THE INTEGRITY COUNCIL
FOR THE VOLUNTARY CARBON MARKET

OBSERVATIONS IN RELATION TO CATEGORY ASSESSMENT
AFFORESTATION, REFORESTATION AND REVEGETATION – PART III
JANUARY 2026

1. Purpose of these observations

The Governing Board (the Board) of the Integrity Council for the Voluntary Carbon Market (ICVCM), when considering the assessment of methodologies related to Afforestation, Reforestation and Revegetation (ARR) identified that it would be beneficial to make available their observations for the purpose of supporting the future development of methodologies in this Category.

These observations are non-binding and do not impact or form any part of the Assessment Framework, Assessment Procedure, or any Decision (as defined under the Assessment Framework) and are published by the Integrity Council for the purpose of information only.

The Integrity Council may, from time to time, publish other observations for other Categories where it considers this may be useful for CCP-Eligible Programs and other stakeholders and may update and revise its observations from time to time based on further assessment processes or information. Observations are not an exhaustive set of views of the Integrity Council, and not all aspects addressed in assessment processes are included. No reliance may be placed on observations, as they are for the purpose of information only, and observations published are without prejudice to other ongoing assessments.

The Governing Board would like to express its gratitude to the experts and other stakeholders engaged in the assessment process, who provided input to the ICVCM regarding this Category. It welcomes novel approaches to increase integrity and recognises that further research and empirical testing of such approaches in methodologies may identify new risks and will be attentive to these as part of general ICVCM ongoing assurance and oversight.

2. Observations relating to ARR methodologies

The Governing Board's observations regarding the assessment of ARR methodologies against the ICVCM Assessment Framework and its Core Carbon Principles generally relate to robust quantification and additionality.

The methodology considered by the Board within this Category and to which these observations relate is Reforestation protocol, version 1.1, applied under Isometric.

3. Robust Quantification

The Reforestation protocol relies on a dynamic performance-benchmark approach using remote sensing to quantify how baseline forest carbon stocks would have evolved without the project intervention. In this approach, the counterfactual baseline scenario is cross checked by regularly observing changes in forest carbon stocks in areas outside of the project area that are statistically

similar to the project area. By retesting baselines against real-world observations of 'matched controls', the protocol aims to account for evolving market conditions, policy shifts, environmental variability, and other external drivers.

ICVCM note the novel nature of this approach and that it has been designed to increase robustness. Similarly to previous decisions on ARR category, ICVCM also acknowledge that empirical testing has not yet been conducted and that remotely sensed data could become saturated, especially when full canopy cover is achieved, but that future advances in remote sensing technology are likely to address any such risk. ICVCM further notes that the protocol leverages digital monitoring, reporting, and verification (dMRV) technologies – including GIS data, LiDAR-equipped drones, and peer-reviewed machine learning models – to automate data collection and analysis, improving both accuracy and transparency.

Allometric equations allow use of simple measurements (for example the diameter of a tree trunk) to express more complex properties, like the volume of a tree and so are a common component of most ARR methodologies. Allometry can vary by species of tree, age and even site location. Not all trees have been sufficiently studied to allow perfect allometric relationships to be equally known across regions of the world, so approximations are frequently used. The methodology requires allometric equations to have been previously published in credible literature before they can be used. In addition, per the requirements of the methodology, the selection of the equation is by the following order of preference: i) Local peer-reviewed equations, ii) Chave, et al. (2014)[1] for project areas in the Tropics, iii) National Forest inventories, or iv) IPCC generalized equations. ICVCM noted during assessment that the chosen equations will undergo independent assessment by a validation and verification body, as well as being subject to Isometric VVB oversight processes, demonstrating sufficient review to confirm appropriateness for the context.

ICVCM note that the methodology permits the use of a conservative global default value for the carbon fraction of dry biomass, but only when more specific factors are unavailable. These preferred factors include: i) regional or species-specific values supported by scientific literature, or ii) genus-specific or national average values, also supported by scientific literature. The methodology provides that the global default value is derived from 2006 IPCC Guidelines for National Greenhouse Gas Inventories as confirmed by the 2019 Refinement to the 2006 IPCC Guidelines. The Governing Board notes that this parameter is an average that may be redefined in the future and that use of more specific data is mandated where it is available and this subject to oversight by both VVBs and the carbon crediting program.

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[1] Chave, J., Réjou-Méchain, M., Búrquez, A., Chidumayo, E., Colgan, M. S., Delitti, W. B., … & Vieilledent, G. (2014). Improved allometric models to estimate the aboveground biomass of tropical trees. Global change biology, 20(10), 3177-3190. https://doi.org/10.1111/gcb.12629

3. Additionality

An ARR mitigation activity is additional if the activity sequesters carbon dioxide at higher levels than would have occurred in its absence.

ICVCM notes that there are potential additionality risks for large-scale commercial ARR mitigation activities, which would also comprise monoculture plantations, including those using non-native species. ICVCM notes that Reforestation Protocol v1.1 mitigates these risks by establishing that projects must not resemble commercial plantation forestry. The Protocol therefore precludes projects that are monoculture plantations, or are plantations limited to several high-value timber species with a non-native composition planted in regions where timber is common practice.