Terms of Reference (ToR)

Independent External Technical Review

Methodology: BCR0015 – Improved Livestock and Grazing Management, Version 1.0, Public Consultation Draft

1. Background

BioCarbon has developed the methodology BCR0015 – Improved Livestock and Grazing Management (Version 1.0), currently under public consultation. The consultation documents are publicly available at:

https://biocarbonstandard.com/en/public-consultation/

This methodology establishes a project-level framework for quantifying net GHG emission reductions and removals resulting from improved and regenerative livestock and grazing management practices. It applies to livestock production systems in which project activities lead to measurable changes in enteric methane emissions, manure management emissions, soil organic carbon stocks, and, where applicable, biomass carbon stocks.

The methodology is designed to support management-driven mitigation approaches in grazing-based livestock systems, including extensive, semi-extensive, mixed, and integrated systems, through interventions such as grazing management adjustments, herd and stocking management, forage and pasture improvement, soil management, manure management, and silvopastoral or forest-integrated grazing systems, where applicable.

In accordance with the BioCarbon methodological governance framework and international best practices, the methodology is subject to an independent external technical review.

This review aims to ensure methodological robustness, transparency, and alignment with high-integrity carbon market principles, including conservativeness, avoidance of over-crediting, additionality, permanence, leakage management, and avoidance of double counting.

2. Objective of the Review

The objective of the independent external review is to assess whether the methodology:

(a) Ensures environmental integrity and conservative estimation of emission reductions and removals;

(b) Avoids systematic overestimation of mitigation outcomes;

(c) Applies scientifically robust and auditable quantification approaches for enteric methane, manure management emissions, and soil organic carbon stock changes;

(d) Adequately addresses baseline plausibility, additionality, leakage, uncertainty, and permanence in livestock and grazing systems;

(e) Is consistent with IPCC AFOLU guidance and good practice for livestock-related GHG accounting;

(f) Aligns with high-integrity frameworks, including the ICVCM Core Carbon Principles and Article 6 of the Paris Agreement.

The review shall explicitly assess whether the methodology provides a credible and auditable framework for quantifying net GHG emission reductions and removals in livestock production systems characterized by variable management intensity, heterogeneous grazing conditions, and context-dependent soil carbon responses.

3. Scope of Work

The external reviewer shall assess at a minimum:

(a) Applicability and Eligibility

(i) Clarity and enforceability of applicability conditions;
(ii) Adequacy of eligibility requirements for livestock and grazing systems;
(iii) Consistency with AFOLU accounting principles;
(iv) Adequacy of exclusions related to ineligible activities, non-measurable changes, and activities resulting in net increases in emissions.

(b) Baseline and Additionality

The reviewer shall specifically assess:

(i) Robustness of the baseline approach, including the continuation of current practices approach and treatment of baseline conditions in livestock systems;
(ii) Adequacy of baseline treatment for enteric methane, manure management emissions, and soil organic carbon;
(iii) Treatment of baseline data limitations, proxy data, and conservative assumptions;
(iv) Consistency between baseline assumptions and additionality demonstration;
(v) Application of the BioCarbon Additionality Tool;
(vi) Treatment of regulatory surplus, common practice, and barrier and/or investment analysis;
(vii) Additionality treatment for existing operations and pre-existing technologies;
(viii) Adequacy of safeguards against non-additional crediting.

(c) Quantification Approach

(i) Scientific validity of quantification methods for enteric methane emissions;
(ii) Scientific validity of quantification methods for manure-related methane and nitrous oxide emissions;
(iii) Robustness of the stock-change approach for soil organic carbon quantification;
(iv) Consistency of requirements for direct measurement, sampling, and remeasurement of soil organic carbon;
(v) Treatment of biomass carbon stock changes, where included;
(vi) Consistency between baseline and project scenario quantification;
(vii) Application of conservative assumptions and parameters;
(viii) Suitability of the net GHG accounting approach for integrated livestock systems.

(d) Stratification, Sampling, and Representativeness

(i) Adequacy of stratification requirements for heterogeneous grazing systems;
(ii) Statistical robustness of sampling design;
(iii) Representativeness of sampling across strata and participating units, including aggregated projects;
(iv) Adequacy of confidence level requirements and treatment of high variability;

(v) Consistency between sampling requirements and uncertainty management provisions.

(e) Uncertainty and Conservativeness

Treatment of uncertainty, including:

(i) Measurement uncertainty;
(ii) Sampling uncertainty;
(iii) Uncertainty associated with soil organic carbon estimation;
(iv) Uncertainty associated with livestock parameters and emission factors;
(v) Application of the BioCarbon Uncertainty Tool;
(vi) Adequacy of conservative deductions and adjustments;
(vii) Safeguards to prevent over-crediting.

(f) Leakage

(i) Identification of leakage sources relevant to livestock systems, including livestock displacement and grazing redistribution;
(ii) Adequacy of leakage quantification and conservative treatment;
(iii) Consistency with the BioCarbon Leakage Management Tool;
(iv) Integration of leakage into net GHG accounting;
(v) Adequacy of provisions for negligible leakage determinations.

(g) Permanence and Reversal Risk

(i) Identification and classification of reversal risks associated with soil organic carbon and, where applicable, biomass carbon;
(ii) Application of the BioCarbon Permanence and Risk Management Tool;
(iii) Adequacy of buffer and compensation mechanisms;
(iv) Treatment of reversal detection, monitoring, reporting, and compensation;
(v) Adequacy of long-term integrity provisions for credited removals.

(h) Avoidance of Double Counting

(i) Consistency with national accounting frameworks;
(ii) Alignment with Article 6 requirements;
(iii) Application of exclusive claim, traceability, and avoidance of double counting principles.

(i) MRV and Data Integrity

(i) Robustness of the MRV framework;
(ii) Adequacy of monitoring requirements for herd composition, grazing management, manure management, and soil organic carbon;
(iii) Adequacy of data management, traceability, and documentation provisions;
(iv) Suitability of QA/QC requirements;
(v) Consistency between monitored parameters and quantification equations;
(vi) Adequacy of verification requirements and competence expectations for validation and verification personnel.

(j) Transparency and Replicability

(i) Clarity and completeness of methodological steps;
(ii) Transparency of assumptions and parameters;
(iii) Internal consistency across sections;
(iv) Replicability across comparable livestock and grazing systems.

4. Deliverables

The external reviewer shall provide:

(i) A written independent technical review report;
(ii) Identification of material methodological risks, if any;
(iii) Clear, structured recommendations for improvement;

An overall conclusion regarding:

(i) methodological robustness;
(ii) environmental integrity; and
(iii) suitability for application in high-integrity carbon markets.

The report shall clearly distinguish between:

(i) critical issues (affecting integrity or credibility); and
(ii) advisory recommendations (methodological improvements).

5. Eligibility Requirements for Applicants

Applicants shall demonstrate:

(a) Advanced academic qualifications in livestock science, agronomy, soil science, agricultural systems, carbon accounting, AFOLU, or related disciplines;

(b) Demonstrated experience in livestock GHG accounting, grassland or grazing systems, soil organic carbon quantification, AFOLU methodologies, or related carbon market methodologies;

(c) Expertise in one or more of the following areas:

(i) enteric methane quantification;
(ii) manure management emissions;
(iii) soil organic carbon measurement and monitoring;
(iv) stratification, sampling, and uncertainty analysis;
(v) livestock production systems and grazing management;
(vi) IPCC AFOLU guidance and project-level GHG accounting;
(vii) high-integrity carbon market principles, including ICVCM CCPs, CORSIA, and Article 6;
(viii) absence of conflicts of interest.

Applicants shall disclose any past or present involvement in the development of this methodology.

6. Selection Process

BioCarbon shall evaluate proposals through a documented, merit-based process, applying criteria related to:

(a) Technical competence;
(b) Relevant sectoral expertise;
(c) Independence and conflict-of-interest screening;
(d) Capacity to complete the review within the specified timeline.

7. Independence and Financial Arrangements

To safeguard independence:

(a) The external reviewer shall not have participated in the development of the methodology;
(b) The reviewer shall sign a conflict-of-interest declaration;

(c) All costs associated with the review shall be borne exclusively by BioCarbon.

8. Timeline

The external review is expected to be completed within two (2) weeks from contract signature.