credits were considered prior to the program start date indicates that credits played an important role in this decision process. On the other hand, if no evidence of prior consideration exists, there is a higher chance that the decision to go ahead with the program occurred without any expectation of carbon credits.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑		
Scoring Definition	Each program is scored on a 1-5 scale, where 1 indicates that a very low proportion of revenue comes from carbon credits and 5 indicates that carbon credits are likely the only direct source of revenue for the program.					
Scoring Approach	MSCI ESG Research identifies whether any evidence exists that carbon credits were considered prior to the program start date. This evidence may include a low carbon strategy document or governmental notices indicating that carbon credits were planned on being utilized. The date of any evidence of carbon credit consideration is then compared to the program start date to determine whether credits were considered prior to the start date or not.					

1.1.1.3.2 Registration Gap

Registration gap evaluates the gap between the start date of the program activity and the program being registered with a crediting standard and issuing credits.

Rationale	A longer gap between the start of program activity and the program's first issuance date suggests the program was able to maintain, at least to an extent, activities, and investment even in the absence of carbon credits. If credits were very important and decisive in the program going ahead, then programs would be expected to work hard to minimize this time taken in the registration process.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑					☑
Scoring Definition	Each program is scored on a 1-5 scale, where 1 indicates a very significant gap between the initial decision date and the first issuance date and 5 indicates a short or inconsequential gap.					
Scoring Approach	MSCI ESG Research analyses relevant program documentation to determine the program's start date and compared this to the date of registration and date of first issuance of the program using the MSCI Carbon Markets platform. The program stated start date is compared to the registration/issuance date and then categorized the gap between these dates into a 1 to 5 scale: - 5 = 2 years or fewer - 4 = 3-4 years - 3 = 5 to 6 years - 2 = 7-9 years - 1 = 10 years or higher					

1.1.2 Barrier Analysis

Barrier analysis refers to whether significant barriers would have existed to implementing the program without carbon credits.

Rationale

J-REDD+ programs have fundamentally different risk profiles regarding additionality of activity than project-scale REDD+. For project-scale REDD+, the Localized risk that landowners would have implemented the project activities without carbon credits is a key consideration. However, J-REDD+ programs are less susceptible to these risks for a number of reasons, including:

1. Scale of program: The risk that local landowners would have conserved the forests anyway is less relevant at the aggregate jurisdictional level. When aggregated across a whole jurisdiction, the decisions of local landowners are unlikely to affect the additionality at a jurisdictional level.
2. Type of proponent: The proponent for J-REDD+ programs is usually a state or national government. These institutions are not subject to the same financial constraints as local actors, and a comparison of the profitability of alternative scenarios is therefore less relevant.

These characteristics represent significant barriers that would have existed to the program's activities taking place without carbon credits.

Key Sources

Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
☑	☑				☑

Scoring Definition

Each program is scored on a 3-5 scale, where 3 indicates low barriers to implementation exist and 5 indicates significant barriers would have existed.

Scoring Approach

MSCI ESG Research conducts a detailed review of J-REDD+ program documentation to understand both the scale of the program and the type of proponent.

The program is then scored on a scale of 3 to 5 as follows:

		Scale: Proportion of Jurisdictional Forest		
		All	Majority	Minority
Type of Proponent	National Government	5.0	5.0	5.0
	Regional Government	4.5	4.0	3.0

1.3 Legal Considerations

Jurisdictions may be subject to alternative pressures to conserve the forest outside of simple profitability analysis. These pressures may be internal to the jurisdiction from the local populations, or external from other jurisdictions or entities. The presence of these pressures may incentivize the jurisdiction to implement forest conservation measures even without carbon credits.

There are three metrics that are used to evaluate this sub-criterion:

- **1.3.1 Internal Economic Pressure:** Whether the government faces significant financial pressures to maintain the baseline scenario from existing economic sectors that are dependent on forest resource extraction.
- **1.3.2 Alternative Policy Incentive:** Whether the program has alternative incentives to protect forest cover outside of the credit revenue.
- **1.3.3 Existing Forest Protection:** Whether the jurisdiction has already committed in previous policy decisions to protect large areas of forest.

Each of these three metrics are deducted from the maximum score of 5 to reach an overall score for 1.3 Legal Considerations on a 1 to 5 scale.

1.3.1 Internal Economic Pressure

Economic Pressure relates to whether the jurisdiction faces financial pressures from existing economic sectors that are dependent on forest resource extraction to maintain the status quo (i.e., the baseline scenario).

Rationale	Certain economic industries and actors will benefit from deforestation-linked activities, for example, timber extraction, farming or mining. These existing pressures to deforest the land to the benefit of these industries and actors can influence government policy and financial incentives. Where governments face economic pressure to permit deforestation for these alternative purposes, carbon credits may play a more important role in incentivizing the government to restrict these actions and thus a program would be more additional.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑	☑	

Scoring Definition	Each program is scored on a 0 to 1 scale, where 0 indicates that a program faces high economic incentives to maintain the status quo due to the presence of extractive industries and a 1 indicates a program faces low internal pressures as there are less significant economic interests to deforest the forested area
Scoring Approach	MSCI ESG Research conducts a detailed review of program documents, third-party data and relevant literature to identify the share of gross domestic product (GDP) that deforestation-related and degradation-related industries represent. Sources on GDP and export values by industry for each country include OECD Structural Analysis Database[7], UN Comtrade[8] and World Bank World Development Indicators[9]. Each program is then scored on a 0 to 1 scale as follows:

[7] Organisation for Economic Co-operation and Development (OECD). (2024). *STAN: OECD Structural Analysis Statistics*. OECD iLibrary. https://stats.oecd.org/Index.aspx?DataSetCode=STANI4_2016

[8] United Nations. (2024). *UN Comtrade Database*. United Nations Statistics Division. https://comtrade.un.org/

[9] World Bank. (2024). *World Development Indicators*. World Bank DataBank. https://databank.worldbank.org/source/world-development-indicators

- 0 = Deforestation or degradation-linked industries represent at least 20% of the jurisdiction's GDP.
- 0.25 = Deforestation or degradation-linked industries represent between 10% and 19% of the jurisdiction's GDP.
- 0.5 = Deforestation or degradation-linked industries represent less than 10% of the jurisdiction's GDP.

1.3.2 Alternative Policy Incentive

Alternative Policy Incentive relates to whether the program has alternative incentives to protect forest cover outside of carbon credit revenues.

Rationale

Governments may have alternative policy incentives to preserve the forest cover within its jurisdiction. For example, a government may be pressured into reducing its rate of deforestation in order to participate in a trade agreement with another government.

These alternative incentives could have led the program's activities to be funded through alternative mechanisms, such as taxation or private investment. Given the presence of these alternative incentives, there is a risk that carbon credits simply replace or "crowd out" other funding sources that would have been used for the same types of activities.

Key Sources

Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
☑			☑		

Scoring Definition

Each program is scored on a scale of 0 to 1, where 0 indicates that no external policy-based incentives exist and 2 indicates that a program faces significant external incentives to preserve the forest cover.

Scoring Approach

MSCI ESG Research conducts a detailed review of relevant policy documentation and literature, such as government policies, external trade agreements and news articles, to identify any relevant government policies that may impact the government's incentives regarding forest conservation.

In particular, this includes a review of any key legislation and trade agreements. Two primary factors are considered: (i) whether alternative policies exist that may incentive the program to go ahead, and whether these policies directly affect the primary driver of deforestation; and (ii) whether any previous policies or mechanisms existed that supported the program's activities even without carbon credits.

Each program is then scored on a 0 to 2.0 scale as follows:

		Alternative Policies		
		Alternative Policies Exist, which target the primary deforestation driver	Alternative Policies Exist, but these don't target the primary deforestation driver	No Alternative Policies Exist
Previous Policy or Agreement	Yes	2.0	1.0	0.0
	No	1.0	0.5	0.0

1.3.3 Existing Forest Protection

Existing Forest Protection refers to whether the jurisdiction has already committed to protect large areas of forest in previous policy decisions.

Rationale	The host country may have already committed to protect certain protected areas within the program boundary. Even though these commitments may not be enforced, these protection schemes may still represent a prior objective of the jurisdiction to protect the forested areas even without carbon credits.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑		

Scoring Definition	Each program is scored on a scale of 0 to 1, where 0 indicates minimal forest protection policies exist and 1 indicates that forest protection schemes are already prevalent in over 25% of the jurisdiction's forested area.
Scoring Approach	MSCI ESG Research conducts a detailed review of relevant literature and third-party data, including government documentation, to understand the level and scale of forest protected statuses within the jurisdiction prior to the program start. Through this, the proportion of the jurisdiction's forested area that is already protected is calculated. Each program is then scored on a 0 to 1.0 scale as follows: - 0 = Less than or equal to 10% of the host jurisdiction's forested area is classed as protected status. - 0.2 = More than 10% but less than 20% of the host jurisdiction's forested area is classed as protected status. - 0.4 = More than 20% but less than 30% of the host jurisdiction's forested area is classed as protected status. - 0.6 = More than 30% but less than 40% of the host jurisdiction's forested area is classed as protected status. - 0.8 = More than 40% but less than 50% of the host jurisdiction's forested area is classed as protected status. - 1.0 = More than 50% of the host jurisdiction's forested area is classed as protected status.

1.4 Baseline Approach

J-REDD+ methodologies usually allow multiple different approaches for a program to estimate its baseline deforestation rate. Programs that employ a baseline approach that is rigorous and suitable for the program's characteristics reduce the risk of using an unreasonable baseline.

There are three metrics that are used to evaluate this sub-criterion:

- **1.4.1 Reference Period Length:** Whether the program historic reference period is of sufficient length to inform a representative estimate of long-term forest loss rates.

- **1.4.2 Modelling Approach:** Whether the program uses well-evidenced methods to justify deviations in future forest loss away from historic levels.
- **1.4.3 Type of Measurement System:** Whether the program uses a range of high-quality data sources to measure deforestation and degradation within the jurisdiction.

The overall score for this sub-criterion is calculated by weighting these factors equally.

1.4.1 Reference Period Length

Reference Period Length refers to whether the program's historic reference period is of sufficient length to inform a representative estimate of long-term forest loss rates.

Rationale	Deforestation rates are subject to considerable annual variability. Baselines that assess historic deforestation over a short time period may therefore not form a representative view of likely underlying deforestation trends, as they may be driven by short-term volatility.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑					

Scoring Definition	Each program is scored on a 1-5 scale, where 1 indicates that a program's baseline deforestation assumption is based on fewer than 5 years of historic data, and 5 indicates that the program considers at least 10 years of historic data.
Scoring Approach	MSCI ESG Research reviews in detail a program's deforestation analysis within its documentation to identify the time frame through which the program evaluated its historic deforestation trends. The difference in years between these dates is then converted into a 1 to 5 scale, with a higher score given where longer historical reference periods have been used.

1.4.2 Modelling Approach

Modelling Approach relates to whether the program uses well-evidenced methods to justify deviations in future forest loss away from historic levels.

Rationale	Programs within high forest, low deforestation (HFLD) jurisdictions may effectively assume that future deforestation and degradation rates will exceed those that have been historically observed. Programs can provide greater justification for this through conducting a range of modelling techniques on the underlying deforestation drivers.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑		

Scoring Definition	Each program is scored on a 1-5 scale, where 1 indicates that the program uses a default rate uplift without clear modelling justification, and 5 indicates that the program

	uses multiple techniques to model future deforestation and degradation based on changes to the underlying drivers.
Scoring Approach	MSCI ESG Research reviews in detail a program's deforestation analysis within its documentation to understand the modelling approach for measuring future deforestation increases. Programs are then scored on a 1 to 5 scale based on the range of measures used, as follows: - 1 = Default value used without wider justification. - 3 = Use of at least one modelling technique to analyze future deforestation based on either underlying deforestation drivers or peer jurisdictions. - 5 = Use of at least one modelling technique to analyze future deforestation based on either underlying deforestation drivers or peer jurisdictions.

1.4.3 Type of Measurement System

Type of Measurement System relates to whether the program uses a range of high-quality data sources to measure deforestation and degradation within the jurisdiction.

Rationale	Geospatial datasets on deforestation and degradation typically have reasonably high uncertainty intervals, reflecting the significant challenges in estimation over very large areas. Programs may utilize more than one underlying dataset to reduce the risk of overreliance on a single anomalous dataset.

Key Sources

Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
☑					

Scoring Definition	Each program is scored on a 1-5 scale, where 1 indicates the program uses a single internal dataset, and 5 indicates that the program uses multiple external datasets to measure deforestation and degradation.
Scoring Approach	MSCI ESG Research reviews in detail a program's documentation to identify the underlying datasets used by the program to measure deforestation and degradation. Programs are then scored on a 1 to 5 scale as follows:

		Type of Dataset		
		Internal	External	Mixed
Number of Datasets	1	1	4	3
	2+	3	5	4

1.5 Baseline Reasonableness

Estimating the baseline rate of deforestation that would have occurred if the program did not happen is the most important, but hardest-to-measure, assumption for REDD+ projects (both project-scale and jurisdictional scale). As it is not possible to know for certain what would have happened in this

counterfactual scenario, assessing the reasonableness of a program's baseline scenario assumptions must be done in a probabilistic way.

Further, given the uncertainties that exist, it is important that any estimates of baseline deforestation rates do not overly rely on one single approach. The reasonableness of a J-REDD+ program's baseline scenario is therefore assessed through a number of considerations that avoid overreliance on a single approach and build a rich picture of that program's individual context.

Through a mechanism developed by ART-TREES, some jurisdictional programs that take place in areas of historically high forest, low deforestation (HFLD) can receive an additional bonus to their baseline deforestation rate to incentivize HFLD jurisdictions to engage in program activities where the financial incentives would otherwise not be sufficient. For programs that benefit from this HFLD bonus, it is therefore important to assess both the reasonableness of the non-HFLD baseline and the reasonableness of the HFLD bonus itself, as both components contribute to the overall baseline rate used by the program.

These two components are therefore assessed separately:

- **1.5.1 Non-HFLD Baseline Reasonableness:** Whether the program's baseline deforestation rate assumptions, prior to the HFLD adjustments, appear reasonable given the deforestation that occurred around the jurisdiction prior to the project start.
- **1.5.2 HFLD Baseline Reasonableness:** Whether the program's baseline deforestation rate including the HFLD adjustment appears reasonable given the deforestation that occurred around the jurisdiction prior to the program start.

Each component is assessed on a 1 to 5 scale, with the overall score reached through weighting each component by the proportion of credits achieved due to the non-HFLD component and the HFLD component. For non-HFLD J-REDD+ programs, the score is based solely on 1.5.1 Non-HFLD Baseline Reasonableness.

1.5.1 Non-HFLD Baseline Reasonableness

When determining the baseline deforestation for a jurisdiction, programs analyze the historic deforestation rates that have occurred previously. Therefore, an analysis of what has happened previously is used as the key indicator to determine what will happen going forwards. While this approach can be reasonablewhen aggregated at a jurisdictional level, it is important that the historic analysis takes into account both the historic average deforestation levels and the trends in deforestation.

Both the historic average deforestation levels and recent trends are assessed in our assessment of 1.5.1 Non-HFLD Baseline Reasonableness as follows:

- **1.5.1.1 Historic Analysis:** Whether the program's non-HFLD deforestation rate appears reasonable given the deforestation trends in the prior 10 years.

1.5.1.1 Historic Analysis

Historic Analysis refers to whether the program's deforestation rate appears reasonable given the deforestation trends in the prior 10 years prior to the program.

Rationale	Typically, the baseline deforestation rate used by a program should not be too dissimilar to the deforestation rate that the jurisdiction has experienced historically

	(i.e., prior to the project and/or crediting period start date). There is an increased risk of over-crediting if the baseline deforestation rate is (significantly) higher than that projected by historic rates.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑	☑				

Scoring Definition	Each program is scored on a 1-5 scale, where 1 indicates that a program's baseline deforestation rate appears to be significantly overestimated and 5 indicates that a program's baseline appears to be conservative.
Scoring Approach	Given it is a counterfactual scenario, it is not possible to say with 100% certainty what would have happened in the jurisdiction in the absence of carbon credits. There are a multitude of different ways to try to estimate what would have happened in the counterfactual, each of which will produce a (slightly) different baseline deforestation rate. A baseline assumption can be considered reasonable if it sits within the range of baseline rates that have occurred historically in the jurisdiction. However, if multiple methodologies/approaches produce a lower baseline deforestation rate than that used by the program, it would suggest that the program has overestimated its baseline. A geospatial assessment of the deforestation rates in the jurisdiction in the 10 years prior to the start of the program is conducted. Historic rates of deforestation in the jurisdiction are then projected forward to estimate what would have been reasonably expected to have occurred in the jurisdiction in the absence of carbon credits. Two different projection methods are used: (i) a historic average, and (ii) a linear approach. For each method, the net emissions reductions achieved are calculated by calculating the difference between the baseline deforestation rates and achieved deforestation rates over the relevant crediting period. In this calculation, the project's carbon stock, leakage and buffer pool contributions are assumed to be correct, which ensures the analysis focuses on understanding the impact of the deforestation assumption alone. The net emission reductions from each method is then compared to the net emission reductions using the program's baseline deforestation rate. Degradation is excluded from this analysis to ensure a like-for-like comparison. This comparison is then scored on a 1 to 5 scale based on the proportion of the project's estimated net emissions impact that appear reasonable compared to the modelled methods. For example, if the modelled net emissions impact is equal to 100% of the program's estimated net emissions impact, the program will receive a score of 5. If the modelled net emissions impact is equal to 50% of the program's estimated net emissions impact, the program will receive a score of 3.

1.5.2 HFLD Baseline Reasonableness

The logic behind HFLD is to provide a more proactive incentive for jurisdictions to protect their forests, rather than waiting to respond only retrospectively once deforestation rates have already reached a critical level. While historic analysis provides some indications of the likely scenarios that could have occurred without carbon credits, it does not provide a view of the full spectrum of scenarios, as future deforestation may depart significantly from historic trends (e.g., experience a sudden jump due to changing commodity prices).

Therefore, as well as considering the reasonableness of the HFLD bonus through historic deforestation trends, it is also important to consider the spectrum of baseline scenarios from a more macroeconomic development perspective, given that deforestation rates (in the absence of carbon credits) may not follow a linear trend.

Two sub-criteria are therefore assessed:

- **1.5.2.1 Modelled Deforestation Drivers:** Whether the program's HFLD deforestation rate appears reasonable given expected changes to the underlying deforestation drivers in that jurisdiction.
- **1.5.2.2 Peer Jurisdictions:** Whether the program's HFLD deforestation rate appears reasonable given the macroeconomic development curves in other similar jurisdictions.

Each of these sub-criteria is assessed on a scale from 1 to 5. The overall score for 1.5.2 HFLD Baseline Reasonableness is determined through an equal weighting of these two factors.

1.5.2.1 Modelled Deforestation Drivers

Modelled Deforestation Drivers refers to whether the program's HFLD deforestation rate appears reasonable given expected changes to the underlying deforestation drivers in that jurisdiction.

Rationale	While deforestation may be caused by direct drivers, such as commercial logging or small-scale agriculture, these will typically be driven by underlying indirect drivers, such as population dynamics or changes in relevant commodity markets. Through an analysis of the underlying indirect drivers that are relevant for a jurisdiction, it is possible to better understand the likely evolution in deforestation and degradation trends based on these drivers.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑	☑		☑	☑	
Scoring Definition	Each program is scored on a 1-5 scale, where 1 indicates that a program's baseline deforestation rate appears to be significantly overestimated and 5 indicates that a program's baseline appears to be conservative.					
Scoring Approach	Through a detailed review of the deforestation and degradation trends and drivers in the jurisdiction, the key underlying drivers of deforestation are identified. This is done by testing several forest change datasets and deforestation drivers, such as economic and demographic data. For example, the driver may be identified as population growth.					

Relevant third-party data is then identified on the likely evolution of this driver to provide a forward-looking view of the changes in this underlying driver. Where possible, multiple datasets are used to avoid overreliance on a single dataset.

Using the identified deforestation drivers as the explanatory variable, expected future emissions are modelled for the jurisdiction.

To analyze emissions dynamics and improve predictive capabilities, a log-log model is trained using observed historical emissions data alongside a set of carefully selected explanatory variables, such as population growth or gross national income (GNI) per capita.

To further enhance the accuracy of the predictions, a bootstrapping algorithm is integrated into the modeling process. This algorithm works by generating multiple subsamples of the data and training hundreds of individual models, creating an ensemble. By averaging the outputs of these models, the bootstrapping approach reduces variance, minimizes overfitting, and improves the reliability of the predictions.

The ensemble of trained log-log models is then applied to forecast future emissions for any specified crediting period. Additionally, the variability across the ensemble allows for the quantification of uncertainties in the predictions.

For each method, the net emission reductions achieved is calculated, by calculating the difference between the baseline and achieved emissions over the relevant crediting period. In this calculation, the project's carbon stock, leakage and buffer pool contributions are assumed to be correct, which ensures the analysis focuses on understanding the impact of the deforestation assumption alone.

The net emissions reductions from this modelling are then compared to the net emissions reductions using the program's baseline deforestation rate. Degradation is excluded from this analysis to ensure a like-for-like comparison.

This comparison is then scored on a 1 to 5 scale based on the proportion of the project's estimated net emissions impact that appear reasonable compared to the modelled methods. For example, if the modelled net emissions impact is equal to 100% of the program's estimated net emissions impact, the program will receive a score of 5. If the modelled net emissions impact is equal to 50% of the program's estimated net emissions impact, the program will receive a score of 3.

1.5.2.2 Peer Jurisdictions

Peer Jurisdictions relates to whether the program's HFLD deforestation rate appears reasonable given the macroeconomic development curves in similar jurisdictions.

Rationale	Forest transition theory suggests that the trajectory of forest cover in a given area can follow a somewhat similar pattern based on socioeconomic development, land use and policy changes.[10] Through understanding the stage of forest transition in which a jurisdiction is, it is then possible to identify other peer jurisdictions that are at similar stages of forest

[10] Sanford, T. et al. 2011. "The drivers of tropical deforestation: a comprehensive review." AGU Fall Meeting Abstracts. 1087.

	transition. Analyzing the deforestation trends observed in these peer jurisdictions can provide indications of the likely evolution in deforestation that would have occurred to the program jurisdiction without the implementation of the program itself.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑	☑		☑	☑	

Scoring Definition	Each program is scored on a 1-5 scale, where 1 indicates that a program's baseline deforestation rate appears to be significantly overestimated and 5 indicates that a program's baseline appears to be conservative.
Scoring Approach	Forest transition theory, a concept in environmental geography, explains the changes in forest cover over time as countries or regions undergo economic development. The forest transition curve visually represents this process. For all countries, a forest transition curve is reconstructed using relevant third-party data, including historical forest cover changes and population pressure dynamics. Each country represents a specific developmental stage along the curve. High forest cover countries, such as HFLD countries, are typically in the early decline phase of the forest transition curve. To identify peer jurisdictions for a specific region under review, its characteristics are compared to those of other countries. This involves analyzing population pressure and forest cover at the start of a crediting period and calculating the minimum Euclidean distance between these attributes. Countries within the fifth percentile of these distances are selected as peers, as they most closely resemble the jurisdiction of interest at a similar point in the forest transition curve. A weight is assigned to each selected jurisdiction from normalizing the previously calculated Euclidian distance. Finally, the Peer Jurisdiction Score is calculated by multiplying the historic deforestation of the jurisdiction by the weighted average comparable increase observed in the selected peer jurisdictions over five-year periods.

Criterion 2 – Quantification

Quantification refers to the likelihood that the emission reduction or removals claimed by a project are accurate, assuming the baseline scenario is correct. It includes both emission reductions or removals within a project area and emissions released or generated outside the project area, known as leakage.

Along with the strength of baseline assessment, quantification is a key determinant of the risks of over-crediting: whether the number of credits issued by the project is equal to the CO_2e actually reduced/removed. In theory, all carbon credits are worth the equivalent of 1 tonne of CO_2e reduced or removed. A low carbon quantification score means that the emission reductions or removals delivered by the credit is likely to be less than 1 tonne. In this case, buyers should be cautious in using one credit to offset 1 tonne of their own emissions as they are unlikely to be equivalent.

Quantifying a J-REDD+ program's emission reductions, even assuming the baseline scenario has been accurately estimated, requires a complex estimation of two primary components: first, the program's carbon stock and, second, any leakage. Both these components are difficult to measure with a high degree of accuracy.

As natural living ecosystems spread over what is often a very large and sometimes inaccessible area of land, measurement of a J-REDD+ program's carbon stock inevitably involves a degree of estimation. Historically, carbon stock was measured by teams on the ground taking occasional samples of an area's biomass, although geospatial datasets and analysis are increasingly being used to complement this manual sampling.

The biggest difference between J-REDD+ and REDD+ quantification assessments is in terms of leakage. Activity-shifting leakage is less relevant but an assessment of J-REDD+ must still consider potential "market" leakage.

Figure 7 illustrates the sub-criteria through which MSCI ESG Research assesses the quantification of J-REDD+ programs, and the Integrity Assessment framework sub-criteria to which they refer. The detailed sub-criteria are described in **Figure 8**.

Figure 7: J-REDD+ Quantification assessment approach

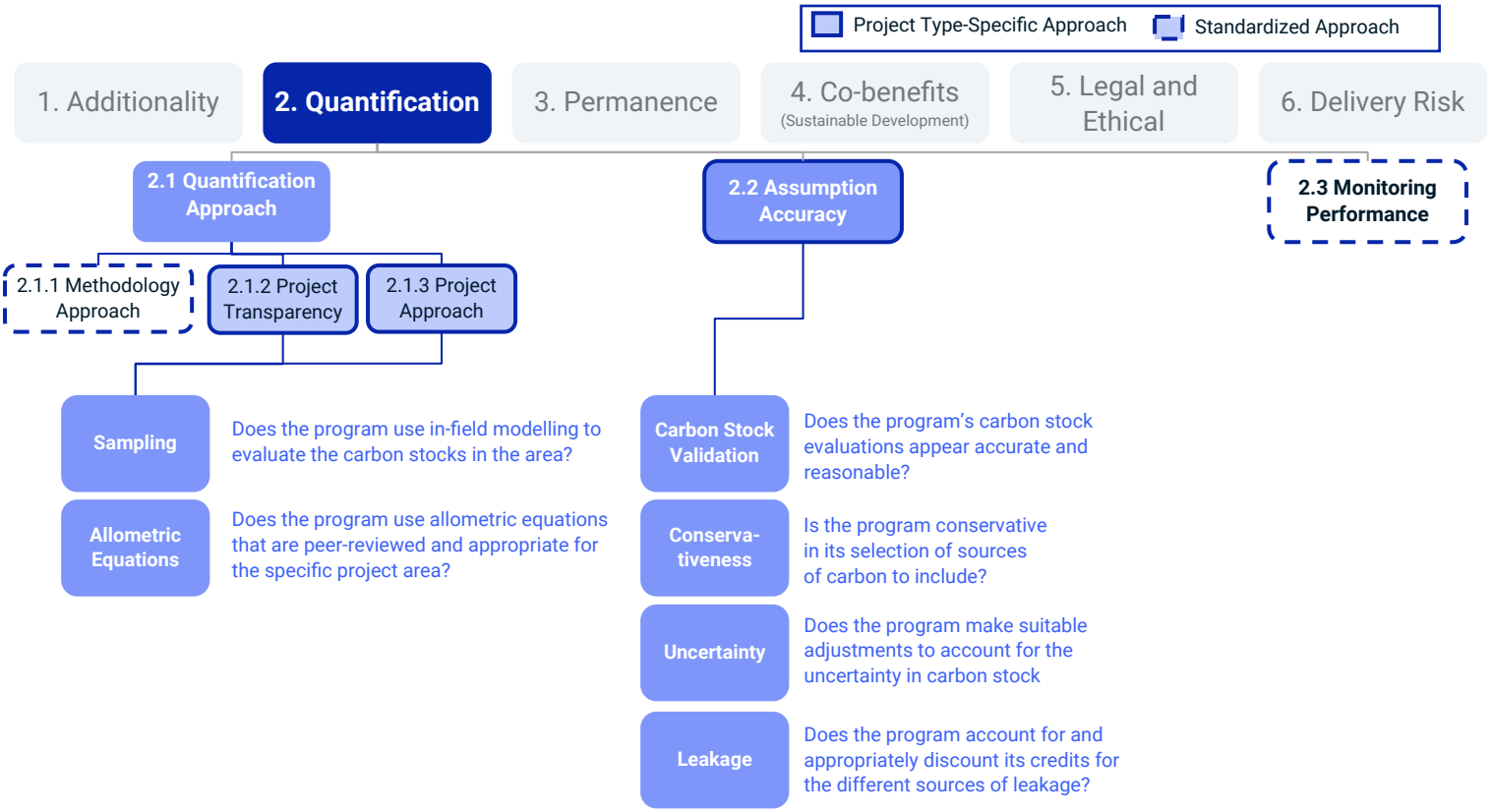


Figure 8: MSCI ESG Research Quantification integrity assessment framework

Sub-criteria	Metrics	Rationale	J-REDD+	REDD+	Renewables	ARR	Cookstoves	Biochar	Landfill Gas	Safe Water	IFM	Waste Mgmt.	Blue Carbon
2.1 Quantification Approach	2.1.1 Methodology Approach	Through setting the assumptions that projects must make, and the sources that can be used to estimate them, crediting program methodologies can play an important role in reducing or even increasing the level of quantification risk.	✓ *Standardized approach*										
	2.1.2 Project Transparency	Transparent documentation and detail on a project's assumptions are required to make an objective assessment of its approach to carbon quantification.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	2.1.3 Project Approach	Two projects with the same methodology may carry different quantification risks depending on the approaches that each project uses.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.2 Assumption Accuracy	Quantification Accuracy	Each project type has a set of key assumptions that determine the accuracy of their carbon quantification. Evaluating the reliability and accuracy of these key assumptions shows whether a project has over- or understated their emission reductions or removals.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.3 Monitoring Performance	2.3.1 Monitoring Plan	Projects that have effective processes in place to regularly monitor and measure key quantification inputs and assumptions are more likely to accurately estimate and update their emissions impact.	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	2.3.2 VVB Analysis	Projects that use a diverse mix of well-regarded verification and validation bodies (VVBs) will improve the likelihood that key quantification details are accurately checked and validated.	✓ *Standardized approach*										
2.4 Red and Green Flags	News scanning	Review of academic papers, industry sources and the news for Red or Green Flags relating to project's quantification.	✓ *Standardized approach*										

2.1.2 Project Quantification Approach

J-REDD+ programs that use scientifically best-practice techniques to estimate key components of their quantification increase the probability that CO_2e impact will be accurately measured.

There are two metrics that are used to evaluate this sub-criterion:

- **2.1.2.1 Sampling:** Whether the program uses suitable and representative sampling approaches to estimate its carbon stock.
- **2.1.2.2 Allometric Equations:** Whether the program employs a peer-reviewed and suitable allometric equation as part of its carbon stock calculations.

The overall score for this sub-criterion is reached by weighting each of these factors by 50%.

2.1.2.1 Sampling

Sampling relates to whether the program uses suitable and representative sampling to measure the carbon stock within the area.

Rationale	To estimate the carbon stock within their area, programs typically use tree measurements from a sample of the area as an input in their calculations. Given that these measurements are then extrapolated over the entire program area, the accuracy of the estimate is dependent on how representative the sampled area is to the entire area. Programs that use more representative sampling techniques over a larger area increase the chances that this sampled area will be representative of the entire program area.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑					
Scoring Definition	Each program is scored on a 5-point scale from 1 to 5, where 1 indicates a relatively low level of sampling and 5 indicates a relatively high level of sampling.					
Scoring Approach	MSCI ESG Research conducts a detailed review of each program's documents to understand its approach to carbon stock estimation and its sampling procedures during both its design and monitoring phases. For each program two key factors are considered. First, if the program combined in-field sampling with any remote sensing. Second, the number and size of plots sampled in order to understand what proportion of the total program area had been sampled. Programs are scored depending on the proportion of the program area sampled. For example, a program that samples over 0.1% of their area receives the highest score of 5. Programs that sample less than 0.01% of their area or do not provide any transparent information on their sampling receive the lowest score of 1. Where programs do not provide transparent information regarding the area sampled, the scoring is instead based on the total number of plots sampled.					

2.1.2.2 Allometric Equations

Allometric Equations relates to whether the program uses peer-reviewed allometric equations that are appropriate for the region, forest type and biome type.

Rationale	Allometric equations are used to convert tree measurements into the amount of carbon they contain. The accuracy of this calculation is therefore dependent on the appropriateness of the allometric equation used. The most appropriate equations will be peer-reviewed and specifically chosen by a program based on their relevance to the program's key characteristics.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑				☑	

Scoring Definition	Each program is scored on a 5-point scale from 1.5 to 5, where 1.5 indicates that a non-peer reviewed allometric equation was used that does not appear to be appropriate for the region or species, and 5 indicates that a species/region/forest-type relevant equation from a peer-reviewed study was used.
Scoring Approach	MSCI ESG Research identifies from program documentation the specific allometric equation(s) used in the program's carbon stock calculations. These studies are then reviewed and researched to determine whether it was peer-reviewed, and if it is relevant for the program area, given its key characteristics. Programs that use a peer-reviewed equation receive 2 points. Programs then receive an additional point if their equation is relevant to each of the region, tree species and forest type.

2.2 Accuracy of Assumptions

The accuracy of key quantification assumptions is evaluated against a combination of internal and third-party estimates to determine whether they appear reasonable.

There are four components that are used to evaluate this sub-criterion:

- **2.2.1 Carbon Stock Validation:** Whether the carbon stock per hectare assumptions appear accurate and reasonable.
- **2.2.2 Conservativeness**: Whether the program has conservatively excluded certain sources of carbon pools from its calculations.
- **2.2.3 Uncertainty Deductions:** Whether the program has made conservative uncertainty deductions to account for the inherent uncertainty in estimating carbon stock over large forested areas.
- **2.2.4 Leakage:** Whether the program appropriately accounts and compensates for the threat of leakage.

Each of these criteria are evaluated on both a 1 to 5 scale and a continuous percentage score. The percentage score represents the proportion of the program's emissions impact that appears accurately estimated, where scores over 100% indicate the program's emissions calculations are conservative, and scores lower than 100% indicate potential overestimation.

2.2.1 Carbon Stock Validation

Carbon Stock Validation refers to whether the program's carbon stock per hectare assumptions appear reasonable.

Rationale	Carbon stock per hectare assumptions are subject to calculation uncertainty. Programs that overestimate their carbon stock will overestimate their emission reduction impact.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑	☑				

Scoring Definition	Each program is scored on a continuous % scale, where 100% indicates that our estimates (once accounting for uncertainty intervals) match the program's estimate, 50% indicates that the third-party carbon stock per hectare estimate is only half of the program's assumption and 200% indicates that the program's carbon stock per hectare may be over double the program's assumption.
Scoring Approach	Through a detailed review of program documentation and developer outreach programs, information on program's carbon stock per hectare and total carbon stock assumptions are extracted. For programs that directly provide above-ground biomass estimates, this estimate is used. For programs that only provide total carbon stock estimates, including other carbon sources, either the program assumptions on the mix of carbon sources or regionally specific default values on the proportion of forest carbon stored in each carbon pool are used to estimate the above-ground biomass component of a program's carbon stock. This program assumption is then compared to the average of third-party geospatial estimates from Chloris Earth and other sources where available (such as the ESA-CCI [European Space Agency - Climate Change Initiative]), who estimate the above-ground biomass within areas and on a per-hectare basis using the latest geospatial techniques.[11] The percentage score is then derived from the ratio difference between the geospatial estimate to the program assumption.

2.2.2 Uncertainty Deductions

Uncertainty Deductions refers to whether the program has made uncertainty deductions to account for the inherent uncertainty in estimating carbon stock over large forested areas.

Rationale	J-REDD+ programs typically operate across such a large area that accurately estimating the carbon stock within the program is inherently difficult. J-REDD+ programs can compensate for this by including uncertainty deductions within their emissions impact calculations.

[11] ESA-CCI. "Chloris Earth." Global Forest Above Ground Biomass. https://app.chloris.earth/#/.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑					

Scoring Definition	Each program is scored on a continuous percentage scale and 1 to 5 scale, where 5 indicates that the program uses a significant uncertainty deduction of over 10%, and 1 indicates that no uncertainty deduction was used.
Scoring Approach	MSCI ESG Research conducts a detailed review of a program's documentation to understand whether any uncertainty deductions were included in the program. Each program is then scored on a continuous percentage scale, where 100% equates to no uncertainty deduction and 110% indicates a 10% uncertainty deduction was applied. Further, each program is scored on a 1 to 5 scale, where 5 indicates that an uncertainty deduction over 10% has been applied and 1 indicates that no uncertainty deduction was applied.

2.2.3 Conservativeness

Conservativeness relates to whether the program has conservatively excluded certain sources of carbon pools from its calculations.

Rationale	The carbon stock of a forested area is composed not only of trees that are visible above ground but also of below-ground biomass, soil organic carbon and other dead wood. Deforestation and degradation can impact the carbon stored in each of these carbon pools but are not always accounted for by programs. Programs that do not estimate the carbon stock within certain pools, such as soil organic carbon, will estimate their emissions impact more conservatively than if they include all these pools in their calculations.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑					

Scoring Definition	Each program is scored on a continuous percentage scale and a 5 to 10 scale, where 5 indicates no optional carbon pools are excluded from a program's calculations and 10 indicates that carbon pools representing up to half of the program's carbon stocks are excluded.
Scoring Approach	Through a detailed review of each individual program's documents, the carbon sources included were identified in the program's carbon stock calculation. The carbon sources reviewed include: above-ground biomass, below-ground biomass, dead wood, wood products, soil organic carbon and litter. Given that each of these pools has a different significance to the overall carbon stock, the proportion of the total carbon stock that any excluded pools likely represent is then estimated based on analyzing a sample of similar programs. For example, on average, soil carbon represents two to five times more carbon than forest litter or deadwood,

and its exclusion is thus more conservative than if one of the latter were excluded. Although, the importance of soil carbon does vary, with it being relatively less important in tropical rainforest projects where above-ground biomass can be much higher.

All programs typically include mandatory above-ground and below-ground biomass sources, and so the score for this criterion is primarily based on whether dead wood, wood products, soil organic carbon and litter are excluded.

2.2.4 Leakage

When reducing deforestation in an area, there is a risk that the agents of deforestation simply deforest a surrounding area instead, resulting in little net climatic benefit. This concept of leakage must be appropriately accounted, monitored, and compensated for by programs.

To evaluate the appropriateness of a program's leakage deductions, both the threat of leakage and the extent to which it is appropriately accounted for is considered:

- **2.2.3.1 Leakage Threat:** The extent to which leakage represents a significant threat given the program's location and its drivers of deforestation.
- **2.2.3.2 Leakage Deduction Suitability:** Whether the program's accounting and compensation for leakage is appropriate given this threat.

These criteria are each assessed on a scale of 1 to 5, with the overall score generated by subtracting the total compensation (expressed as a percentage) from the total Leakage Threat (expressed as a percentage), and the net percentage then being mapped onto a 1-5 scale.

2.2.3.1 Leakage Threat

The threat of leakage is determined by the specific circumstances of a program. Two factors in our assessment of a program's leakage threat are considered:

- **2.2.3.1.1 Market Leakage** The risk that the program's activities change the supply and demand equilibrium for the relevant deforestation-linked industries, causing other market actors to shift their activities and deforest other areas.
- **2.2.3.1.2 Activity Leakage:** The risk that the agents of deforestations simply shift their activities to surrounding areas.

2.2.3.1.1 Market Leakage

Market leakage refers to the threat that the program's activities change the supply and demand equilibrium for the relevant deforestation-linked industries, causing other market actors to shift their activities and deforest other areas.

Rationale	For J-REDD+ programs, the primary leakage risk is market leakage. A key underlying driver of deforestation within the JREDD+ program may often be regional and/or global demand for commodities such as timber, agricultural products, and minerals. Should reductions in deforestation result in similar reductions in the production of a certain commodity, then actors in other regions may be incentivized to deforest other lands to meet the demand for this commodity.

Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets

Key Sources	☑	☑	☑

Scoring Definition

Each program is scored as a percentage indicating the likely proportion of gross emission reductions at risk due to market leakage.

Scoring Approach

MSCI ESG Research conducts a detailed review of each individual program's key documents to understand its underlying drivers of deforestation and the activities it is undertaking to prevent deforestation.

Fundamentally, the threat of market leakage is driven by the market elasticity of the relevant deforestation industries. For example, a highly elastic market will respond more quickly to any reductions in supply due to the program's activities and lead to a counter-balancing increase in supply elsewhere, threatening deforestation in other locations. Accurately estimating and quantifying the risk of market leakage is very difficult, given the complexity of drawing causal relationships at a market leakage.

Following key academic insights on the drivers of market leakage,[12] three main factors are assessed to evaluate the significance of the market leakage threat:

1. **Deforestation drivers:** Some industries will have higher elasticity than others if the supply for these products can respond from more areas.
2. **Integration into global markets:** If a deforestation-linked industry is more integrated into global markets, then supply responsiveness could come internationally, not just domestically, and therefore respond more quickly.
3. **Mitigation:** Whether any specific activities have been put in place to reduce the potential effects of market leakage.

1. Deforestation drivers

To assess elasticity, a leakage threat table is used that assesses the threat of different sources of leakage given each driver of deforestation, as shown below:

	Example Deforestation Driver					
	Large-scale Commercial Logging	Small-scale Logging	Large-scale Agriculture	Small-scale Pastoral	Small-scale Arable	Mineral Extraction
Market Leakage Risk	High	Very Low	High	Very Low	Very Low	Medium

For each program, the overall leakage threat is then calculated based on the relevance of each driver of deforestation to the program and assumed leakage threat percentages for each threat level.

Indeed, drivers fundamentally differ in the likelihood that displaced supply will actually result in displaced forest loss. For example, while reductions in large scale timber harvesting are very likely to result in forest being cleared elsewhere whereas gold mining may be displaced to preexisting mines that may not always need to clear new areas of forest to increase production.

[12] Pan, W, et al. (2020). "Leakage in energy/forest sectors and climate policy implications using meta-analysis." *Forest Policy and Economics;* Haya, K, et al (2020). "Quality assessment of REDD+ carbon credit projects." Berkeley Carbon Trading Project.

2. ***Integration into global markets***

If a local deforestation-linked industry is closely integrated into global markets, then the threat of market leakage will be higher. For the relevant deforestation-linked industries, this integration into global markets is assessed through an analysis of the proportion of the extracted products that are exported, using a range of third-party data sources. The overall threat score from Step 1 is then multiplied based on the level of global integration:

- **1 = Low integration:** Less than 20% of the deforestation-linked products were exported.
- **0.85 = Moderate integration:** More than 20% but less than 40% of the deforestation-linked products were exported.
- **0.7 = High integration:** More than 40% of the deforestation-linked products were exported, indicating high integration to global markets.

3. ***Mitigation activities***

MSCI ESG Research then determines whether the program undertakes any leakage mitigation efforts, such as increasing production of the commodity elsewhere, that would soften the risk of leakage. If mitigation activities are present, then the leakage threat score is reduced by 25%.

The overall score is then reached through the aggregation of the scores from steps 2 and 3.

2.2.3.1.2 Activity Leakage

Activity leakage relates to the threat that the agents of deforestations simply shift their activities to surrounding areas.

Rationale	The size of J-REDD+ programs means that most agents of forest loss are highly unlikely to be able to easily physically migrate up to thousands of miles to areas to outside the area. However, if not mitigated by effective alternative livelihood opportunities, some activity leakage may take place at the borders of a jurisdiction.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑		

Scoring Definition	Each program is scored as a percentage indicating the likely proportion of gross emissions reductions at risk due to activity leakage.

Scoring Approach

First, a detailed review of each individual program's key documents is conducted to understand its underlying drivers of deforestation and the activities it is undertaking to prevent deforestation.

This is then matched to the activity leakage threat table below, assigning each a likelihood of resulting in leakage. For example, small-scale drivers tend to have higher threats of activity-shifting leakage than larger-scale drivers. This is shown below:

	Example Deforestation Driver					
	Commercial Logging	Small-scale Logging	Large-scale Agriculture	Small-scale Agriculture	Settlement Growth	Mineral Extraction
Threat of	Very Low	Low	Very Low	Low	Low	Very Low

Activity Leakage						

Second, to assess the extent to which activity-shifting threats have been mitigated, the Alternative Livelihood Score is used (see 4.1.3.1) to measure the degree to which this risk is likely mitigated by providing agents of deforestation with economic opportunities outside of deforestation-linked industries. Programs with a very high Alternative Livelihoods Score are assumed to be able to mitigate up to 50% of their activity leakage threat.

2.2.3.2 Leakage deduction suitability

Leakage deduction refers to whether a program appropriately accounts (i.e., deducts) for leakage given its leakage threat.

Rationale	The size of a program's leakage deduction should reflect the specific leakage threat level it faces. Programs that deduct a low proportion of their credits due to leakage despite facing high leakage threats risk overestimating their total emissions reduction impact.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑					
Scoring Definition	The proportion of emission reductions deducted from the potential issuance pool to account for leakage is expressed as a proportion of the program's emission reductions.					
Scoring Approach	MSCI ESG Research conducts a detailed review of program documents, including monitoring reports and program design documents, to identify both a program's ex-ante and ex-post leakage deductions as a proportion of total emission reductions. Ex-post leakage deductions are prioritized where they are available in monitoring reports, otherwise a program's ex-ante leakage deductions are used.					

6. Criterion 3 - Permanence

Permanence refers to the likelihood that the emission reductions or removals achieved by a project will be sufficiently long-term and not released back into the atmosphere. There is growing consensus that 100 years represents a good benchmark for projects to be classified as 'permanent'. The IC-VCM's Core Carbon Principles require a monitoring and compensation period of at least 40 years for nature-based projects.

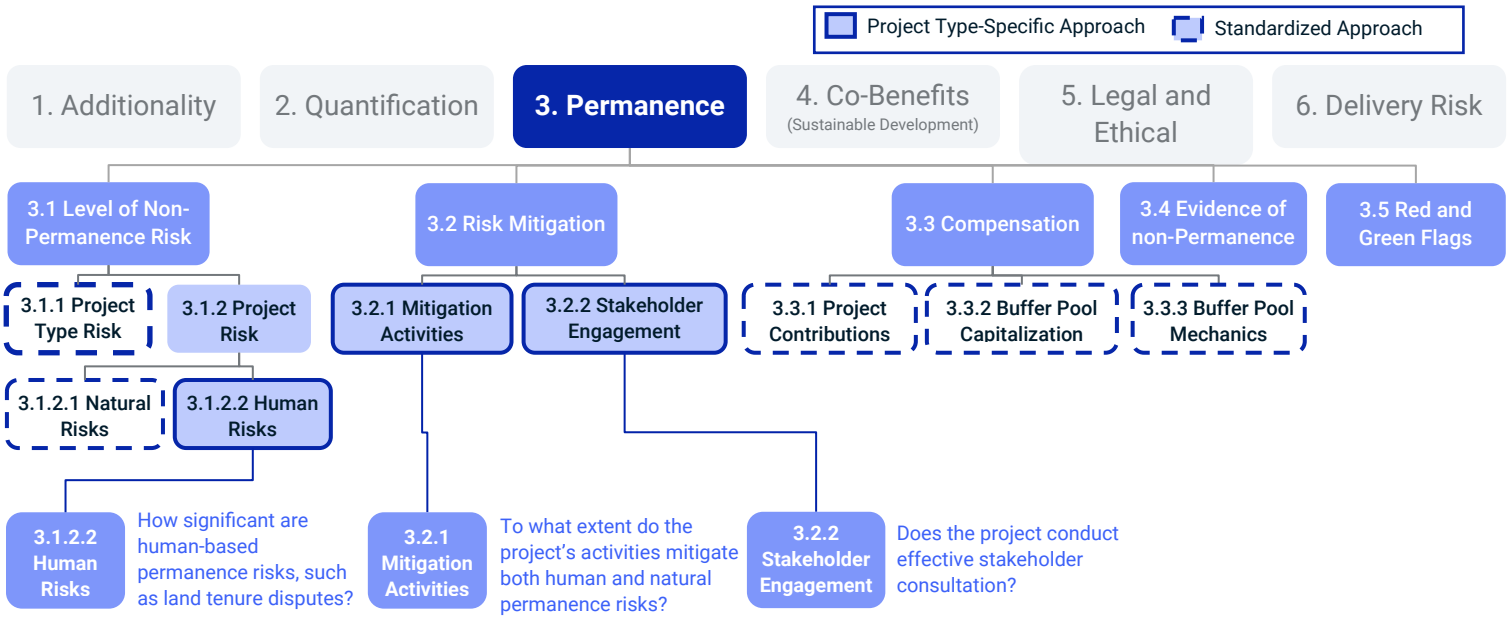
A permanent reduction or removal can only be guaranteed where it is physically impossible for a reversal to occur. However, for most projects, a risk of reversal does, to some extent, exist. This risk may be due to natural risks, such as wildfires, or human risks, such as poor project management.

As with project-scale REDD+, J-REDD+ programs involve both inherent human and natural permanence risks. However, the greater scale of J-REDD+ programs can reduce the proportionate impact of natural risks, as the potential severity of natural disasters is more contained (assuming buffers are constant) and is more easily incorporated within a program's baseline calculations.

Conversely, political and policy uncertainty, plus corruption and financial crime risks, significantly increase risks of land not being protected at a consistent standard over time (across electoral cycles). Hence, J-REDD+ permanence requires deep evaluation of risk of government policy reversals and/or a government's ability to effectively police/control its forested areas.

Figure 9 illustrates the sub-criteria through which MSCI ESG Research assesses the permanence of the emissions reductions achieved by J-REDD+ programs, and the Integrity Assessment framework sub-criteria that they refer to. The detailed sub-criteria are described in Figure 10.

Figure 9: Permanence integrity assessment approach[13]



[13] The approach to assess 3.2.2 Local Stakeholder Engagement is outlined in Section 4.3.2, Local Stakeholder Engagement.

Figure 10: MSCI ESG Research Permanence integrity assessment framework

Sub-criteria		Metrics	Rationale	J-REDD+	REDD+	Renewables	ARR	Cookstoves	Biochar	Landfill Gas	Safe Water	IFM	Waste Mgmt.	Blue Carbon
3.1 Level of Non-Permanence Risk	3.1.1 Project Type Risk	**Project Type Significance**	Different project types have inherently different levels of non-permanence risk.	✓ *Standardized approach*										
	3.1.2 Project Risk	**3.1.2.1 Natural Risks**	The risk of fire, drought, landslide and other natural risks in that project area.	✓	✓	✗	✓	✗	✗	✗	✗	✓	✗	✓
		3.1.2.2 Human Risks	Human-related permanence risks include the strength of land tenure rights or a project developer's experience.	✓	✓	✗	✓	✗	✗	✗	✗	✓	✗	✓
3.2 Mitigation		**3.2.1 Mitigation Activities**	Projects can mitigate non-permanence risks through implementing activities that focus on addressing key risks.	✓	✓	✗	✓	✓	✓	✗	✓	✓	✗	✓
		3.2.2 Local Stakeholder Engagement	Successfully engaging with local stakeholders lowers the risk of human-based non-permanence.	✓	✓	✗	✓	✓	✓	✗	✓	✓	✗	✓
3.3 Compensation and Contributions		**3.3.1 Project Contributions**	A project's buffer pool contributions should appropriately account for the non-permanence risk.	✓	✓	✗	✓	✓	✓	✗	✓	✓	✗	✓
		3.3.2 Buffer Pool Capitalization	An under-capitalized buffer pool may have insufficient credits to cover future losses.	✓ *Standardized approach*										
		3.3.3 Buffer Pool Mechanics	A buffer pool should have mechanisms in place to ensure projects appropriately account for and estimate their buffer pool credits.	✓ *Standardized approach*										
3.4 Evidence of Non-Permanence		**Non-Permanence Events**	If significant reversals have occurred without being accounted for, then carbon stock reversals have already occurred.	✗	✓	✗	✓	✗	✗	✗	✗	✓	✗	✗
3.5 Red and Green Flags		**News scanning**	Review of academic papers, industry sources and the news for Red or Green Flags relating to project's permanence.	✓ *Standardized approach*										

Given the interplay of permanence risk, mitigation and compensation activities, the overall permanence assessment is conducted in three main steps:

- **Significance of Risks:** Each relevant risk factor is primarily assessed on a 1 to 5 scale that signifies the proportion of credits at risk of reversal and the likelihood of this occurring. These 1 to 5 scores are also converted into a percentage of carbon stock at risk, which

represents a more specific estimate of the percentage of carbon stocks that are expected to be at risk, mitigated for, or compensated for. These risks are then individually summed to reach an overall permanence risk, reflecting the percentage of all achieved emissions reductions that would be expected to be reversed without any mitigation or compensation activities.

- **Net Permanence Risk:** The effect of mitigation is to address any non-permanence risk that exists. Therefore, the effect of 3.2 Risk Mitigation is to reduce the gross permanence risk level identified in 3.1 Level of Non-Permanence Risk to reach a net Permanence Risk Score and percentage.
- **Post-Compensation Risk:** This net Permanence Score is then compared to the buffer pool contribution percentage in 3.3 Compensation and Contributions.

The remaining percentage of credits therefore represents either the proportion of credits that are either undercompensated for or overcompensated for. A negative post-compensation risk score indicates that the buffer pool appears over-sufficient given the net permanence risk of the program. While a positive post-compensation risk score indicates that the buffer pool appears under-sufficient given the net permanence risk of the program.

3.1.2.1 Natural Risks

Natural risks refer to the significance and likelihood that such risks within an area might lead to a reversal in the emission reductions/removals achieved.

Rationale	Natural disturbances, such as drought, fire or landslides, can threaten the CO_2e stored in land-based carbon pools. These risks are most relevant for nature-based projects, where the CO_2e is stored in carbon pools that are susceptible to a range of natural risks. For example, wildfires may burn down trees within a J-REDD+ program, resulting in CO2 being released into the atmosphere.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑	☑			☑	

Scoring Definition	Each program is scored on a 5-point scale from 1 to 5 for each natural risk type, where 5 indicates no permanence risk and 1 indicates a very significant permanence risk from natural disturbances.
Scoring Approach	MSCI ESG Research has considered five main types of natural risk in our assessment: (i) fire, (ii) drought, (iii) landslide; (iv) windthrow/tropical cyclone (or uprooting of trees by wind); (v) biotic. These risks are assessed independently using MSCI ESG Research's geospatial analysis. MSCI ESG Research only assesses natural risks where they are relevant to that project type. For many types, natural risks do not represent a permanence risk as the CO2e is not stored in a carbon pool at risk of natural disturbances. Major natural risks are assessed for each individual program through geospatial analysis of its boundary, as shown in Table 1. For each risk, MSCI ESG Research looks at the historical trends and patterns of natural risk. Then, these risks are forecasted using our in-house climate models that account for the projected change in likelihood

as temperatures and climates change. This modelling results in a specific estimate of risk within that progam's boundary.

More detail on MSCI ESG Research's geospatial permanence methodology can be found in separate methodology note: "MSCI Carbon Project Ratings - Geospatial Methods in Assessing Permanence."

Table 1: Analytical Approach for each natural risk

Wildfire	Forecast of the future frequency and severity of fires based on a geospatial analysis and our own modelling.
Drought	Forecast of the intensity and frequency of drought risk for each project.
Landslide	Assessment of the percentage of project areas that are currently susceptible to landslides based on the NASA landslide susceptibility map.[14]
Windthrow	Estimate of the tropical cyclone return interval for each project area based on a 10,000-year synthetic dataset.[15]
Biotic	Assessment of biotic outbreaks (% of area at risk/not at risk), based on the National Insect and Disease Risk Map (NIDRM) 2018.[16]

3.1.2.2 Human Risks

Protected forests are also subject to human-based risks of reversal, given that the areas may be deforested at a later date. If a J-REDD+ program successfully protects an area for 20 years, but the area is then deforested anyway, the emissions impact will only be transitory. While even a transitory reduction is helpful in providing the climate some short-term "relief," it is less valuable than a more permanent reduction/removal and cannot be said to be a "true" offset of a fossil fuel emission (which stays in the atmosphere for a very long time).

To assess human-based permanence risks, the different underlying drivers of human-based deforestation are considered. As part of this assessment, three primary components of human risk are analyzed:

- **3.1.2.2.1 Policy and Governmental Risks:** The risks that changes in government and policy threaten the long-term implementation of the program's activities.
- **3.1.2.2.2 Land Tenure:** Whether disputable or unsecure land tenure may impact the stability of the program area's governance and protection.
- **3.1.2.2.3 Program Lifetime:** Whether plans are in place to protect the forest beyond the program's lifetime to ensure ongoing protection of the area.

[14] Thomas Stanley and Dalia B. Kirschbaum, 2017 , "A Heuristic Approach to Global Landslide Susceptibility Mapping," *Natural Hazards*, 87 (1): 145-64, https://doi.org/10.1007/s11069-017-2757-y.

[15] Kenneth R. Knapp et al., 2018, "International Best Track Archive for Climate Stewardship (IBTrACS) Project, Version 4," NOAA National Centers for Environmental Information.

[16] US Forest Service, "National Insect and Disease Risk Map (2018 NIDRM)," 2018.

Each program is scored on both a percentage basis (representing the percentage of carbon credits at risk) and a 1 to 5 scale, with the overall score based on a sum of the scores for each individual criterion.

3.1.2.2.1 Policy and Governmental Risks

Given J-REDD+ programs are intrinsically tied to federal or state policies/agreements, the long-term implementation of the program is closely linked to the political risks that exist in the jurisdiction.

In order to assess policy and governmental permanence risks, three primary components are considered:

- **3.1.2.2.1.1 Cross-Party Consensus:** Whether the program has broad support across the political spectrum, and is therefore less sensitive to political changes.
- **3.1.2.2.1.2 Political Stability and Corruption:** Whether the program is located in a country with an unstable political climate or corruption risks.
- **3.1.2.2.1.3 Threat of Violence:** Whether the jurisdiction faces any external political threats that may impact the political environment (such as the threat of invasion or political coup).

Each program is scored on a percentage basis, with the overall score based on a sum of the scores for each individual component.

3.1.2.2.1.1 Cross-Party Consensus

Cross-Party Consensus relates to whether the program has broad support across the political spectrum and is therefore less sensitive to political changes.

Rationale	J-REDD+ programs may be implemented and agreed on by one political party, but it is important that there is some consensus across the whole political spectrum to maintain the program's activities. Programs that are the result of broader democratic consensus are likely to be more stable and less affected by political changes over time.
Key Sources	Project Documentation ☑ | Geospatial | Project Methodology Documentation | Academic Literature ☑ | Third-party Data | MSCI Carbon Markets
Scoring Definition	Each program is scored on a 1 to 5 scale, where 1 indicates that the program was developed through a single political figure without cross-party support, and 5 indicates that the program has broad cross-party support and has been maintained by multiple heads of states and governments.
Scoring Approach	MSCI ESG Research conducts a detailed review of the policy environment within each jurisdiction and the history of each J-REDD+ program. Two factors are considered: (i) the length of time in which the policy has been in place and supported; (ii) whether the program has had support from multiple parties and heads of state. Programs that have maintained support across multiple administrations are likely to be more resilient to future changes in government. Each program is then scored on a 1 to 5 scale as follows:

	Range of Leaders during Policy

		Single Head of State	Multiple Heads of State across a Single Party	Multiple Heads of State across Multiple Parties
Policy Time in Operation	5 Years or Fewer	1.0	2.0	3.0
	6 to 10 Years	1.5	2.5	3.5
	11 to 20 Years	2.0	3.0	4.0
	More than 20 Years	2.0	3.0	5.0

3.1.2.2.1.2 Political Stability and Corruption

Political Stability and Corruption refers to whether the program is located in a country with an unstable political climate or corruption risks.

Rationale	The risks that J-REDD+ policies are later reversed are dependent on the level of political stability and corruption risks within the country. Regions with highly unstable political situations are more likely to experience policy reversals. Further, programs located in areas with high levels of corruption may see policies being less stringently enforced.

Key Sources

Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
			☑	☑	

Scoring Definition	Each program is scored on a scale of 1 to 5 scale, where 1 indicates very high risk and 5 indicates that very low political risk.
Scoring Approach	To assess the political stability and corruption within a jurisdiction, two factors are evaluated: - **Corruption:** The level of corruption within each jurisdiction. An average of two third-party data sources are used as an input: the Transparency International's Corruption Perception Index and the World Bank's Control of Corruption Indicator. - **Climate Policy Uncertainty:** The level of policy uncertainty within a jurisdiction. This is based on an index created by MSCI ESG Research that assesses the relative degree of policy uncertainty that exists within climate policy at a national scale. Each of these inputs are normalized on a 1 to 5 scale, with the overall score based on an equal weighting of these two factors.

3.1.2.2.1.3 Threat of Violence

Threat of Violence refers to whether the jurisdiction faces any external political threats that may impact the political environment (such as the threat of invasion or political coup).

Rationale	A jurisdiction may face the threat of invasion, coup or civil war. These events could significantly disrupt the political landscape within a country, and lead to larger risks of policy reversals or lack of enforcement in relation to deforestation policies.

Key Sources

Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
☑			☑		

Scoring Definition	Each program is scored on a scale of 1 to 5 scale, where 5 indicates very low risk and 1 indicates very high risk of violence (suggestive of an imminent civil war, invasion or coup).
Scoring Approach	Detailed research on the political environment and stability of each jurisdiction is conducted. Through this, any significant disputes with other governments or outside actors are identified and evaluated. Each program is then scored on a 1 to 5 scale based on both the existence and level of severity of the threats, as follows:

		Existing Threat Identified	
		No	Yes
Likelihood	None	5	n/a
	Low	n/a	4
	Moderate	n/a	3
	High	n/a	2
	Very High	n/a	1

3.1.2.2.2 Land Tenure

Land Tenure refers to whether any land tenure issues or uncertainties exist in the program area which impact the potential for deforestation in the future.

Rationale	Jurisdictions that have secure land tenure are less prone to illegal settlements or the threat of communities being removed from their land. In this way, agents of deforestation from outside the area are less likely to inhabit and control the protected forests.

Key Sources

Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
			☑	☑	

Scoring Definition	Each program is scored on a scale of 1 to 5 where 1 represents a very high degree of permanence risk due to land tenure, and 5 indicates very low risk.
Scoring Approach	For each jurisdiction, two key factors are considered: (i) the extent to which the forests are state-owned, and (ii) the security of property and land rights within each jurisdiction using third party data from the World Economic Forum and the World Bank. For larger countries, such as Brazil, regional or state-level data is used where available.

Each program area is then scored on a 1 to 5 scale on both of these key factors. The overall score is then based on a 75% weighting towards the third-party land rights score.

3.1.2.2.3 Program Lifetime

Program Lifetime refers to whether plans are in place to protect the forest beyond the program's lifetime to ensure ongoing protection of the area.

Rationale

A J-REDD+ program may have a lifetime of 30 years, beyond which the proponents may not be obligated to protect the area. Therefore, the risk of abandonment of the program activities are heightened after the end of this program lifetime. In contrast, programs that legally commit to preserving the area beyond the program's lifetime reduce this risk.

Key Sources

Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
☑				☑	

Scoring Definition

Each program is scored on a scale of 1 to 5 where 1 represents a very high degree of permanence risk due to a short program lifetime, and 5 indicates very low risk.

Scoring Approach

For each jurisdictional program, two key factors are considered: (i) the number of years that the program's activities must be legally maintained; and (ii) whether credits are returned or cancelled at the end of this period.

Each program is then scored on a 1 to 5 scale, as follows:

		Reversal Policy		
		Credits Cancelled	Credits Returned	Policy Not Stated
Commitment Lifetime	Fewer than 10 Years	2	1	1
	10-19 Years	3	2	2
	20-39 Years	4	3	3
	40-99 Years	5	4	4
	100+ Years	5	5	5

3.2.1 Mitigation Activities

Mitigation activities refer to the extent to which the program's activities address and mitigate permanence risks.

Rationale

Both human and natural-based permanence risks can be addressed through the implementation of relevant program activities. For J-REDD+ in particular, ensuring that there is sustainable local support for the program that goes beyond the existing political stakeholders is important to ensuring successful implementation of the program. Programs that are able to stimulate self-sustainable alternative livelihoods

	and value chains will be less dependent on the jurisdictional policies to conserve the forested areas, thus reducing the significance of permanence risks.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑				☑	

Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates that very limited and ineffective mitigation procedures appear to be in place and 5 indicates very effective mitigation procedures appear to be in place.
Scoring Approach	MSCI ESG Research conducts a detailed review of each program's key documents and relevant third-party literature to identify and understand the mitigation activities that the program has in place. In particular, five primary types of mitigation initiatives are evaluated: - **Natural Risk Mitigation:** Evidence of the program including specific measures to combat the threat of natural risks, such as fires or sea level rises. - **Value Chain Development:** Evidence of strong, explicit efforts to ensure new value chain growth as a key aim of the program to compensate for the prevention of deforestation-linked activities. - **Alternative Livelihood Development:** Programs that support the development of alternative livelihoods for agents of deforestation. - **Constitutional and International Agreements:** Whether any constitutional or international agreements are in place that will help to ensure or protect the program's activities from political changes. - **Commitment Period:** Programs that legally commit to implementing the program's activities over at least a 100-year timeframe to ensure ongoing protection of the area. Each mitigation activity is then mapped to the relevant natural or human threat that it would help to mitigate. Based on the strength of each mitigation activity, mitigation activities are then assumed to mitigate up to 100% of each relevant risk. Each program is then scored on a 1 to 5 scale based on the proportion of risks that appear to be effectively mitigated: - **5** = Mitigation activities may mitigate over 30% of permanence risks. - **4** = Mitigation activities may mitigate between 20% and 29% of permanence risks. - **3** = Mitigation activities may mitigate between 10% and 19% of permanence risks. - **2** = Mitigation activities may mitigate between 5% and 9% of permanence risks. - **1** = Limited evidence of any of mitigation initiatives, with mitigation activities expected to impact less than 5% of total permanence risk.

7. Criterion 4 – Co-benefits

Co-benefits reflect the sustainable development benefits (and safeguards) of a project beyond the CO2e it saves — i.e., its "externalities." These are typically positive but can, on occasion, be negative.

Carbon projects have the potential to reduce/remove CO_2e and simultaneously have a broader positive societal impact via issues such as development, adaptation and biodiversity.

J-REDD+ programs have the potential to deliver significant social and environmental outcomes outside of their emissions impact. Through protecting forested areas, J-REDD+ programs naturally preserve the biodiversity that lies within those areas, which can regularly be composed of rich and diverse fauna and flora. Further, given the importance of community-building initiatives to J-REDD+ program design, these initiatives can help to support social development goals. Though, to have a net positive social impact, it is important that these initiatives provide support beyond that which the community would have achieved from any deforestation-linked activities in the baseline scenario.

Our approach to co-benefit assessment builds on the UN's Sustainable Development Goals (SDG) framework. The focus is on understanding both the SDG significance of a project and the extent to which the program provides evidence of these outcomes being achieved through effective monitoring.

Figure 11 illustrates the sub-criteria through which MSCI ESG Research assesses the co-benefits of J-REDD+ programs, and the Integrity Assessment framework sub-criteria that they refer to. The detailed sub-criteria are described in **Figure 12**.

Figure 11: Co-benefits integrity assessment approach

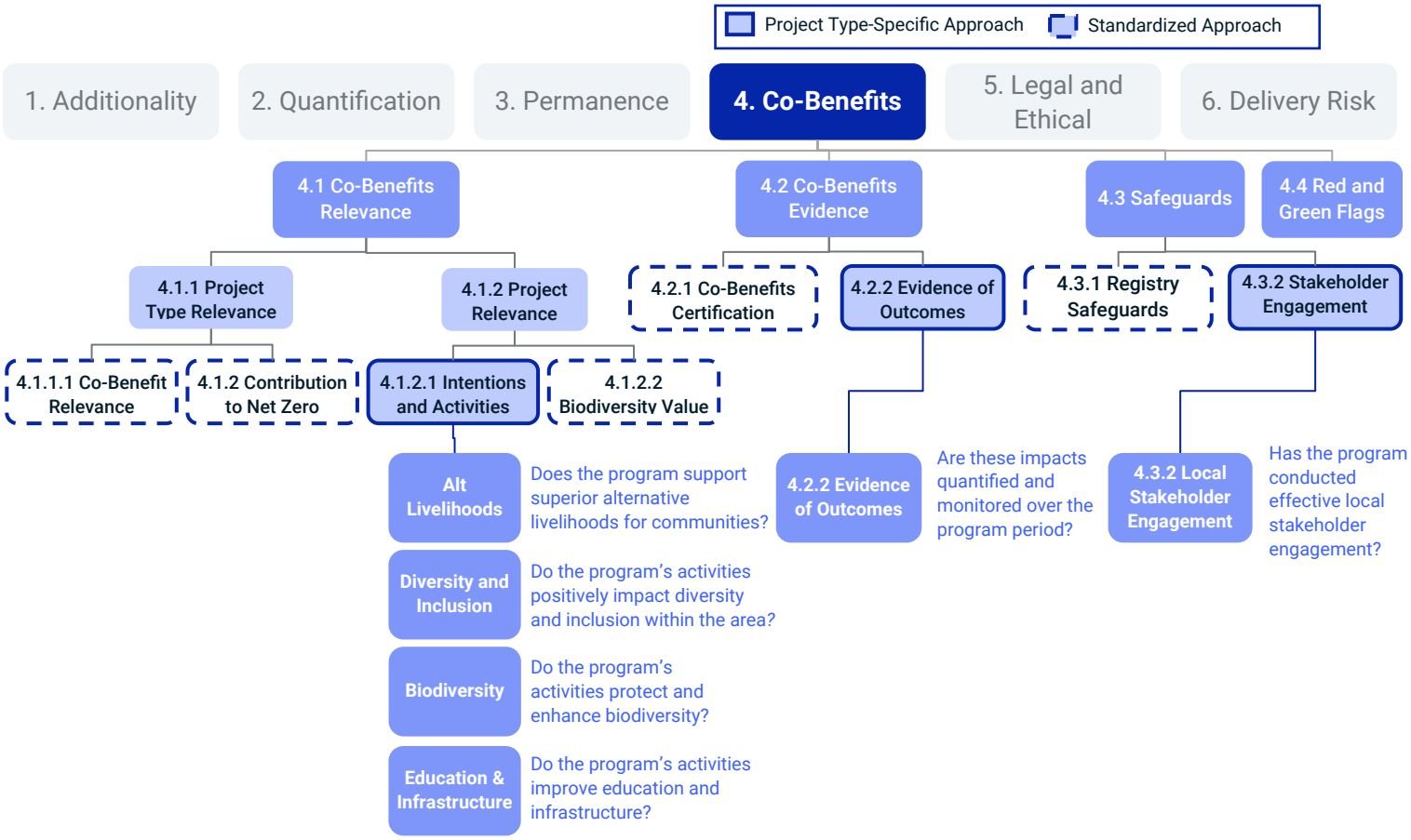


Figure 12: MSCI ESG Research Co-benefits integrity assessment framework

Sub-criteria		Metrics	Rationale	J-REDD+	REDD+	Renewables	ARR	Cookstoves	Biochar	Landfill Gas	Safe Water	IFM	Waste Mgmt.	Blue Carbon
4.1 Co-benefits Relevance	4.1.1 Project Type Relevance	4.1.1.1 Relevance to Project Type	Different project types have an inherently different impact on each sustainable development impact.	✓ *Standardized approach*										
		4.1.1.2 Contribution to Net Zero	Some project types create 'carbon lock-ins' of technologies or practices that are not compatible with a net zero economy.	✓ *Standardized approach*										
	4.1.2 Project Relevance	4.1.2.1 Project Intentions to Activities	The specific design and implementation of a project's activities are critical drivers for whether a project generates positive sustainable development impact.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		4.1.2.2 Biodiversity Value	Nature-based projects that enhance or protect areas of rich biodiversity have greater environmental value.	✓	✓	✗	✓	✗	✗	✗	✗	✓	✗	✓
4.2 Co-benefits Evidence		4.2.1 Certification	Achieving certification involves more stringent project verification. This improves the likelihood that a project's co-benefits have been realized.	✓ *Standardized approach*										
		4.2.2 Quantification of Outcomes	Projects can increase the confidence that co-benefits are attributed to their actions through measuring, monitoring, and quantifying the outcome.	✓	✓	✗	✓	✓	✓	✗	✓	✓	✗	✓
4.3 Safeguards		4.3.1 Registry Safeguards	More effective environmental and social safeguards required by registries reduce the likelihood of projects causing harm.	✓ *Standardized approach*										
		4.3.2 Local Stakeholder Engagement	Projects that successfully engage with local stakeholders reduce the likelihood of any negative impacts occurring.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4.4 Red and Green Flags		News scanning	Review of academic papers, industry sources and the news for Red or Green Flags relating to project's co-benefits.	✓ *Standardized approach*										

4.1.2.1 Project Intentions to Activities

While J-REDD+ programs can impact a range of social or environmental goals, the significance of these co-benefits is heavily determined by the program's design and implementation. A deep understanding of a program's activities and design is required to fully assess its co-benefit impact.

There are four categories of sustainable development impacts that are evaluated as part of this sub-criterion:

- **4.1.3.1 Alternative Livelihoods:** Whether the program provides a superior alternative livelihood to stakeholders beyond that which would have been achieved with the previous land use.
- **4.1.3.2 Diversity and Inclusion:** Whether the program promotes and drives increased diversity and inclusion within the program area, supporting the needs of any disadvantaged groups.
- **4.1.3.3 Education and Infrastructure:** Whether the program supports and invests in local education, health and infrastructure.
- **4.1.3.4 Biodiversity:** Whether the program protects an area of high biodiversity value, supporting continued ecosystem value and resilience.

Each program is scored on a scale of 1 to 5 based on the evaluation of these metrics.

4.1.3.1 Alternative Livelihoods

When J-REDD+ programs change the land use within a program area, they are also changing the source of income for the households within the area. Many communities may have financially relied on deforestation-linked activities, and therefore J-REDD+ programs must aim to reduce their reliance on these activities by substituting them with alternative activities that provide equal or greater benefits to the communities. If program activities do not sufficiently compensate communities, then the households may suffer a reduction in their incomes compared to what would have otherwise happened.

An assessment of Alternative Livelihoods therefore requires both understanding the opportunity cost of a program and the program's support mechanisms aimed to substitute for this opportunity cost:

- **4.1.3.1.1 Alternative Livelihoods Risk:** The extent to which the baseline scenario would have created high financial outcomes for local communities.
- **4.1.3.1.2 Alternative Livelihoods Support:** Whether the program provides attractive and sustainable opportunities and support to local communities.

Both sub-criteria are assessed on a scale of 1 to 5, with the overall score based on an equal weighting of each. Given that alternative livelihood impacts can be both positive and negative, a score of 2 indicates a net neutral impact, a 1 indicates high likelihood of a net negative impact and 5 indicates high likelihood of a net positive impact.

4.1.3.1.1 Alternative Livelihoods Risk

To assess alternative livelihood risk, two factors are considered related to a program's opportunity cost:

- **4.1.3.1.1.1 Program Driver Risk:** Whether an alternative land use represents a financially attractive scenario for participants.
- **4.1.3.1.1.2 Crowding Out:** Whether the underlying drivers of deforestation supported local community livelihoods through deforestation-linked activities.

These criteria are assessed on a scale of 1 to 5, where 1 represents high risk and 5 low risk. The overall score for 4.1.3.1.1 Alternative Livelihoods Risk is then reached through an equal weighting of these two factors.

4.1.3.1.1.1 Program Driver Risk

Program Driver Risk refers to whether a deforestation-linked activity represents a very attractive alternative land use compared to the program scenario.

Rationale	Certain drivers of deforestation are associated with inherently higher opportunity costs to local communities. If the baseline scenario includes deforestation-linked activities that would have significantly benefited local communities, then the opportunity cost for these communities of the program is higher.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑		

Scoring Definition	Each program is scored on a scale of 1 to 3, where 1 indicates a very high opportunity cost and 3 indicates very low opportunity cost.

Scoring Approach

MSCI ESG Research conducts a detailed review of each program's key documents, to assess the drivers of deforestation and the relative contribution of each driver to the overall deforestation present in the jurisdiction.

The relative opportunity cost of each driver is then assessed using the scoring table below:

	Example Deforestation Driver					
	Commercial Logging	Small-scale Logging	Large-scale Agriculture	Small-scale Pastoral	Small-scale Arable	Mineral Extraction
Opportunity Risk	3	1.5	2.5	1	1	1.5

The overall score for this criterion is then based on a weighted average of these risk scores based on the relative size of each deforestation driver to the program.

4.1.3.1.1.2 Crowding Out Risk

Crowding Out Risk refers to whether carbon credit revenue risks replacing or substituting other sources of revenue that would otherwise have been used to support local communities.

Rationale	Some jurisdictions may enter into an agreement with a corporate to purchase carbon credits in lieu of paying tax or royalty fees for operating within that jurisdiction. This foregone tax or royalty revenue may have been spent on local community initiatives as well, meaning that the carbon credit revenue carries an opportunity cost of this foregone tax revenue.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑				☑	

Scoring Definition

Each program is scored on a scale of 1 to 3, where 1 indicates that there is considerable evidence that the majority of credits are at-risk of crowding out other investment and 3 indicates very low risk of crowding out.

Scoring Approach

MSCI ESG Research conducts a detailed review of program documentation and relevant literature to identify any credit purchase agreements made between the jurisdiction and another entity. Research focuses on whether any of these purchase agreements were made in conjunction with an agreement to reduce other payments made to the jurisdiction.

Clearly isolating the quid pro quo nature of these agreements is difficult, and so it is important to also assess the strength of evidence that this agreement led to reduced government revenue elsewhere.

Through an examination of these agreements, the overall score is assessed as follows:

		Strength of Evidence		
		No alternative agreement appears to exist	Entity receives preferential agreement but no clear evidence links agreement to carbon credit purchases	Entity receives preferential agreement which is linked to carbon credit purchases in financial documentation
Proportion of Credits	None	3.0	3.0	3.0
	Less than 10%	3.0	2.75	2.5
	10-24%	3.0	2.5	2.0
	25-49%	3.0	2.25	1.5
	50% or higher	3.0	2.0	1.0

4.1.3.1.2 Alternative Livelihoods Support

To assess the extent to which a program supports the financial opportunities of the communities within the jurisdiction, five factors are considered:

- **4.1.3.1.2.1 Activity Mapping**: The extent to which the activities of a J-REDD+ program focus on building strong alternative livelihood opportunities.
- **4.1.3.1.2.2 Direct Benefit Sharing:** The extent to which a program appears to share the proceeds of its carbon credit revenue directly with local communities.
- **4.1.3.1.2.3 Job Creation:** The extent to which the program creates quantified employment opportunities for local communities.
- **4.1.3.1.2.4 Secure Land Rights:** Whether a program secures or provides land rights to local communities to strengthen their ownership over the program area.
- **4.1.3.1.2.5 Jurisdiction Adjustment Factor:** The extent to which program financing for alternative livelihood support is likely to deliver high outcomes in that jurisdiction given purchasing power and corruption risks.

These criteria are assessed on a scale of 1 to 5, where 1 represents very limited alternative livelihood benefits and 5 represents high likelihood of very significant positive impacts.

The overall score is reached through weighting the individual scores of these five factors. Activity Focus receives a 25% weighting, Jurisdictional Revenue Share a 15% weighting, Activities Evidence a 20% weighting, Direct Benefit Payments a 20% weighting and Jurisdiction Adjustment Factor a 20% weighting.

4.1.3.1.2.1 Activity Mapping

Activity Mapping refers to the extent to which the activities of a J-REDD+ focus on building strong alternative livelihood opportunities.

Rationale	Programs that focus on utilizing carbon credit revenue to support economic opportunities and outcomes for local communities will increase the likelihood that the program will create sustainable alternative livelihoods.

Key Sources

Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
☑			☑		

Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates that the program devotes very few resources to activities that benefit alternative livelihoods and 5 indicates that alternative livelihoods are strongly supported and the primary focus of the program.
Scoring Approach	MSCI ESG Research conducts a detailed review of each individual program's key documents and related literature to identify the list of activities that a program implements, and the relevance of them to alternative livelihoods. For over 25 activities, ranging from capacity building programs to direct cash support to land tenure, the extent to which the program includes that activity as well as the level of significance and evidence placed on the activity is evaluated. The relevance of each of these activities to alternative livelihood support is then assessed, with the overall score based on three main factors: (i) the range of activities relevant to alternative livelihoods within the program; (ii) the significance of these activities as part of the whole J-REDD+ program; (iii) the evidence provided that these activities have been conducted. Programs are then scored on a 1 to 5 scale as follows: - 1 = No focus on alternative livelihood activities. - 2 = Alternative livelihood activities are a limited share of program activities and not a key objective). - 3 = Alternative livelihood activities are an important part of the program's activities but not a key objective. - 4 = Activities focused on alternative livelihood support are a primary program activity and central aim of the program. - 5 = Activities focused on alternative livelihood support are the primary program activity and central aim of the program, representing the vast majority of program spending.

4.1.3.1.2.2 Direct Benefit Sharing

Direct Benefit Sharing refer to the extent to which a program appears to share the proceeds of its carbon credit revenue directly with its local communities.

Rationale	The proceeds of carbon credit revenues can sometimes be directly shared with local communities to ensure that they financially benefit from the program.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑					
Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates that no benefit sharing agreement appears to exist and 5 indicates that there is a transparent benefit sharing agreement in place, within which a significant proportion of the program's proceeds are delivered directly to local communities.					
Scoring Approach	MSCI ESG Research engages with programs directly, and conduct a detailed review of program documentation and third-party literature to understand the use of proceeds of carbon credits, and whether benefit sharing agreements are in place. Both the significance and transparency of any such benefit sharing agreements are evaluated. Programs are then scored on a 1 to 5 scale as follows: - 1 = No benefit sharing agreement appears to be in place. - 2 = Benefit sharing agreement appears to be in place, but no transparent information is provided on the proportion of revenue shared directly with local communities. - 3 = Benefit sharing agreement is in place, with less than 20% of program revenue directly shared with local communities. - 4 = Benefit sharing agreement is in place, with 20-39% of program revenue directly shared with local communities. - 5 = Benefit sharing agreement is in place, with over 40% of program revenue directly shared with local communities.					

4.1.3.1.2.3 Job Creation

Job creation relates to whether the program creates quantified employment for local communities.

Rationale	J-REDD+ program activities can directly provide employment opportunities to local communities and thereby contribute to sustainable alternative livelihoods.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑				☑	

Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates that no employment opportunities appear to have been created and 5 indicates that a high number of jobs are likely to have been created (relative to the volume of credits issued).
Scoring Approach	MSCI ESG Research conducts a detailed review of program documents, including program design documents and monitoring reports, to identify the number of employment opportunities created by the program. This is then divided by the program's estimated annual emission reductions to assess the relative proportion of job creation. This job creation is assessed through an analysis of program monitoring and verification reports, but where not available the assessment is made probabilistically based on the program design documents. This ratio of job creation per credit is then categorized into a 1 to 5 score, where 5 indicates that over five jobs were created per 1,000 credits. This same scoring system for jobs created per kt CO_2e is used across all project types to ensure consistency.

Points Scoring	# Jobs per kt CO_2e
1	0
2	0-1
3	1-2.5
4	2.5-5
5	5+

4.1.3.1.2.4 Secure Land Rights

Secure Land Rights refers to whether the program helps to secure or provide land rights and asset ownership to local communities.

Rationale	Program activities can directly support local communities' ownership of land through helping to secure land rights or transferring rights.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑				☑	
Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates that no strengthening of land rights is included in the program's activities and 5 indicates the strengthening of land rights is a central component of the program.					
Scoring Approach	MSCI ESG Research conducts a detailed review of key program documents and third-party data sources to understand the significance of land tenure improvement programs within the J-REDD+ program. The overall score is based on two components: (i) the significance of strengthening land tenure to the program; (ii) the proportion of communities impacted by the land tenure initiatives.					

4.1.3.1.2.5 Jurisdiction Adjustment Factor

At a jurisdictional level, the impact of carbon credit revenue on other social or environmental outcomes is particularly dependent on how effectively this money is allocated. Across jurisdictions,

a similarly priced carbon credit purchase could lead to different outcomes based on two key jurisdictional factors: first, the risk that revenue is not allocated towards supporting the desired outcomes due to corruption or other similar risks; and second, the extent to which revenue in one jurisdiction leads to higher outcomes due to the purchasing power in that jurisdiction.

Two sub-criteria are assessed here:

- **4.1.3.1.2.5.1 Corruption Risk:** The risk that carbon credit revenue does not reach its intended recipients due to corruption.
- **4.1.3.1.2.5.2 Purchasing Power Parity:** The relative impact that 1 USD of carbon credit revenue can have given the relative cost and income levels of that jurisdiction.

The overall score is reached through an equal weighting of these two factors.

4.1.3.1.2.5.1 Corruption Risk

Corruption Risk refers to the risk that carbon credit revenue does not reach its intended recipients due to corruption.

Rationale	To ensure strong alternative livelihoods, programs must effectively allocate revenue to their intended activities and communities. Given the primary proponent for J-REDD+ programs is usually a national or subnational government, it is important that credit revenue is not lost to corruption. Jurisdictions with higher corruption levels face more risks that the carbon credit revenue does not reach its intended targets.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
					☑	
Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates a high level of corruption risk and 5 indicates a very low level of corruption risk.					
Scoring Approach	MSCI ESG Research assesses the risk of corruption by leveraging third-party data on national (or jurisdictional, where available) corruption indices from Transparency International's Corruption Perception Index and the World Bank's Control of Corruption Indicator). These two indices are averaged together to assess the corruption of that jurisdiction.					

4.1.3.1.2.5.2 Purchasing Power Parity

Purchasing Power Parity (PPP) refers to the relative costs and income levels within a jurisdiction, and therefore the relative value of USD 1 of carbon credit revenue.

Rationale	Programs that take place in lower-income jurisdictions can deliver more significant outcomes and opportunities with the same number of dollars of carbon credit revenue. Further, programs with a lower purchasing power parity will likely face lower local costs to implement an activity, meaning that carbon credit revenue will go further than in other relatively higher-cost jurisdictions.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets

	☑
Scoring Definition	Each program is scored on a scale of 1 to 5 scale, where 1 indicates that the jurisdiction is in the world's top 20% of gross national income (GNI) per capita on a PPP basis and 5 indicates that the jurisdiction is in the world's bottom 20% of GNI per capita on a PPP basis.
Scoring Approach	Standardized global data for all countries is used on GNI per capita from the World Bank in USD, calculated on a PPP basis. For each jurisdiction, the percentile of relative income levels that the jurisdiction is in is calculated. Jurisdictions with lower GNI per capita will be in a lower percentile, and therefore receive a higher score. Each program is then scored on a 1 to 5 scale by translating the jurisdiction percentile into a 1 to 5 scale.

4.1.3.2 Diversity and Inclusion

To be successful, J-REDD+ programs must enforce new restrictions as well as incentivize and facilitate local participation in conservation efforts. This, however, has direct relevance to issues of diversity and inclusion, and whether the activities enforce or counteract existing inequalities. For example, there is a risk that programs may reinforce existing inequalities or distribute benefits in an uneven manner. Alternatively, J-REDD+ programs can help improve diversity and inclusion through directly promoting the outcomes of disadvantaged groups or ensuring benefits are shared equitably.

To assess a program's impact on diversity and inclusion, five sub-criteria are considered:

- **4.1.3.2.1 Activities Mapping:** Whether a program supports diversity and inclusion through its activities.
- **4.1.3.2.2 Power and Inclusion:** Whether the program supports improved and more equal power dynamics within the region and local community.
- **4.1.3.2.3 Gender Outcomes:** Whether a program explicitly demonstrates improved equality within the jurisdiction.
- **4.1.3.2.4 International Inequalities:** Whether a program helps to improve international inequality through facilitating the flow of capital to low-income countries.

The first three sub-criteria are each scored on a 1 to 5 scale, with each weighted 30%, 50% and 20% respectively. The overall score is then reached by summing this weighted score with the score for 4.1.3.2.4 International Inequalities. Given that diversity and inclusion impacts can be both positive and negative, a score of 2 indicates a net neutral impact, 1 indicates high likelihood of a net negative impact and 5 indicates high likelihood of a net positive impact.

4.1.3.2.1 Activities Mapping

Activity Mapping refers to the extent to which the activities of a J-REDD+ program focus on improving diversity and inclusion within the jurisdiction.

Rationale	Programs that focus on utilizing carbon credit revenue to achieve positive diversity and inclusion outcomes for local communities will increase the likelihood that the program will create these outcomes.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑		

Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates that the program devotes very few resources to activities that impact diversity and inclusion and 5 indicates that diversity and inclusion activities are strongly supported and the primary focus of the program.
Scoring Approach	MSCI ESG Research conducts a detailed review of each individual program's key documents and related literature to identify the list of activities that a program implements, and the relevance of them to diversity and inclusion. For over 25 activities, ranging from capacity building projects to direct cash support to land tenure, the extent to which the program includes that activity as well as the level of significance and evidence placed on the activity is evaluated. The relevance of each of these activities to diversity and inclusion is then assessed, with the overall score based on three main factors: (i) the range of activities relevant to diversity and inclusion within the program; (ii) the significance of these activities as part of the whole J-REDD+ program; (iii) the evidence provided that these activities have been conducted. Programs are then scored on a 1 to 5 scale as follows: - 1 = No focus on alternative livelihood activities. - 2 = Diversity and inclusion activities are a limited share of program activities and not a key objective). - 3 = Diversity and inclusion activities are an important part of the program's activities but not a key objective. - 4 = Activities focused on diversity and inclusion are a primary program activity and central aim of the program. - 5 = Activities focused on diversity and inclusion are the primary program activity and central aim of the program , representing the majority of program spending.

4.1.3.2.2 Power and Inclusion

Power and Inclusion refers to whether the program supports improved and more equal power dynamics for indigenous populations within the region and local community.

Rationale	Programs can support more equal power dynamics in a jurisdiction by ensuring indigenous populations are included in decision-making and have equal representation in governance structures.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑	☑	

Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates that activities do not appear to support more equal financial outcomes and 5 indicates that program activities are likely to have a significant, positive impact on more equal financial outcomes.
Scoring Approach	Through a review of program documentation and relevant literature, the program's impact on power and inclusion for indigenous populations is assessed. Four main factors are considered in this assessment: (i) whether specific policies for indigenous populations exist within the program; whether indigenous populations are specifically included within the program's decision-making processes; (iii) the size of the indigenous population impacted as a proportion of the total population of the jurisdiction; (iv) the size of the benefit sharing agreement in place for indigenous populations. Programs are scored on a 1 to 5 scale based on these factors.

4.1.3.2.3 Gender Outcomes

Gender Outcomes refers to whether the program supports gender equality in the region and local community through specific activities.

Rationale	Programs can support lower income, marginalized or disadvantaged groups through explicit activities that target the well-being and opportunities of these groups.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑		
Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates that activities do not appear to support more equal gender outcomes and 5 indicates that program activities seem to significantly involve the participation of women.					
Scoring Approach	A detailed review of key program documents is conducted to assess the participation of women in program activities. In particular, the proportion of people with employment, improved health and/or training that are women is identified. This assessment is primarily conducted through an analysis of program monitoring and verification reports, but where not available the assessment is made probabilistically based on the program design documents. Programs are then scored based on the proportion of the program's beneficiaries that are women in the following way: - 1 = No or low female participation or no transparent information is provided - 2 = 10-20% of program beneficiaries are women - 3 = 20-30% of program beneficiaries are women - 4 = 30-40% of program beneficiaries are women - 5 = 40%+ of program beneficiaries are women					

4.1.3.2.4 International Impacts

International Impacts refers to whether a program helps to reduce international inequality through facilitating the flow of capital to low-income countries.

Rationale	Programs can support reduced international equality through facilitating capital flows to low-income countries.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑		
Scoring Definition	Each program is scored on a scale of 0 to 1, where 1 indicates that the jurisdiction represents a very low-income group that is highly likely to facilitate the flow of capital to low-income countries.					
Scoring Approach	Using data from the World Bank on GNI per capita, each program is scored on a 0 to 1 scale based on the GNI per capita level. If the host country's GNI per capita value is above USD 14,000, it receives 0 points. If it is below USD 1,000, it achieves the maximum score of 1.					

4.1.3.3 Education and Infrastructure

As well as supporting direct, near-term social impacts, J-REDD+ programs can lay the foundations for future development by investing in education, health, and infrastructure.

To assess a program's impact on education, health, and infrastructure, four sub-criteria are considered:

- **4.1.3.3.1 Education Activities and Outcomes**: Whether a program explicitly improves educational outcomes through its activities.
- **4.1.3.3.2 Health Activities and Outcomes**: Whether a program explicitly improves health outcomes through its activities.
- **4.1.3.3.3 Infrastructure Activities and Outcomes**: Whether a program explicitly improves infrastructure outcomes through its activities.
- **4.1.3.3.4 Jurisdiction Adjustment Factor:** A measurement of the relative impact of investments in education, health or infrastructure in that jurisdiction given corruption risks and purchasing power parity (uses the same score as described in 4.1.3.1.2.5.

Each of these sub-criteria is assessed on a scale of 1 to 5. The 4.1.3.3.4 Jurisdiction Adjustment Factor receives a 20% weighting, with an equal weighting placed on the remaining sub-criteria.

4.1.3.3.1 Education Activities and Outcomes

Education Activities and Outcomes relates to whether the program supports improved education outcomes through its activities.

Rationale	Programs can directly invest in and support education in order to improve educational outcomes within their jurisdiction.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑		

Scoring Definition	Each program is scored on a scale of 2 to 5, where 2 indicates that the program does not appear to impact education outcomes at all, and 5 indicates that a program's activities seem to impact the education of a significant proportion of households.
Scoring Approach	Through a detailed review of each program's documentation and relevant literature, two key factors are assessed within this sub-criterion: (i) the significance and evidence provided of education-related activities to the program; (ii) the quantification of outcomes associated with these initiatives. **(i) Significance and evidence of activities:** The relevance of each of the program's activities to education is assessed, with the overall score based on three main factors: (i) the range of activities relevant to education within the program; (ii) the significance of these activities as part of the whole J-REDD+ program; (iii) the evidence provided that these activities have been conducted. **(ii) Quantification of outcomes:** Educational outcomes may be quantified by the program based on the number of schools constructed or upgraded, or the number of individuals that benefit from improved educational outcomes. Where transparent financial information is provided, the proportion of credit revenue that is spent on education activities is assessed. This is then converted into a 1 to 5 scale, where 1 indicates that no credit revenue will be spent on education, 3 indicates that 10% of revenue will be spent on education, and 5 indicates that at least 20% of credit revenue will be spent on education programs. Where financial information is not provided, programs are scored based on the relative emphasis placed on education within the program's overall activities and the specific quantification of outcomes achieved.

4.1.3.3.2 Health Activities and Outcomes

Health Activities and Outcomes relates to whether the program supports improved health outcomes through its activities.

Rationale	Programs can directly invest in hospitals, medical training and medical support in order to improve health outcomes within their jurisdictions.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑			☑		

Scoring Definition	Each program is scored on a scale of 2 to 5, where 2 indicates that the program does not appear to impact health outcomes at all, and 5 indicates that a program's activities seem to impact the health of a significant proportion of households.

Scoring Approach	Through a detailed review of each program's documentation and relevant literature, two key factors are assessed within this sub-criterion: (i) the significance and evidence provided of health-related activities to the program; (ii) the quantification of outcomes associated with these initiatives. (i) Significance and evidence of activities: The relevance of each of the program's activities to health is assessed, with the overall score based on three main factors: (i) the range of activities relevant to health within the program; (ii) the significance of these activities as part of the whole J-REDD+ program; (iii) the evidence provided that these activities have been conducted. (ii) Quantification of outcomes: Health outcomes may be quantified by the program based on the number of hospitals constructed or upgraded, or the number of individuals that benefit from improved health outcomes. Where transparent financial information is provided, the proportion of credit revenue that is spent on health activities is assessed. This is then converted into a 1 to 5 scale, where 1 indicates that no credit revenue will be spent on health, 3 indicates that 10% of revenue will be spent on health, and 5 indicates that at least 20% of credit revenue will be spent on health programs. Where financial information is not provided, programs are scored based on the relative emphasis placed on health within the program's overall activities and the specific quantification of outcomes achieved.

4.1.3.3.3 Infrastructure Impact

Infrastructure Impact relates to whether the program supports the development and improvement of local infrastructure through its activities.

Rationale	Programs can directly invest in and support local infrastructure, such as roads and internet connectivity.

Key Sources

Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
☑				☑	

Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates that the program does not appear to impact infrastructure at all, and 5 indicates that a program's activities seem to significantly improve infrastructure within its jurisdiction.
Scoring Approach	Through a detailed review of each program's documentation and relevant literature, two key factors are assessed within this sub-criterion: (1) the significance and evidence provided of infrastructure-related activities to the program; (2) the quantification of outcomes associated with these initiatives. (1) Significance and evidence of activities: The relevance of each of the program's activities to infrastructure is assessed, with the overall score based on three main factors: (i) the range of activities relevant to infrastructure within the program; (ii) the

significance of these activities as part of the whole J-REDD+ program; (iii) the evidence provided that these activities have been conducted.

(2) Quantification of outcomes: Infrastructure outcomes may be quantified by the program based on the number of renewable energy facilities constructed or upgraded, or the number of individuals that benefit from improved infrastructure.

Where transparent financial information is provided, the proportion of credit revenue that is spent on infrastructure activities is assessed. This is then converted into a 1 to 5 scale, where 1 indicates that no credit revenue will be spent on infrastructure, 3 indicates that 10% of revenue will be spent on infrastructure, and 5 indicates that at least 20% of credit revenue will be spent on infrastructure projects.

Where financial information is not provided, programs are scored based on the relative emphasis placed on infrastructure within the program's overall activities and the specific quantification of outcomes achieved.

4.1.3.3.4 Jurisdiction Adjustment Factor

Jurisdiction Adjustment Factor is a measure of the relative impact of investments in education, health or infrastructure in that jurisdiction given corruption risks and purchasing power parity.

For this sub-criterion, the same approach is used as for 4.1.3.1.2.5 Jurisdiction Adjustment Factor, detailed above.

4.1.3.4 Biodiversity

By protecting forested areas, J-REDD+ programs not only preserve the carbon captured by the forests but also the habitats and ecosystems within them. In this way, J-REDD+ programs have potential environmental benefits beyond their emissions impact. The significance of this impact depends on the biodiversity context (i.e., richness) of the specific area and the activities undertaken by the program to protect, enhance and monitor that biodiversity.

To assess a program's impact on biodiversity, three sub-criteria are considered:

- **4.1.3.4.1 Species Richness**: The extent to which high-importance species live in an area and are protected by the program.
- **4.1.3.4.2 Biodiversity Ecoregion**: Whether a program is located in an area of high biodiversity value.
- **4.1.3.4.3 Biodiversity Monitoring**: Whether a program monitors biodiversity within its area and actively engages in activities to support and protect biodiversity.

These criteria are assessed on a scale of 1 to 5, where 1 represents no positive biodiversity impact and 5 indicates very high likelihood of a highly positive impact on biodiversity.

The score is reached through weighting Species Richness 40%, Biodiversity Ecoregion 40% and Biodiversity Monitoring 20%.

4.1.3.4.1 Species Richness

Species Richness relates to the extent to which the area hosts a range of high-importance species within its ecosystem.

Rationale	Programs that preserve areas of high species richness will play a more pivotal role in protecting vital ecosystems.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑				☑	

Scoring Definition	Programs that preserve areas of high species richness will play a more pivotal role in protecting vital ecosystems.
Scoring Approach	MSCI ESG Research reviews the International Union for Conservation of Nature's (IUCN) most recent country-level data to assess the range of vulnerable and endangered species within each jurisdiction. In particular, both the number of animal species within a region and the proportion of them that are considered globally vulnerable endangered or critically endangered as per the IUCN red list are assessed. Each program is then scored on a 1 to 5 scale based on the relative species density as follows: - 1 = Countries that are within the bottom 20th percentile of density relative to all countries with currently registered or proposed J-REDD+ programs within the ART-TREES registry. - 2 = Countries that fall between the 20th and 40th percentile. - 3 = Countries that fall between the 40th and 60th percentile. - 4 = Countries that fall between the 60th and 80th percentile. - 5 = Countries that are above the 80th percentile.

4.1.3.4.2 Geospatial Biodiversity Value

This criterion refers to whether the program conserves an area of high biodiversity value.

Rationale	The biodiversity impact and conservation value of a nature-based project is likely to be higher if it is located in an area of high biodiversity and species richness.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
		☑				

Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates the program has very limited biodiversity value, and 5 indicates the program supports and conserves an area of very high biodiversity value.
Scoring Approach	MSCI ESG Research conducts detailed geospatial analysis on the area to assess four components: (i) ecosystem scarcity; (ii) biodiversity intactness; (iii) biodiversity threat; (iv) biodiversity support. More detail on the approach is found in the MSCI Carbon Project Ratings Overall Methodology Note.

4.1.3.4.3 Biodiversity Monitoring

Biodiversity Monitoring refers to the extent to which the program engages in ongoing monitoring of the biodiversity within its area.

Rationale	Monitoring initiatives can help to not only track the biodiversity within a program area but also identify biodiversity opportunities and risks that a program can focus on.
Key Sources	Project Documentation ☑ | Geospatial | Project Methodology Documentation | Academic Literature ☑ | Third-party Data | MSCI Carbon Markets
Scoring Definition	Each program is scored on a scale of 2 to 5, where 2 indicates no biodiversity monitoring or training activities are present and 5 indicates that the program monitors and tracks biodiversity outcomes related to at least 5 key indicators.
Scoring Approach	MSCI ESG Research conducts a detailed review of a program's key documents to understand whether the program's activities involve monitoring and tracking biodiversity within the jurisdiction. Program activities might include the direct funding of biodiversity monitoring and research, the commitment to tracking certain biodiversity indicators over the lifetime of the program or specific anti-poaching initiatives. Each program is then scored on a 2 to 5 scale based on the level to which it implements biodiversity monitoring initiatives as follows: - 2 = No biodiversity monitoring initiatives are directly mentioned or targeted. - 3 = Program activities do include direct funding of biodiversity or species monitoring, but they are not a core objective of the program. - 5 = Biodiversity monitoring initiatives are a central objective of the program, with clear metrics identified to track.

4.2.2 Quantification of Outcomes

Quantification of outcomes relates to whether the program monitors and/or quantifies the impact of the program on targeted Sustainable Development Goals.

Rationale	Assessing the evidence of co-benefit impacts is crucial to evaluating the degree to which co-benefits are achieved and can be attributed to a program. Programs that measure, quantify, and monitor their co-benefit impacts provide greater evidence in support of the targeted social and environmental benefits being achieved.
Key Sources	Project Documentation ☑ | Geospatial | Project Methodology Documentation | Academic Literature | Third-party Data | MSCI Carbon Markets
Scoring Definition	Each program is scored on a scale of 1 to 5, where 1 indicates there is no quantification or monitoring of SDGs and 5 indicates that benefits are quantified and monitored.

Scoring Approach	MSCI ESG Research assesses the level to which co-benefits have been quantified and/or monitored.

		Quantified	
		Yes	No
Monitored	Yes	5	1
	No	3	1

4.3.2 Local Stakeholder Engagement

The quality of engagement by J-REDD+ program organizers with local stakeholders plays a key role in ensuring communities benefit from their activities while helping to mitigate human-based permanence risk. Programs that put additional resources and time into consulting with local communities and modify program design/operations to suit locals are more likely to realize their social objectives.

This is evaluated through the following sub-criteria:

- **4.3.2.1 Effective Consultation:** How effective was the consultation process?
- **4.3.2.2 Representation and Inclusivity:** Has the program ensured proper and inclusive representation of stakeholders?
- **4.3.2.3 Access to Information:** Has the program relayed relevant information to stakeholders?
- **4.3.2.4 Feedback and Grievances:** Does the program display effective feedback and grievance redressal mechanisms?

Each program is scored on a 1 to 5 scale for each of these sub-criteria. An overall score for criterion 4.3.2 is then reached by weighting effective consultation and representation and inclusivity by 35% each and access to information and feedback and grievance 15% each. Programs scoring a 5 are those that undertake substantial stakeholder consultations.

4.3.2.1 Effective Consultation

Effective consultation relates to whether the program uses best-practice techniques to engage and consult with stakeholders.

Rationale	Programs that engage with stakeholders toward the start of a program's conception and use multiple methods of in-person consultation provide more open and effective channels to engage with stakeholders and receive any feedback.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑					

Scoring Definition	Each program is scored on a scale of 1 to 5, where 5 indicates that the program appeared to conduct effective in-person engagements prior to its start, and 1 indicates that very limited in-person stakeholder consultation seemed to have been performed prior to the start of the program or thereafter.

Scoring Approach	Through a detailed review of program documents, three main components of stakeholder consultation effectiveness are assessed. First, the first date of stakeholder consultation is compared to the program start date. Programs that conducted their initial consultation prior to their start date receive a score of 2. Second, the types and range of consultation conducted are considered. Programs that conducted multiple forms of engagement including an in-person consultation receive 2 points. Third, the frequency with which ongoing consultation is conducted is assessed. Programs that perform ongoing consultation receive 2 points. These component scores are summed up to a maximum possible score of 5.

4.3.2.2 Representation and Inclusivity

Representation and Inclusivity relates to whether the program has ensured that it consults with a representative and inclusive range of stakeholders.

Rationale	Programs which consult a greater number of stakeholders tend to incorporate more representative feedback and ensure that they are designed with a representative set of stakeholder interests in mind.

Key Sources

Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
☑					

Scoring Definition

Each program is scored on a scale of 1 to 5, where 5 indicates that a program transparently consults with a representative group of stakeholders, including women, while 1 indicates that no information is provided on the which stakeholders were consulted.

Scoring Approach

MSCI ESG Research assesses if the number of stakeholders in attendance has been provided. In particular, if the total number of stakeholders and the number of female attendees is disclosed. This is then scored as shown in the table below.

		No. Stakeholders Consulted		
		Unknown	**<50**	**50+**
Transparency of Disclosures	Total, including women	3	4	5
	Total	2	3	4
	None	1	n/a	n/a

4.3.2.3 Access to Information

Access to Information refers to whether the program provides transparent and comprehensive information to local stakeholders regarding its activities.

Rationale	By providing greater access to information, stakeholders will be better informed on a program's activities and more able to provide feedback to the program.

Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑					
Scoring Definition	Each program is scored on a scale of 1 to 5, where 5 indicates that a program provides very transparent access to information through both documentation and in-person meetings, and 1 indicates that limited access to information is provided to stakeholders.					
Scoring Approach	MSCI ESG Research conducts a detailed review of program documentation to understand whether in-person meetings were conducted to present program information to stakeholders and whether clear documentation was provided to stakeholders. Programs receive a score of 2 if program organizers have conducted in-person meetings to present information to stakeholders. Programs receive a score of 3 if program design documents (PDDs) or pamphlets were provided to stakeholders, or a score of 1 otherwise. These component scores are summed up to a maximum possible score of 5.					

4.3.2.4 Feedback and Grievance

Feedback and Grievance refers to whether the program has procedures in place to receive and act on feedback received from stakeholders.

Rationale	By providing local stakeholders with a clear feedback mechanism and committing to disclose and act on this feedback, then programs are more likely to satisfy the needs of stakeholders by both listening and responding to their feedback.					
Key Sources	Project Documentation	Geospatial	Project Methodology Documentation	Academic Literature	Third-party Data	MSCI Carbon Markets
	☑					
Scoring Definition	Each program is scored on a scale of 1 to 5, where 5 indicates that a program provides very transparent access to information through both its documentation and in-person meetings and 1 indicates that stakeholders appear to have only limited access to information.					
Scoring Approach	Three aspects of a program's feedback procedure are assessed: - **Feedback Mechanism:** Whether a program has a feedback and grievance procedure in place. - **Feedback Disclosure:** Whether a program transparently discloses any feedback received. - **Feedback Response:** Whether a program has clearly acted on any feedback received. Programs receive a score of 3 if they have a feedback mechanism in place, and 1 otherwise. For the other 2 factors, programs receive a score of 1 if they satisfy this					

factor. The overall scores are then based on adding each of these components to reach a score from 1 to 5.

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9. Change log

Date	Key Changes
19-Sep-2024	Initial publication

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