ASSESSMENT REPORT

The World Bank Group's BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL)

GHG Emissions reduction program in Orinoquia – Biocarbon ERP

Prepared for:

World Bank Group

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Program	GHG Emissions reduction program in Orinoquia – Biocarbon ERP
Program Entity	Colombia's Ministry of Environment and Sustainable Development
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Monitoring Period	N/A
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Assessment Team	Lead Auditor: Alexa Dugan Auditor: Vanessa Mascorro Technical Reviewer: Dr. Erynn Maynard-Bean

Executive Summary

SCS Global Services (SCS) was retained by the Initiative for Sustainable Forest Landscapes (ISFL) of the World Bank Group to perform an independent assessment of the GHG Emissions reduction program in Orinoquia – Biocarbon ERP ("the ER Program") against the ISFL Emission Reductions Program Requirements and associated guidelines. The scope of this assessment was to confirm that the information provided in the emission reductions program document is correct and complete and to apply expert judgement to evaluate the feasibility of program design aspects and identify areas of improvement to inform the World Bank Group's and ISFL contributors' review of the Program. While this is an independent assessment, it should be noted that the assessment team worked closely with the ISFL staff and others at the World Bank Group to develop the findings and conclusions described in this report.

This report presents an overview of the assessment process and its conclusions, as well as a summary assessment opinion. The assessment checklist, audit plan and a detailed list of all findings issued during the assessment process are included as appendices.

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1 Introduction

SCS Global Services (SCS) is a global leader in third-party certification, auditing, testing services, and standards. Established as an independent third-party certification firm in 1984, our goal is to recognize the highest levels of performance in environmental protection and social responsibility in the private and public sectors, and to stimulate continuous improvement in sustainability by recognizing and certifying achievements which align with the United Nations Sustainable Development Goals (SDGs). An internationally recognized verification body, SCS is currently accredited to ISO 14065 for Greenhouse Gas Validation and Verification by the American National Standards Institute (ANSI), offering carbon offset project validation and verification under such voluntary carbon programs as the Verified Carbon Standard (VCS), the American Carbon Registry (ACR), and the Climate, Community and Biodiversity (CCB) standards. SCS is also an accredited verification body for the Cap-and-Trade Program of the California Air Resources Board and has conducted jurisdictional assessments in Colombia and Ecuador under the REDD Early Movers Program.

SCS was commissioned by the World Bank Group to undertake an assessment of the GHG emissions reduction program in Orinoquia – Biocarbon ERP ("the ER Program"). The ER Program consists of promoting sustainable agricultural and livestock systems, improving the efficiency of production systems in terms of land and other resource use, integration of forestry within agricultural systems, forest restoration, reducing deforestation and promoting sustainable forest management, and enhancing planning and governance for more efficient interventions within the Orinoquia Department of Colombia. This report covers review of the ER Program, as described in the emission reductions program document, as a project deliverable.

1.1 ER Program Description

The GHG emissions reduction program in Orinoquia – Biocarbon ERP, hereafter referred to as the ER Program promotes activities to generate both emission reductions and promote removals in the Orinoquia Region of Colombia. Orinoquia consists of approximately 25 million hectares across four departments. Program activities to Emission Reductions associated with the primary sources of GHG emissions, such as deforestation of natural forests, cattle ranching, and rice cultivation; in turn, the ER Program aims to strengthen activities that promote the removal[1] of GHG through restoration and natural regeneration processes, implementation of commercial forest plantations including rubber, palm and cocoa crops, and changes in carbon content that are associated with losses and gains of other woody vegetation. The ER Program consists of various beneficiaries including native and non-native communities reliant on the land and resources, agricultural producers (e.g., rice, cocoa, palm oil), cattle producers, and other regional and territorial institutions.

[1] In the text, the terms GHG removals (removals) and absorptions (absorptions) are used interchangeably.

1.2 Assessment Team

The assessment team consisted of the following individuals:

- Lead Auditor: Alexa Dugan
- Auditors: Vanessa Mascorro
- Technical Reviewer: Dr. Erynn Maynard Bean

2 Assessment Details

2.1 Scope and Objectives

The objectives of the assessment are as follows:

- Ensure, according to the applicable level of assurance, that the information provided in the emission reductions program document is correct and complete (i.e., not leaving out information that might affect the opinion of the reader).
- Conduct an independent assessment of the compliance against the approved ER Program Requirements and associated guidelines.
- Apply expert judgement to evaluate the feasibility of ER Program design aspects and identify areas of improvement to inform the World Bank Group's and ISFL contributors' review of the ER Program.

The scope of the assessment entails review, as required, to achieve the above objectives. The following areas were particularly emphasized. In some cases, consideration of the areas indicated below extends the scope of the assessment beyond a strict assessment for conformance to the assessment criteria.

Aspect	Expected Scope of the Assessment
Drivers of AFOLU emissions and removals	▪ Correctness and completeness of the analysis on historic and future trends (qualitative and quantitative) in drivers of AFOLU emissions and removals ▪ Expert judgement of the analysis, including the barriers to mitigation
Description and justification of the ISFL ER Program's planned actions and interventions	▪ Expert judgement whether the proposed actions and interventions address drivers of emissions and are informed by the contribution of key sources and sinks to the total GHG emissions and removals in the Program GHG Inventory and the analysis of trends ▪ Expert judgement of continued private sector engagement achieved or planned in addressing drivers of emissions ▪ Expert judgement of risks to implementation and potential benefits of planned actions and interventions

Aspect	Expected Scope of the Assessment
Financing plan for implementing the planned actions and interventions of the ISFL ER Program	▪ Correctness and completeness of information on the transaction costs and the identified funding gaps for the ISFL ER Program and the plan for mitigating gaps ▪ Expert judgement whether the identified sources of finance are sufficient to affect the land use activities and drivers of emissions and removals ▪ Expert judgement of the financial and economic analyses, discount rates, and flows of funds
Analysis of laws, statutes, and other regulatory frameworks	▪ Correctness and completeness of the information provided in the Program document ▪ Expert judgement to identify any known legal or regulatory issues in the program area that can affect the program design, including benefit sharing
Risk for displacement	▪ Correctness and completeness of the information provided in the analysis of displacement risk ▪ Expert judgement on the effectiveness of the proposed strategy to mitigate and/or minimize, to the extent possible, potential Displacement
Participation under other GHG initiatives	▪ Correctness and completeness of the information provided whether parts of the program area, or projects in the program area, are included in other GHG initiatives and if this creates a risk of double counting, and/or double payment
Data management and registry systems to avoid multiple claims to ERs	▪ If applicable, expert judgement whether the Program and Projects Data Management System is sufficient, secure, and robust ▪ If the ISFL ER Program is not using the World Bank's transaction registry for Forest Carbon Partnership Facility (FCPF) and ISFL ER Programs, expert judgement whether the transaction registry is sufficient, secure, and robust ▪ If applicable, expert judgement of the data management and registry systems to recognize nested projects and avoid multiple claims to ERs
ISFL Reporting	▪ Assess whether the GHG Inventory is comparable in its use of definitions, categories and subcategories with national processes such as the national GHG inventory, REDD+ and the Biannual Update Report

Aspect	Expected Scope of the Assessment
	▪ Assess whether the best available data sets, methods, models and assumptions have been used in the ISFL Reporting and that the inventory applies the general IPCC principles of transparency, completeness, consistency, accuracy and comprehensiveness.
Selection of subcategories for accounting	▪ Correctness and completeness of the data and information provided on the choice of the subcategories ▪ Assess whether the quality and baseline setting requirements have been applied correctly and the choice of the subcategories is correct and justified ▪ Assess whether all significant pools and sources of greenhouse gas emissions are included. If a major carbon pool/ or gas is excluded, assess whether this has been sufficiently explained and justified, provided it is not a significant pool.
Emissions baseline	▪ Assess whether the methods used to construct are in line with the IPCC and best practice approaches as defined, for example by the GFOI ▪ Correctness and completeness of the data used to construct the baseline ▪ Assess whether the baseline requirements have been applied correctly and the Emissions Baseline estimate is calculated correctly ▪ Assess whether the uncertainty in the Emissions Baseline has been correctly identified and assessed in accordance with IPCC good practice
Time bound plan to increase the completeness of the scope of accounting and improve data and methods for the subsequent Emissions Reductions Payment Agreement (ERPA) Phases during the ERPA Term	▪ Expert judgement whether the proposed plan is feasible, addresses priority subcategories and is likely to increase the completeness of the scope of accounting and improve data and methods for the subsequent ERPA Phases.
Ex-ante estimation of the emission reductions	▪ Expert judgement if the assumed effectiveness of the program in addressing the drivers and its impact on the emissions is justified and based on reasonable assumptions
Monitoring approach	▪ Assess whether the data and methods proposed for monitoring are consistent enough with the data and methods used for the determination of the baseline to allow

Aspect	Expected Scope of the Assessment
	for meaningful comparison and calculation of the emission reductions ▪ Assess whether the proposed monitoring methods and arrangements are in place as described in the Program Document and are technically capable of collecting the data ▪ Assess whether the uncertainty in the data and parameters to be monitored has been correctly identified and assessed and if the proposed approach to manage and reduce uncertainty reflects good practice
Reversals	▪ Correctness and completeness of the data and assumption used in the assessment of the reversal risk ▪ Assess whether the ISFL Buffer Requirements have been applied correctly

2.2 Criteria

The criteria for the assessment were as follows:

- The approved ISFL ER Program Requirements, Version 2.0 April 2021 ("the Program Requirements")
- The following associated guidelines:
    - ISFL Buffer Requirements, Version 2.0 April 2020 ("the Buffer Requirements")
    - ISFL Program Document Template, Version 2.0 January 2020 ("the PD Template")[2]

2.3 Good Practice Guidance

The following guidance documents were referenced as good practice in undertaking the assessment, though said documents were not formally considered to be part of the assessment criteria. Where it was appropriate to apply professional judgment in assessing against the indicators set out in SCS' assessment checklist (see Appendix C below), methodological approaches that appropriately followed good practice were automatically assumed to meet the intent of a given indicator.

- 2006 IPCC Guidelines for National Greenhouse Gas Inventories ("the IPCC 2006 Guidelines")
- The following ISFL Program documents:
    - Guidance Note on the Preparation of Financing Plan of REDD+ and Landscape Emission Reduction Programs, Version 1.0 August 2017 ("the Financing Plan Note")

[2] Noting that any guidance within the PD Template pertaining to brevity or word count was not considered part of the auditable criteria, though said guidance was referenced in determination of the level of detail that should be within the ERPD.

  - Guidance Note on the Ability of Program Entity to Transfer Title to Emission Reductions, Version 1.0 March 2018 ("the Title Transfer Note")
  - Guidance Note on Application of IPCC Guidelines for Subcategories and Carbon Pools Where Changes Take Place Over a Longer Time Period, Version 1.0, March 2021 ("the Carbon Pools Note")
- GFOI 2020, Integration of remote-sensing and ground-based observations for estimation of emissions and removals of greenhouse gases in forests: Methods and Guidance from the Global Forest Observations Initiative, Edition 2.0, Food and Agriculture Organization, Rome ("GFOI").

2.4 Normative Assessment References

The following normative references guided SCS' assessment approach:

- Terms of Reference, updated 14 December 2018
- SCS' Program Quality Manual and Auditor Manual
- The following normative references of the International Organization for Standardization (ISO):
  - ISO 14065:2013, Greenhouse gases — Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition
  - International Accreditation Forum Mandatory Document 6: 2014 —*Application of ISO 14065: 2013*
  - ISO 14064-3:2006, Greenhouse gases — Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions
  - ISO 14066:2011, Greenhouse gases — Competence requirements for greenhouse gas validation teams and verification teams

2.5 Level of Assurance

Both a reasonable and limited level of assurance were selected for the assessment work described in this report and were determined at the indicator level as set out in the assessment checklist (see Appendix A).

2.6 Materiality

The term "discrepancy", as implicitly defined in Section 2.30 of ISO 14064-3:2006, encompasses the terms "error", "omission" and "misrepresentation" (i.e., these three types of distortion are different categories of discrepancies). Any discrepancies which also presented clear divergence from stated requirements of the assessment criteria were treated as non-conformities in the assessment process. Any other discrepancies identified during the course of the assessment were subject to the following materiality assessment.

- In respect of quantitative matters:

  - A discrepancy in the program GHG inventory and/or the process used to select subcategories eligible for ISFL accounting was considered material if it resulted in an incorrect determination of the subcategories eligible for ISFL accounting.
  - A 1.00% materiality threshold applied to any over-estimation of the emissions baseline.[3]
- Regarding reporting of information in the ERPD:
  - Any factual errors in the reporting of information in the ERPD were considered material if the incorrectly reported information was directly or indirectly required to be reported in the ERPD by the assessment criteria.

Any discrepancies identified as material through application of the above criteria were treated as non-conformities in the assessment process. Any discrepancies not identified as material through application of the above criteria were inherently considered immaterial. In the event that discrepancies were identified that did not require immediate correction but that required corrective action or mitigation at some later time, such as before the first verification, a special type of finding, termed an Forward Action Request, was issued by SCS (see Section 3.5, below, for a description of findings).

3 Assessment Process

The assessment services described in this report were performed through a combination of document reviews and interviews with relevant personnel. At all times, SCS assessed the conformance of the ER Program, as described in the ERPD, to the assessment criteria. The assessment team issued findings to ensure that the ER Program fully conformed to all requirements. The services included the following steps.

3.1 Methodology

The assessment was performed through a combination of document review and interviews with relevant personnel, as discussed in Sections 3.2 through 3.4 of this report. At all times, the ERPD and the ER Program described therein were assessed for conformance to the criteria described in Section 2.2 of this report. As discussed in Section 3.5, findings were issued to identify any actual or potential areas of risk or concern.

A risk assessment was conducted, and a sampling plan produced, in accordance with Sections 4.4.1 and 4.4.3 of ISO 14064-3:2006, respectively, following a proprietary approach developed by SCS. The process involved identification of key areas of "residual risk" (areas where there exists risk of a material discrepancy that is not prevented or detected by the QA/QC processes of the ER Program). Sampling and data testing activities were planned to address any risk where the likelihood of an area of

[3] The materiality analysis was carried out by first calculating the difference between the reported Emissions Baseline and the assessment team's calculation of the same quantity, and then dividing by the reported Emissions Baseline. If the resulting quantity was greater than 1.00%, the discrepancy was considered material. Otherwise, the discrepancy was not considered material. Under-estimation of the Emissions Baseline was not considered a material discrepancy.

nonconformance or material discrepancy (see Section 2.6 above regarding what constitutes a material discrepancy) going undetected by the assessment team was judged to be unacceptably high. An audit plan was created that took the sampling plan into account.

3.2 Document Review

The emissions reduction program document (ERPD_Biocarbono_Orinoquia_V5_English version _Limpio 1.docx & corresponding annexes; "the ERPD") was carefully reviewed for conformance to the assessment criteria. The following additional documentation, provided by ER Program personnel in support of the ERPD, was also reviewed by the assessment team:

Document	File Name (If Applicable)	Ref.
Summary of the documentation provided to the assessment team	AFOLU_Spreadsheet Descriptions and Traceability.docx	1
Colombia's Bienniel Update Reports	NIR_BUR2_Colombia.pdf, 03-FE_NIR-BUR3_Colombia.pdf	2
Inventory field manual	Manual de Campo v5.2 IFN	3
GHG Inventory Protocol	P_Maestro_SINGEI21.08.2017	4
Protocol for processing Digital Imagery	ProtocoloPDIv2_fe_de_erratas	5
ISFL Orinoquia contributor feedback matrix	Orinoquia ERPD-GHG Section_Consolidated Contributor Feedback_Response Matrix_Final_Aug 2021	6
Activity data summaries for Enteric Fermentation	[Various files]	7
Source data for Enteric Fermentation activity data	[Various files]	8
Organic Soil shapefile	Suelos_Organ.shp	9
Activity data summaries for Manure Management	1. Comparacion de categorias IPCC por region_V5_Ajustes_Estiercol.xlsx; 1. Modelo calculo Factores de emision por gestion de estiercol.xlsx; various other Excel files	10
Source literature for the Manure Management activity data	[Various files]	11
FEDEGAN Census Data	[Various files]	12
ICA Census Data	[Various files]	13
Expert opinions regarding livestock parameters	[Various files]	14
Emission factors for Enteric Fermentation and Manure management	Modelo IPCC-IDEAM FE metano entérico y de gestión de estiércol - 3Ala	15
Agriculture and livestock (AFOLU 1) emission calculation workbooks	AFOLU_1_MODELO_Depart 2000_oct.xlsx, AFOLU_1_MODELO_Depart 2001_oct.xlsx, ... AFOLU_1_MODELO_Depart 2018_oct	16

Document	File Name (If Applicable)	Ref.
Regional temperature data (spatial files)	[Various files]	17
Agriculture and livestock (AFOLU 1) mitigation scenarios	[Various files]	18
AlimenTro program documentation	AlimenTro 4.0	19
Manure management data/parameter comparison	Comparación AWMS Colombia vs IPCC 2019	20
Tutorial of the AFOLU 1 Calculation workbooks	Tutorial_Hojas_Calculo	21
GHG Inventory Summaries	4_1_2_LB_Arauca_GHGIN.xlsx; 4_1_2_LB_Casanare_GHGIN.xlsx, 4_1_2_LB_Meta_GHGIN.xlsx; 4_1_2_LB_Orinoquia_GHGIN.xlsx, 4_1_2_LB_Vichada_GHGIN.xlsx, 4_1_2_Resumen_inventario.xlsx	22
ISFL Baseline GHG Summary	4_4_BAU_2009_2029	23
Mitigation Scenario Summaries	4_6_Categorias_BAU_Mitigacion.xlsx, 4_6_Escenario_Mitigacion_2019_2029.xlsx Descripción escenario de mitigación ERPD AFOLU2; Insumo para el potencial de mitigacion de OVL (DA Cacao); Insumo para el potencial de mitigacion de OVL (DA SIlvopastoriles)	24
Forest sector (AFOLU 2) mitigation scenarios	Areas_OrinoquiaNAMA_OVL_SSP.xlsx, Escenario Deforestación.xlsx, Escenario Regeneración.xlsx	25
Guide to navigating forest sector (AFOLU 2) Data and calculations	Soportes GHGIN AFOLU 2_Guia_navegacion.xlsx	26
Calculations of areas of change	Areas_Finales_2000-2018_SMByC_Ajustado; Areas_Finales_Cambios; Areas_Finales_Cambios_FINAL; 03-DA_Areas_cambio	27
Region and Department Shapefile	Reg y Depto Orinoquia.shp; Region_Depertamento.shp	28
Land Cover shapefiles & classification summary	E_ECCMC_Ver21_100K.shp; v2_regnat_z18n.shp, 02-DA_FE_Clasificacion_clima	29
Land use Land Cover Change spatial files	Cambio_2000_2002.rrd… Cambio_2017_2018.rrd	30
ICIAT Agriculture Emission factor data	[Various files]	31
Fuelwood activity data and emission factors	01-DA_ECV_2018_leña; 01-DA_leña_1985-1992; 01-DA_Leña_1993-2004; 01-DA_Leña_2005-2017; 01-DA_Leña_2018-2050; 01-FE_Leña	32
Activity data and Emission Factors for direct N20 emissions from soils	02-DA_FE_Procedimiento	33

Document	File Name (If Applicable)	Ref.
Land use category emission factors from Yepes 2011	03-FE_Estudio_Yepes_2011	34
Forest Plantation Emission Factor data	04-BD_FE_UTolima; 04-FE_Estudio_UTolima; 04-FE_Plantaciones	35
Cropland Emission Factor data	06-DA_Aguacate; 06-DA_Cacao; 06-DA_Cafe; 06-DA_Limon; 06-DA_Mandarina; 06-DA_Mango; 06-DA_Naranja; 06-DA_Tangelo	36
Palm emission factor data from Henson et al.	07-FE_Palma_Henson.et.al	37
Silvopastoral activity data and emission factors	08-DA_silvopastoriles; 08-FE_Estudio_TNC; 08-FE_Estudio_TNC	38
Biomass burning activity data	09-DA_Caña; 09-DA_SNIF	39
Harvested wood products data	[Various FAO files]	40
Deforestation emission factors	11-FE_Plantaciones_Deforestación	41
Calculation workbook: Wood consumption	01-3B1ai TFPT-Consumo leña	42
Calculation workbook: Organic Soils	02-3B1ai-3B2ax-3B3a_Suelos_Org	43
Calculation workbooks: Other Woody Vegetation	[Various files]	44
Calculation workbooks: Forest Plantations	[Various files]	45
Calculation workbooks: Regeneration	Arauca-Regeneración; Casanare-Regeneración; Consolidado-Regeneración; Meta-Regeneración; Vichada-Regeneración	46
Calculation workbooks: Crops	3B2ai Café.xlsx; 3B2aiii-3B2aiv-3B2av-3B2avi-3B2avii-3B2aviii-3B2aix-3B2ax Frutales.xlsx	47
Calculation workbooks: Palm Oil	[Various files]	48
Calculation workbook: Pasture	08-3B3a PPT Pastizales (SSP)	49
Calculation workbook: Biomass Burning	09-3C1 Quema Biomasa	50
Calculation workbook: Harvested Wood Products	10-3D1 PMR	51
Calculation workbooks: Deforestation	Arauca-Deforestación; Casanare-Deforestación; Consolidado-Deforestación; Meta-Deforestación; Vichada-Deforestación	52
Documentation on National-level Mitigation scenarios and quantification	portafolio-de-medidas-sectoriales-de-mitigacion-de-cambio-climatico-contribucion-determinada-Colombia-ndc-2020.pdf PMR_reporte_escenario_de_mitigacion_20201209_1.pdf	53
Uncertainty assessment documentation	Anexo_Parametros_incertidumbre_V02; T01_PE_Ori_2018_V02.xlsx [Various programming files]	54

Document	File Name (If Applicable)	Ref.
Monitoring and Verification documentation	Anexo 1 Variables_Estimación_GEI_Medidas_Mitigación_PRE_2023-03; Doc_metodológico_SMBYC; Sistema_MRV_AFOLU_Orinoquia_6_2023	55
Analysis of Reversals	Analisis de reversiones.pdf	56
Mitigation Measures	Matriz_Portafolio_Medidas_Mitigación_PRE_2023-06-28	57
Displacement risk summary	Riesgo de Desplazamiento	58
Stakeholder participation Plan	PPPI Biocarbono V. 2.2	59
Grievance and Complaints Mechanism	Mecanismo PQRSD PRE	60
Technical guides and information the RENARE system	98-RES 1447 DE 2018; Guia_Tecnica_RENARE_V.1.0; Mesa Programatica REDD+	61

3.3 Interviews

3.3.1 Interviews with ER Program Personnel

The process used in interviewing ER Program personnel was a process wherein the assessment team elicited information regarding (1) the ERPD and any supporting work products or documents and (2) actions undertaken to conform to various requirements.

The following personnel associated with (a) the program entity, (b) any organizations responsible for managing/implementing the ER Program and/or (c) any partner organizations involved in the ER Program were interviewed.

The phrase “throughout audit”, under “Date(s) Interviewed”, indicates that interviews took place throughout the assessment process.

1. Program Personnel

Individual	Affiliation	Role	Date(s) interviewed
Juan David Turriago Garcia	Institute of Hydrology, Meteorology and Environmental Studies (IDEAM)	Technical Coordinator MRV AFOLU	Throughout audit
Ivan Dario Gomez Guzman	Government Enterprise Architecture	Senior Economist	Throughout audit
Lizet Jimena Robayo Rocha	IDEAM	LULUCF GHG Inventory Coordinator	Throughout audit
Diana Leidy Manrique Luna	IDEAM	Agriculture sector GHG Inventory Coordinator	Throughout audit

Constantino Hernandez Garay	IDEAM	Operational Planning Group Coordinator	Through out audit
Carlos Felipe Torres Triana	IDEAM	Technical Coordinator-Greenhouse Gas Emissions from Agriculture	Through out audit
Edersson Cabrera Montenegro	IDEAM	Project Coordinator	Through out audit
Jose Julian Gonzalez Arenas	IDEAM	Deforestation Projections and Reference Level Construction Coordinator.	Through out audit
Fabian Mauricio Gerena Reina	BioCarbono	Coordinator Component 1	Through out audit
Luis Enrique Caicedo Navarro	BioCarbono	Professional Support Forest Sector GHG	Through out audit
Lilia Patricia Arias Duarte	Center for Research and Development in Geographic Information	Head of CIAF Office	Through out audit
Fernando Leyva Pinzon	MinAgricultura	Director of Sector Policy	Through out audit
Gustavo Adolfo Galindo Garcia	IDEAM	Forest and Carbon Monitoring	Through out audit
Hector William Moreno Quitian	IDEAM	Consultant on enteric methane emissions from the AFOLU sector.	Through out audit
Ivon Maritza Casallas Martinez	IDEAM	Global Change Coordinator (former)	Through out audit

2. World Banks task team

Individual	Affiliation	Role	Date(s) interviewed
Maria Catalina Becerra Leal?	World Bank Group	Carbon Finance Specialist	Throughout audit
Tuuli Johanna Bernardini	World Bank Group	Component Lider of ERP and MRV Definition – Orinoquia Biocarbon Project	Throughout audit
Jose Maria Michel Fuentes	World Bank Group	Consultant/REDD+ Expert	Throughout audit

Naikoa Aguilar Amuchastegui	World Bank Group	Senior Climate Change Specialist	Throughout audit
Marcela Portocarrero Aya	World Bank Group	Natural Resource Specialist	Throughout audit
Andres Espejo	World Bank Group	FCPF Fund Manager/ Lead Natural Climate Solutions	Throughout audit
Roy Parizat	World Bank Group	ISFL BioCarbon Fund Manager	Throughout audit

3.3.2 Interviews with Individuals Other Than ER Program Personnel

No additional individuals other than the ER program personnel described in section 3.3.1 above were interviewed.

3.4 Site Inspections

Due to the COVID-19 pandemic as well as the audit team's expert assessment regarding the need for an in-person site visit, no site visit occurred during this assessment. In lieu of a site visit, the assessment team performed web-based meetings with program personnel and program partners. In addition, the assessment team utilized remotely sensed imagery to assess land use classes in the program area.

3.5 Resolution of Findings

Findings are the formal mechanism used by SCS to identify any actual or potential areas of risk or concern. The following discusses the types of findings that may arise from the assessment process.

New Information Requests (NIRs)

If the assessment team determined that they have not been furnished with sufficient information to make a decision regarding conformance, a New Information Request (NIR) was issued. After a response was received, the assessment team evaluated the submission and determined if adequate information had been provided or if additional findings (NIR, NCR, OBS) were warranted.

Non-Conformity Reports (NCRs)

When the assessment team identified (1) a clear non-conformity with respect to a specific indicator (where a given indicator was of the "binary" conformance type) or (2) a material discrepancy (see "Materiality", above, for more information), a Non-Conformity Report (NCR) was issued. Closure of an NCR required that the assessment team be provided with evidence that the underlying issue resulting in issuance of the NCR had been duly addressed.

Observations (OBSs)

An OBS indicated one or more of the following:

- An area where immaterial discrepancies existed between the observations, data testing results or professional judgment of the assessment team and the information reported or utilized (or the methods used to acquire such information) within the ERPD.
- An area where the expert judgement of the assessment team suggested that there were opportunities for improvement in the areas falling within the assessment scope.
- An area which presented a risk of future non-conformance.

Where an OBS was written against an indicator of the "professional judgement" conformance type, the OBS was written when a low (III) or medium (II) conformance rating had been assigned. Annex A's General Guidance section contains more detail regarding the two conformance types and ratings.

Forward Action Requests (FAR)

When the assessment team finds that one or more NIR or/and NCR have not been closed after significant[4] efforts made by the Program Entity to provide sufficient evidence to resolve the underlying issue, a FAR was issued. A FAR can be issued only after having discussed it with the World Bank and upon the approval of the Fund Manager/FMT. FAR will be turned into World Bank Conditions of Effectiveness that need to be fulfilled by ER Programs during the Conditions Fulfillment period following the signature of the ERPA to ensure the FAR is addressed prior to the submission of the first ER Monitoring Report.

A FAR shall be addressed during the first monitoring event, and a VVB shall provide a positive opinion as part of the first verification report.

4 Assessment Findings

The major findings of the assessment are described below for each category included in the scope of the assessment (see "Scope and Objectives", above). The assessment findings at the indicator level are described in Appendix C below.

4.1 Determination of ISFL Accounting Scope

4.1.1 ISFL Reporting

The following findings from Appendix C are relevant to this sub-section:

- NIR 34, 46, 60, 73-75
- NCR 23-24, 32, 39, 59, 72, 76-77
- OBS 44-45

[4] Significant effort can be considered when more than three rounds of findings are needed to close one or more NIR or/and NCR or by an ad hoc decision made by the ISFL Fund Manager

The assessment team took the following steps to assess the program GHG inventory for comparability with use of definitions, categories and subcategories with national processes such as the national GHG inventory, REDD+ and the Biennial Update Report:

- Independently reviewed and took inventory of the program datasets to assess the level of consistency between the national GHG inventory and the program GHG inventory. For instance, the program utilizes the land use and land cover maps developed as part of the Forest and Carbon Monitoring System (SMByC). We reviewed the second and the third Biennial Update Report (BUR) and the countries' Forest Reference Emission Level (FREL) to evaluate whether this land use dataset is also utilized for the countries national GHG inventory, which is it is. We also compared the datasets for the agricultural subcategories (e.g., enteric fermentation) to evaluate whether the same or consistent data were utilized for the national inventory and the program inventory.
- An independent assessment was undertaken to compare the definitions of natural forest and the other land use classes to evaluate consistency between national GHG reporting (BUR, FREL), and the program reporting. The assessment team also independently evaluated the subcategories and naming conventions utilized in the national GHG reporting to compare to the program subcategory distinctions.
- The assessment team evaluated whether there is consistency between key parameters such as the global warming potentials (GWPs) utilized in the national GHG inventory as compared to the program accounting.
- In cases where datasets were developed specifically for this program area (e.g., plantation emission factors), the auditors evaluated for methodological consistency (definitions, assumptions, approach) between the national GHG datasets and the program data.

The assessment team took the following steps to assess whether the best available data sets, methods, models and assumptions have been used and that the inventory applies the general IPCC principles of transparency, completeness, consistency, accuracy and comprehensiveness:

- Held meetings with the program's technical team to gain a clear understanding of the process in determining the best available data sets, methods and models to be employed by the program.
- Independently reviewed literature regarding the availability of datasets pertaining to forest inventory, soil characteristics, forest resource use, disturbances, land use change, and agriculture in Colombia's Orinoquia region to confirm that the best available data sets and assumptions have been utilized by the program.
- Independently reviewed Colombia's Forest Reference Level Submission to the UNFCCC and the Biennial Update Report (BUR) to assess whether similar data sets, methods, and assumptions have been used for the national GHG inventory and represents the best available data in the country.
- If no country specific or region-specific information was available, the assessment team independently evaluated whether the most relevant and accurate default values from the 2006 IPCC Guidelines were applied.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- The best available data sets, methods, models, and assumptions have been used and that the inventory applies the general IPCC principles of transparency, completeness, consistency, accuracy and comprehensiveness.
- Given that the program is directly employing several national GHG inventory datasets and processes including the SMByC data for land use and land cover mapping, published emission factors from Yepes et al. 2011, and identical subcategory and land use classifications, the program GHG inventory inherently applies comparable use of definitions, categories and subcategories as other national processes related to GHG inventory and REDD+.
- Overall, conservative assumptions and parameters have been used to ensure the baseline is accurate yet conservative.

4.1.2 Selection of Subcategories for Accounting

The following findings from Appendix C are relevant to this sub-section:

- NIR 20-21, 31
- NCR 35, 47, 52

The assessment team took the following steps to assess the correctness and completeness of the data and information provided on the choice of the subcategories:

- Independently assessed the datasets used for each land use subcategory to determine the IPCC tier, availability, and vintage of the data sources.
- Independently quantified the emissions baseline for each subcategory to check the absence of errors in the quantification of net emissions and removals per subcategory as well as the relative contribution to total GHG emissions and removals associated with all land use conversions.
- Independently identified, recalculated, and selected subcategories in accordance with the section 4.3.4-4.3.15 of the ER Program Requirements to assess the step 1-3 selection of subcategories as indicated in the ERPD and calculations workbooks.

The assessment team took the following steps to assess whether the quality and baseline setting requirements have been applied correctly and confirm that the choice of the subcategories is correct and justified:

- Classified each subcategory by IPCC tier and independently assessed whether only subcategories that utilized data and procedures that comply with the minimum IPCC Tier 2 methods and data were selected.
- Classified each subcategory by IPCC approach and independently assessed whether only subcategories that utilized data and procedures that comply with IPCC approach 2 or 3 data and methods were selected.

- Classified each subcategory by the vintage of available data sources to independently assess whether only subcategories that have sufficient historic data available to construct an Emission Baseline over a Baseline Period of approximately 10-year period at the start of a ISFL ERPA Phase were selected.
- Independently evaluated the source of each of the datasets utilized in the baseline quantification and independently re-calculated the emissions baseline.
- Reviewed the subcategory selection process as described and demonstrated in section 4.2 of the ERPD to evaluate conformance with the subcategory selection criteria.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- Confirmed that the selection of subcategories is in conformance with the procedures outlined in the ISFL Program Requirements and free from material error.
- However, several Forward Action Requests pertaining to the selected subcategories for the Emissions Baseline have been issued (see Section 5.2 below).

4.1.3 Time Bound Plan to Increase Completeness Accounting Scope

The following findings from Appendix C are relevant to this sub-section:

- NIR 6, 71
- NCR 70
- OBS 61

The assessment team took the following steps to assess whether the proposed plan is feasible, addresses priority subcategories and is likely to increase the completeness of the scope of accounting and improve data and methods for the subsequent ERPA Phases:

- Reviewed the description of the time-bound plan for improving input datasets such that they comply tier 2 or the spatial requirements for IPCC, for several subcategories as described in section 4.3 and Annex 8 of the ERPD. For instance, the program intends to include various crop subcategories such as coffee and cacao, and the pastureland subcategory that all require approach 2 or approach 3 spatial data be developed for conformance with the ISFL requirements.
- We also evaluated whether all subcategories indicated as meeting the ISFL requirements for inclusion, fully met the ISFL requirements for inclusion, and if they did not, we evaluated that a time-bound plan to improve the datasets for inclusion was established and could be met.
- Conducted meetings with the program team to inquire about the status of the implementation of this time-bound plan, the relevant parties involved, and the availability of data or generating such data.
- Reviewed the baseline emissions analysis and subcategory selection datasets to understand the significance (relative emissions) of subcategories included in the time-bound plan.

- Compared the required input data and parameters for calculating the pools in this subcategory to the potential improvements a described in the ERPD.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- Determined that the plan, which involves developing forest degradation activity data and determining the pre-regeneration land uses is already underway by IDEAM and involves the use of satellite image analysis combined with field inventory data.
- Through interviews with the program team, we confirmed that consultancies have been established and work is already underway to develop improved data for various subcategories requiring improvements such as forest plantations, palm oil, other woody vegetation, rice cultivation, and other crops.
- Confirmed that funding is available or will become available to conduct these additional analyses and develop the improved data such that the intended subcategories can be included in the ISFL baseline and monitoring.
- Verified that the improvement plan includes the required input and data parameters for calculating the pools in this subcategory using tier 2 data.
- Ultimately found that the time-bound plan is feasible based on a review of institutions referenced and the status of the improvements. Such improvements will increase the completeness of the accounting scope through improved data quality.

4.2 Design of Planned Actions and Interventions

4.2.1 Drivers of AFOLU Emissions and Removals

The following findings from Appendix C are relevant to this sub-section:

- N/A

The assessment team took the following steps to assess the correctness and completeness of the analysis on historic and future trends (qualitative and quantitative) in drivers of AFOLU emissions and removals:

- Reviewed the ERPD- (Section 3.1.1) to cross check against the ER Program Requirements including the template requirements.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program has identified and evaluated drivers of AFOLU emissions and removals.
- Solicited feedback from in-country specialists, who are familiar with local laws and customs, and have expertise in the technical fields required for reliable assessment.

- Engaged with the primary literature, including peer-reviewed journal articles and national publications/reports (e.g., FREL, BUR) to assess if the claims issued by the project are in-line with current scientific findings.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- The description provided in the ERPD and supplemental documents is appropriate and complete.
- The drivers of AFOLU emission and removals are reasonable and accurate as compared to the quantification of emissions and removals as well as corresponding literature including the FREL, BUR reports, and other peer-reviewed journal articles.

4.2.2 Description and Justification of the Program's Planned Actions and Interventions

The following findings from Appendix C are relevant to this sub-section:

- NIR 68

The assessment team took the following steps to assess whether the proposed actions and interventions address drivers of emissions and are informed by the contribution of key sources and sinks to the total GHG emissions and removals in the program GHG inventory and the analysis of trends:

- Reviewed the ERPD (Section 3.1) to cross check against the ER Program Requirements including the template requirements.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program intends to execute proposed actions and interventions, and understand if and how these interventions may be feasible given local customs.
- Engaged with the primary literature (i.e., peer-reviewed publications, FREL, BUR, carbon project documentation) to assess if the planned actions and interventions are feasible, directly influence the drivers of emissions, and are in-line with current scientific findings.
- Compared the planned actions and interventions to the description of the drivers of AFOLU emission and removals as well as the quantification of emissions to evaluate whether there is a clear and direct relationship between the planned actions to reduce emissions and the drivers of emissions.

The assessment team took the following steps to assess the extent and effectiveness of private sector engagement (either achieved or planned) in addressing drivers of emissions:

- Reviewed the ERPD (Section 3.1) to cross check against the ER Program Requirements including the template requirements.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program intends to execute proposed actions and interventions, and understand if and how these interventions may be feasible given local customs. Inquired about the pilot implementation programs already underway or established in other regions to better evaluate the feasibility and potential impacts of these interventions.

- Engaged with the primary literature to assess if the claims issued by the project are in-line with current scientific findings.
- Increased familiarity with current privately-held carbon offset projects in the country to understand their contributions to addressing drivers of emissions and to assess the program's planned interactions and engagements with the nested carbon projects.

The assessment team took the following steps to assess the magnitude of risks to (a) ER Program implementation and (b) the potential benefits of planned actions and interventions and the extent to which mitigation mechanisms have been included in ER Program design:

- Reviewed the ERPD to cross check against the ER Program Requirements including the template requirements.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program intends to execute proposed actions and interventions. Inquired about the current and future partnerships and consultancies that will be established to implement the activities.
- Engaged with the primary literature to assess if the claims issued by the project are in-line with current scientific findings.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- The description provided in the ERPD and supplemental documents is appropriate and complete.
- The planned interventions (e.g., low-carbon crop production practices, agroforestry, sustainable plantations, efficient cookstoves, low-carbon cattle operations, sustainable forest management and prevention of deforestation, to name a few) are directly related to the most significant drivers of emissions.
- The planned interventions are feasible and have already been underway through various pilot programs within the region or in other nearby regions as part of similar emission reductions/conservation activities (e.g., Vision Amazonia).

4.2.3 Financing Plan for Implementing the Planned Actions and Interventions of the Program

The following findings from Appendix C are relevant to this sub-section:

- N/A

The assessment team took the following steps to assess the correctness and completeness of information on projected costs, revenues and funding gaps or surpluses:

- Reviewed the ERPD (Section 3.3.1) and Annex 2 to cross check against the ER Program Requirements including the template requirements.

- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program has developed and analyzed its finances and financial planning for the duration of program implementation.
- Applied expert judgement to assess whether all planned interventions are completely included in the program costs and are realistically represented in the financial analysis and planning.
- Conducted an independent recalculation of the ex-ante estimated emission reductions and applied assumptions of the costs of emission reduction tons to independently recalculate the total revenues.
- Applied expert judgement to assess the feasibility in the program's plans for addressing the funding gap, which includes potential resources from the General Royalty System (funds generated from hydrocarbons and minerals), a new tax on carbon revenues, and international bilateral and/or multilateral donors).
- Reviewed the sensitivity analysis of the financial plan to understand the risks and potential uncertainty associated with the financing plan.

The assessment team took the following steps to assess whether the identified sources of finance are sufficient to affect the land use activities and drivers of emissions and removals:

- Reviewed the ERPD, including annex 2, to cross check against the ER Program Requirements including the template requirements.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program has developed and analyzed its finances.
- Applied expert judgement to assess the estimated costs of the planned interventions and the annual levels of implementation to assess whether the sources of finances and relevant amounts of sufficient to affect the land use activities.
- Engaged with the primary literature to assess if the claims issued by the project are in-line with current scientific findings.

The assessment team took the following steps to assess the financial and economic analyses (including discount rates and other parameters):

- Reviewed the ERPD (Section 3.3.1) to cross check against the ER Program Requirements including the template requirements.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program has developed and analyzed its cash flow analysis and funding gap.
- Applied expert judgement and knowledge of financial principles when assessing the cash flow assumptions including the ISFL purchase cost for VERs, discount rates, and implementation rates.

The assessment team took the following steps to assess the arrangements for flow of funds:

- Reviewed the ERPD (Section 3.3.1) to cross check against the ER Program Requirements including the template requirements.
- Applied expert judgement when reviewing the arrangements for flow of funds to assess whether sufficient agreements are in place and fundings sources are adequate to address the program implementation costs and funding gaps.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program has developed and analyzed its finances.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- The description provided in the ERPD and supplemental documents is appropriate and complete.
- The financial planning appears to be accurate and contain complete information on projected costs, revenues and funding gaps or surpluses.
- The financial planning applies established principles of cash flow analyses and includes accurate application of parameters (e.g., cost of VERs) and ex-ante emission reductions.
- The financing plan for ISFL program implementation is feasible, realistic, and appears to sufficiently address the land use activities and the drivers of emissions.
- The program team has concrete and realistic plans for addressing the funding gap (e.g., General Royalty System).

4.2.4 Risk for Displacement

The following findings from Appendix C are relevant to this sub-section:

- N/A

The assessment team took the following steps to assess the correctness and completeness of the information provided in the analysis of displacement risk:

- Reviewed the ERPD to cross check against the ER Program Requirements including the template requirements.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program has evaluated the risk of displacement through the use of a spatial modeling process evaluating risk of displacement both within and outside of the ER program area.
- Evaluated other regional emissions reductions measures and policies to assess whether other mechanisms and actions may be in place outside of the ER program area to prevent or mitigate displacement risks.
- Evaluated whether consultancies and partnerships are in place with other local and regional initiative and authorities to prevent and mitigation displacement risks.

- Engaged with the primary literature to assess if the claims issued by the project are in-line with current scientific findings.

The assessment team took the following steps to assess the effectiveness of the proposed strategy to mitigate and/or minimize, to the extent possible, potential displacement:

- Reviewed the ERPD to cross check against the ER Program Requirements including the template requirements.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program has identified the risk of displacement and intends to implement activities in a targeted manner to mitigate displacement risks.
- Applied expert judgement when assessing the risk of displacement and whether planned interventions (e.g., low-carbon crop production practices, agroforestry, sustainable plantations, efficient cookstoves, low-carbon cattle operations, sustainable forest management and prevention of deforestation, to name a few) will effectively combat this risk.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- The description provided in the ERPD and supplemental documents is appropriate and complete and demonstrates that the program team conducted a thorough and spatially explicit assessment of displacement both within the program area and outside.
- Activity shifting leakage from shifting rice cultivation, deforestation, and cattle ranching are the likely drivers of displacement, as they are the highest emission sources in the region, which is accurately described in the ERPD.
- The planned program interventions are feasible solutions to the risk of displacement caused by activity shifting leakage, as many interventions are to enhance efficiency of activities where they are already established (e.g., low-carbon crop productions, sustainable forestry, etc.). Likewise, other programs and partnerships are in place that can help to prevent or mitigate the risk of displacement outside of program area.

4.3 Tracking, Management, Disbursement and Reduction of Risks to Emission Reductions

4.3.1 Analysis of Laws, Statutes, and Other Regulatory Frameworks

The following findings from Appendix C are relevant to this sub-section:

- NIR 64

The assessment team took the following steps to assess the correctness and completeness of the information provided in the ERPD in respect of laws, statutes, and other regulatory frameworks:

- Reviewed the ERPD (Section 3.1.4) to cross check against the ER Program Requirements including the template requirements.
- Conducted an independent review of the laws, statutes, and other regulatory frameworks in Colombia to evaluate the completeness of the information provided in the ERPD.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program has assessed the validity of the project against any known legal or regulatory frameworks, including the National Safeguards System under MinAmbiente, the National Climate Change Policy, Law 1931 of 2018, and many others.
- Applied expert judgment while reviewing the laws pertinent to this project to assess whether the proposed project activities are in-line with the legal and regulatory frameworks in place.
- Independently reviewed the Forest (Carbon Stock Management) Regulations of 2021 to better understand the national requirements around jurisdictional GHG initiatives.

The assessment team took the following steps to assess the existence and extent of any known legal or regulatory issues in the program area that could affect the ER Program design and the existence and effectiveness of any mitigation mechanisms to address such issues:

- Reviewed the ERPD (Section 3.1.4) to cross check against the ER Program Requirements including the template requirements.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program has assessed the validity of the project against any known legal or regulatory frameworks, including the National Safeguards System under MinAmbiente, the National Climate Change Policy, Law 1931 of 2018, Law 2169 of 2021, and many others.
- Conducted a review of the Resolution 1447 of 2018 which regulates the MRV system of mitigation actions at the national level and established the National Registry for the Reduction of Greenhouse Gas Emissions (RENARE) which serves as a reporting mechanism for all REDD projects in the country.
- Conducted a review of the National Safeguards System under MinAmbiente to evaluate whether that an appropriate social safeguards framework has been established to guarantee the rights of local communities while implementing program activities.
- Applied expert judgment while reviewing the laws pertinent to this project and ensured that project activities were in-line with the legal and regulatory frameworks in place.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- The description provided in the ERPD and supplemental documents is appropriate and complete.
- The program staff are knowledgeable about the local laws and statutes and have abided by and worked within these frameworks while designing and executing this project.
- There is low risk of non-adherence to laws and regulatory frameworks, especially considering that this jurisdictional program is operated by government officials who are obligated to uphold the law as they are public servants.

- There are regulatory enforcement and monitoring measures in place to ensure that all project activities and implementing actors maintain compliance with laws and regulatory frameworks in place.

4.3.2 Participation Under Other GHG initiatives

The following findings from Appendix C are relevant to this sub-section:

- N/A

The assessment team took the following steps to assess the correctness and completeness of the information provided whether parts of the program area, or projects in the program area, are included in other GHG initiatives and if this creates a risk of double counting, and/or double payment:

- Independently reviewed the ERPD (Section 3.7.2) and cross-checked it against the program requirements.
- Reviewed the other AFOLU carbon projects (e.g., Verra, Green Climate Fund, ART-TREES) existing in the Orinoquia Region to understand the extent of the risk of double counting and/or double payment.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program intends to avoid risk of double counting and how their identification of and engagement with other AFOLU carbon projects has determined their internal risk of double counting.
- To better understand the national requirements around reporting of emission reductions, the assessment team independently reviewed documentation on RENARE, the system used to register and track greenhouse gas mitigation initiatives in Colombia jurisdictional GHG initiatives relative to projects encompassed (nested) within the jurisdiction.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- Concluded that the jurisdictional program has considered double counting risk and has designed the project accordingly, including plans to either nest or exclude existing AFOLU carbon projects within the Orinoquia Region, which is covered by Resolution 1447.
- The assessment has confirmed that a national greenhouse gas mitigation initiative registry system (RENARE) has been established which also contains spatial controls that detect if there are non-compatible overlaps in the region, and will be used to prevent double counting with other AFOLU initiatives in the region. It is important to note that the RENARE system is currently not active due to regulatory issues, but assurance was provided that it will be active by the time of verification. See section 5.2 for a forward action request pertaining to this tracking system.
- Due to the measures proposed or in place, the assessment team has found that the risk of double-counting is relatively low.

4.3.3 Data management and Registry Systems to Avoid Multiple Claims to Emission Reductions

The following findings from Appendix C are relevant to this sub-section:

- NIR 62, 65, 66

The assessment team took the following steps to assess whether the program and projects data management system is sufficient, secure, and robust:

- Independently reviewed the ERPD (Section 3.7.3) and cross-checked it against the program requirements.
- Independently reviewed Resolution 1447 of 2018, which establishes the measurement, reporting, and verification (MRV) system for greenhouse gas mitigation, including the data management and registry system to avoid multiple claims of emission reductions, the RENARE system.
- The assessors also reviewed documentation pertaining to the data management protocols for national GHG inventories which the includes the systematization of the methods and protocols for data management and reporting processes. The program has indicated its intention to apply such data management approaches.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of the organizational structure of the program and the various data management systems and registries (e.g., national forest inventory system, SMBYC, RENARE, etc).

The assessment team took the following steps to assess whether the transaction registry to be used is sufficient, secure, and robust:

- Independently reviewed the ERPD (Section 3.7.3) and cross-checked it against the program requirements.
- To better understand the national requirements around reporting of emission reductions, the assessment team independently reviewed documentation on RENARE, the system used to register and track greenhouse gas mitigation initiatives in Colombia.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the RENARE system works, what spatial controls are in place, who operates the system, and how the system is applicable to the ER Program. The assessment team evaluated whether the system is sufficient and robust to register, track, and as appropriate retire or cancel ER units generated under the ER Program.

The assessment team took the following steps to assess whether the data management and registry systems are sufficiently robust and sophisticated as to recognize nested projects and avoided multiple claims to emission reductions:

- Independently reviewed Resolution 1447 of 2018, which establishes the measurement, reporting, and verification (MRV) system for greenhouse gas mitigation, including the data management and registry system to avoid multiple claims of emission reductions, the RENARE system. The resolution also contains nesting and exclusion provisions.

- To better understand the national requirements around reporting of emission reductions, the assessment team independently reviewed documentation on RENARE, the system used to register and track greenhouse gas mitigation initiatives in Colombia jurisdictional GHG initiatives relative to projects encompassed (nested) within the jurisdiction.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the RENARE system works, what spatial controls are in place, who operates the system, and how the system is applicable to the ER Program.
- Reviewed the other AFOLU carbon projects (e.g., Verra, Green Climate Fund, ART-TREES) existing in the Orinoquia Region to understand the extent of the risk of multiple claims to emission reductions.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- Confirmed that the project's data management system is sufficient, secure, sophisticated, and robust.
- The assessment has confirmed that a national greenhouse gas mitigation initiative registry system (RENARE) has been established which also contains spatial controls that detect if there are non-compatible overlaps in the region, and will be used to prevent double counting with other AFOLU initiatives in the region.
- Confirmed that data management system and registry system is in-line with regulatory requirements outlined in the Resolution 1447 of 2018.
- Confirmed that the program has established a registry system, RENARE (which is not currently active) to serve as a data management system to allow for tracking of carbon project areas, credits, cancellations, etc. See section 5.2 for a forward action request pertaining to this tracking system.

4.3.4 Reversals

The following findings from Appendix C are relevant to this sub-section:

- N/A

The assessment team took the following steps to assess the correctness and completeness of the data and assumptions used in the assessment of the reversal risk:

- Independently reviewed the ERPD (Section 4.7) and cross-checked it against the program requirements.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the program intends to manage reversal risk.
- Reviewed ancillary documentation regarding the main natural risk factors (fire and floods) as well as anthropogenic factors (illegal and armed actors) to better understand their impacts on forests in the Orinoquia Region and confirm the correctness of the data and assumptions described in the ERPD.

- Applied expert judgement to assess whether the data and assumptions included in assessing both anthropogenic and natural risk were valid, while also consulting the primary literature to assess whether these data and assumptions are in-line with current scientific findings.

The assessment team took the following steps to assess whether the Buffer Requirements have been applied correctly:

- Independently reviewed the ERPD (Section 3.7.3) and cross-checked it against the program requirements.
- Held meetings with the program's technical team as well as World Bank personnel to gain a clear understanding of how the buffer credits were calculated.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- The project has accurately assessed reversal risks due to the main anthropogenic and natural factors active in the Orinoquia Region.
- The reversal risk appears to the reasonable and accurate, though it must be noted that the risk of future climatic events is difficult to predict due to stochasticity of disturbance events. The assessment of natural factors considered mostly historical risks, and in a changing climate, these risks of natural disturbances (fires and floods) could increase.
- Assured that the program is accurately calculating buffer credits as per the requirements of the ISFL guidelines.

4.4 Quantification of Emission Reductions

4.4.1 Emissions Baseline

The following findings from Appendix C are relevant to this sub-section:

- NIRs 1-17, 41-42, 22, 25-27, 30, 35-38, 40, 48, 50-51, 53, 56, 57-58, 69
- NCRs 18, 28-29, 33, 49, 54-55, 67
- OBS 43

The assessment team took the following steps to assess whether the methods used to construct are in line with the IPCC and best practice approaches:

- Reviewed the application of the methods and datasets, including assumptions and selection of parameters used to construct the emissions baseline to assess whether they are in line with IPCC methods and best practice approaches.
- Assessment team applied the IPCC guidelines, other criteria described in section 2.2 above, and best practice approaches to independently quantify the emissions baseline for a sample of subcategories (i.e., those selected by applying section 4.3 of the program requirements) using the complete datasets or samples of data utilized by the program team.

- Conducted meetings and interviews with the program team to better understand the data and methods applied and check the validity of information provided to the assessment team.

The assessment team took the following steps to assess the correctness and completeness of the data used to construct the baseline:

- Independently assessed the land use land cover (LULC) classification through review of the mapping files and supporting protocols, to determine whether the methodologies applied, as well as the training and QA/QC processes employed, were appropriate to ensure high-quality data and minimize the impact of any measurement errors.
- Independently reviewed the data sources and assumptions used to develop the emission factors for all land cover classes and carbon pools.
- Independently assessed the program area boundaries and the land use land cover change areas within the Orinoquia region boundary by performing an intersection of the various spatial files and recalculating the areas by department and biome.
- Conducted meetings and interviews with the program team to better understand the data and methods applied and to check the validity of information provided to the assessment team.

The assessment team took the following steps to whether the baseline requirements have been applied correctly and the emissions baseline estimate is calculated correctly:

- Independently replicated the quantification of the emissions baseline using a combination of the complete datasets (e.g., emission factors and land use conversions) and/or a sample of the datasets for the subcategories, applied by the program team to verify that the emissions baseline estimate is free of material discrepancies.
- The replication of the quantification included recalculation of the following: activity data (the area of each land use category and land use change for each year), emission factors for live, dead and soil pools, , program area boundaries (Orinoquia boundary, department and biome boundaries), total emissions of each subcategory (emission factor times activity data), and the subcategory selection (described above in section 4.1.2 above).

The assessment team took the following steps to assess whether the uncertainty in the emissions baseline has been correctly identified and assessed in accordance with IPCC good practice:

- Reviewed the ERPD (section 4.5.3) to verify that all potential uncertainties arising in the baseline scenario as well as measurement, monitoring and reporting have been identified and assessed in accordance with IPCC good practice.
- Assessed whether a comprehensive approach to mitigate key areas of uncertainty has been addressed in a time-bound plan to increase the completeness and improve data and methods (see section 4.1.3 above for the time-bound plan assessment).
- Independently determined the ex-ante uncertainty set-aside factor in the table in section 4.6.4 of the Program Requirements to assess whether the correct factor was applied. Independently

recalculated the ex-ante estimation of the quantity of total net emission reductions allocated to the Uncertainty Buffer for each ERPA year.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- The methods, including assumptions and selection of parameters, used to construct the emissions baseline are in line with the IPCC and best practice approaches.
- The data used to construct the emissions baseline is correct and complete for the subcategories ultimately selected.
- The emissions baseline is only considered interim as several improvements are to be made to the baseline subcategories, therefore the assessment team has issued several Forward Action Requests in reference to the emissions baseline and to individual subcategories included as described in section 5.2 below.
- The baseline requirements have been applied or are intended to be applied correctly upon completion of the Forward Action Requests and the interim emissions baseline estimate has been calculated correctly as is free of material discrepancies.

4.4.2 Monitoring Approach

The following findings from Appendix C are relevant to this sub-section:

- NIR 63

The assessment team took the following steps to assess whether the data and methods proposed for monitoring are consistent enough with the data and methods used for the determination of the baseline to allow for meaningful comparison and calculation of the emission reductions:

- Reviewed and independently identified the key datasets and methods used for the baseline determination which will be needed for continued monitoring.
- Conducted interviews with the program team to better assess the monitoring plans and personnel required for continued monitoring of the program emissions including land use change monitoring and program implementation emissions.
- Reviewed the monitoring approach in section 4.5.1 in the ERPD to determine whether it is consistent with these key datasets and methods used for the baseline determination.
- Reviewed documentation and interviewed program team to determine whether an appropriate party is delegated as responsible for carrying out the monitoring strategy.

The assessment team took the following steps to assess whether the proposed monitoring methods and arrangements are in place as described in the ERPD and are technically capable of collecting the data:

- We independently assessed whether the data needed for monitoring will be continually updated and available by reviewing the monitoring frequency of key sources of activity data such as the

national forest inventory (NFI) and the spatial land use datasets (SMByC) for deforestation subcategories, plantation activity data from the Colombian Agricultural Institute, and agricultural databases such as those for palm oil, rice, and livestock.

- We independently assessed the ability of the RENARE system to be used for the monitoring of program emission reductions as well as other project emission reductions within the Orinoquia region. However, a Forward Action Request regarding the RENARE system described in section 5.2 below.
- Applied expert judgement to assess whether the proposed monitoring methods and arrangements are in place as described in the ERPD and are technically capable of collecting the data.
- Conducted interviews with the technical experts on the program team to evaluate whether the team includes the technical capacities for collection and synthesis of monitoring data.

The assessment team took the following steps to assess whether the uncertainty in the data and parameters to be monitored has been correctly identified and assessed:

- Independently identified the sources of uncertainty and compared to those identified in section 4.5.3, annex 9 and annex 10 of the ERPD. The main sources of uncertainty identified are those associated with the activity data and the emissions factors.
- Compared the identified sources of uncertainty for each data and parameter to be monitored to determine whether they were identified following approaches from the most recent IPCC guidance and guidelines.
- Applied expert judgement to conclude that the assessment of sources of uncertainty in construction of the Emissions Baseline is justifiable.
- Compared the monitoring plan to the elements of the time-bound plan described in section 4.1.3 above to assess whether there is consistency in the identification of data and parameters that have the highest uncertainty and that are most critical to improving accuracy and increasing completeness of the accounting scope.

The assessment team took the following steps to assess whether the proposed approach to manage and reduce uncertainty reflects good practice:

- Compared the proposed approach to manage and reduce uncertainty to the guidance set out in the IPCC 2006 Guidelines to determine whether such guidance has been considered and applied.
- Applied expert judgement to assess whether the proposed approach to reduce uncertainties reflects good practice and are relevant and feasible for each data and parameter.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- The monitoring procedures are appropriate to the stated tasks.
- The monitoring procedures are technically capable of collecting the data needed to allow for meaningful comparison and calculation of the emission reductions from the baseline.

- The appropriate institutional framework and organizational structure is in place to make monitoring of the data and parameters feasible.
- The uncertainty in the data and parameters to be monitored has been correctly identified and assessed. The uncertainty set-aside factor has been correctly applied.
- The proposed approach to manage and reduce uncertainty generally reflects good practice.
- However, the assessment team could only review a draft of the uncertainty assessment for the interim baseline and for limited years, thus a Forward Action Request has been issued regarding the uncertainty analysis which is described in section 5.2 below.

4.4.3 Ex-Ante Estimation of the Emission Reductions

The following findings from Appendix C are relevant to this sub-section:

- N/A

The assessment team took the following steps to assess whether the assumed effectiveness of the Program in addressing the drivers and its impact on the emissions is justified and based on reasonable assumptions:

- Reviewed the ERDP and supporting documentation to assess the justification of the applied emissions reduction estimation approaches, assumptions, and parameters.
- Conducted interviews with the program team to better understand how the proposed activities will be implemented to address the drivers of deforestation and reduce emissions.
- Applied expert judgement while reviewing the application of methodologies and assumptions used to estimate ex-ante emission reductions.
- Reviewed the national level modeling methodologies for which the program-level activities were based upon and downscaled from (National Determined Contributions). Reviewed Colombia's Nationally Appropriate Mitigation actions (NAMA) which are concrete projects and policies aimed to reduce emissions, to ensure the program activities are in-line with these NAMAs.
- Applied expert judgement to independently evaluate the assumed effectiveness of the program in addressing the drivers of emissions and their impacts on the emissions.
- Compared the proposed program activities to the National REDD Strategy to determine whether the program is in-line with national strategies and estimated emissions reductions.

In summary, based on the processes and procedures conducted, the assessment team concludes the following:

- The assumed effectiveness of the Program in addressing the drivers and its impact on the emissions has been justified in the ERPD and supporting documentation and is considered feasible.
- The proposed activities are directly in-line with main drivers of deforestation and degradation and are directed at the largest emission sources in the region, as well as in line with the established NAMAs.

- The program team has applied appropriate methodologies that are fully in-line with the national-scale estimation of mitigation impacts, developed for the Nationally Determined Contributions.

5 Conclusion

5.1 Assessment Opinion

SCS Global Services (SCS) was retained by the Initiative for Sustainable Forest Landscapes (ISFL) of the World Bank Group to perform an independent assessment of the GHG Emissions reduction program in Orinoquia – Biocarbon ERP against the ISFL Emission Reductions Program Requirements and associated guidelines. During the review of the ERPD, the assessment team was informed by the due diligence processes of the ISFL team in the World Bank Group and others at the World Bank Group to develop the findings and conclusions described in this report.

The conclusions of the assessment engagement differ between the two levels of assurance utilized in the assessment. The conclusions are set out according to each level of assurance in the table below.

Applicable Level of Assurance	Conclusions
Reasonable	With the exception of any potential or actual areas of risk or concern or Forward Action Requests (i.e., currently unresolved material omissions, misstatements, and/or non-conformities) as documented in Section 5.2 below, and based on the processes and procedures conducted by the audit team: ▪ The information provided in the ERPD is correct and complete (i.e., not leaving out information that might affect the opinion of the reader). ▪ The Program, as described in the ERPD, complies with the assessment criteria as described above.
Limited	With the exception of any potential of actual areas of risk or concern or Forward Action Requests (i.e., currently unresolved material omissions, misstatements, and/or non-conformities) as documented in Section 5.2 below, and based on the processes and procedures conducted by the audit team: ▪ There is no evidence that the information provided in the ERPD is incorrect and/or incomplete (i.e., leaving out information that might affect the opinion of the reader). ▪ There is no evidence that the Program, as described in the ERPD, does not comply with the assessment criteria as described above.

The reader is encouraged to refer to Appendix C below for information regarding the level of assurance applied to any indicator of interest.

In addition, the following summary conclusions are made (with the exception of any potential or actual areas of risk or concern or Forward Action Requests (i.e., currently unresolved material omissions, misstatements, and/or non-conformities) as documented in Section 5.2 below) with a limited level of assurance regarding those areas in which the scope of the assessment extends beyond a strict assessment for compliance to the assessment criteria:

Area	Conclusions
Effectiveness of achieved or planned private sector engagement in addressing drivers of emissions	Based on the processes and procedures conducted: ▪ Based on interviews with program partners and review of program activities in place or planned, the ERPD provides a complete description of the planned private sector engagement in addressing drivers of emissions. ▪ The private sector included at this time includes the expertise necessary, partnerships, and parafiscal funding to enable the described activities. ▪ The private sector included at this time includes support and consultancies from a wholistic range of entities necessary to implement the program activities necessary to address the drivers of emissions.
Risks to (a) program implementation and (b) the potential benefits of planned actions and interventions	Based on the processes and procedures conducted: ▪ As stated above, the experience and knowledge pertaining to project activities, the strong community engagement elements, and the collaboration among government agencies and the private sector at this time lay the foundation for the success of the program implementation. ▪ Although a funding gap currently exist, mechanisms for funding have been put in place and alternative funding sources have been identified and/or secured, thus the assessment team believes this to be a low risk factor. ▪ The assessment concluded that anthropogenic factors such as the presence of illegal armed groups may pose a threat to emission reductions in the Orinoquia Region, due to impacts on accessing the Program area, implementing Program activities, and managing the governance. ▪ A review of literature and interviews with the program team revealed that climatic events such as

Area	Conclusions
	fire, flooding, and drought may pose a risk to some subcategories, such to agriculture and natural forests, but that these risks are relatively low.
Plan for mitigating funding gaps	Based on the processes and procedures conducted: ▪ The program conducted analyses of regional, national and local budgets to identify fiscal space for funding the project and programs and are in the process of working in these spaces to implement the program activities. ▪ The entirety of the funding gaps are intended to be covered by additional funding sources (e.g., General Royalty System, carbon tax revenues, Emissions Trading System, international bilateral and/or multilateral donors, and/or investments by private producers). ▪ Sources of funding include departmental and regional budgets that are updated annually and therefore presents a level of uncertainty in the financial plans. ▪ Overall, mechanisms for funding have been put in place and alternative funding sources have been identified and/or secured, thus the assessment team believes this to be a low risk factor.
Plan whether the identified sources of finance are sufficient to have a meaningful impact on the land use activities and drivers which cause emissions and removals	Based on the processes and procedures conducted: ▪ The identified sources of financing (e.g., national, departmental, and regional budgets, grants to kickstart the Implementation Unit, parafiscal funds from the private sector), appear at this time to be sufficient to have a meaningful impact on initial implementation of the emission reduction activities. ▪ Based on the ex-ante estimation of emissions reductions, payment for results of ER Program appear to be sufficient in covering future program costs.
Financial and economic analyses	Based on the processes and procedures conducted: ▪ The economic analysis provided is well designed and has been prepared by experts in the field of finance.

Area	Conclusions
Arrangements for flow of funds	Based on the processes and procedures conducted: ▪ The arrangement for flow of funds is well documented and described in the economic analysis described above.
Any known legal or regulatory issues in the program area that can affect the program design, and the implications thereof	Based on the processes and procedures conducted: ▪ No known legal or regulatory issues in the program area that can affect the program design, including benefit sharing, and the implications thereof, were identified by the assessment team.
Effectiveness of the proposed strategy to mitigate and/or minimize, to the extent possible, potential displacement	Based on the processes and procedures conducted: ▪ Based on the documentation provided, the assessment team believes that the claims in the ERPD are accurate regarding this criterion. The project activities have been designed to prevent and mitigate the extent of displacement of emissions outside of the program area. ▪ On-site analysis should occur during the verification phase of this process.

Lead Verifier's Approval	 Alexa Dugan, 13 November 2023
Technical Reviewer's Approval	 Erynn Maynard-Bean, 13 November 2023

5.2 Forward Action Requests and Potential or Actual Areas of Risk or Concern

This section contains a summary description of areas of potential opportunity for improvement as well as areas of current non-conformance (Forward Action Requests) or potential risk of non-conformance in the future.

The column headers in the below table have the following meanings:

- No: The number of the area of risk, concern, or Forward Action Request (assigned in consecutive sequence).
- Indicator(s): A cross-reference to any applicable indicators in the assessment checklist (see Appendix C below for more information).
- Finding(s): A cross-reference to the unresolved finding to which the area of risk, concern, or Forward Action Request is related.
- Sec: A cross-reference to the applicable section of the requirement against which the unresolved finding was issued, as pasted from the applicable indicator(s) in Appendix C; note that the one- or two-character alphabetical codes at the beginning of each section reference have the following codes:
    - T : PD Template
    - PR : Program Requirements
    - BR : Buffer Requirements
    - VV: Validation & Verification Requirements
- Requirement Text: The text of the requirement against which the unresolved finding was issued, as pasted from the applicable indicator(s) in Appendix C.
- Forward Action Request OR Potential or Actual Area of Risk or Concern: A description of the potential or actual area of risk or concern.

No.	Indicator(s)	Finding(s)	Sec.	Requirement Text	Forward Action Request or Potential or Actual Area of Risk or Concern

01 (FAR)	RA-21	NCR 47 (interim Emissions Baseline)	PR§4.3.14	Section 4.3.14 of the ER Requirements states: "If a subcategory selected in step 1 has historic data available to construct an Emission Baseline over a Baseline Period of approximately 10 years but these data do not meet the other quality requirements of Section 4.2, it can only be included for accounting in the ISFL ERPA Phase if all the quality requirements can be met through the application of improved methods and data. ISFL ER Programs that intend to include such a subcategory need to ensure that the quality requirements can be met at the latest at the end of the ISFL ERPA Phase. In this case, ISFL ER Programs shall provide an interim Emissions Baseline at the beginning of the ISFL ERPA Phase using best available data to be able to provide ex-ante estimations of the emission reductions."	**Forward Action Request:** In section 4.2.3 of the ERPD the program lists the selection of final subcategories and defines if each subcategory meets or does not meet the ISFL requirements for inclusion. Several subcategories including (1) forest remaining forest, (2) Urine and manure deposited from grazing animals, (3) Volatilization of urine and manure deposited from grazing animals, (4) Leaching/runoff of urine and manure deposited from grazing animals, (5) direct emission from Cattle manure management, and (6) Indirect emissions cattle manure management are listed as having historical data available to construct an emission baseline over a baseline period of 10 years ('Yes' indicated in column 1), but these subcategories do not meet other quality requirements. However, these six subcategories are not included in the interim Emissions Baseline. Nonetheless, there are other categories such as (1) Land Converted to Forest (Regeneration), (2) Dynamics in Other Woody Vegetation, (3) Dynamics in Forest Plantations, (4) Rice Cultivation, (5) Dynamics in Palm Cultivation, and (6) Forest converted to other forestland that also have the Emission Baseline data for a 10 year period, but do not meet other ISFL requirements, but that are included in the interim emission baseline. This demonstrates that there is inconsistency

No.	Indicator(s)	Finding(s)	Sec.	Requirement Text	Forward Action Request or Potential or Actual Area of Risk or Concern
					in which subcategories are included in the interim Emission Baseline. ***As a result, the assessment team is issuing this Forward Action Request to require that the program include these 6 subcategories (e.g., forest remaining forest, etc.) as part of the interim Emissions Baseline (if the intention is to include them in the final Emissions Baseline) at the beginning of the ISFL ERPA Phase using best available data***. This is considered to be a risk of relatively low significance as it does not impact crediting, but rather provides more transparency in the final Emissions Baseline and the associated ex-ante estimations of emissions reductions.

No.	Indicator(s)	Finding(s)	Sec.	Requirement Text	Forward Action Request or Potential or Actual Area of Risk or Concern
02 (FAR)	RA-41	NIR 53 (uncertainty analysis)	PR§4.6.1	Section 4.6.1 of the ER Program Requirements states the following: "ISFL ER Programs shall systematically identify and assess sources of uncertainty in the determination of the Emissions Baseline and the monitoring of Emissions and Removals following the most recent IPCC guidance and guidelines."	**Forward Action Request:** The program team has provided an assessment of the uncertainty associated with the interim Emissions Baseline subcategories, but this assessment only includes demonstration for the year 2018 of the baseline. While the assessment approach appears to be in line with the IPCC guidance and guidelines, the assessment team will need to evaluate the complete uncertainty assessment which includes all years of the baseline and all subcategories. ***This Forward Action Request is therefore being issued to require that a complete uncertainty analysis for all included subcategories and all baseline years be provided at the start of the first verification.***

03 (FAR)	RA-05, RA-06	NCR 33, NIR 57 (Degradation)	PR§4.1.2	Section 4.1.2 of the ER Program Requirements states that "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines."	**Forward Action Request:** In the case of forest degradation, the difference between permanent loss in natural forest (deforestation) versus temporary loss in forest due to harvesting, fuelwood collection, or natural disturbance (together termed here as degradation) cannot be distinguished with the current data and methods. For instance, if a forest experiences a high-severity fire, in the satellite imagery this could appear as a conversion from forest to bare land or forest to grassland, but that cover change may be temporary and the forest may regenerate its forest cover again. As a result, the program team has made the assumption that all land cover change identified in the SMByC mapping system are classified as deforestation. This could result in inaccurate emissions estimates for the following subcategories: ▪ Forest Land Remaining Forest Land (Natural Forest) – Natural forest remaining forest, because it does not include temporary losses (degradation) ▪ All Deforestation subcategories, because these subcategories may include emissions due to temporary losses (degradation) as permanent land uses changes, which have different emissions trajectories overtime.

No.	Indicator(s)	Finding(s)	Sec.	Requirement Text	Forward Action Request or Potential or Actual Area of Risk or Concern
					Although this has already been identified in the improvement plan, this forward action request is being issued to require the following: ▪ ***For the subcategory forest remaining forest, all emissions from degradation activities (including forest fire, illegal harvests, firewood consumption, and other disturbances) are distinguished and quantified in a transparent and replicable manner.*** ▪ ***That all deforestation subcategories only include true land use changes (deforestation) and do not include emissions due to forest degradation.***

04 (FAR)	RA-05, RA-06	NIRs 16, 21, 42, 58, NCR 33, 55 (reforestation/ regeneration)	PR§4.1.2	Section 4.1.2 of the ER Program Requirements states "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines."	**Forward Action Request:** This FAR is related to FAR 06 above, however, it focuses on distinguishing forest growth (land cover change) from reforestation (land use change). To accurately quantify removals across the various subcategories, the program must be able to accurately distinguish reforestation (land use change) from forest growth/regrowth in forest remaining forest subcategories (land cover change). For the reforestation subcategory – Land converted to forestland, the program does not have spatially explicit data for the initial land use prior to reforestation. For instance, in response to finding NIR42, the program team indicated the following: "The team from IDEAM has reviewed the regeneration analysis and after thoroughly reviewing the information sources used, they have concluded that it is not possible to reproduce the calculation of the regeneration classification and that this methodology is not replicable or comparable to the more robust methodology used for deforestation. Therefore, the regeneration estimates were recalculated using the same approach used for the other vegetation, plantations, and palm estimates, which are crude estimates that do not take into account changes in carbon content associated with changes in land use, but

No.	Indicator(s)	Finding(s)	Sec.	Requirement Text	Forward Action Request or Potential or Actual Area of Risk or Concern
					only changes in biomass, SOC and DOM carbon content associated with the growth of natural forests." ***Although this has already been identified in the improvement plan, this FAR is issued to require the following:*** ***1. All forest remaining forest subcategory removals (forest growth) are distinguished and quantified in a transparent and replicable manner, following IPCC equations.*** ***2. The lands converted to forest (regeneration) only include true land use changes (conversion of nonforest to forest) and do not include any removals due to forest regrowth following disturbances, harvests, etc.*** 3. ***The program provides a replicable and spatially explicit demonstration of the initial nonforest land use prior to reforestation for the subcategory land converted to forestland***.

05 (FAR)	RA-05, RA-06	NIRs 27, 40, 56 NCR 42 (Dynamics in Palm, Plantations, and Other Woody Vegetation)	PR§4.1.2	Section 4.1.2 of the ER Program Requirements states "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines."	**Forward Action Request:** It has been conveyed to the assessment team that these three subcategories (Dynamics in palm cultivation, Dynamics in Plantations, Dynamics in Other Woody Vegetation) include both area gains and area losses in other types of forest land that are not included in the national definition of natural forest. However, for these other forest lands (palms, plantation, and other woody vegetation) there is not a robust assessment distinguishing land use change from land cover change. For example, the program may be including harvesting of plantation lands as a land use change, which has a different emissions trajectory than a true harvest that does not include a land use change. ***Although this has already been identified in the improvement plan, the audit team is issuing this FAR to require that the program include:*** ***1. A complete land use change assessment, which includes a differentiation of true land use change (conversion) from land cover change (Biomass losses from removal, fuelwood and disturbance and subsequent regrowth) for these other forest subcategories that is in conformance with the spatial and tier 2 requirements of the ISFL.*** 2. ***A transparent and replicable demonstration of the quantification***

No.	Indicator(s)	Finding(s)	Sec.	Requirement Text	Forward Action Request or Potential or Actual Area of Risk or Concern
					associated with the land cover changes (e.g., growth, disturbance, degradation) in these other forestland subcategories that complies with the IPCC equations.
06 (FAR)	PD-148	NIR 62, 66 (RENARE)	PR§3.7.1 T§3.7.2	Section 3.7.1 of the ER Program requirements states "ISFL ER Programs will identify a Transaction Registry to register, track, and as appropriate retire or cancel ER units generated under the ISFL ER Program." Furthermore, Section 3.7.2 of ERPD Template requires the following "Where the ISFL ER Program, or any part of the Program Area, has been registered under any other GHG mitigation initiative, provide the registration number(s) and details for each of these."	**Forward Action Request:** Section 3.7.2 of the ERPD indicates that "For this reason, the Ministry of Environment will proceed by legal means to delegate such administration. Subsequently, the delegated entity will develop the functional tests of the platform, carry out the platform stabilization process and open RENARE to the public. These last steps will be completed in the second half of 2023. Once the platform is open, PRE Biocarbon will proceed to register in RENARE and update the information presented in Table 17." ***This FAR is being issued to require that the program demonstrate that the RENARE registry system is operational and provide registration numbers for all registered projects within the program area by the start of the verification.***

07 (FAR)	RA-01, RA-02	N/A (Cropland, Other Woody Vegetation, Plantations)	PR§4.1.4	Section 4.1.4 of the ER Program Requirements indicates that "The Program GHG Inventory shall be comparable in its use of definitions, categories, and subcategories with national processes such as the national GHG inventory, REDD+ and the Biannual Update Report. The Program GHG Inventory Programs may select definitions, categories, or subcategories that are different from the ones that have been used in national processes, if this increases the likelihood of being able to assess the impacts of ISFL interventions. In that case, an explanation shall be provided to clarify how methodological Consistency will be maintained with the national GHG inventory so that Program GHG Inventory can be integrated with and inform the national GHG inventory."	**Forward Action Request:** Section 4.1.1 of the ERPD indicates that the subcategory Dynamics in forest plantations "includes plantation types for afforestation and reforestation for **timber** agricultural production and/or non-timber products or environmental goods and services. Trees, shrubs, native palms, natural and/or anthropogenic bamboo, and oil palm and coconut plantations are excluded." The subcategory Dynamics in Other Woody Vegetation "Includes natural vegetation, trees planted for **timber** and non-timber agricultural and forestry production, excluding forest plantations (see category 3B1aiii) and oil palm plantations (see category 3B2aii)." Thus, both categories, plantation and OWV specify the inclusion of timber for agricultural production. From discussions with the program team our understanding is that OWV includes woody agricultural tree crops such as avocado, cacao, and other fruit trees, while plantations include eucalyptus, pine, cedar, etc. Such distinction is not clear or transparent in the ERPD. ***This FAR is to require the following more specific information be provided in the ERPD regarding the distinction between the timber agriculture included in the***

No.	Indicator(s)	Finding(s)	Sec.	Requirement Text	Forward Action Request or Potential or Actual Area of Risk or Concern
					OWV subcategory versus the plantation subcategory.

08 (FAR)	N/A	NCR 47, NIR 71 (Annex 8 versus text of ERPD)	VV§5.1	Section 5.1 of the Validation and Verification Requirements outlines the general guiding principles of the Validation and verification. The principle of Consistency is to "enable meaningful comparisons in ISFL ER Program-related information."	The auditors have found that there is inconsistency between the information provided in the ERPD and Annex 8. For instance, for the Forest Converted to Other Forest land, Table 23 in the ERPD and Table 2 in Annex 8 both indicate that it does not meet the Methods and Data Requirements (minimum of tier 2). However, in Table 22 of section 4.2.2, there is no distinction between this forest to other forest deforestation subcategory and the other deforestation subcategories in regards to whether it meets the ISFL requirements. Likewise, in Table 3 of Annex 8, the description seems to suggest that the subcategory meets the tier 2 data requirements. Ultimately it is unclear in the ERPD which ISFL requirements the Forest Converted to Other Forest land subcategory meets or does not meet. Additionally, for the subcategory "Forest that remains forest" Table 22 in section 4.2.2 indicates that the subcategory meets the tier 2 data requirement, but Table 23 in section 4.2.3 and Table 2 in Annex 8 indicate that the forest remaining forest subcategory do NOT meet this requirement. Meanwhile, Table 5 in Annex 8 it states "Historical information is available for the entire period, but it does not meet the spatial requirements requested by the ISFL methodological framework" suggesting that the forest

No.	Indicator(s)	Finding(s)	Sec.	Requirement Text	Forward Action Request or Potential or Actual Area of Risk or Concern
					remaining forest subcategory meets the tier 2 data quality and methods but not the spatial representation. Overall it is not clear which requirements the forest remaining forest subcategory meets or not. ***This FAR is issued to require that these inconsistencies be corrected by the start of the verification.***

Appendix A: Assessment Checklist

The column headers in the below checklist tables have the following meanings. See Annex A of SCS' inception report for more information.

- No: The number assigned to the indicator.
- Sec: The section reference to the applicable requirement text, using the following coding system:
    - T : PD Template
    - PR : Program Requirements
    - BR : Buffer Requirements
- Requirement Text: The text of the applicable requirement.
- Indicator: The text of the indicator.
- Assessment Findings: A summary of the assessment team's findings in respect of the indicator.
- LA (Level of Assurance): R (for reasonable level of assurance) or L (for limited level of assurance)
- CT (Conformance Type), defined as follows:
    - Binary (Type B) means that conformance to the indicator is binary: it has been achieved or not. The B code identifies indicators that are tied to prescriptive requirements within the assessment criteria.
    - Professional Judgment (Type P) means that professional judgment will be applied to determine indicator conformance.
- CC (Conformance Code), using the following codes:

- For both Type B and Type P:
  - N/A: Not applicable
- For Type B:
  - C means that the evidence collected by the assessment team suggests that a state of conformance exists with respect to the applicable requirement.
  - NC means that the evidence collected by the assessment team suggests that a state of non-conformance exists with respect to the applicable requirement.
  - FAR means that a Forward Action Request has been issued such that further evidence will be collected by the assessment team at the time of verification to confirm the state of conformance to the applicable requirement.
- For Type P:
  - Ratings of 'I', 'II' and 'III' signify a high, medium and low level of conformance to the indicator, respectively.

Cross-Cutting Documentation Requirements

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
CC-01	T§1	Please complete all sections of this PD. If sections of the PD are not applicable, explicitly state that the section is left blank on purpose and provide an explanation why this section is not applicable.	All applicable sections of the PD Template are completed; if any section(s) of the PD Template are not applicable, it is explicitly stated that "this section is left blank on purpose" and an explanation of why the section is not applicable is provided.	Confirmed through review of the ERPD.	L	B	C
CC-02	T§1	Provide definitions of key terms that are used and use these key terms, as well as variables etc., consistently using the same abbreviations, formats, subscripts, etc.	Key terms[5] are defined and used consistently, with the same spelling, formatting and/or abbreviations, throughout the ERPD.	Confirmed through review of the ERPD.	L	B	C
CC-03	T§1	Provide definitions of key terms that are used and use these key terms, as well as variables etc., consistently using the same abbreviations, formats, subscripts, etc.	Mathematical variables are presented consistently, with the same notation, throughout the ERPD.	Confirmed through review of the ERPD.	L	B	C
CC-04	T§1	The presentation of values in the PD, including those used for the calculation of emission reductions, should be in international standard format e.g., 1,000 representing one thousand and 1.0 representing one.	All values in the ERPD are in international standard format, as in the following examples: (a) 1,000 represents one thousand and (b) 1.0 represents one. Values are not presented in the format that reverses the use of the comma and period (e.g., 1.000 representing one thousand).	Confirmed through review of the ERPD.	L	B	C
CC-05	T§1	Please use International System Units (SI units – refer to http://www.bipm.fr/enus/3_SI/si.html) and if other units are used for weights/currency (Lakh/crore etc.),	All values in the ERPD are presented using SI units; if values are presented using different units (which is acceptable at the discretion of the ERPD preparer), such values are	Confirmed through review of the ERPD.	L	B	C

[5] A "key term" has the following attributes: (1) not within the standard American or British English lexicon; (2) important for an understanding of how the Program, as described in the ERPD, is compliant with the assessment criteria; and (3) not defined in the Program Requirements glossary.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		they should be accompanied by their equivalent S.I. units/norms (thousand/million).	accompanied by a presentation using SI units.				
CC-06	T§1	If the PD contains equations, please number all equations and define all variables used in these equations, with units indicated.	Any equations included in the ERPD contain the following attributes: (1) numbered in sequential order; (2) all variables defined, and (3) units indicated for all variables.	Confirmed through review of the ERPD.	L	B	C

ISFL ER Program Design Requirements

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
PD-01	T§2.1.1	Name of the ISFL ER Program	The name of the ER Program is reported in the provided table in Section 2.1.1 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-02	T§2.1.1	Name of the Program Area	The name of the jurisdiction constituting the Program Area is reported in the provided table in Section 2.1.1 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-03	T§2.1.1	Geographic area of the Program Area (hectares)	A "justifiable" estimate of the size of the Program Area (in units of hectares) is reported in the provided table in Section 2.1.1 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-04	T§2.1.1	Population of the Program Area	A "justifiable" estimate of the population of the Program Area is reported in the provided table in Section 2.1.1 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-05	T§2.1.1	Ex-ante estimate of emission reductions (ERs) for the ISFL ER Program (tonnes of CO_2e)	An ex-ante estimate of Emission Reductions for the ISFL ER Program,[6] in units of tCO_2e, is reported in the provided table in Section 2.1.1 of the ERPD. The information provided is consistent with that provided in Section 4.6 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-06	T§2.1.2	Please provide a brief description (roughly 150 words or less) of the rationale for the selection of the	A description of the rationale for the selection of the jurisdiction for the Program Area, including a description of the unique characteristics of the	Confirmed through review of the ERPD.	L	B	C

[6] See indicators RA-60 through RA-62 for requirements for ex-ante estimates of Emission Reductions.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		jurisdiction for the Program Area for an ISFL ER Program, including its unique characteristics that align with the ISFL Vision.	jurisdiction that align with the ISFL Vision, has been provided in Section 2.1.2 of the ERPD.				
PD-07	T§2.1.3	Please provide a brief summary (roughly 300 words or less) of… The drivers of AFOLU emissions and removals, including deforestation and forest degradation	A summary of the drivers of AFOLU emissions and removals, as identified in indicator PD-27, is provided in Section 2.1.3 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-08	T§2.1.3	Please provide a brief summary (roughly 300 words or less) of… The broader vision of the ISFL ER Program, including the proposed interventions to address AFOLU emissions and the impact they will have in the jurisdiction on sustainable land use	A summary of the broader vision of the Program, including the proposed interventions to address AFOLU emissions and the impact they will have on sustainable land use in the jurisdiction, is provided in Section 2.1.3 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-10	T§2.1.3	Please provide a brief summary (roughly 300 words or less) of… The expected outcomes of the ISFL ER Program and how they will be sustained beyond the lifetime of the ISFL ER Program	A summary of the expected outcomes of the ER Program, and how they will be sustained beyond the lifetime of the ER Program,[7] is provided in Section 2.1.3 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-11	T§2.1.4	Estimate of costs and revenues of planned actions and interventions, including institutional, implementation, and transaction costs	An estimate of costs and revenues of planned actions and interventions, including institutional, implementation, and transaction costs, is reported in the provided table in Section 2.1.4 of the ERPD. The information provided is consistent with that provided in Section 3.1.3 of the ERPD.[8]	Confirmed through review of the ERPD.	L	B	C
PD-12	T§2.1.4	Amount of financing identified/secured financing for planned actions and interventions	The amount of financing identified or secured for planned actions and interventions is reported in the provided table in Section 2.1.4 of the ERPD. The information provided is consistent with that	Confirmed through review of the ERPD.	L	B	C

[7] The "lifetime of the Program," for purposes of this indicator, must extend at least to the end of the ERPA Term, and could optionally extend beyond that period if ER Program activities are planned to take place after the end of the ERPA Term.

[8] See indicators PD-34 through PD-40 for criteria against which financial data are to be assessed.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			provided in Section 3.1.3 of the ERPD.[Error! Bookmark not defined.]				
PD-13	T§2.1.4	Financing surplus or gap amount	The amount of financing surplus or gap is reported in the provided table in Section 2.1.4 of the ERPD. The information provided is consistent with that provided in Section 3.1.3 of the ERPD.[Error! Bookmark not defined.]	Confirmed through review of the ERPD.	L	B	C
PD-14	T§2.1.4	Please provide a brief summary (roughly 100 words or less) of the measures proposed to address financing gap, if any and arrangements for flow of funds.	A summary of (1) the measures proposed to address the financing gap (if applicable)[9] and (2) arrangements for flow of funds is provided in Section 2.1.4 of the ERPD. The information provided is consistent with that provided in Section 3.1.3 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-16	T§2.2.2	Organization(s) responsible for managing/implementing the ISFL ER Program (if more than one, please list all)	The indicated details in the template are provided in Section 2.2.1 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-17	T§2.2.3	Partner organizations involved in the ISFL ER Program: Please list existing partner agencies and organizations involved in the design and implementation of the ISFL ER Program or that have executive functions in financing, implementing, coordinating and/or controlling activities that are part of the proposed ER Program	Information regarding the existing partner agencies and organizations involved in the design and implementation of the ER Program or that have executive functions in financing, implementing, coordinating and/or controlling activities that are part of the ER Program is included in the provided table in Section 2.2.3 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-18	T§2.2.4	Please provide a brief description (roughly 150 words or less) of coordination within the government (across ministries/departments) for the management/implementation of the ISFL ER Program. For example, how do ministries focused on environmental issues, agriculture, finance, etc. coordinate formally or informally on	A description of coordination within the government (across ministries/departments) for the management/implementation of the ER Program, as indicated in the PD Template, is provided in Section 2.2.4 of the ERPD.	Confirmed through review of the ERPD.	L	B	C

[9] See indicator PD-41 through PD-44 for criteria against which the plan for mitigating the financing gap (if applicable) is to be assessed.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		this program, including through coordination platforms or shared responsibilities.					
PD-19		Please provide a brief description (roughly 150 words or less) of coordination between the government and other organizations (including civil society, the private sector, and other stakeholders) for the management/implementation of the ISFL ER Program.	A description of coordination between the government and other organizations (including civil society, the private sector, and other stakeholders) for the management/implementation of the ER Program is provided in Section 2.2.4 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-20	PR§3.1.1	ISFL ER Programs are required to demonstrate that they are undertaken using a jurisdictional and Integrated Landscape Management approach, in accordance with the ISFL's Vision.	The ER Program design is aligned with the Integrated Land Management approach, including collaboration among various stakeholders with the purpose of achieving sustainable landscapes.	Confirmed through review of the ERPD.	L	P	I
PD-21			The ER Program design is aligned with concepts described in the ISFL Vision, including its intention to reduce greenhouse gas emissions at the jurisdictional scale.	Confirmed through review of the ERPD.	L	P	I
PD-22	PR§3.2.1	The design of the ISFL ER Program shall be informed by the contribution of key sources and sinks to the total GHG emissions and removals in the Program GHG Inventory (described in section 4.1).	The subcategories included in the Step 1 selection (see indicators RA-16 through RA-19) are identified for the purposes of ER Program design.	Confirmed through review of the ERPD.	L	B	C
PD-23	PR§3.2.2	For the analysis of trends, ISFL ER Programs shall identify the key drivers of AFOLU emissions and removals, by performing a qualitative historical analysis (or quantitative if data are available) to identify those subcategories for which emissions or removals have changed significantly over the base period, and a qualitative analysis of the subcategories likely to	Subcategories that have been subject to significant increases in emissions or decreases in removals during the Baseline Period (see indicator RA-20 for guidance regarding specification of the Baseline Period) are identified in an analysis of trends using one of the following approaches: 1. A quantitative analysis, if quantitative data are available to support such an analysis.	Confirmed through review of the ERPD, calculation workbook, and supporting data and documentation.	L	B	C

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		show a significant increase of emissions or decrease of removals in the future.	2. A qualitative analysis,[10] if quantitative data are not available to support a quantitative analysis. The conclusions drawn from the analysis (i.e., the specific identification of subcategories) are "justifiable".				
PD-24			Subcategories that are likely to show a significant increase in emissions or decrease in removals in the relatively near future[11] are identified in the analysis of trends.[12] The conclusions drawn from the analysis (i.e., the specific identification of subcategories) are "justifiable".	Confirmed through review of the ERPD, calculation workbook, and supporting data and documentation.	L	B	C
PD-25			The data constituting inputs to the analysis of trends are the "best available" data.	Confirmed through review of the ERPD, calculation workbook, and supporting data and documentation.	L	P	I
PD-26			The analysis of trends has appropriately identified any subcategories not included in the Step 1 selection meeting one or more of the following criteria: 1. The subcategory has been associated with a significant increase in emissions or a significant decrease in removals during the Baseline Period.	Confirmed through review of the ERPD, calculation workbook, and supporting data and documentation.	L	P	I

[10] The qualitative analysis may (1) be based on expert judgement and (2) include consideration of whether emissions from a subcategory have decreased or removals have increased through the use of mitigation techniques, such as technology adoption or a coordinated change in land management practices.

[11] The temporal scale of the analysis should probably roughly align with the anticipated duration of the ERPA Term unless there is good reason to do otherwise. The intent is that the projection include all phases of the ERPA Term, not just the first phase, in order to appropriately consider any circumstances that may not occur in the immediate future but can reasonably be projected to occur by the end of the ERPA Term.

[12] The qualitative analysis may (1) be based on expert judgement and (2) include consideration of any barriers that prevent mitigation policies and measures to be implemented in the absence of the proposed Program (i.e., it is permissible to project likely future conditions under a scenario in which such barriers remain in place).

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			2. The subcategory is likely to be associated with such an increase in emissions or decrease in removals during the relatively near future.[13]				
PD-27	PR§3.2.2; T§3.1.1	For the analysis of trends, ISFL ER Programs shall identify the key drivers of AFOLU emissions and removals, by performing a qualitative historical analysis (or quantitative if data are available) to identify those subcategories for which emissions or removals have changed significantly over the base period, and a qualitative analysis of the subcategories likely to show a significant increase of emissions or decrease of removals in the future. Please provide a brief description… of the identified drivers of land use change that contribute to GHG emissions and removals associated with AFOLU (e.g., deforestation and forest degradation and other aspects of land use change) in the Program Area… include more information on the drivers of AFOLU emissions and removals in Annex 1.	The key drivers of land use change associated with the subcategories identified in indicators PD-23 through PD-26 are identified in a "justifiable" fashion and described in the ERPD, as follows: 1. A brief description of identified drivers is provided in Section 3.1.1 of the ERPD. 2. A longer description of identified drivers is provided in Annex 1 of the ERPD.	Confirmed through review of the ERPD.	L	B	C
PD-28	PR§3.2.1	The design of the ISFL ER Program shall be informed by the contribution of key sources and sinks to the total GHG emissions and removals in the Program	The subcategories identified in indicator PD-22, and the key drivers of land use change identified in indicators PD-23 through PD-27, have been considered in design of the ER Program (i.e.,	Confirmed through review of the ERPD and discussions with the program team.	L	B	C

[13] An example of such a subcategory would be Forest Land to Cropland, in the case where deforestation rates within the jurisdiction have historically been low but where a significant improvement in access, such as with the recent completion of the Interoceanic Highway between Brazil and Peru, is projected to be accompanied by an increase in deforestation rates.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		GHG Inventory (described in section 4.1) and an analysis of trends. Together these shall be the basis to specify interventions to address the key drivers of AFOLU emissions and removals and to identify the entities that would undertake them.	consideration has been given to the design of activities that are intended to mitigate the emissions or reduced removals associated with any such subcategories or drivers).				
PD-29			One of the following is true for every subcategory identified in indicator PD-22 and/or every key driver of land use change identified in indicators PD-23 through PD-27: 1. One or more ER Program activities has been specifically designed to mitigate the emissions or reduced removals associated with the subcategory or driver. 2. Otherwise, a compelling rationale can be provided in support of the decision not to address the emissions or reduced removals associated with the subcategory or driver in the ER Program design.	Confirmed through review of the ERPD and discussions with the program team.	L	P*	I
PD-30	T§3.1.2	Please provide a description (roughly 1,000 words or less) of planned actions and interventions (including existing, improved, and/or new activities; investments; measures; and governance, regulation, and/or policy interventions) for the ISFL ER Program. Include: i. A description of how these actions and interventions impact the main factors influencing emissions or address the drivers of land use change, deforestation, and forest degradation	A description is provided in Section 3.1.2 of the ERPD regarding the planned actions and interventions[14], including the following: 1. A description of how said actions and interventions impact the main factors of land use change, deforestation, and forest degradation in the subcategories targeted by the program. 2. A description of the following: a. The priority placed on each of the planned actions and interventions based on	Confirmed through review of the ERPD and discussions with the program team.	L	B	C

[14] It is acceptable to group actions and interventions for purposes of satisfying this indicator, so long as the clarity of the analysis is not degraded (e.g., it is not necessarily that a separate description be provided regarding how each action or intervention impacts "the main factors influencing emissions or address the drivers of land use change, deforestation").

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		(identified in a. above) in the subcategories targeted by the ISFL ER Program ii. A description of the prioritization and timelines of the planned actions and interventions based on implementation risks for the activities and their potential benefits.	implementation risks for the activities and their potential benefits. b. The timelines of the planned actions and interventions based on implementation risks for the activities and their potential benefits.				
PD-31			Partnerships have been entered into with private sector actors, or there are concrete plans to pursue such partnerships.	Confirmed through review of the ERPD and discussions with the program team.	L	P*	I
PD-32			Where partnerships have been entered into or are planned, these partnerships are likely to be effective in addressing the drivers of emissions.	Confirmed through review of the ERPD and discussions with the program team.	L	P*	I
PD-33			Risks to (a) ER Program implementation and (b) the potential benefits of planned actions and interventions have been adequately considered in planning the actions and interventions, and appropriate mitigation mechanisms have been incorporated into Program design, where feasible.	Confirmed through review of the ERPD and discussions with the program team.	L	P*	II
PD-34	T§3.1.3 [15]	Please outline the financing plan for the ISFL ER Program. A guidance note on the preparation of financing plans for REDD+ and landscape emission reduction programs provides the details of the steps to be followed in the preparation of the financing plan. Please include the following information:	A specific time period covered by the financing plan has been identified, and this time period is "justifiable". It is generally expected that this period commences at the date of effectiveness of the ER Program (as defined by ER Program personnel) and extends past the end of the ERPA Term;[16] where a shorter time period is covered by the financing plan, the following are true:	Confirmed through review of the ERPD and discussions with the program team.	L	P*	I

[15] Assessment of all indicators related to T§3.1.3 will be determined by consultation with the World Bank Group.

[16] From Section 1 of Annex 2 of the Financing Plan Note: "It is useful to define the Program period of the financing plan which may cover the period from the date of effectiveness of an ER Program until the end of Program implementation which is expected to be longer than the period covered under the emission reduction payment agreement (ERPA). Therefore, the Program period of the financing plan needs to be realistic and consider the duration and circumstances of Program implementation."

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		i. Costs of program implementation (sum of implementation costs, institutional costs and transaction costs) ii. Sources of financing (public and private sources, reinvestment of revenue from program and amount of ER revenue proposed for use in program implementation) iii. Financing surplus or gap of the ER program; and options for addressing financing gap, if any	1. The time period covered by the financing plan is appropriate to the circumstances of the ER Program. 2. The time period covered by the financial plan is unlikely to result in the conclusion that the ER Program enjoys a financing surplus where use of a longer time period would result in the conclusion that the ER Program is faced with a financing gap.				
PD-35			A "justifiable" estimate of the costs of ER Program implementation (sum of implementation costs, institutional costs and transaction costs) is reported in the provided table in Section 3.1.3 of the ERPD.	Confirmed through review of the ERPD and discussions with the program team.	L	B	C
PD-36			The estimate of the costs of ER Program implementation is comprehensive; that is, it (1) covers the entire time period covered by the financing plan (as assessed in indicator PD-34) and (2) includes all of the types of costs identified in Section 2.2.1 of the Financing Plan Note unless any omitted costs are not relevant to ER Program implementation.	Confirmed through review of the ERPD and discussions with the program team.	L	P*	I
PD-37			A "justifiable" determination of the sources of financing is provided in the provided table in Section 3.1.3 of the ERPD.	Confirmed through review of the ERPD and discussions with the program team.	L	B	C
PD-38			1. The quantity of unsecured financing**Error! Bookmark not defined.** has been conservatively determined; i.e. it includes only funding sources that are very likely to materialize.	Confirmed through review of the ERPD and discussions with the program team.	L	P	II

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			2. Unsecured financing[17] that is unlikely to flow during the 2-3 years from the start of an ER Program or until after the first verification event has been excluded as a source of funding (such funding may be included in the sensitivity analysis) unless a compelling rationale can be provided for its inclusion. 3. Documentary evidence can be provided to support any claimed secured financing. 4. Financing that will not flow until after the time period covered by the financing plan (as assessed in indicator PD-34) is excluded from the reported information.				
PD-39			The identified sources of finance are sufficient to have a meaningful impact on the land use activities and drivers which cause emissions and removals, as determined in indicator PD-27.	Confirmed through review of the ERPD and discussions with the program team.	L	P*	I
PD-40			A "justifiable" estimate of the financing surplus or gap of the ER Program, calculated as the difference between funding financing available and ER Program cost (both for each year of the time period covered by the financing plan and across time periods) is reported in the provided table in Section 3.1.3 of the ERPD.	Confirmed through review of the ERPD and discussions with the program team.	L	B	C
PD-41			If funding gaps exist, a plan for mitigating them is presented in Section 3.1.3 of the ERPD.	Confirmed through review of the ERPD.	L	B	C

[17] The Financing Plan Note suggests unsecured financing be defined as "The sources of financing that are anticipated during Program period but cannot be verified at the beginning of an Program."

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
PD-42			If funding gaps exist, the plan for mitigating them, as presented in Section 3.1.3 of the ERPD, is concrete, making clear the specific actions to be taken to mitigate gaps.	Confirmed through review of the ERPD.	L	P*	II
PD-43			If funding gaps exist, the plan for mitigating them, as presented in Section 3.1.3 of the ERPD, is time-bound, with specific milestones provided for additional funding to be secured.	Confirmed through review of the ERPD.	L	P*	II
PD-44			If funding gaps exist, the plan for mitigating them, as presented in Section 3.1.3 of the ERPD, is realistic and reasonably capable of being implemented.	Confirmed through review of the ERPD.	L	P*	II
PD-45	T§3.1.3	Please briefly describe the following (roughly 150 words or less): i. Financial and economic analysis (e.g.,, NPV, IRR) ii. Sensitivity analysis (to assess the influence of changes in costs, revenues, funding sources and discount rates on program financing) iii. Proposed fund flow arrangements	A "justifiable" financial analysis and economic analysis, as generally described in Section 2.7 of the Financing Plan Note[18], is described in Section 3.1.3 of the ERPD.	Confirmed through review of the ERPD and discussions with the program team.	L	B	C
PD-46			The discount rate used for the financial analysis has the following attributes: 1. The selection of the discount rate is "justifiable". 2. The discount rate is reflective of the expectations of the Program Entity for return on long-term investments[19], as determined using one of the following sources of information: a. An internal discount rate used by the Program Entity in financial planning and analysis.	Confirmed through review of the financial analysis and discussions with the program team.	L	P*	I

[18] In assessing against these indicators, the assessment team is not to assess against the Financing Plan Note, but merely to confirm that described analysis follows the general form as set out in the Financing Plan Note.

[19] Such an expectation is referred to as the "time value of money" in the economics literature.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			b. The interest rate charged by financial institutions in the host country on long term loans for forestry or agriculture or other land use projects.[20] c. Any other source that, as accurately as possible, reflects the expectations of the Program Entity for return on long-term investments.				
PD-47			The calculation of net present value or internal rate of return in the financial analysis is "justifiable" and is carried out according to good practice in the field of financial investment analysis.	Confirmed through review of the financial analysis and discussions with the program team.	L	P*	I
PD-48			Any values for externalities[21] in the economic analysis are "justifiable" (the "base" prices for carbon, as set out in Section 2.7.4 of the Financing Plan Note, are automatically deemed "justifiable").	Confirmed through review of the financial analysis and discussions with the program team.	L	P*	I
PD-49			The calculation of net present value or internal rate of return in the economic analysis is "justifiable" and is carried out according to good practice in the field of financial investment analysis.	Confirmed through review of the financial analysis and discussions with the program team.	L	P*	I
PD-50			A "justifiable" sensitivity analysis[22] (to assess the influence of changes in costs, revenues, funding sources and discount rates on ER Program financing), as generally described in Section 2.7 of the Financing Plan Note[Error! Bookmark not defined.], is described in Section 3.1.3 of the ERPD.	Confirmed through review of the financial analysis and discussions with the program team.	L	B	C

[20] As suggested in Section 2.7.3.1 of the Financing Plan Note.
[21] Externalities, in this context, are costs and benefits not directly paid by or flowing to the Program Entity, respectively.
[22] The assessment criteria does not clarify whether it is required that the uncertainty analysis pertain to the financial analysis, the economic analysis, or both; therefore, the uncertainty analysis may pertain to only one, or both, of the above.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
PD-51			The range of discount rates used for the sensitivity analysis is "justifiable" and adequately captures the range of variability that could reasonably be expected in the discount rate.[23]	Confirmed through review of the financial analysis and discussions with the program team.	L	P*	I
PD-52			The "parameters" included in the sensitivity analysis include changes in costs, revenues, financing sources, discount rates, and other ER Program specific "parameters" that have significant influence on the ER Program.	Confirmed through review of the financial analysis and discussions with the program team.	L	P*	I
PD-53			The impact of a "justifiable" range of upper thresholds for costs, and a "justifiable" range of lower thresholds for benefits, are tested in the uncertainty analysis to assess whether there is an impact on the outcome of the analysis.	Confirmed through review of the financial analysis and discussions with the program team.	L	P*	I
PD-54			Key variables that have major influence on costs, revenues, cash flow and the calculated net present value or internal rate of return are identified through the uncertainty analysis, and the identification of such variables is reasonable.	Confirmed through review of the financial analysis and discussions with the program team.	L	P*	I
PD-55			The proposed fund flow arrangements are described in Section 3.1.3 of the ERPD.	Confirmed through review of the ERPD and discussions with the program team.	L	B	C
PD-56			The description of the proposed fund flow arrangements in 3.1.3 of the ERPD provides a description of plans for the dissemination of funds from the sale of Emission Reductions between any relevant entities involved in operation of the Program.	Confirmed through review of the ERPD and discussions with the program team.	L	B	C
PD-57			The proposed fund flow arrangements, as described in Section 3.1.3 of the ERPD, are appropriate in light of the formal and informal institutional arrangements between entities involved in operation of the Program.	Confirmed through review of the ERPD and discussions with the program team.	L	P*	I

[23] The default range of -/+2 percent as lower and upper bound discount rates, as suggested in Section 2.7.3.3 of the Financing Plan Note, should automatically be assigned a conformance ranking of I for purposes of this indicator.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
PD-58	TAnnex 2	Please include the summary financing plan according to the template below.	The summary financing plan is included, according to the provided template, in Annex 2 of the ERPD.[24] The information provided is more detailed than, but consistent with, the information provided in Section 3.1.3 of the ERPD (e.g., the same total ER Program costs are reported in the two sections).	Confirmed through review of the ERPD and discussions with the program team.	L	B	C
PD-59			The presentation of information in the financing plan included in Annex 2 of the ERPD follows the categories set out in the Financing Plan Note[25] unless a compelling rationale can be provided in support of a deviation from the categories set out in the Financing Plan Note.	Confirmed through review of the ERPD and discussions with the program team.	L	P	II
PD-60	T§3.1.4 [26]	Please provide an analysis (roughly 500 words or less) of the planned actions and interventions in the context of relevant local, regional and national laws, statutes and regulatory frameworks, including relevant international conventions and agreements. Please identify any potential compliance issues of the actions and interventions with these laws, statutes, regulatory frameworks, conventions and agreements; and identify legal and regulatory gaps. If applicable discuss how these issues will be addressed.	A "justifiable" analysis of the planned actions and interventions in the context of relevant legal requirements[27] is provided in Section 3.1.4 of the ERPD.	Confirmed through review of the ERPD and supporting documentation, and discussions with the program team.	L	B	C
PD-61			The following information is provided in Section 3.1.4 of the ERPD: 1. A "justifiable" analysis of whether any of the planned actions and interventions has the potential to result in noncompliance with a relevant legal requirement. 2. If any such potential has been identified, a description of the situation	Confirmed through review of the ERPD and supporting documentation, and discussions with the program team.	L	B	C

[24] In areas where there exists lack of clarity regarding how the provided template is to be filled out, any reasonable interpretation of the provided template will be considered acceptable for purposes of this indicator.
[25] For example, the determination of what constitutes "multilateral" funding follows Section 2.3.2 of the Financing Plan Note.
[26] Assessment of all indicators related to T§3.1.4 will be determined by consultation with the World Bank Group.
[27] The term "legal requirements," in the context of the indicators in this checklist, is very broad and includes local, regional and national laws, statutes and regulatory frameworks, including relevant international conventions and agreements.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			of potential noncompliance and the proposed means for addressing it.				
PD-62			The following information is provided in Section 3.1.4 of the ERPD: 1. A "justifiable" analysis of whether there are any legal or regulatory gaps that may impact the implementation of the planned actions and interventions (e.g., if there is lack of regulatory clarity on the management responsibilities of the various agencies involved in implementation). 2. If any such gap has been identified, a description of the situation and the proposed means for addressing it.	Confirmed through review of the ERPD and supporting documentation, and discussions with the program team.	L	B	C
PD-63			The planned actions and interventions are free from the actual or potential compliance issues in respect of relevant legal requirements[Error! Bookmark not defined.] or, if this is not the case, an appropriate mitigation plan with a reasonable possibility of success is in place to address any issues.	Confirmed through review of the ERPD and supporting documentation, and discussions with the program team.	L	P*	I
PD-64			The planned actions and interventions are free from actual or potential entanglement with legal and/or regulatory gaps or, if this is not the case, an appropriate mitigation plan with a reasonable possibility of success is in place to address any issues.	Confirmed through review of the ERPD and supporting documentation, and discussions with the program team.	L	P*	I
PD-65	T§3.1.5; PR§3.2.5	Please describe (roughly 500 words or less) the following:	1. A "justifiable" identification of the subcategories[28] that can reasonably be projected to be impacted by the	Confirmed through review of the ERPD and	L	B	C

[28] The term "sources and sinks" is used in the Program Requirements and the PD Template, but review of the IPCC 2006 Guidelines suggests that these terms are used somewhat interchangeably with the term "category" (of which a subcategory would be a component).

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		i. GHG sources and sinks that may be impacted by the proposed ISFL ER Program and an assessment of their associated risk for displacement ii. A strategy for mitigating and/or minimizing, to the extent possible, potential displacement, prioritizing key sources of displacement risk iii. How the ISFL ER Program's planned actions and interventions have been designed to address displacement	Program[29] is provided in Section 3.1.5 of the ERPD. 2. For each subcategory identified in step (1) above, a "justifiable" assessment of the risk of the subcategory for Displacement[30] is provided in Section 3.1.5 of the ERPD.	discussions with the program team.			
PD-66			A strategy for mitigating and/or minimizing, to the extent possible, potential displacement, prioritizing key sources of displacement risk, is provided in Section 3.1.5 of the ERPD.	Confirmed through review of the ERPD and discussions with the program team.	L	B	C
PD-67			A "justifiable" assessment is provided in Section 3.1.5 of the ERPD regarding how the ER Program's planned actions and interventions have been designed to address Displacement.	Confirmed through review of the ERPD and discussions with the program team.	L	B	C
PD-68			The planned actions described in Section 3.1.5 of the ERPD are likely to be effective in to mitigating and/or minimizing potential Displacement.	Confirmed through review of the ERPD and discussions with the program team.	L	P*	II
PD-142	T§3.6.2	Please indicate whether the ISFL ER Program, or any part of the Program Area, has transferred, or is planning to transfer, any ERs to, or received or is planning to receive otherwise payment for, ERs from any other GHG mitigation initiative. This would include parts of the Program Area that are registered or are seeking registration under	A "justifiable" search for any instance whereby the ER Program, or any part of the Program Area, has transferred, or is planning to transfer, any ERs to, or received or is planning to receive otherwise payment for, ERs from any other GHG mitigation initiative[31] has been performed and Section 3.6.2 of the ERPD contains an indication of whether any such instances were noted.	Confirmed through review of the ERPD and discussions with the program team.	L	B	C

[29] Note that the list of such subcategories may or may not be identical to the list of subcategories eligible for ISFL Accounting. It is quite possible that the ER Program will impact subcategories that are currently not included in the accounting scope.

[30] Emissions occurring outside the host country are not considered to be Displacement unless it is completely evident that they are a consequence of land use activities moving from inside the Program Area to an area outside the Program Area.

[31] Any parts of the Program Area in which individual projects or jurisdictional programs have been registered, or are currently seeking registration, under greenhouse gas programs or schemes such as the Clean Development Mechanism (CDM), the Verified Carbon Standard (VCS) or the Green Climate Fund (GCF), must be identified for purposes of this indicator.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		project or program level standards such as the Clean Development Mechanism (CDM), the Verified Carbon Standard (VCS), the Green Climate Fund (GCF) or others.					
PD-143		Please also indicate any actions that might not be included in the ISFL ER Program but which could address the drivers of land use change, deforestation, and forest degradation within the Program Area and that are generating ERs that may be transferred to, or be otherwise paid for by, other GHG mitigation initiatives (e.g., improved cook stoves programs under the CDM).	Section 3.6.2 of the ERPD contains a description of any actions that might not be included in the ER Program but which could address the drivers of land use change, deforestation, and forest degradation within the Program Area and that are generating ERs that may be transferred to, or be otherwise paid for by, other GHG mitigation initiatives (e.g., improved cook stoves programs under the CDM).	Confirmed through review of the ERPD and discussions with the program team.	L	B	C
PD-144		Where the ISFL ER Program, or any part of the Program Area, has been registered under any other GHG mitigation initiative, provide the registration number(s) and details for each of these.	Where the ER Program, or any part of the Program Area, has been registered under any other GHG mitigation initiative[Error! Bookmark not defined.], the following are provided for each such instance in Section 3.6.2 of the ERPD: 1. Registration number(s), if relevant. 2. Project/Program ID numbers, if relevant. 3. Any other details that are important to understand the extent of any potential for double-counting (or references to where such information is publicly available), including the following: a. The spatial extent of the project or Program Area. b. The monitoring or reporting period(s) for which credit issuance has been sought	Confirmed through review of the ERPD and discussions with the program team.	L	B	C

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			and/or obtained and, for each monitoring or reporting period, the number of credits sought and/or obtained, if known to the Program Entity.				
PD-147	T§3.6.3	In addition, please indicate the choice and implementation of an ER Transaction Registry to ensure that any ERs from planned actions and interventions under the ISFL ER Program are not accounted for/registered more than once; and that any ER from the planned actions and interventions under the ISFL ER Program sold and transferred to the ISFL are not used again by any entity for sale, public relations, compliance or any other purpose.	Section 3.6.3 of the ERPD identifies the ER Transaction registry to be used and describes the implementation status of such use.	Confirmed through review of the ERPD. However, see Forward Action Request in Section 5.2(10) above.	L	B	
PD-148	PR§3.7.1	ISFL ER Programs shall work with the host country to select an appropriate arrangement to avoid double counting, including double issuance, double selling/use, or double claiming, in order to track the emission reductions to ensure that any emission reductions that have been generated, monitored and verified under the ISFL ER Program and paid for by the ISFL are not used again by any entity for sale, public relations, compliance or any other purpose unless otherwise agreed by the parties to the ERPA and, where relevant, consistent with any applicable guidance adopted under the Paris Agreement. For this purpose, ISFL	Evidence is provided that an appropriate arrangement has been selected in coordination and consultation with the host country order to fulfill the following objectives: 1. Avoid double counting, including double issuance, double selling/use, or double claiming. 2. Track the Emission Reductions to ensure that any Emission Reductions that have been generated, monitored and verified under the ER Program and paid for by the ISFL are not used again by any entity for sale, public relations, compliance or any other purpose unless otherwise agreed by the parties to the ERPA and,	Confirmed through review of the ERPD and discussions with the program team. However, see Forward Action Request in Section 5.2(10) above.	L	B	

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		ER Programs will identify a Transaction Registry to register, track, and as appropriate retire or cancel ER units generated under the ISFL ER Program.	where relevant, consistent with any applicable guidance adopted under the Paris Agreement.				
PD-149			If the World Bank's registry system is not to be used as a Transaction Registry...				
PD-150			There is a good likelihood that the Transaction Registry to be used by the ER Program will be operational by the time of verification.	Confirmed through review of the ERPD and discussions with the program team. However, see Forward Action Request in Section 5.2(10) above.	L	P*	II
PD-151			The Transaction Registry to be used by the ER Program will have an appropriate procedure in place to address double-counting, such as may occur where voluntary carbon projects may potentially be located within the jurisdiction within which the ER Program is operating.	Confirmed through review of the ERPD and discussions with the program team. However, see Forward Action Request in Section 5.2(10) above.	L	P*	II
PD-152			The Transaction Registry to be used by the ER Program will encompass all of the necessary sectoral scopes pertaining to the ER Program (e.g., the Transaction Registry permits crediting of Emission Reductions pertaining to both avoided deforestation and livestock management).	Confirmed through review of the ERPD and discussions with the program team. However, see Forward Action Request in Section 5.2(10) above.	L	P*	II
PD-153			The Transaction Registry to be used by the ER Program will be sufficient, secure and robust.	Confirmed through review of the ERPD and discussions with the program team. However, see Forward Action Request in Section 5.2(10) above.	L	P*	II
PD-154	PR§3.7.2	Based on national needs and circumstances, the Transaction Registry might be complemented with	If applicable (i.e., if an ER Program and Project's Data Management System has been or will be implemented), the ER Program and Project's	Confirmed through review of the ERPD and	R	P	II

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		the use of a (national) Program and Projects Data Management System that supports registering of and reporting on projects/programs.	Data Management System is or will be sufficient, secure, and robust.	discussions with the program team. However, see Forward Action Request in Section 5.2(10) above.			

Requirements for Greenhouse Gas Reporting and Accounting

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
RA-01	PR§4.1.1	ISFL ER Programs shall report on all AFOLU related emissions and removals in the Program Area (ISFL Reporting).	The Program GHG Inventory reports on all emissions and removals associated with each category identified as "AGRICULTURE, FORESTRY, AND OTHER LAND USE" (i.e., with a category code beginning with 3) in Table 8.2, Volume 1, Chapter 8 of the IPCC 2006 Guidelines.	Confirmed through review of the calculation workbook and supporting data.	R	B	C
RA-02	PR§4.1.2, PR§4.1.4	ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) ... The Program GHG Inventory should be comparable in its use of definitions, categories and subcategories with national processes such as the national GHG inventory, REDD+ and the Biannual Update Report. The Program GHG Inventory Programs may select definitions, categories, or subcategories that are different from the ones that have been	If a national-level GHG inventory reporting document[32] exists, either one of the following two options is the case: 1. Both of the following are true: a. All categories and subcategories listed in the national-level GHG inventory reporting document are also included in the Program GHG Inventory; and b. The definitions used in the Program GHG Inventory are the same as those used in the	Confirmed through review of the calculation workbook, supporting data, and supporting documentation.	R	B	C

[32] E.g., the National GHG Inventory, the Biennial Report or formally submitted REDD+ readiness documentation such as the Forest Reference Emissions Level.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		used in national processes, if this increases the likelihood of being able to assess the impacts of ISFL interventions. In that case, an explanation should be provided to clarify how methodological consistency will be maintained with the national GHG inventory so that Program GHG Inventory can be integrated with and inform the national GHG inventory.	national-level GHG inventory reporting document. 2. Otherwise, a compelling rationale for any variation relative to the national processes can be provided, unless all of the following are true: a. The variation relative to the national processes increases the likelihood of being able to assess the impacts of ISFL interventions[33]. b. An explanation has been provided to clarify how methodological consistency will be maintained with the national GHG inventory so that Program GHG Inventory can be integrated with and inform the national GHG inventory (e.g., any definitions used in the Program GHG inventory are consistent with, and/or readily nest into, the definitions used in the national GHG inventory).				
RA-03	PRAnnex1	ISFL ER Programs may choose to use the terminology from their national greenhouse inventory [in lieu of the table in Annex 1] as long as the principles of these ISFL ER Program Requirements are adhered to (for	Subcategories are differentiated to at least the level of specificity set out in Annex 1 of the Program Requirements.[34]	Confirmed through review of the calculation workbook, supporting data, and supporting documentation.	R	B	C

[33] E.g., a broad transition category such as Land Converted to Cropland in the national-level GHG inventory reporting document is sub-divided into Forest Land Converted to Cropland (FC) and Grassland Converted to Cropland (GC) in the Program GHG Inventory, thus allowing for more accurate quantification of emissions (this is the example provided in Volume 4, Chapter 3, Section 3.2 of the IPCC 2006 Guidelines).

[34] For example, in respect of enteric fermentation by livestock, it is necessary to discriminate between fermentation by the major types of livestock (e.g., cattle, sheep and swine).

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
RA-04		example the level of aggregation an analysis is performed) and the documents submitted to the ISFL clearly outline the countries' own terminology and different levels of aggregation.	Where subcategories are differentiated to a finer level of detail than is set out in Annex 1 of the Program Requirements, this differentiation has the potential to increase the accuracy and/or completeness of the accounting of emissions and removals.	Confirmed through review of the calculation workbook, supporting data, and supporting documentation.	R	B	C
RA-05	PR§4.1.2	ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines. In accordance with the IPCC guidance and guidelines, the Program GHG Inventory should apply the basic principles of transparency, accuracy, completeness, consistency over time and comparability as defined by the IPCC.	The Program GHG Inventory has been compiled in a manner consistent with the IPCC 2006 Guidelines[35].	Confirmed through review of the calculation workbook, supporting data, and supporting documentation.	R	B	C
RA-06			In compiling the Program GHG Inventory, the following inventory quality indicators established by the IPCC 2006 Guidelines[36] are adhered to, as applicable, unless a compelling rationale can be provided to support a deviation from these indicators: **Transparency**: There is sufficient and clear documentation such that individuals or groups other than the inventory compilers can understand how the inventory was compiled and can assure themselves it meets the good practice requirements for national greenhouse gas emissions inventories.	Confirmed through review of the calculation workbook, supporting data, and supporting documentation.	R	P	II

[35] In this context, "consistent with" means that the selection of subcategories included in the Step 1 selection (see indicators RA-16 through RA-19) is equivalent to the selection that would have resulted had the IPCC 2006 Guidelines been duly followed to the letter. This may require the assessment to independently recompile the inventory according to the guidance of the IPCC 2006 Guidelines and determine whether there is a difference in the Step 1 selection.
[36] Volume 1, Chapter 1, Section 1.4

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			Completeness: Estimates are reported for all relevant categories of sources and sinks, and gases. Geographic areas within the scope of the national greenhouse gas inventory are recommended in these Guidelines. Where elements are missing their absence should be clearly documented together with a justification for exclusion. **Consistency**: Estimates for different inventory years, gases and categories are made in such a way that differences in the results between years and categories reflect real differences in emissions. Inventory annual trends, as far as possible, should be calculated using the same method and data sources in all years and should aim to reflect the real annual fluctuations in emissions or removals and not be subject to changes resulting from methodological differences. **Comparability**: The national greenhouse gas inventory is reported in a way that allows it to be compared with national greenhouse gas inventories for other countries. This comparability should be reflected in appropriate choice of key categories, and in the use of the reporting guidance and tables and use of the classification and definition of categories of emissions and removals. **Accuracy**: The national greenhouse gas inventory contains neither over- nor under-estimates so far as can be judged. This means making all endeavors to remove bias from the inventory estimates.				

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
RA-07	PR§4.1.3	The Program GHG Inventory shall utilize best available methods and existing data. This may include the use of Activity Data Proxies if needed, and IPCC Tier 1 data and methods if no data are available to apply higher Tier methods.	In compiling the Program GHG Inventory, the "best available"[37] methods and existing data are utilized.	Confirmed through review of the calculation workbook, supporting data, and supporting documentation.	R	B	C
RA-08	PR§4.1.5	The Program GHG Inventory shall be compiled during ISFL ER Program design and every second year during the ERPA Term following the national GHG inventory process.	A Program GHG Inventory has been compiled during ER Program design.	Confirmed through review of the calculation workbook, supporting data, and supporting documentation.	R	B	C
RA-09	T§4.1.1	Please provide a short description (maximum three pages) of the approach used to compile the GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory). Please provide… A description of the general approach applied to compile the Program GHG Inventory including: o an overview of the definitions, categories and subcategories used; o a general overview of the type, Tier and vintages of the data sources used (details to be provided in the next section);	A description of the general approach applied to compile the Program GHG Inventory is provided in Section 4.1.1 of the ERPD.	Confirmed through review of the calculation workbook and ERPD.	R	B	C
RA-10	T§4.1.1	Please provide a short description (maximum three pages) of the	An overview description of the definitions, categories and subcategories used to compile	Confirmed through review of the	R	B	C

[37] In this case, "available" means data that were readily available at the time of inventory compilation and did not require substantive additional cost or other resources in order to acquire (this definition supersedes the generalized definition provided in the "General Guidance" section of this checklist, above). It is expected that, in many cases, assessment teams will see data from older GHG inventories utilized in the Program GHG Inventory, and this is acceptable to the intended users in the absence of ready availability of more accurate and/or up-to-date data. Activity Data Proxies (see definition of "Activity Data Proxy" in the Program Requirements) or Tier 1 data and methods may be used if more accurate data and methods are not available.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		approach used to compile the GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory). Please provide… an overview of the definitions, categories and subcategories used;	the Program GHG Inventory is provided in Section 4.1.1 of the ERPD.	calculation workbook and ERPD.			
RA-11	T§4.1.1	Please provide a short description (maximum three pages) of the approach used to compile the GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory). Please provide… a general overview of the type, Tier and vintages of the data sources used (details to be provided in the next section);	A general description of the type, Tier and vintages of the data sources used to compile the Program GHG Inventory is provided in Section 4.1.1 of the ERPD.	Confirmed through review of the calculation workbook and ERPD.	R	B	C
RA-12	T§4.1.1	Please provide a short description (maximum three pages) of the approach used to compile the GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory). Please provide… If applicable, an overview of definitions, categories, or subcategories that are different from the ones that have been used in national processes and an explanation that clarifies how methodological consistency could be maintained with the national GHG inventory.	If any definitions, categories, or subcategories that are different from the ones that have been used in national processes (as determined in indicator RA-02), an overview of such, and an explanation that clarifies how methodological consistency could be maintained with the national GHG inventory, has been provided in Section 4.1.1 of the ERPD.	Confirmed through review of the calculation workbook, supporting data, and supporting documentation. See related Forward Action Request in section 5.2(11) above.	R	B	FAR
RA-13	PR§4.1.7	The results of the Program GHG Inventory shall at least be reported at the level of subcategories with their associated carbon pools and gases…	The Program GHG Inventory, as reported in Annex 6 of the ERPD, includes estimates of emissions or removals, for the applicable	Confirmed through review of the calculation workbook and the ERPD.	R	B	C

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			inventory year(s), for every subcategory included in the scope of the Program GHG Inventory.				
RA-14	PR§4.1.7	…the activity data, emission factors, methods, information on the underlying assumptions used, and results shall be provided to the national government of the program to inform the national GHG inventory as appropriate.	1. An inventory report document, reporting on the compilation of the Program GHG Inventory in a sufficient level of detail that a reader having expert knowledge of the IPCC 2006 Guidelines could recompile the inventory based on the information provided, has been presented in Annex 6 of the ERPD. 2. Evidence is provided that the contents of Annex 6 of the ERPD have been received by appropriate personnel at the agency or ministry responsible for compiling the national GHG inventory for the host country within which the ER Program is located.	Confirmed through review of the calculation workbook and the ERPD.	R	B	C
RA-15	PR§4.3.1, PR§4.3.2	ISFL ER Programs shall identify the subcategories eligible for ISFL Accounting in an ERPA Phase according to the following 3 steps: Step 1: Initial selection of subcategories; Step 2: Review of the available data and methods for the subcategories from the initial selection against the quality and baseline setting requirements for ISFL Accounting; Step 3: Final selection of the subcategories eligible for ISFL Accounting. The identification of subcategories eligible for ISFL Accounting shall be	Subcategories eligible for ISFL Accounting in an ERPA Phase are identified during ER Program design according to three steps, termed Steps 1-3[38].	Confirmed through review of the calculation workbook and the ERPD.	R	B	C

[38] The outcome of each step is a list of selected subcategories. For each step, this list is referred to as "the Step X selection" in these indicators, where X is the number associated with each step. For example, the list of subcategories that is an outcome of Step 1 is referred to as "the Step 1 selection."

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		performed during program design and shall be updated before the start of each ERPA Phase.					
RA-16	PR§4.3.3; T§4.1.2	ISFL ER Programs shall list all the subcategories from the Program GHG Inventory, with the associated carbon pools and gases, in order of the relative magnitude of contribution of these subcategories to the absolute level of the total GHG emissions and removals in the Program GHG Inventory.	The following procedure, or a different procedure that, in conjunction with other procedures, results in an identical Step 1 selection and identical reporting within the ERPD, has been followed: 1. Using information in the Program GHG Inventory, determine the GHG emissions or removals associated with each subcategory included in the scope of the Program GHG Inventory. This value is the "Net emissions and removals" as referenced in the provided table in Section 4.1.2 of the PD Template (Table 5)[39]. In completing this step, ensure that net emissions are represented as a positive value and net removals are represented as a negative value.[40] 2. Identify the greenhouse gases associated with the subcategory and, if any carbon pools[41] are associated with the subcategory, identify those as well. 3. Calculate the absolute value of each quantity determined in step (1) above.	Confirmed through independent recalculation of the program GHG inventory and review of the ERPD.	R	B	C

[39] The table in question is referred to as Table 5 in the PD Template and will be referred to as such within this checklist, for purposes of brevity. If additional tables have been added to the ERPD under assessment, said table may be been assigned a different number.

[40] This is consistent with the convention set out in the IPCC 2006 Guidelines. For example, Section 2.2.3, Chapter 2, Volume 4 of the IPCC 2006 Guidelines states that "…increases in C stocks, i.e. positive (+) stock changes, represent a removal (or 'negative' emission) from the atmosphere, while decreases in C stocks, i.e. negative (-) stock changes, represent a positive emission to the atmosphere."

[41] "Carbon pool," for these purposes, means one of five pools identified in Table 1.1, Section 1.3, Chapter 1, Volume 4 of the IPCC 2006 Guidelines (above-ground biomass, below-ground biomass, dead wood, litter and soil organic matter), noting that it is permissible for the definitions of specific pools used in the Program GHG Inventory to be different from those set out in Table 1.1 (per the guidance provided in Section 1.2.2).

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			4. Rank the absolute values calculated in step (3) above, and the associated subcategories, from highest to lowest. 5. Sum the absolute values calculated in step (3) above. This sum is the "absolute level of the total GHG emissions and removals in the Program GHG Inventory" as referenced in Table 5[42]. 6. Divide each value calculated in step (3) above by the value calculated in step (5) above and multiply by 100 to convert to a percentage; this value is reported in Table 5 as the "Relative contribution to the absolute level of the total GHG emissions and removals in the Program GHG Inventory." 7. Populate Table 5 with the list determined in the above steps. Note the following regarding the "Total" row: a. The value for "Net emissions and removals" must be given as the sum calculated in step (5) above, for consistency with the presentation of information in Section 4.2.1 of the ERPD. b. The value for "Relative contribution to the absolute level of the total GHG emissions and removals in the Program GHG Inventory" must be 100% (any other value indicates a calculation error).				

[42] This phrase is present both in Section 4.3.3 of the Program Requirements and Section 4.1.2 of the PD Template. It is ambiguously worded, so the assessment team may see different interpretations of it, but SCS has confirmed with the World Bank that the interpretation provided in this indicator is the intended one. It is also the interpretation affirmed in the final sentence of footnote 6 within the PD Template.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
RA-17	PR§4.3.4; T§4.2.1	From this list, all ISFL ER Programs shall initially select the following subcategories: i. Any subcategories involving conversions from or to forest land; ii. Forest land remaining forest land; iii. Any subcategories involving conversions between land-use categories other than forest land that, cumulatively with the conversions from or to forest land, amount to 90% of the absolute level of the total GHG emissions and removals associated with all land use conversions in the Program GHG Inventory; and iv. The single most significant of the remaining subcategories in order of the relative magnitude of contribution of these subcategories to the absolute level of the total GHG emissions and removals in the Program GHG Inventory.	The following procedure, or a different procedure that, in conjunction with other procedures, results in an identical Step 1 selection and identical reporting within the ERPD, has been followed: 1. From Table 5, identify any subcategories associated with conversions[43] from or to forestland. For each such subcategory, transcribe the information in the two left-most columns in Table 5 to the corresponding columns in the first provided table in Section 4.2.1 of the PD Template (Table 6)[44], preserving the ranking of subcategories as provided in Table 5.[45] 2. From Table 5, identify any subcategories associated with conversions between land-use categories other than forest land. For each such subcategory, transcribe the information in the two left-most columns in Table 5 to the corresponding columns in Table 6, preserving the ranking of subcategories as provided in Table 5, as in step (1) above. 3. For each subcategory in Table 6, calculate the absolute value of the value in the "Net emissions and removals." Note that this information is not directly reported in Table 6.	Confirmed through independent recalculation of the program GHG inventory, independent selection of subcategories based on the program GHG, and review of the ERPD.	R	B	C

[43] "Conversion," as used in this indicator, means a change from one land-use category to another, consistent with the usage of this term on page 3.7, Chapter 3, Volume 4 of the IPCC 2006 Guidelines.

[44] The table in question is referred to as Table 6 in the PD Template and will be referred to as such within this checklist, for purposes of brevity. If additional tables have been added to the ERPD under assessment, said table may be been assigned a different number.

[45] I.e., the ranking of the subcategories in Table 5 must be the same as the relative ranking of those same subcategories in Table 6.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			4. Sum the absolute values calculated in step (3) above. This sum is reported in Table 6 as the "Total absolute GHG emissions and removals associated with all land use conversions in the Program GHG Inventory." 5. Divide each value calculated in step (3) above by the value calculated in step (4) above and multiply by 100 to convert to a percentage; this value is reported in Table 6 as the "Relative contribution to the total absolute GHG emissions and removals associated with all land use conversions in the Program GHG Inventory." 6. For each subcategory in Table 6, populate the "Cumulative contribution to the total absolute GHG emissions and removals associated with all land use conversions in the Program GHG Inventory" column by summing, from top to bottom, all values of the "Relative contribution to the total absolute GHG emissions and removals associated with all land use conversions in the Program GHG Inventory" up to and including the subcategory in question.[46] 7. Include the following in the Step 1 selection: a. Any subcategories from Table 6 involving conversions from or to forest land.				

[46] An example of this operation is given in Table 4.5, Section 4.5, Chapter 4, Volume 1 of the IPCC 2006 Guidelines. Columns F and G in Table 4.5 correspond to the columns entitled "Relative contribution to the total absolute GHG emissions and removals associated with all land use conversions in the Program GHG Inventory" and "Cumulative contribution to the total absolute GHG emissions and removals associated with all land use conversions in the Program GHG Inventory" in Table 6, respectively.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			b. Forest land remaining forest land.[47] c. Any subcategories from Table 6 involving conversions between land-use categories other than forest land meeting the following criteria: i. The associated value of "Cumulative contribution to the total absolute GHG emissions and removals associated with all land use conversions in the Program GHG Inventory" is less than 90.000%. ii. The subcategory is the first subcategory encountered in Table 6, when reading from top to bottom, for which the associated value of "Cumulative contribution to the total absolute GHG emissions and removals associated with all land use conversions in the Program GHG Inventory" is greater				

[47] If the subcategory "Forest land remaining forest land" has been further disaggregated in the Program GHG Inventory (e.g., if this subcategory has been disaggregated into subcategories pertaining to forest type), the reference to "Forest land remaining forest land" in this indicator should be read as referring to all of the subcategories that, together, can be aggregated as "Forest land remaining forest land."

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			than or equal to 90.000%. d. The first subcategory encountered in Table 5, when reading from top to bottom, that is not already included in the Step 1 selection through application of the above steps.				
RA-18	PR§4.3.5	Additional non-forest related subcategories may be included at the discretion of the ISFL ER Program if the quality requirements in Section 4.2 are met, provided there is a clear rationale for including these subcategories in terms of improving ISFL ER Program mitigation performance.	If a voluntary decision is made to include any non-forest related subcategories in the Step 1 selection, additional to those included in the Step 1 selection through application of the above indicators, a "justifiable" determination has been made that there is a reasonable expectation that Emission Reductions related to the subcategory will be generated within the ERPA Term.	Confirmed through review of the calculation workbook and the ERPD.	R	B	C
RA-19	T§4.2.1	For additional non-forest related subcategories included at the discretion of the ISFL ER Program, provide a clear rationale for including these subcategories in terms of improving ISFL ER Program mitigation performance.	The second table in Section 4.2.1 of the PD Template is populated with a list of non-forest related subcategories that have been voluntarily included in the Step 1 selection, along with a justification for such inclusion.	Confirmed through review of the ERPD.	R	B	C
RA-20	PR§4.2.2, PR§4.2.5-4.2.6, PR§4.3.7, PR§4.3.8, PR§4.3.9	ISFL ER Programs shall review the historic activity data and emission factors available for the subcategories selected in step 1, and the methods used to collect these activity data and emission factors against the quality and baseline setting requirements for ISFL Accounting listed in Section 4.2. ISFL ER Programs shall account for the total net emission reductions across eligible subcategories by estimating the baseline and monitoring emissions and removals for the eligible subcategories using at minimum IPCC	The following procedure, or a different procedure that, in conjunction with other procedures, results in an identical Step 3 selection, has been followed for each subcategory included in the Step 1 selection, in order to determine whether each subcategory will (a) be retained in the selection (in which case it is termed a "retained subcategory" and considered to have "RET status" or (b) be provisionally considered for removal from the selection (in which case it is termed a "provisionally removed subcategory" and said to have "PREM status"):	Confirmed through independent review and recalculation of activity data and emission factors. However see Section 5.2 (01, 04-05, 07-09) above regarding the Emissions Baseline subcategories.	R	B	C

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		Tier 2 methods and data. Subcategories are considered to meet Tier 2 if all the significant pools and gasses are estimated using Tier 2 methods and data. For Subcategories referenced in paragraph 4.3.4ii, jurisdiction-specific Activity Data Proxies may be considered if Tier 2 methods and data are not available to meet the requirement of paragraph 4.2.2. The Emissions Baseline should be constructed based on the average annual historical GHG emissions and removals (or, where legacy effects are significant, the GHG emissions and removals resulting from average annual historic activities if it can be documented that this is more conservative for the relevant subcategory(ies) and the required data is available) over a baseline period (Baseline Period) of approximately 10 years. This Emissions Baseline should be constructed based on at least two data points. The end date for the Baseline Period for each ERPA Phase is the most recent date prior to two years before the submission of the ISFL ER Program document for each ERPA Phase for	1. Identify the section(s) of Volume 4 of the IPCC 2006 Guidelines that contains guidance required for quantification of emissions or removals related to the subcategory[48]. For each area where applicable guidance is provided, review the descriptions of higher tier methods[49]. 2. Note the following requirements for quantification of baseline emissions: a. Data must be available to quantify an average annual estimate of GHG emissions and removals across the Baseline Period[50], using at least two data points, according to one of the following methods: i. Direct quantification of average annual historical GHG emissions and removals within the Program Area during the Baseline Period; or ii. Quantification of GHG emissions and removals resulting from average annual historic activities within the Program Area during the				

[48] For example, for subcategories pertaining to land conversion to cropland, one would refer to Chapter 5.3, "Land Converted to Cropland." One would also refer to other portions of the IPCC 2006 Guidelines as needed. For example, if biomass is burned in the process of converting forest land to cropland, one would refer to Chapter 5, Section 5.3.4 of the IPCC 2006 Guidelines for quantification guidance.

[49] Following IPCC convention, "higher tier" refers to either Tier 2 or Tier 3.

[50] See step (2)(b) below for requirements regarding the determination of the Baseline Period.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		independent technical assessment. An alternative start-date of the Baseline Period could be allowed only with a convincing justification, and is not more than 15 years before the end date of the Baseline Period. For Subcategories listed in paragraph 4.3.4iv, if 10 years of historical data are not available at the beginning of the first ERPA Phase to construct the Emissions Baseline, a Baseline Period of 5 years may be considered for the first ERPA Phase with sufficient justification, with the requirement to construct the Emissions Baseline using an approximate 10-year Baseline Period for subsequent ERPA Phases where possible.	Baseline Period where all of the following criteria apply: 1. Legacy effects[51] are likely to impact the Emissions Baseline. 2. Required data are available, following the requirements on data quality set out below, in order to implement the approach. b. The Baseline Period must meet the following temporal requirements: i. The Baseline Period must be approximately[52] 10 years in length, unless all of the following are true: 1. The subcategory				

[51] Legacy effects are emissions during the Baseline Period that are a result of land-use change that occurred before the start of the Baseline Period. Legacy effects are most likely to occur in the below-ground biomass, dead wood and soil organic matter pools, for which emissions attributable to land-use change may occur over extended periods of time.

[52] For the purposes of this indicator, "approximately" refers to a period of time within 365 days of the indicated number of years (e.g., "approximately 10 years" means a period of time that is exactly between 9 and 11 years).

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			was added to the Step 1 selection per indicator step (7)(d) in indicator RA-17. 2. Sufficient data for a Baseline Period of approximately 10 years are not available at the beginning of the first ERPA Phase. 3. Sufficient data for a Baseline Period of at least 5 years[53] are available at the beginning of the first ERPA Phase. 4. The Baseline Period is set to between 5 and 10 years in length.				

[53] Baseline Periods less than five full years (e.g., in general, five consecutive periods of 365 days) in length are not permitted.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			5. A compelling rationale[54] is provided regarding the propriety of a Baseline Period of between 5 and 10 years for this subcategory. 6. Where possible, a commitment is made to construct the Emissions Baseline using an approximate 10-year Baseline Period for subsequent ERPA Phases. ii. Both of the following must be true regarding the date falling exactly two years before the date of submittal of the ERPD for quality review by the World Bank (referred to in				

[54] It is expected that the most common reasons that may be given for a shorter Baseline Period will be related to lack of data availability. The assessment team should closely scrutinize any claims made but should be prepared to accept any justifiable explanation for lack of feasibility.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			this step (2) as the "date of interest"): 1. The Baseline Period must end on or earlier than the day just before the date of interest. 2. If the Baseline Period does not end on the day just before the date of interest, the Baseline Period must end as recently as possible prior to the day just before the date of interest, and good reason must be provided for why the Baseline Period cannot end on the day just before				

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			the date of interest. iii. If the start date of the Baseline Period is not approximately 10 years before the end of the baseline period, all of the following are true: 1. A compelling rationale can be provided regarding why it would be infeasible[55] for the start of the Baseline Period to be within approximately 10 years of the end of the baseline period. 2. The start date of the Baseline Period is not more than 15 years before the end data of the				

[55] It is expected that the most common reasons that may be given for lack of feasibility will be related to lack of data availability, but perhaps other reasons may be given for lack of feasibility. The assessment team should closely scrutinize any claims made but should be prepared to accept any justifiable explanation for lack of feasibility.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			Baseline Period. 3. Use the following procedure for determining whether the subcategory "meets Tier 2" (i.e., can be quantified using higher tier methods) and, thus, adheres to the requirements of this step (3): a. Refer to Table 5 to identify any greenhouse gases or carbon pools (referred to in the remainder of this indicator as "G/Ps") associated with the subcategory.[56] b. Of the G/Ps identified in step (3)(a) above, assess whether there are any G/Ps for which higher tier methods are not available for the entire process of quantifying both (a) baseline emissions (in consideration of the data requirements for baseline quantification as identified in step (2) above) and (b) monitoring emissions related to the subcategory. c. If no such G/Ps exist, the subcategory meets Tier 2; skip to step (4). Otherwise, the following significance testing procedure must be applied: i. Using information in the Program GHG Inventory, determine				

[56] For any subcategory with one or more associated carbon pools, the greenhouse gas CO_2 must be disregarded for purposes of assessing whether the subcategory meets Tier 2 (double-counting in the significance testing would otherwise result).

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			the GHG emissions or removals associated with each greenhouse gas or carbon pool identified in step (3)(a) above. ii. Calculate the absolute value of each quantity determined in step (3)(c)(i) above. iii. Rank the absolute values calculated in step (3)(c)(ii) above, and the associated G/Ps, from highest to lowest. iv. Sum the absolute values calculated in step (3)(c)(ii) above. v. Divide each value calculated in step (3)(c)(ii) by the value calculated in step (3)(c)(iv) above and multiply by 100 to convert to a percentage. This is the relative contribution to the absolute level of the total GHG emissions and removals in the subcategory. vi. Work through the list of G/Ps in sequential order from top to bottom, adding, for				

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			each G/P, the value calculated in step (3)(c)(v) for that G/P to the sum of the corresponding values across all G/Ps that are higher-ranked (i.e., that appear higher in the ranked list).[57] The result of this operation, for each G/P, is the calculation of the cumulative contribution of that G/P to the total absolute GHG emissions and removals. vii. Identify all G/Ps meeting at least one of the following criteria (such G/Ps are considered "significant"): 1. Having an associated relative contribution to the absolute level of the total GHG emissions				

[57] This is the same operation as that set out in Step (6) of indicator RA-17. An example of this operation is given in Table 4.5, Section 4.5, Chapter 4, Volume 1 of the IPCC 2006 Guidelines.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			and removals in the subcategory, as calculated in step (3)(c)(v) above, that is greater than or equal to 25.000%. 2. Having an associated cumulative contribution to the absolute level of the total GHG emissions and removals in the subcategory, as calculated in step (3)(c)(vi) above, that is less than 60.000%. 3. Being the first G/P encountered, when reviewing the list of values calculated in step (3)(c)(vi) from top to				

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			bottom, for which the calculated value is greater than or equal to 60.000%. viii. For each G/P identified in step (3)(c)(vii) above, determine whether higher tier methods are available for the entire process of quantifying both (a) baseline emissions (in consideration of the data requirements for baseline quantification as identified in step (2) above) and (b) monitoring emissions related to the subcategory. 1. If an affirmative determination is made for each G/P identified in step (3)(c)(vii) above, the subcategory meets Tier 2. 2. Otherwise, the				

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			subcategory does not meet Tier 2. 4. If the subcategory is related to land use change[58], determine whether the following requirements for quantification of activity data, in respect of Approaches 1, 2 and 3 as described in Volume 4, Chapter 3, Section 3.3.1 of the IPCC 2006 Guidelines, can be adhered to for the entire process of quantifying both (a) baseline emissions (in consideration of the data requirements for baseline quantification as identified in step (2) above) and (b) monitoring emissions related to the subcategory: a. Quantification of activity data using Approach 1 is not permitted. b. Activity data using must be quantified using Approach 3, unless this is not possible, in which case Approach 2 may be used, provided that ancillary information is available that allows to land-use conversions to be tracked over time. 5. Determine whether the subcategory meets Tier 2, through application of the procedure set out in step (3) above, and adheres to any applicable requirements for land representation as set out in step (4) above.				

[58] This step is not applicable to subcategories not related to land use change.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			a. If yes, the subcategory is assigned RET status. b. If not: i. If the sub-category in question is "forest land remaining forest land" and all of the following are true, the sub-category is assigned RET status. 1. The only issue is that sufficient activity data[59] are not available to meet the requirements of higher tier methods for each G/P identified in step (3)(c)(vii) above. 2. Data from an Activity Data Proxy are available to serve as a substitute for the missing activity data in the implementati				

[59] "Activity data" is defined in Volume 1, Chapter 1 of the IPCC 2006 Guidelines as "information on the extent to which a human activity takes place"; such data are most frequently calculated using units of land area (e.g., hectares).

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			on of a higher tier method, and are used for this purpose. 3. In respect of baseline emissions, quantification follows guidance for baseline quantification set out in step (2) above. ii. Otherwise, the subcategory is assigned PREM status. 6. The outcome of the above steps is a list of subcategories with a status identifier (either "RET" or "PREM") attached to each); this is termed the Step 2 selection.				
RA-21	PR§4.3.11-4.3.13	For each ERPA Phase, ISFL ER Programs shall only account for those subcategories for which step 2 has shown that the historic activity data and emission factors available, and the methods used to collect these activity data and emission factors, meet the quality and baseline setting requirements for ISFL Accounting listed in Section 4.2 while taking into account the provisions of paragraph 4.3.8 and 4.3.9.	The following procedure, or a different procedure that, in conjunction with other procedures, results in an identical Step 3 selection, has been followed for each subcategory included in the Step 2 selection: 1. If the subcategory has a status of RET, it is included in the Step 3 selection. 2. If the subcategory has a status of PREM: a. If the subcategory was assigned a status of PREM for the sole reason that, while historic data available to	Confirmed through independent review and recalculation of activity data and emission factors. However see Section 5.2 (01, 04-05, 07-09) above regarding Forward Action Request pertaining to the Emissions Baseline subcategories.	R	B	FAR

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		If a subcategory selected in step 1 has historic data available to construct an Emission Baseline over a Baseline Period of approximately 10 years but these data do not meet the other quality requirements of Section 4.2, it can only be included for accounting in the ERPA Phase if all the quality requirements can be met through the application of improved methods and data. ISFL ER Programs that intend to include such a subcategory need to ensure that the quality requirements can be met at the latest at the end of the ERPA Phase. In this case, ISFL ER Programs shall provide an interim Emissions Baseline at the beginning of the ERPA Phase using best available data to be able to provide ex-ante estimations of the Emission Reductions. Each relevant subcategory selected in step 1 that does not have sufficient historic data available to construct an Emission Baseline over a Baseline Period of approximately 10-year period at the start of an ERPA Phase (with the exception of the subcategories that meet the requirements of 4.3.9), cannot be included for accounting and the calculation of the emission reductions and removals in that ERPA Phase. In this case the ISFL ER Program shall monitor the emissions for that subcategory in accordance with the quality requirements of Section 4.2 for the ERPA Phase and these monitored	construct an Emission Baseline over a Baseline Period of approximately 10 years do exist, these data do not meet the requirements set out in steps (3) and (4) of indicator RA-20, the subcategory is included in the Step 3 selection if a "justifiable" determination is made that it will be possible to produce an Emissions Baseline adhering to the requirements of the same steps (3) and (4) by no later than the end of the first ERPA Phase. Otherwise, the subcategory is not included in the Step 3 selection. b. If the subcategory was assigned PREM status because, at least in part, historic data available to construct an emission baseline over a Baseline Period of approximately 10 years do not exist, the subcategory is not included in the Step 3 selection. c. If the subcategory was assigned PREM status for any reason other than given in steps (2)(a)-(b) above, the subcategory is not included in the Step 3 selection.				

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		data collected during the ERPA Phase (and potentially earlier ERPA Phases) shall be used to estimate the Emissions Baseline during the subsequent ERPA Phase in order to fulfill the baseline period requirements outlined in Section 4.2					
RA-22	T§4.2.2	For each of the subcategories selected in step 1, provide a summary of the review of the available data and methods for the subcategories against the quality and baseline setting requirements for ISFL Accounting using the table template below. Copy and complete the table for each individual subcategory	For each of the subcategories included in the Step 1 selection, the provided table in Section 4.2.1 of the PD Template is populated (the table is populated uniquely for each such subcategory) with summary information regarding the review of the available data and methods against the quality and baseline setting requirements for ISFL Accounting.	Confirmed through review of the ERPD.	R	B	C
RA-23	TAnnex 7	For each of the selected subcategories in Section 4.2.1: • Identify the parameters that were used to determine the activity data and emission factors in the calculation of the emissions and removals for that subcategory; • For each parameter used to determine activity data, describe the historic time series available for that parameter including how they relate to the proposed start date and end date of the Baseline Period (see Section 4.4.1); • Provide details on the source of the parameters (e.g., official statistics) or a description of the method for determining the parameter (e.g., for parameters derived from remote sensing images describe the process applied including details such	The following information is included in Annex 7 of the ERPD for each of the subcategories included in the Step 1 selection: 1. Identification of the "parameters: used to determine the activity data and emission factors in the calculation of the emissions and removals for the subcategory 2. For each "parameter" identified in (1) above: a. If the "parameter" is used to determine activity data, a description of the historic time series available for that "parameter", including how the available time series relates	Confirmed through review of the ERPD and calculation workbooks.	R	B	C

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		as the type of sensors and the details of the images used). If proxies have been used, describe the data sources for the proxies and their application to estimate activity data; • Provide details on the spatial level of the parameters (local, regional, national or international) and if they allow for spatially explicit observations of land-use categories and land-use conversions; • Provide an analysis if the parameters comply with the requirements on the use of, at minimum, IPCC Tier 2 methods and data. For parameters used for land use change-related subcategories, also provide an analysis if they data allows for the use of Approach 3 for land representation.	to the start date and end date of the Baseline Period b. Details on the data source for the "parameter", following one of the below options, as applicable: i. If the "parameter" has been measured, a description of the method for determining the "parameter" (e.g., for "parameters" derived from remote sensing images describe the process applied including details such as the type of sensor and the types of imagery used). ii. If proxies have been used, describe the data sources for the proxies and their application to estimate activity data. iii. For other data sources (e.g., literature or expert judgment), provide a description of the source of the data.				

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			c. If the "parameter" is spatial in nature, details on the level to which it applies (local, regional, national or international) and clarification as to whether the "parameter" allows for spatially explicit observations of land-use categories and land-use conversions. d. An analysis as to whether the "parameter" complies with the requirements on the use of, at minimum, IPCC Tier 2 methods and data. e. If the "parameter" is used for land use change-related subcategories, an analysis as to whether data provided by the "parameter" allows for the use of Approach 3 for land representation.				
RA-24	T§4.2.3	Based on the analysis above, complete the table below by listing all subcategories from step 1 and identifying those subcategories for which step 2 has shown that the historic activity data and emission factors available, and the methods used to collect these activity data and	In the provided table in Section 4.2.3 of the PD Template, list all subcategories included in the Step 1 selection and populate the table according to its instructions, with those subcategories included in the Step 3 selection (and only such subcategories) being identified as "Eligible for ISFL Accounting"[60].	Confirmed through review of the ERPD and calculation workbooks. However see Section 5.2 (01, 04-05, 07-09) above regarding Forward Action	R	B	FAR

[60] The distinction in the provided table between "Emissions Baseline setting requirement(s)," "Methods and data requirement(s)" and "Spatial information requirement(s)" is not clear, so the assessment team should be flexible regarding how these columns are filled out. The factors of primary importance are that all subcategories included in the Step 1 selection are included in the table and that the "Eligible for ISFL Accounting?" column is correctly populated in respect of whether or not each subcategory is included in the Step 3 selection.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		emission factors, meet the quality and baseline setting requirements for ISFL Accounting.		Requests pertaining to Emissions Baseline subcategories.			
RA-25	PR§4.3.1; T§4.3; TAnnex 8	[For] Each relevant subcategory selected in step 1 that does not have sufficient historic data available to construct an Emission Baseline over a Baseline Period of approximately 10-year period at the start of an ERPA Phase (with the exception of the subcategories that meet the requirements of 4.3.9)… the ISFL ER Program shall monitor the emissions for that subcategory in accordance with the quality requirements of Section 4.2 for the ERPA Phase and these monitored data collected during the ERPA Phase (and potentially earlier ERPA Phases) shall be used to estimate the Emissions Baseline during the subsequent ERPA Phase in order to fulfill the baseline period requirements outlined in Section 4.2. For subcategories that were included in Section 4.2.1 above as part of the initial selection (step 1) but were not eligible for ISFL Accounting, please provide a summary of the time bound plan (approximately 500 words) to increase the completeness of the scope of accounting, improve data and methods and start collecting data to be able to estimate the Emissions Baseline for the subsequent ERPA Phases during the ERPA Term. Also, discuss those	A description of the time-bound plan to increase the completeness of the scope of accounting and improve data and methods for the subsequent ERPA Phases during the ERPA Term is provided in Section 4.3 of the PD Template, and the full plan itself is provided in Annex 8 of the PD Template. The time-bound plan, and the description thereof, have the following attributes: 1. For any subcategory included in the Step 1 selection but not included in the Step 3 selection, concrete actions are identified that will meet the following objectives: 2. Increase the completeness of the scope of accounting. 3. Improve data and methods. 4. Start collecting data to be able to estimate the Emissions Baseline for one or more subsequent ERPA Phases during the ERPA Term. 5. For any subcategory identified in step (2)(a) of indicator RA-21: 6. If the subcategory was included in the Step 3 selection, it is affirmed that all the quality requirements can be met through the application of improved methods and data by the end of the first ERPA Phase[61] and concrete actions are	Confirmed through review of the ERPD, calculation workbooks, and discussions with the program team. However see Section 5.2 (01, 04-05, 07-09) above regarding Forward Action Requests pertaining to Emissions Baseline subcategories.	R	B	FAR

[61] For such subcategories, this is a precondition for inclusion in the Step 3 selection.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		subcategories selected in step 1 that have historic data available to construct an Emission Baseline over a Baseline Period of approximately 10 years but where these data do not meet the other quality requirements and identify if all the quality requirements can be met through the application of improved methods and data at the latest at the end of the current ERPA Phase. Please include the full-time bound plan in Annex 8 below.	identified that will result in the subcategory being granted RET status, upon application of the procedure set out in indicator RA-20, by the end of the first ERPA Phase. 7. If the subcategory was not included in the Step 3 selection, this is clearly stated and the information requested in (1)(a)-(c) above is provided.				
RA-26			The time-bound plan to increase the completeness of the scope of accounting and improve data and methods for the subsequent ERPA Phases during the ERPA Term, as described in Section 4.3 of the ERPD and provided in full in Annex 8 of the ERPD, has the following attributes:				
RA-27			The time-bound plan is **specific**, with actions to be taken and responsible parties clearly identified.	Confirmed through review of the ERPD and discussions with the program team.	R	P*	I
RA-28			The time-bound plan is **measurable**: describing actions to be taken with a sufficient level of detail that it will be possible to objectively measure progress towards any objectives.[62]	Confirmed through review of the ERPD and discussions with the program team.	R	P*	I
RA-29			The time-bound plan is **achievable**: feasible given resources that can reasonably be assumed to be available to the Program Entity.	Confirmed through review of the ERPD and discussions with the program team.	R	P*	II
RA-30			The time-bound plan is **relevant**, with the largest amount of planned effort granted to	Confirmed through review of the ERPD	R	P*	I

[62] For example, of the two planned actions described below, the second is more measurable than the first.

1. "We will acquire updated medium-resolution imagery for the Program Area."
2. "We will acquire cloud-free medium-resolution imagery from the Landsat-8 sensor as it becomes available, with an objective of having wall-to-wall coverage of the Program Area by 31 March 2019."

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			subcategories that of the highest priority for eligibility for ISFL Accounting.[63]	and discussions with the program team.			
RA-31			The time-bound plan is **time-bound**, with specific milestones provided by which key implementation actions will be completed.	Confirmed through review of the ERPD and discussions with the program team.	R	P*	II
RA-32			The time-bound plan is likely to increase the completeness of the scope of accounting.	Confirmed through review of the ERPD and discussions with the program team.	R	P*	I
RA-33			The time-bound plan is likely to improve data and methods for the subsequent ERPA Phases.	Confirmed through review of the ERPD and discussions with the program team.	R	P*	I
RA-34	PR§1; PR§4.4.1	For each ERPA Phase, ISFL ER Programs shall determine an Emissions Baseline comprising those subcategories that are eligible for ISFL Accounting in the ERPA Phase as determined by the steps in Section 4.3. ISFL ER Programs are expected to demonstrate conformity with this document and apply general principles of… conservativeness in order to be able to receive result-based finance from the ISFL.	For each subcategory included in the Step 3 selection, the following are true, as applicable, regarding the Emissions Baseline for the first ERPA Phase ("the First Phase Baseline"): 1. The First Phase Baseline has been constructed, in respect of the subcategory, following the requirements set out in step (2) of indicator RA-20. 2. If the subcategory was determined to meet Tier 2 in step (3) of indicator RA-20, only higher tier methods are used to construct the First Phase Baseline for any greenhouse gases or carbon pools identified in step (3)(c)(vii) of the same indicator (no Tier 1 methods are used	Confirmed through review of the ERPD and calculation workbooks. However see Section 5.2 (01, 04-05, 07-09) above regarding Forward Action Requests pertaining to the Emissions Baseline subcategories.	R	B	FAR

[63] The determining of priority is to be made by the Program Entity.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			for such greenhouse gases or carbon pools). 3. If the subcategory is related to land use change, the requirements of step (4)(a)-(b) of indicator RA-20 are adhered to in constructing the First Phase Baseline. 4. If step (5)(b)(i) of indicator RA-20 applies to the subcategory, the requirements in step (5)(b)(i)(1)-(3) of the same indicator are adhered to in constructing the First Phase Baseline. 5. If step (2)(a) of indicator RA-21 applies to the subcategory, an Interim Emissions Baseline is produced for the sub-category using "best available" data and incorporated into the First Phase Baseline for purposes of ex-ante quantification of Emission Reductions.				
RA-35			The First Phase Baseline is constructed through summation of the individual subcategory-specific baselines across all subcategories included in the Step 3 selection.	Confirmed through review of the ERPD and calculation workbooks. However see Section 5.2 (01, 04-05, 07-09) above regarding Forward Action Requests pertaining to the Emissions Baseline subcategories.	R	B	FAR
RA-36			The following guidance is applied in constructing the First Phase Baseline, as applicable:	Confirmed through review of the ERPD and calculation workbooks, and	R	P	II

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			1. The good practice suggestions of the IPCC 2006 Guidelines. 2. The guidance of Sections 3-5 of GFOI.	independent recalculation of the baseline.			
RA-37			The First Phase Baseline has been constructed using conservative methodological assumptions and approaches in order to ensure that Emission Reductions are not over-estimated (i.e., to err on the side of underestimating baseline emissions).[64]	Confirmed through review of the ERPD and calculation workbooks, and independent recalculation of the baseline.	R	P	II
RA-38			Where legacy effects are likely to be present, these have been accounted for in construction of the First Phase Baseline through appropriate implementation of the accounting approach set out in step (2)(a)(ii) in indicator RA-20.	Confirmed through review of the ERPD and calculation workbooks, and independent recalculation of the baseline.	R	P	II
RA-39			In constructing the First Phase Baseline, all emissions from the below-ground biomass, dead wood, litter and soil organic matter carbon pools following land-use change are not assumed to be instantaneous or to occur within a short period of time, but are projected using a decay function over a "justifiable" period of time.[65]	Confirmed through review of the ERPD and calculation workbooks, and independent recalculation of the baseline.	R	P	I
RA-40			Emissions Baselines for ERPA Phases after the first ERPA Phase, as reported in Section 4.4.2 of	Confirmed through review of the ERPD	L	P	I

[64] This language paraphrases Section 3.7 of ISO 14064-2:2006. Note, however, the following:

1. The principle of conservativeness does not necessarily imply that choices leading to a higher Emission Baseline are made at every turn. It simply requires that, in the face of uncertainty, methodological assumptions and approaches are selected that err on the side of over-estimating the baseline.
2. As referenced in this indicator, the principle of conservativeness does not extend to the selection of data sources, such as emission factors. It is not expected, for example, that where an uncertainty range around an emission factor is provided in the literature, the lower bound of that range will be selected for use in quantification. Uncertainty in data sources will be accounted for in the calculation of the uncertainty set-aside factor, per Section 4.6 of the Program Requirements.

[65] Page 3.9 of Chapter 3, Volume 4 of the 2006 IPCC Guidelines suggests a default time period of 20 years for "dead organic matter and soil carbon stocks to reach equilibrium following land-use conversion" and, therefore, a default time period of 20 years will automatically be considered justifiable for purposes of this indicator. However, time periods other than 20 years may also be justifiable.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			the PD Template, are "justifiable" in light of (a) projected trends in average emissions (over future Baseline Periods as relevant to future ERPA Phases) within the Program Area and (b) subcategories that were not included in the Step 3 selection that are predicted to become eligible for ISFL Accounting in respect of future ERPA Phases.	and calculation workbooks, and independent recalculation of the baseline.			
RA-41	PR§4.6.1	ISFL ER Programs shall systematically identify and assess sources of uncertainty in the determination of the Emissions Baseline… following most recent IPCC guidance and guidelines…	A "justifiable" assessment of sources of uncertainty in the construction of the Emissions Baseline for the first ERPA Phase has been carried out; this assessment has the following attributes: 1. The assessment is systematic, in that it proceeds in a methodical manner through the various components of the quantification process and assesses uncertainty independently for each component. 2. The classification of uncertainties is undertaken using the "eight broad causes of uncertainty" identified in Section 3.1.5 of Chapter 3, Volume 1 of the IPCC 2006 Guidelines; an exhaustive identification of all instances of each of these causes of uncertainty is provided.	See Section 5.2(06) above. A forward action request has been issued for this requirement. The audit team confirmed that an analysis of the source of uncertainty in the Emissions Baseline has been conducted in a systematic way. However, verification of the uncertainty values for each subcategory included in the interim baseline across the baseline period has not yet been achieved.	R	B	FAR
RA-42	PR§4.6.1	ISFL ER Programs shall, to the extent feasible, follow a process of managing and reducing uncertainty in the determination of the Emissions Baseline…	A "justifiable" assessment has been undertaken regarding how uncertainty in the construction of the Emissions Baseline for the first ERPA Phase can be managed and reduced, given the means that can reasonably be made available to the Program Entity. This assessment has been acted upon.	See Section 5.2(06) above. A forward action request has been issued for this requirement. The audit team confirmed that an analysis of the	R	B	FAR

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
				source of uncertainty in the Emissions Baseline has been conducted in a systematic way. However, verification of the uncertainty values for each subcategory has not yet been achieved.			
RA-43			The guidance set out in Section 3.1.6 of Chapter 3, Volume 1 of the IPCC 2006 Guidelines has been duly considered in assessing how uncertainty in the construction of the Emissions Baseline for the first ERPA Phase can be managed and reduced.	Confirmed through review of the ERPD and supporting data and documentation, and independent recalculation of the baseline.	R	P	I
RA-44			The "best available" data have been used in the construction of the Emissions Baseline for the first ERPA Phase.	Confirmed through review of the ERPD and supporting data and documentation, and independent recalculation of the baseline.	R	P	I
RA-45	T§4.4.1	Building on the information provided in 4.2 above, please provide a short description (maximum two pages) of the approach used for estimating the Emissions Baseline. Please provide: • A description of the general approach applied to estimate the Emissions Baseline in the current ERPA Phase	The following information is provided in Section 4.4.1 of the ERPD: 1. A description of the general approach applied to estimate the Emissions Baseline in the current ERPA Phase.[66] 2. Identification and assessment of uncertainty in the determination of the Emissions Baseline	Confirmed through review of the ERPD and supporting data and documentation, and independent recalculation of the baseline. See However see Section 5.2 (01, 04-05, 07-09) above	R	B	FAR

[66] All references to the "current ERPA Phase" refer to the first ERPA Phase.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		• Identification and assessment of uncertainty in the determination of the Emissions Baseline. • The Baseline Period(s) used in the construction of the Emissions Baseline for the current ERPA Phase by indicating the start-date and the end-date for the Baseline Period(s). If different Baseline Periods are used for different subcategories, explain how this meets the requirements. • In case an interim Emissions Baseline is provided at the beginning of the ERPA Phase, identify those subcategories that led to the use of the interim baseline and describe how best available data have been used. • Ex-ante estimate, including assumptions made, of how the Emissions Baseline will change in future ERPA Phases.	3. The start date(s) and end date(s) of the Baseline Period(s) used in the construction of the Emissions Baseline for the current ERPA Phase 4. If different Baseline Periods are used for different subcategories, clarification regarding how this meets any relevant clauses of the Program Requirements. 5. In case an interim Emissions Baseline is provided at the beginning of the ERPA Phase, identification of those subcategories that led to the use of the interim baseline and a description of how "best available" data have been used. 6. An ex-ante estimate of how the Emissions Baseline will change in future ERPA Phases (with a description of any assumptions made in producing the estimate).	regarding Forward Action Requests pertaining to the Emissions Baseline subcategories.			
RA-46	TAnnex 9	Please provide a step-by-step calculation of the Emissions Baseline. Provide a transparent, complete, consistent and accurate description of the approaches, methods, and assumptions used and provide an overview of the activity data and emission factors used in a way that is sufficiently detailed to enable the reconstruction of the Emissions Baseline. Identify and asses the sources of uncertainty in the determination of the Emissions	A step-by-step calculation of the Emissions Baseline, including the following information, is provided in Annex 9 of the ERPD: 1. A transparent, complete, consistent and accurate description of the approaches, methods, and assumptions used 2. An overview of the activity data and emission factors used in a way that is sufficiently detailed to enable the reconstruction of the Emissions Baseline.	Confirmed through review of the ERPD and supporting data and documentation, and independent recalculation of the baseline.	R	B	C

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		Baseline and describe actions that have been taken to manage or reduce uncertainty Attach any spreadsheets, spatial information, maps and/or synthesized data used in the calculation.	3. An identification and assessment of the sources of uncertainty in the determination of the Emissions Baseline and a description of actions that have been taken to manage or reduce uncertainty. Any spreadsheets, spatial information, maps and/or synthesized data used in the calculation of the Emissions Baseline are incorporated by reference to Annex 9.				
RA-47	T§4.4.2	Provide the estimate of the Emissions Baseline in the table below.	An estimate of the Emissions Baseline is provided, for each ERPA Phase included in the ERPA Term, in the provided table in Section 4.4.2 of the PD Template.	Confirmed through review of the ERPD and the calculation workbook.	R	B	C
RA-48	T§4.5.1	Please provide a description (two pages or less) of the methods and standards for generating, recording, storing, aggregating, collating and reporting data on monitored parameters, including equations if necessary.	Section 4.5.1 contains a description of the methods and standards[67] for generating, recording, storing, aggregating/collating and reporting data on monitored "parameters", including equations if necessary.	Confirmed through review of the ERPD and the calculation workbook.	R	B	C
RA-49	T§4.5.2	Please provide a description or flow diagram (one page or less) indicating how the monitoring system will operate and who will be responsible for monitoring the parameters.	Section 4.5.2 of the ERPD contains a description or flow diagram indicating how the monitoring system will operate and who will be responsible for monitoring the "parameters".	Confirmed through review of the ERPD.	R	B	C
RA-50	TAnnex 10; PR§4.6.1	Using the table provided, clearly describe all the data and parameters to be monitored (copy table for each parameter).	Using the table provided[68] in Annex 10 of the ERPD a clear description is provided of all the data and "parameters" to be monitored (copy table for each "parameter").	Confirmed through review of the ERPD.	R	B	C

[67] The definition of "standard" that applies to here is (from Merriam-Webster): "something set up and established by authority as a rule for the measure of quantity, weight, extent, value, or quality." For example, when speaking of collection of remotely sensed data, a standard for pixel size (such as 30 meters) could be described in the ERPD.
[68] An overly-stringent interpretation of the table in Annex 10 would not be in anyone's best interest. While clarity in how the table is populated is important, brevity should be permitted so long as clarity is not degraded. References to external documents (e.g., if a certain section of a Standard Operating Procedures document is referenced under "Quality Assurance/Quality Control procedures to be applied") should be permitted, so long as the external documents are clearly provided.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
RA-51		ISFL ER Programs shall systematically identify and assess sources of uncertainty in the… monitoring of emissions and removals following most recent IPCC guidance and guidelines…	A "justifiable" assessment of sources of uncertainty in the monitoring of emissions and removals has been carried out and documented in Annex 10 of the ERPD (under "Identification of sources of uncertainty for this "parameter"…"); this assessment has the following attributes: 1. The assessment is systematic, in that it proceeds in a methodical manner through the various "parameters" used in quantification and assesses uncertainty independently for each component. 2. The classification of uncertainties is undertaken using the "eight broad causes of uncertainty" identified in Section 3.1.5 of Chapter 3, Volume 1 of the IPCC 2006 Guidelines; an exhaustive identification of all instances of each of these causes of uncertainty is provided.	Confirmed through review of the ERPD and calculation workbook, and discussions with the program team.	R	B	C
RA-52	T§4.5.3	The details on all data and parameters to be monitored in Annex 10 below should also provide a systematic identification and assessment of uncertainty in the data and parameters to be monitored. Based on the information provided in the Annex, indicate how uncertainty will be managed and reduced in the monitoring of emissions and removals (roughly 500 words or less).	A "justifiable" assessment has been undertaken, and documented in Section 4.5.3 of the ERPD, regarding how uncertainty in the monitoring of emissions and removals can be managed and reduced, given the means that can reasonably be made available to the Program Entity.	Confirmed through review of the ERPD and discussions with the program team.	R	B	C
RA-53			The guidance set out in Section 3.1.6 of Chapter 3, Volume 1 of the IPCC 2006 Guidelines has been duly considered in assessing how uncertainty in the monitoring of emissions and removals can be managed and reduced.	Confirmed through review of the ERPD and discussions with the program team.	R	P	II
RA-54		ISFL ER Programs shall, to the extent feasible, follow a process of managing	The "best available" data have been used in the monitoring of emissions and removals.	Confirmed through review of the ERPD	R	P	I

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		and reducing uncertainty in the… monitoring of emissions and removals.		and discussions with the program team.			
RA-55			The following guidance is applied in constructing the monitoring of emissions and removals, as applicable: 1. The good practice suggestions of the IPCC 2006 Guidelines. 2. The guidance of Sections 3-5 of GFOI.	Confirmed through review of the ERPD and discussions with the program team.	R	P	I
RA-56	PR§4.2.2-4.2.3; PR§4.5.1	ISFL ER Programs shall estimate all the subcategories and their associated carbon pools and gases included in the scope for ISFL Accounting following the quality requirements in Section 4.2. ISFL ER Programs shall account for the total net emission reductions across eligible subcategories by estimating the baseline and monitoring emissions and removals for the eligible subcategories using at minimum IPCC Tier 2 methods and data. Subcategories are considered to meet Tier 2 if all the significant12 pools and gasses are estimated using Tier 2 methods and data. ISFL ER Programs are encouraged to improve data and methods, and to move to a higher tier over time, as possible. For accounting emission reductions from land use change-related subcategories, Approach 3 should be used for land representation; Approach 2 may be used if this is not possible if ancillary information is available that allows to track land over time.	For each subcategory included in the Step 3 selection, the following are true, as applicable, regarding the planned monitoring data and methods as described in Section 4.5 and Annex 10 of the ERPD: 1. If the subcategory was determined to meet Tier 2 in step (3) of indicator RA-20, only higher tier methods are planned for monitoring emissions from any greenhouse gases or carbon pools identified in step (3)(c)(vii) of the same indicator (no Tier 1 methods are planned for such monitoring). 2. If the subcategory is related to land use change, the requirements of step (4)(a)-(b) of indicator RA-20 are adhered to in monitoring emissions.	Confirmed through review of the ERPD and supporting data and documentation, and independent recalculation of the baseline.	R	B	C

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
RA-57	PR§4.5.2	In estimating the subcategories and their associated carbon pools and gases included in the scope for ISFL Accounting, ISFL ER Programs shall ensure methodological consistency between the Emissions Baseline and the monitored net GHG emissions. Methodological consistency implies that same methods and datasets have been used to calculate the Emission Baseline and the actual GHG emissions and removals. In case methods and/or datasets differs, methodological approaches provided by IPCC Guidelines to ensure time series consistency are applied."	One of the following is true: 1. The planned monitoring methods and data as described in Section 4.5 and Annex 10 of the ERPD are identical to the methods and data that have been used to calculate the Emissions Baseline (with the obvious exception that the temporal scope differs: the monitored data will pertain to the ERPA Phase to which the monitoring applies, while the baseline data pertained to the Baseline Period). 2. There are differences between the planned monitoring methods and data as described in Section 4.5 and Annex 10 of the ERPD and the methods and data that have been used to calculate the Emissions Baseline, in which case either the description in Section 4.5 contains a commitment to either update the Emissions Baseline to use the same methods and data to be used in monitoring[69], or to use one of the splicing techniques described in Sections 5.3.3-5.3.3.6 of Chapter 5,	Confirmed through review of the ERPD and data/supporting documentation, and through discussions with the program team.	R	B	C

[69] Noting, however, that revisions to the baseline during the ERPA Phase should be limited to the following:

- Replacement of emission factors used in the construction of the Emissions Baseline by others that have improved accuracy.
- Corrections to historical activity data resulting from improvements in data accuracy.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
			Volume 1 of the IPCC 2006 Guidelines in order to ensure time series consistency.				
RA-58	PR§4.4.2; PR§4.5.1	The Emissions Baseline shall be expressed as tonnes of CO2e per year. The measured [monitored] emissions and removals shall be expressed as tonnes CO2e per year.	Each Emissions Baseline reported in the ERPD is expressed as metric tons (i.e., megagrams) of CO2-equivalent per year. Greenhouse gases are converted using 100-year global warming potentials derived from one of the two following sources. 1. The IPCC's Second Assessment Report, which has the following global warming potentials: a. Carbon dioxide: 1 b. Methane: 21 c. Nitrous oxide: 310 2. The IPCC's Fourth Assessment Report, which has the following global warming potentials: a. Carbon dioxide: 1 b. Methane: 25 c. Nitrous oxide: 298	Confirmed through review of the ERPD and supporting data and documentation, and independent recalculation of the baseline that the IPCC Second Assessment Report GWPs were applied.	R	B	C
RA-59			If a process for quantifying monitored emissions in terms of CO2e per year is documented within the ERPD, that process utilizes the same global warming potentials that are used in construction of the Emissions Baseline.	Confirmed through review of the ERPD.	R	B	C
RA-60	T§4.6	Please provide a simplified ex-ante estimation of the expected Emission Reductions of the ISFL ER Program. Where the calculation requires monitored data that is not available yet, use best estimates based on expected impacts of the ER Program	Section 4.6 of the ERPD contains a simplified ex-ante estimate of the expected Emission Reductions of the ER Program for each year of the ERPA Term, having the following attributes: 1. Where the calculation of the ex-ante estimate requires monitored	Confirmed through review of the ERPD and supporting ex-ante calculation workbooks.	R	B	C

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		and data that might be available from other actions (either in the country or in other countries). List all assumptions, and provide the values used for each parameter and the sources for these data. Summarize the outcome in the table below.	data that are not available yet, best estimates are used based on the expected impacts of the ER Program and/or data from similar circumstances. 2. All assumptions are listed. 3. For each "parameter" included in the analysis, the value(s) used and data sources are provided. 4. The provided table in Section 4.6 is populated.				
RA-61			Assumptions regarding the following, as incorporated into the ex-ante estimate presented in Section 4.6 of the ERPD, are "justifiable": 1. The effectiveness of the ER Program in addressing the key drivers of land use change, as identified in indicator PD-27, considering the planned actions and interventions of the ER Program (as assessed in indicators PD-28 through PD-33) and the financing plan (as assessed in indicators PD-34 through PD-58). 2. The impact of the ER Program on emissions within the Program Area, considering the factors identified in (1) above.	Confirmed through review of the ERPD and supporting ex-ante calculation workbooks, and discussions with the program team.	L	P*	I

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
RA-62	PR§4.5.3	ISFL ER Programs determine the total net emission reductions across the eligible subcategories by comparing monitored emissions and removals with a baseline as follows: Actual GHG net emissions minus Net Emission Baseline for the Program Area equals Net emission reductions	For each year of the ERPA Term, the total net Emission Reductions are calculated by taking the ex-ante estimate of actual GHG net emissions and subtracting the Emissions Baseline applicable to the corresponding ERPA Phase; the subtraction operation described above is carried out correctly.	Confirmed through independent recalculation and review of the ERPD.	R	B	C
RA-63	PR§4.6.1	Good practice requires that bias be prevented wherever possible, such as by using appropriate QA/QC procedures. Where biases cannot be prevented, it is good practice to identify and correct them when developing a mean estimate of the emission reductions. In particular, the point estimate of the emission reductions that is used for requesting	Sources of bias[70] that can reasonably be projected to impact the estimate of the total net Emission Reductions are identified, and steps are taken to correct them to the extent practical.	Confirmed through review of the ERPD and discussions with the program team.	R	P	I

[70] In the context of this indicator, a "source of bias" is a factor resulting in divergence between the Emission Reductions that will be calculated for each year of the ERPA Term and the theoretically knowable (but, for practical purposes, unknowable) difference between the following quantities:

1. The emissions from the Program Area during the year in question that are attributable to the subcategories eligible for ISFL Accounting.
2. The average yearly emissions from the Program Area during the Baseline Period(s) that were attributable to the subcategories eligible for ISFL Accounting. In practice, some bias in the constructed Emissions Baseline is inevitable, for a multitude of reasons.

The following should be noted:

1. For all practical purposes, bias in the estimated Emission Reductions are inevitable.
2. The focus of this indicator is on bias in the estimated Emission Reductions, rather than on bias in the individual components of that estimate (e.g., in the Emissions Baseline). In theory, if the Emissions Baseline and the monitored emissions were both "off" by the same quantity, the biases would compensate and the estimate of the Emission Reductions would be free from bias.
3. At the time of the assessment, it may not be possible for all sources of bias to be identified and corrected, as only the Emissions Baseline is finalized and the quantification of monitored emissions has yet to occur. Therefore, at this time, the focus should be on identifying and correcting sources of bias in the Emissions Baseline and, to the extent that sources of bias can reasonably be projected to impact the monitoring of emissions based on the monitoring plan as described in Section 4.5 and Annex 10 of the ERPD, such sources of bias are also addressed.

No.	Sec.	Requirement Text	Indicator	Assessment Findings	LA	CT	CC
		payment should be free of biases as much as it is practical and possible.					
RA-64	T§4.7.1	Please provide an assessment (roughly 500 words or less) of the anthropogenic and natural risk of Reversals that might affect emission reductions during the ERPA Term and, as feasible, the potential risk of Reversals after the end of the last ERPA Phase.	A "justifiable" assessment of the anthropogenic and natural risk of Reversals that might affect Emission Reductions during the ERPA Term and, as feasible, the potential risk of Reversals after the end of the last ERPA Phase, is provided in Section 4.7.1 of the ERPD.	Confirmed through review of the ERPD and supporting documentation, and discussions with the program team.	R	B	C
RA-65	T§4.7.2; BR§7.2	Please provide an ex-ante assessment of the level of risk of Reversals, using the ISFL approved risk assessment and buffer tool. The Reversal risk assessment tool shall be used to determine the Reversal Set-Aside Percentages based on the two identified risk factors. The risk indicators in the second column of Table 2 below are indicative and non-exclusive and are provided as an example to show how to assess the risk of Reversal for each of the risk factors. The risk of Reversal is assessed for both risk factors (A and B) as high, medium or low with associated Reversal Set-Aside Percentages. The Reversal Set-Aside Percentage for the whole ER Program is calculated as the sum of the Reversal Set-Aside Percentages for both of the Risk Factors.	1. An ex-ante assessment of the level of risk of Reversals is provided in Section 4.7.2 of the ERPD. 2. This estimate is calculated as the sum of the reversal set-aside percentages identified in Result A and Result B of Table 2 in the Buffer Requirements.	Confirmed through review of the ERPD and independent recalculation of the reversal set aside.	L	B	C
RA-66			The reversal set-aside percentages identified in Result A and Result B of Table 2, for purposes of the ex-ante estimate reported in Section 4.7.2 of the ERPD, have been determined in a "justifiable" manner.[71]	Confirmed through review of the ERPD and discussions with the program team.	L	B	C

[71] Note that the risk indicators provided in Table 2 of the Buffer Requirements are simply examples. The assessment against this indicator should have both an element of (1) assessing the select risk indicators (i.e., assessing whether the selected indicators the applicable indicators in the context of the ER Program) and (2) assessing the level of risk assigned to each risk factor.

Appendix B: Audit Plan

Program	GHG Emissions reduction program in Orinoquia – Biocarbon ERP
Program Entity	Ministerio de Agricultura y Desarrollo Rural and Ministerio de Ambiente y Desarrollo Sostenible
Program Location	Orinoquia region of Colombia (comprising the jurisdiction of the departments of Arauca, Casanare, Meta and Vichada)
Date last updated	Last updated: 11/13/2023 Last shared with client: 8 May 2023

Introduction

This plan provides a description of the assessment services to be performed in respect of the Emission Reductions Program Document (ERPD) submitted for review by SCS Global Services (SCS). The structure of the assessment (e.g., the assessment objectives, scope and criteria), as described in this report, is established in SCS' inception report (version 2-4), which was updated in March 2021 and approved as final by the World Bank Group. The reader is directed to SCS' inception report for further background information.

Assessment Objectives

The objectives of the assessment are as follows:

- Ensure, according to the applicable level of assurance (see Section 4, below), that the information provided in the ERPD is correct and complete (i.e., not leaving out information that might affect the opinion of the reader)
- Conduct an independent assessment of the conformance against the approved ER Program Requirements and associated guidelines
- Apply expert judgement to evaluate the feasibility of program design aspects and identify areas of improvement to inform the World Bank Group's and ISFL Contributors' review of the ER Program.

Assessment Scope

The scope of the assessment entails review as required to achieve the above objectives; the following areas will be particularly emphasized. In some cases, consideration of the areas indicated below extends the scope of the assessment beyond a strict assessment for conformance to the assessment criteria.

Aspect	Expected Scope of the Assessment
Drivers of AFOLU emissions and removals	▪ Correctness and completeness of the analysis on historic and future trends (qualitative and quantitative) in drivers of AFOLU emissions and removals ▪ Expert judgement of the analysis, including the barriers to mitigation
Description and justification of the ISFL ER Program's planned actions and interventions	▪ Expert judgement whether the proposed actions and interventions address drivers of emissions and are informed by the contribution of key sources and sinks to the total GHG emissions and removals in the Program GHG Inventory and the analysis of trends ▪ Expert judgement of continued private sector engagement achieved or planned in addressing drivers of emissions ▪ Expert judgement of risks to implementation and potential benefits of planned actions and interventions
Financing plan for implementing the planned actions and interventions of the ISFL ER Program	▪ Correctness and completeness of information on the transaction costs and the identified funding gaps for the ISFL ER Program and the plan for mitigating gaps ▪ Expert judgement whether the identified sources of finance are sufficient to affect the land use activities and drivers of emissions and removals ▪ Expert judgement of the financial and economic analyses, discount rates, and flows of funds
Analysis of laws, statutes, and other regulatory frameworks	▪ Correctness and completeness of the information provided in the program document ▪ Expert judgement to identify any known legal or regulatory issues in the program area that can affect the program design.
Risk for displacement	▪ Correctness and completeness of the information provided in the analysis of displacement risk ▪ Expert judgement on the effectiveness of the proposed strategy to mitigate and/or minimize, to the extent possible, potential Displacement
Participation under other GHG initiatives	▪ Correctness and completeness of the information provided whether parts of the program area, or projects in the program area, are included in other GHG initiatives and if this creates a risk of double counting, and/or double payment
Data management and registry systems to avoid multiple claims to ERs	▪ If applicable, expert judgement whether the Program and Projects Data Management System is sufficient, secure, and robust ▪ If the ISFL ER Program is not using the World Bank's transaction registry for FCPF and ISFL ER Programs, expert judgement whether the transaction registry is sufficient, secure, and robust

Aspect	Expected Scope of the Assessment
	▪ If applicable, expert judgement of the data management and registry systems to recognize nested projects and avoid multiple claims to ERs
ISFL Reporting	▪ Assess whether the GHG Inventory is comparable in its use of definitions, categories and subcategories with national processes such as the national GHG inventory, REDD+ and the Biannual Update Report ▪ Assess whether the best available data sets, methods, models and assumptions have been used in the ISFL Reporting and that the inventory applies the general IPCC principles of transparency, completeness, consistency, accuracy and comprehensiveness
Selection of subcategories for accounting	▪ Correctness and completeness of the data and information provided on the choice of the subcategories ▪ Assess whether the quality and baseline setting requirements have been applied correctly and the choice of the subcategories is correct and justified ▪ Assess whether all significant pools and sources of greenhouse gas emissions are included. If a major carbon pool/ or gas is excluded, assess whether this has been sufficiently explained and justified, provided it is not a significant pool
Emissions baseline	▪ Assess whether the methods used to construct are in line with the IPCC and best practice approaches as defined, for example by the GFOI ▪ Correctness and completeness of the data used to construct the baseline ▪ Assess whether the baseline requirements have been applied correctly and the Emissions Baseline estimate is calculated correctly ▪ Assess whether the uncertainty in the Emissions Baseline has been correctly identified and assessed in accordance with IPCC good practice
Time bound plan to increase the completeness of the scope of accounting and improve data and methods for the subsequent ERPA Phases during the ERPA Term	▪ Expert judgement whether the proposed plan is feasible, addresses priority subcategories and is likely to increase the completeness of the scope of accounting and improve data and methods for the subsequent ERPA Phases
Ex-ante estimation of the emission reductions	▪ Expert judgement if the assumed effectiveness of the program in addressing the drivers and its impact on the emissions is justified and based on reasonable assumptions
Monitoring approach	▪ Assess whether the data and methods proposed for monitoring are consistent enough with the data and methods used for the determination of the baseline to allow for meaningful comparison and calculation of the emission reductions

Aspect	Expected Scope of the Assessment
	▪ Assess whether the proposed monitoring methods and arrangements are in place as described in the Program Document and are technically capable of collecting the data ▪ Assess whether the uncertainty in the data and parameters to be monitored has been correctly identified and assessed and if the proposed approach to manage and reduce uncertainty reflects good practice
Reversals	▪ Correctness and completeness of the data and assumption used in the assessment of the reversal risk ▪ Assess whether the ISFL Buffer Requirements have been applied correctly

Assessment Criteria and Good Practice Guidance

The criteria for the assessment are as follows:

- The approved ISFL ER Program Requirements, Version 2.0, April 2021 ("the Program Requirements")
- The following associated guidelines:
    - ISFL Buffer Requirements, Version 2.0, April 2020 ("the Buffer Requirements")
    - ISFL Program Document Template, Version 2, January 2020[72]

The following guidance documents (or collections of documents) will be considered to contain *good practice* in undertaking the assessment, though said documents are not formally considered to be part of the assessment criteria. Where professional judgment may be applied in assessing against the indicators set out in the checklist set out in Annex A of SCS' inception report ("the assessment checklist"), methodological approaches that appropriately follow *good practice* will automatically be assumed to meet the intent of a given indicator.[73]

- 2006 IPCC Guidelines for National Greenhouse Gas Inventories ("the IPCC 2006 Guidelines")
- The following ISFL Program documents:
    - Guidance Note on the Preparation of Financing Plan of REDD+ and Landscape Emission Reduction Programs, Version 1.0, August 2017 ("the Financing Plan Note")
    - Guidance Note on the Ability of Program Entity to Transfer Title to Emission Reductions, Version 1.0 March 2018 ("the Title Transfer Note")

[72] Noting that any guidance within the PD Template pertaining to brevity or word count will not be considered part of the auditable criteria, though said guidance will be referenced in determination of the level of detail that should be within the ERPD.

[73] This does not necessarily preclude methodological approaches that do not follow good practice. It does, however, mean that additional professional judgment will be required to determine whether such methodological approaches are in conformance with the assessment criteria.

    - Guidance Note on Application of IPCC Guidelines for Subcategories and Carbon Pools Where Changes Take Place Over a Longer Time Period, Version 1.0, March 2021 ("the Carbon Pools Note")
- GFOI 2020, Integration of remote-sensing and ground-based observations for estimation of emissions and removals of greenhouse gases in forests: Methods and Guidance from the Global Forest Observations Initiative, Edition 3.0, Food and Agriculture Organization, Rome ("GFOI")

Level of Assurance

Both a reasonable and limited level of assurance have been selected for the assessment work described in this plan and are determined at the indicator level as set out in the assessment checklist.

Treatment of Materiality

Where one or more discrepancies are identified during the course of assessment activities, the following criteria will be abled in order to determine whether said discrepancies are material:

- In respect of quantitative matters, discrepancies will be identified and quantified by the audit team based on the audit team's recalculation, based on the guidance found in the indicators in the assessment checklist. Where the methodology used in production of the ERPD does not follow the guidance in the assessment checklist, a discrepancy between the output produced by the audit team and the information reported in the ERPD will likely result, and any such discrepancies will be evaluated for materiality according to the following criteria:
    - A discrepancy in the Program GHG Inventory and/or the process used to select subcategories eligible for ISFL Accounting (including a discrepancy in the ordering of subcategories by total GHG emissions and removals on an absolute basis) will be considered material if it results in an incorrect determination of the subcategories eligible for ISFL Accounting.
    - A 1.00% materiality threshold applies to any over-estimation of the Emissions Baseline.[74]
- Regarding reporting of information in the ERPD:
    - Any errors in the reporting of factual information in the ERPD will be considered material if the incorrectly reported information is directly or indirectly required to be reported in the ERPD by the assessment criteria.

Any discrepancies identified as material through application of the above criteria will be treated as non-conformities in the assessment process. Any discrepancies not identified as material through application

[74] The materiality analysis will be carried out by first calculating the difference between the reported Emissions Baseline and the assessment team's calculation of the same quantity, and then dividing by the reported Emissions Baseline. If the resulting quantity is greater than 1.00%, the discrepancy is considered material. Otherwise, the discrepancy is not considered material. Under-estimation of the Emissions Baseline will not be considered a material discrepancy.

of the above criteria will inherently be considered immaterial. It is possible that discrepancies may be identified that do not need to be corrected immediately but that will require corrective action or mitigation at some later time. Under this situation, a special type of finding, termed an Observation, will be issued by SCS (see "Description of SCS' Findings Process," below, for more information).

Description of Assessment Process

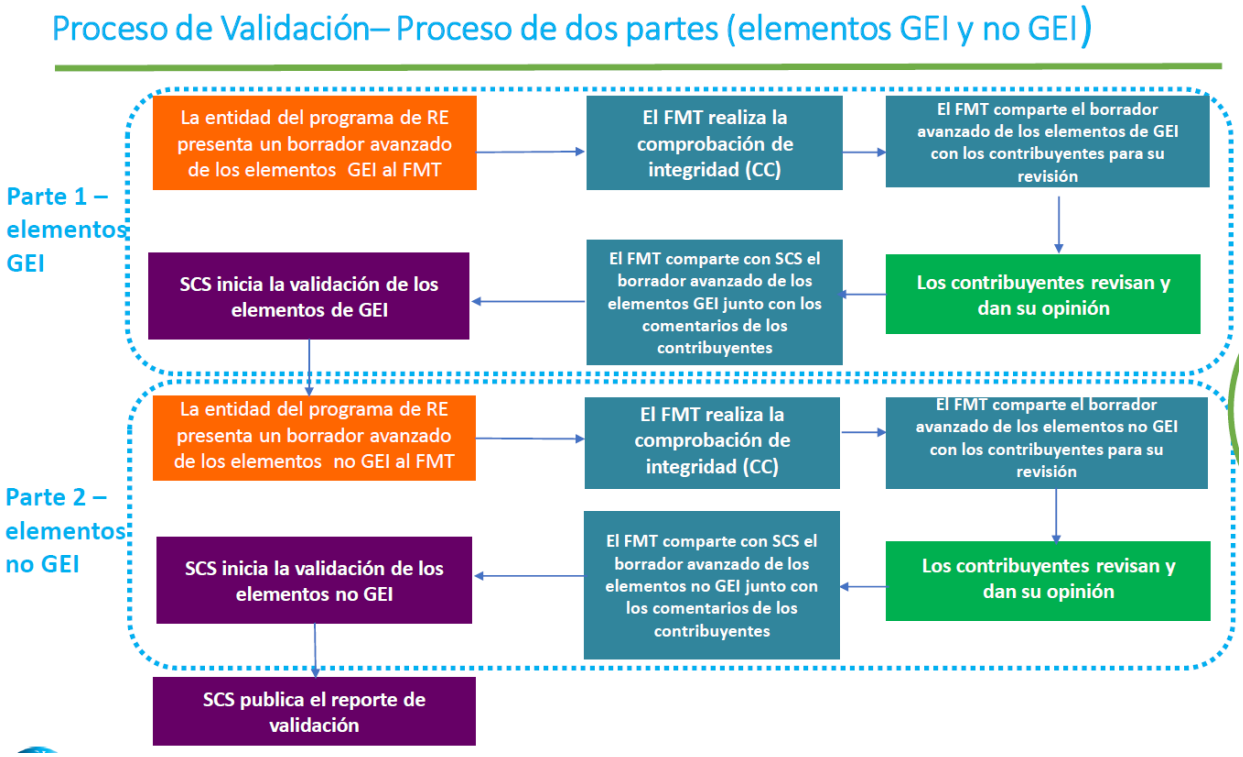
Introduction

The planned assessment services will be performed through a combination of document reviews, interviews with relevant personnel, and on-site inspections.

The scope of this assessment has been divided into two phases:

(1) Part 1: GHG elements

(2) Part 2: Non-GHG elements



Project Kickoff

The assessment process will begin with a "kickoff call" or conference call. This meeting is an opportunity for introductions as well as a chance to ensure that all parties involved are fully informed regarding the

basic parameters of the assessment engagement (e.g., scope, criteria, materiality threshold, level of assurance) and to clarify expectations regarding the assessment timeline. A preliminary Gantt chart and logistics regarding milestones as well as any upcoming in-person or remote office meeting(s) and the one site visit will be discussed during the kickoff call. The Gantt chart will be updated throughout the assessment process as it is subject to changes based on the completion of milestones by participants.

The kickoff call was conducted on 29 November 2021.

Document Review and Desk Review Findings

Upon receipt of relevant project documentation, including the ERPD, a document review will take place. During this phase of the assessment, the assessment team will likely request additional documentation and information to support this review. The objectives of the document review are as follows:

- Assess conformance for any requirements against which it is possible to check conformance as a desk-based exercise, and:
    - Where conformance is confirmed, document such in the assessment checklist
    - Where clear evidence of nonconformance is identified, document such in the assessment findings (see below)
    - Where more information is needed to clarify whether conformance has been attained, the following options may be taken:
        - Issue a finding (see below)
        - Follow up with a more in-depth investigation during subsequent meeting(s) and/or the site visit
- Identify any circumstances that would threaten the integrity of the planned site visit

The outcomes of the document review are the following:

- A round or more of "desk review findings,"[75] highlighting any clearly identified areas of nonconformance or formally identifying any areas in which additional information is required in order to assess conformance
- Inputs to inform the development of the risk assessment and sampling plan (see below)

It is important to note that one possible outcome of the document review is that the assessment team determines that the ER Program is not yet ready for the site visit. In such cases, the assessment team would have identified "red flags" which would lead them to determine that the site visit would be premature. Should this situation arise, the assessment team would promptly alert the ISFL team in the World Bank Group of the "red flag" issues and work with them to develop an appropriate course of action. Examples of issues that could preclude a site visit are as follows:

[75] See "Description of SCS' Findings Process," below, for a description of the types of findings issued by SCS.

- Documents submitted by ER Program personnel contain non-conformances of a nature that indicate potential ER Program-wide deficiencies or areas of significant risk.
- Documents submitted by ER Program personnel contain significant areas of incomplete information.
- Documents submitted by ER Program personnel fail to meet professional standards (e.g., poor/unclear organization, writing or translation).

In the absence of such "red flag" issues, the assessment team will alert the ISFL team in the World Bank Group of the intent to proceed with the site visit, and will await approval prior to initiating site visit preparation (e.g., booking airline tickets and coordinating with ER Program personnel). Once clearance is received, there will be a one month to one and a half month window following the delivery of the desk review findings to allow for adequate preparation.

Office Meetings and Site Visit

Office meetings

The office meeting(s) will consist of program personnel being invited to explain various elements of the ERPD and to demonstrate to the assessment team the manner in which assessment criteria have been met. The assessment team will work with personnel being interviewed to identify means of independent confirmation of important assertions (in a manner that does not jeopardize the independence of the assessment engagement).[76] This process will proceed most smoothly when personnel being interviewed are ready to actively engage with the assessment team to provide the requested information. In this sense, personnel being interviewed are invited to work collaboratively with the assessment team to demonstrate, based upon the agreed upon level of assurance, that the criteria requirements have been complied with and that the ERPD is free from material discrepancy.

Site Visit

It is anticipated that the site visit will take place within approximately one month to one and one-half months after SCS receives the draft phase 2, non-GHG elements. Although the focus of the site visit will be on the Phase 2, non-GHG elements, if the audit team has been unable to reach a reasonable level of assurance on any phase 1, GHG-elements, additional phase 1 elements may be included in the scope of the site-visit.

One site visit will be conducted to accomplish the following objectives:

- Hold office meetings that are most efficiently held in-person.
- Undertake direct physical observations and/or measurements, and/or hold confirmatory interviews with stakeholders.

[76] For example, if it is asserted that certain emissions data originated from a certain government agency, the assessment team may request assistance in making independent contact with said agency.

In planning for the site visit, the assessment team may require different types of assistance as part of this process, including the following:

- Logistical assistance (e.g., transportation, locating safe food and drinking water, and securing safe lodging)
- Assistance facilitating interviews and meeting with stakeholders during the site visit

The assessment team will provide its own accommodation and transport, especially in the main cities.

At the end of the site visit, a closing meeting will be held. The purpose of the closing meeting will be for the assessment team to present their findings and observations, including providing positive feedback, and discuss next steps in the process. The closing meeting will also revisit the Gantt chart and the associated remaining milestones.

Whereas, actual time on site will be ER Program dependent, site visit activities will be limited to the following:[77]

- Interviews with ER Program personnel, including related to identification of any known legal or regulatory issues in the Program Area that can affect the ER Program's design
- Interviews with individuals responsible for conducting stakeholder consultations
- Interviews with knowledgeable individuals regarding the agents and drivers of deforestation
- Assessment of the ER Program's planned actions and interventions
- Office meetings to determine conformance with the Program Requirements
- Ground-truthing any data for which remotely sensed imagery has been used in the estimating carbon stocks (Phase 1 element, as needed)
- Field sampling for ER Programs in which physical sampling was employed to estimate carbon stocks (Phase 1 element, as needed)

The assessment teams will not conduct stakeholder interviews regarding the extent or nature of stakeholder consultation,[78] to reduce duplication of efforts (in respect of the World Bank Group's due diligence processes).

Site Visit Findings

A round of findings, termed the "site visit findings" will be issued after the site visit. In conjunction with the desk review findings, the site visit findings constitute the comprehensive listing of all outstanding issues that have been identified as part of the assessment process. It is anticipated that site visit findings will be issued within approximately one to two weeks after the end of the site visit. (This entails

[77] Site visits will occur for all ER Programs and an individual ER Program site visit shall not exceed 20 person-days. Additional person-days and/or site visits, if needed, are outside the scope of SCS' proposal.
[78] Per email guidance provided by World Bank Group personnel on 8 February 2019 and 11 February 2019.

an approximately three and one-half month time period from SCS' receipt of the phase 2, non-GHG elements to issuance of site visit findings.)

Report Writing

In the assessment report, the assessment team will document how conformance with the assessment criteria has been assessed. The assessment report will be supported with the assessment checklist.

Technical Review

An independent technical review will be carried out. This technical review is not intended to be a second iteration of the assessment process, but emphasizes review of the assessment team's activities, findings and conclusions, as well as a review of the assessment report. While the review is targeted more at review of the assessment documentation than the ERPD, it is always possible that additional discrepancies could come to light during the technical review, which may result in issuance of new findings.

Release of Report

Once the technical reviewer has signed off on the assessment report, a draft assessment report and opinion will be submitted to the ISFL team in the World Bank Group. SCS will modify the draft assessment report based on feedback from the ISFL team in the World Bank Group and will then submit a final assessment report and opinion. A videoconference with ISFL Contributors to discuss the assessment findings will also take place at this time.

Description of SCS' Findings Process

Findings Overview

Findings are the formal mechanism used by SCS to either (a) require corrective action, (b) request additional information, analysis or justification or (c) identify areas of risk or concern. Findings will be issued against the relevant text of the assessment criteria (not necessarily against the specific language of the applicable indicator in the assessment checklist); any additional good practice guidance will also be cited.

The findings are issued to ER Program personnel using a proprietary workbook-based approach, termed the Findings Presentation Workbook. This gives ER Program personnel the opportunity to respond to the findings and allows for efficient and transparent tracking of the current status of each finding. With each round of findings (one from the desk review and one from the site visit), the assessment team will typically go over the findings via conference call or webinar with the entity being assessed to ensure that the findings are understood.

Throughout the engagement, SCS strives to keep ER Program personnel informed of the findings and potential findings as soon as any issue arises. This can be done by phone, e-mail or virtual communication such as Skype and Zoom, but should be documented by sending an updated version of the Findings Presentation Workbook. The assessment team will also communicate the potential impact of material findings to ER Program personnel. ER Program personnel will be given a deadline, based on the agreed upon Gantt chart, for providing a written response. After the response is received, the assessment team will evaluate the submission and determine if adequate information has been provided to correct the non-conformity or if additional findings should be issued.

In special cases, findings may be withdrawn if the assessment team finds that the finding itself is no longer relevant.

Certain circumstances may arise under which the steps set out below (report writing, technical review and release of the assessment report) will be completed even though open findings persist.

Potential triggers for issuance of an assessment report and opinion while findings are open are as follows:

- The assessment team receives communication from the World Bank Group and/or the Program Entity indicating a decision not to respond (or respond further, in the case that a response has already been provided) to one or more open findings.
- It is the judgment of the assessment team, in consultation with other parties to the process, that closure of one or more findings would be infeasible, given the time and resources available to the ER Program personnel.
- One or more findings remain open and the time required for issuance and review of responses to findings exceeds the number of days set out in SCS' financial proposal.

Should this situation arise, SCS will consult with the World Bank Group and the Program Entity regarding whether to proceed with issuance of an assessment report and opinion.[79]

When an assessment report and opinion is issued while findings are open, any outstanding issues will be detailed in a designated section entitled "Potential or Actual Areas of Risk or Concern." Here, the assessment team will document conclusions as they relate to any unresolved findings. This section can be considered a summary description of areas of potential opportunity for improvement as well as areas of current non-conformance or potential risk of non-conformance in the future.

Categorization of Assessment Findings

The following discusses the types of findings that may arise from the assessment process.

New Information Requests (NIRs)

[79] However, SCS reserves the right to proceed with issuance of an assessment report and opinion while findings are open at its sole discretion.

When the assessment team determines that they have not been furnished with sufficient information to make a decision regarding conformance, a New Information Request (NIR) will be issued. After the response is received, the assessment team will evaluate the submission and determine if adequate information has been provided or if additional findings (NIR, NCR, OBS) should be issued.

Non-Conformity Reports (NCRs)

When the assessment team has identified (1) a clear non-conformity with respect to a specific indicator (where a given indicator is of the "binary" conformance type) or (2) a material discrepancy (see "Treatment of Materiality", above, for more information), a Non-Conformity Report (NCR) will be issued. Closure of an NCR requires that the assessment team be provided with evidence that the underlying issue resulting in issuance of the NCR has been duly addressed. While SCS' Auditor Code of Conduct precludes consulting as to how to address non-conformities, the assessment team is encouraged to provide a thorough explanation of the basis of any non-conformities or material discrepancies observed, including a detailed explanation regarding (1) the nature of any discrepancies observed and/or (2) how applicable requirements have not been complied with.

Observations (OBSs)

An OBS indicates one or more of the following:

- An area where immaterial discrepancies exist between the observations, data testing results or professional judgment of the assessment team and the information reported or utilized (or the methods used to acquire such information) within the ERPD.
- An area where the expert judgement of the assessment team suggests that there are opportunities for improvement in the areas falling within the assessment scope.
- An area which may become a non-conformity in the future.

Where an OBS is written against an indicator of the "professional judgement" conformance type, the OBS will be written when a low (III) or medium (II) conformance rating has been assigned. The General Guidance section in the assessment checklist contains more detail regarding the two conformance types and ratings.

Forward Action Requests (FARs)

When the assessment team finds that one or more NIR or/and NCR have not been closed after significant[80] efforts made by the Program Entity to provide sufficient evidence to resolve the underlying issue, a FAR is issued. A FAR can be issued only after having discussed it with the World Bank and upon the approval of the Fund Manager/FMT. FAR will be turned into World Bank Conditions of Effectiveness that need to be fulfilled by ER Programs during the Conditions Fulfillment period following the signature of the ERPA to ensure the FAR is addressed prior to the submission of the first ER Monitoring Report.

[80] Significant effort can be considered when more than three rounds of findings are needed to close one or more NIR or/and NCR or by an ad hoc decision made by the ISFL Fund Manager

A FAR shall be addressed during the first monitoring event, and a VVB shall provide a positive opinion as part of the first verification report.

Audit Team

The following audit team has been assembled to provide the audit services described in this plan:

- Lead Auditor: Alexa Dugan
- Auditor: Vanessa Mascorro
- Technical Reviewer: Dr. Erynn Maynard-Bean

Dates of Substantive Meetings, Interviews and/or Site Visits

The planned meetings, interviews and/or site visits are listed in the table below. In accordance with SCS' inception report, this table includes the following information:

- Individuals/groups/organizations to be interviewed
- Locations/communities to be visited

Date(s)	Attendees	Purpose
30 July 2021	World Bank Group, World Bank FMT, Program Participants, SCS	Kick off callI: Introductions, scope and criteria review, logistical planning
1 October 2021	World Bank Group, World Bank FMT, Program Participants, SCS	Quantification call: Agriculture and livestock emissions
1 October 2021	World Bank Group, World Bank FMT, Program Participants, SCS	Quantification call: Land use and land cover change emissions
9 December 2021	World Bank Group, World Bank FMT, Program Participants, SCS	Discussion and clarification about AFOLU1 agriculture and livestock findings.
17 December 2021	World Bank Group, World Bank FMT, Program Participants, SCS	Discussion and clarification about AFOLU2 findings, program area, Activity Data, Emission Factors.
24 January 2023	World Bank Group, World Bank FMT, Program Participants, SCS	Discussion and clarification about AFOLU2 findings - gains and losses quantification process, forest land remaining forest land, typification of deforestation and AD.
4/19/2023, 4/25/2023, 4/28/2023, 5/4/2023	World Bank Group, World Bank FMT, Program Participants, SCS	Non-GHG components

Meeting Agendas

Land use land cover call; Internet-Based Meeting Date: 1/10/2021, 90 minutes	
Date	Interviews, Document and Data Review

October 2021	**Completeness of Reporting (PR§4.1.1, PR§4.1.2, PR§4.1.4)** ▪ Indicator RA-01 requires the assessment team to assess the extent to which the Program GHG Inventory reports on all emissions and removals associated with each category identified as "AGRICULTURE, FORESTRY, AND OTHER LAND USE" (i.e., with a category code beginning with 3) in Table 8.2, Volume 1, Chapter 8 of the IPCC 2006 Guidelines. ▪ Therefore, program personnel to walk the assessment team through the following workbooks, and provide detailed overview of the process to develop the data and emissions factors pertaining to land use and land use change subcategories (e.g., forest converted to grassland, cropland converted to forest, etc) **Temas especificos:** - Nos gustaría saber más sobre el proceso para la estimación o extracción de las variables: ▪ Excel: Deforestación: 3b1aii, • Hoja - Tipificacion AGB ▪ – ¿Como determinaron las áreas de las clases de suelos (columns C-O) y los porcentajes de las clases de uso de suelo (columnas Q-AC)? El equipo de auditoria necesita verificar todas las áreas de cada clase y año. ▪ -- Porque no utilizaron los valores observados de áreas de deforestación en columnas C-O en la hoja "estimación(línea base)". ¿Como modelaron las áreas? Las áreas observadas están diferente de las áreas modelados en el periodo base. ▪ -- ¿Como determinaron todos los factores de emisiones de cada uso de suelo? ▪ ▪ Bosque remanentes (cambio de reservas): ▪ -- No es claro porque las transiciones a bosque a Arbustales, bosque a plantación, y bosque a vegetación secundaria están incluidos en la subcategoria bosque **remanentes**. Ch. 4 de IPCC 2006 dice Los bosques remanentes son "bosques gestionados que han estado en tierras forestales durante más de 20 años (por defecto), o durante un periodo de transición específico del país". Esto sugiere que no hay transición. ▪ -- Arbustales están clasificado como bosque (3B1aii) en los cálculos. Porque no incluidos en la clase de 3B3b (pastizales)? ▪ **Hojas - Factores Suelos – Tipificación Y Suelos (Linea Base-Tipificado)** • Cuál es la fuente de los factores de suelo utilizados para la Orinoquia. • Cuál es la fuente del valor de COSref(tc/ha) - reserva de C de referencia del suelo específica de la región • El equipo de auditoría debe poder confirmarlos de forma independiente. ▪

	▪ Bosque (natural) remanentes: • No es claro si este clase fue incluidos. Tabla 9 de ERPD indica que la subcategoria fue incluidos pero, no realiza los requisitos espaciales? ▪ Transiciones y estados estables (steady states): • Según sección 5 en ISFL Nota Orientativa Sobre la Aplicación de las Directrices del IPCC (**Cambio en las reservas de carbono de la biomasa (biomasa aérea y biomasa subterránea**) para las tierras forestales convertidas en tierras de cultivo o pastizales), en la nota orientativa del ISFL sobre la aplicación de las Directrices del IPCC, es un requisito para contabilizar de los emisiones y acumulaciones después de la transición de bosque a pastizales y agricultura ▪ ---- En la sección 5 se presentan diferentes opciones para contabilizar las pérdidas y ganancias en estado establesi. ¿**Cómo ha contabilizado el equipo del programa el estado estable después de las transiciones**? Donde están los cálculos de emisiones en AGB y BGB después de transiciones? ▪ ▪ Transición de Superficies de agua - Vegetación Acuática: • Según sección 6.2 ISFL Nota Orientativa Sobre la Aplicación de las Directrices del IPCC “Para la línea de base de las emisiones, los programas de ER de ISFL seguirán el enfoque previsto en el capítulo 2 del Suplemento 2013 de las Directrices del IPCC de 2006 para los inventarios nacionales de gases de efecto invernadero: Humedales ("Suplemento sobre humedales"). Las emisiones/remociones anuales de CO2-C in situ procedentes de suelos orgánicos drenados en la Línea de Base de Emisiones se calcularán utilizando la ecuación 2.3 del Suplemento sobre Humedales y la orientación proporcionada en esta nota (incluida la orientación proporcionada en el recuadro 4 en forma de ejemplo)” • ¿Se ha desarrollado y utilizado un factor de emisión del suelo específico para los humedales, utilizando Capitulo 2 de Suplemento sobre humedales?

Agriculture and Livestock emissions; Internet-Based Meeting Date: 1/10/2021, 90 minutes	
Date	Interviews, Document and Data Review
1 October 2021	**Completeness of Reporting (PR§4.1.1, PR§4.1.2, PR§4.1.4)** ▪ Indicator RA-01 requires the assessment team to assess the extent to which the Program GHG Inventory reports on all emissions and removals associated with each category identified as "AGRICULTURE, FORESTRY, AND OTHER LAND USE" (i.e., with a category code beginning with 3) in Table 8.2, Volume 1, Chapter 8 of the IPCC 2006 Guidelines. ▪ Program personnel to walk the assessment team through the following workbooks, and provide detailed overview of the process to develop the data and emissions factors pertaining to land use and land use change subcategories (e.g., forest converted to grassland, cropland converted to forest, etc) ▪ **Temas especificos:** - Nos gustaría saber más sobre el proceso para la estimación o extracción de las variables: • **N(T),** la cantidad de cabezas de ganado de la especie/categoría T del país • Los calculos para las estimaciones de los factores de emisión (FE) de Nivel 2, utilizados para derivar la Fermentacion Enterica de animales bovinos. El reporte menciona que el FE fue calculado para el departamento de acuerdo a la regionalización ganadera según metodología del IPCC 2019, NRC (2000,2001), CSIRO (2007) y CNCPS (2004). • **Como derivaron el FE del CH4 por gestión de estiércol para cada categoría animal?** Utilizaron los valores por defecto para el Nivel 1 de las tabla 10.14? O utilizaron la ecuación 10.23 para estimarlos, o alguna otra fuente? • **TAM, masa animal típica promedio:** En el reporte de ecuaciones se menciona que se tomaron de las tablas 10A-4 a 10A-9, pero no pudimos validar estos valores en dichas tablas. • **$MS_{(T,S)}$, fracción del total de excreción anual de nitrógeno para cada especie de ganado.** Mismo caso anterior, en el reporte de ecuaciones se menciona que se tomaron de las tablas 10A-4 a 10A-8, pero no pudimos validar estos valores en dichas tablas. ▪

Non-GHG Interviews; Internet-Based Meetings Dates: 19 - April - 2023 to 4 - May - 2023	
Date	Interviews, Document and Data Review
19 – April 2023	▪ Estimación de las Reducciones de Emisiones GEI (sección 4.6) ▪ Análisis de Incertidumbre (sección 4.5.3 del ERPD)

	▪
25 – April 2023	▪ Plan de Monitoreo (secciones 4.5.1 y 4.5.2 del ERPD) ▪ Plan de Mejora (Anexo 8) ▪ Participación en Otras Iniciativas GEI ▪ Sistemas de Gestión de datos y de Registro ▪
28 – April 2023	▪ AFOLU Factores de Deforestación (sección 3.1.1) ▪ ER Acciones e intervenciones previstas en el programa (sección 3.1.2) ▪ Reversiones de las emisiones GEI (sección 4.7) ▪
4 – May 2023	▪ Completar las entrevistas de los componentes Non-GHG: - Análisis de leyes, estatutos, y otros marcos normativos - Plan de Financiamiento - Reversiones de las emisiones GEI (sección 4.7) ▪ Discutir las solicitudes de acciones futuras (FARs) ▪ Discutir los hallazgos pendientes en el análisis de GHG ▪ Definir cuáles de las cuestiones pendientes puede abordar el equipo del programa para esta primera fase y cuáles deberán remitirse como FARs ▪

Client/Responsible Party Contact

Name of Program Entity	Proyecto Biocarbono Orinoquia – Paisajes sostenibles bajos en carbono
Contact Individual	Iván Darío Gómez Guzmán, National Coordinator
Contact Information	ivan.gomez@minagricultura.gov.co

Audit Schedule

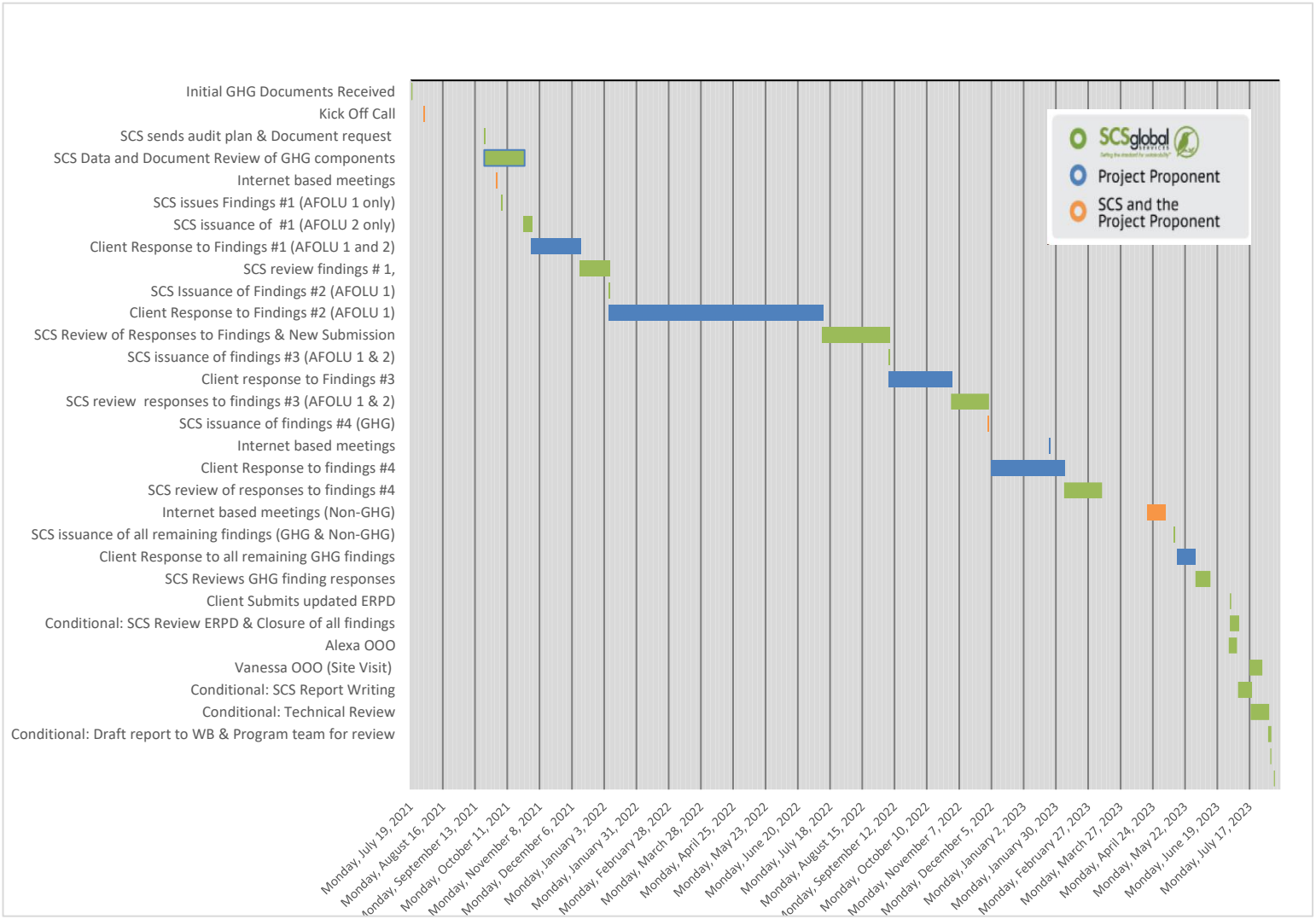
An indicative schedule for the assessment, based on the best knowledge currently available to the assessment team, is included below. This timetable is subject to updates during the assessment process, and such updates will be provided directly to program personnel via email.

* Note that the table below shows the last schedule provided to the program team during the audit. The timeline may have been altered due to delays in closing final findings, updating the ERPD, and/or completing the Technical Review.

Milestone	Start Date	End Date

Initial GHG Documents Received	Monday, July 19, 2021	Monday, July 19, 2021
Kick Off Call	Friday, July 30, 2021	Friday, July 30, 2021
SCS sends audit plan & Document request	Tuesday, September 21, 2021	Tuesday, September 21, 2021
SCS Data and Document Review of GHG components	Tuesday, September 21, 2021	Monday, October 25, 2021
Internet based meetings	Friday, October 1, 2021	Friday, October 1, 2021
SCS issues Findings #1 (AFOLU 1 only)	Wednesday, October 6, 2021	Wednesday, October 6, 2021
SCS issuance of #1 (AFOLU 2 only)	Monday, October 25, 2021	Monday, November 1, 2021
Client Response to Findings #1 (AFOLU 1 and 2)	Monday, November 1, 2021	Monday, December 13, 2021
SCS review findings # 1,	Monday, December 13, 2021	Friday, January 7, 2022
SCS Issuance of Findings #2 (AFOLU 1)	Friday, January 7, 2022	Friday, January 7, 2022
Client Response to Findings #2 (AFOLU 1)	Friday, January 7, 2022	Monday, July 11, 2022
SCS Review of Responses to Findings & New Submission	Monday, July 11, 2022	Wednesday, September 7, 2022
SCS issuance of findings #3 (AFOLU 1 & 2)	Wednesday, September 7, 2022	Wednesday, September 7, 2022
Client response to Findings #3	Wednesday, September 7, 2022	Monday, October 31, 2022
SCS review responses to findings #3 (AFOLU 1 & 2)	Monday, October 31, 2022	Friday, December 2, 2022
SCS issuance of findings #4 (GHG)	Friday, December 2, 2022	Friday, December 2, 2022
Internet based meetings	Tuesday, January 24, 2023	Tuesday, January 24, 2023
Client Response to findings #4	Monday, December 5, 2022	Monday, February 6, 2023
SCS review of responses to findings #4	Monday, February 6, 2023	Friday, March 10, 2023
Internet based meetings (Non-GHG)	Wednesday, April 19, 2023	Thursday, May 4, 2023
SCS issuance of all remaining findings (GHG & Non-GHG)	Friday, May 12, 2023	Friday, May 12, 2023
Client Response to all remaining GHG findings	Monday, May 15, 2023	Tuesday, May 30, 2023
SCS Reviews GHG finding responses	Wednesday, May 31, 2023	Monday, June 12, 2023
Client Submits updated ERPD	Friday, June 30, 2023	Friday, June 30, 2023
Conditional: SCS Review ERPD & Closure of all findings	Friday, June 30, 2023	Friday, July 7, 2023
Alexa OOO	Thursday, June 29, 2023	Wednesday, July 5, 2023

Vanessa OOO (Site Visit)	Monday, July 17, 2023	Thursday, July 27, 2023
Conditional: SCS Report Writing	Friday, July 7, 2023	Tuesday, July 18, 2023
Conditional: Technical Review	Tuesday, July 18, 2023	Wednesday, August 2, 2023
Conditional: Draft report to WB & Program team for review	Wednesday, August 2, 2023	Friday, August 4, 2023
Conditional: SCS shares final report	Friday, August 4, 2023	Friday, August 4, 2023
Conditional: Closing Meeting	Monday, August 7, 2023	Monday, August 7, 2023


Initial GHG Documents Received
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Client Response to Findings #1 (AFOLU 1 and 2)
SCS review findings # 1,
SCS Issuance of Findings #2 (AFOLU 1)
Client Response to Findings #2 (AFOLU 1)
SCS Review of Responses to Findings & New Submission
SCS issuance of findings #3 (AFOLU 1 & 2)
Client response to Findings #3
SCS review responses to findings #3 (AFOLU 1 & 2)
SCS issuance of findings #4 (GHG)
Internet based meetings
Client Response to findings #4
SCS review of responses to findings #4
Internet based meetings (Non-GHG)
SCS issuance of all remaining findings (GHG & Non-GHG)
Client Response to all remaining GHG findings
SCS Reviews GHG finding responses
Client Submits updated ERPD
Conditional: SCS Review ERPD & Closure of all findings
Alexa OOO
Vanessa OOO (Site Visit)
Conditional: SCS Report Writing
Conditional: Technical Review
Conditional: Draft report to WB & Program team for review
SCSglobal
Project Proponent
SCS and the Project Proponent
Monday, July 19, 2021
Monday, August 16, 2021
Monday, September 13, 2021
Monday, October 11, 2021
Monday, November 8, 2021
Monday, December 6, 2021
Monday, January 3, 2022
Monday, January 31, 2022
Monday, February 28, 2022
Monday, March 28, 2022
Monday, April 25, 2022
Monday, May 23, 2022
Monday, June 20, 2022
Monday, July 18, 2022
Monday, August 15, 2022
Monday, September 12, 2022
Monday, October 10, 2022
Monday, November 7, 2022
Monday, December 5, 2022
Monday, January 2, 2023
Monday, January 30, 2023
Monday, February 27, 2023
Monday, March 27, 2023
Monday, April 24, 2023
Monday, May 22, 2023
Monday, June 19, 2023
Monday, July 17, 2023

Appendix C: List of Findings

Please see Section 3.5 above for a description of the findings issuance process and the categories of findings issued. It should be noted that all language under “Recipient Response” is a verbatim transcription of responses provided to the findings by ER Program personnel.

NIR 1 Dated 6 Oct 2021
Standard Reference: ISFL Program Requirements
Document Reference: AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx

Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data." Section 4.1.1 of the ERPD indicates "These are obtained from the single municipal vaccination registry of the Colombian Federation of Cattle Ranchers (FEDEGAN) and departmental information from the Colombian Agricultural Institute (ICA) and (FAOSTAT) Statistics Division Food and Agriculture Organization of the United Nations."
In replicating the calculation of the enteric fermentation and manure management emission factors, workbook "AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx", sheet 3A1 column D and sheet 3A2 column E, the assessment team has been unable to verify the variable N(T) "number of head of animals", for the following categories:

Bovine
Reviewing the source data in the files provided in Folder # 1"Datos de actividad emisiones metano enterico", the audit team couldn't confirm the total number of heads reported in the workbook 001-Inventario_bovino_fedegan 2001- 2020.xlsx or the workbook Censos_bovinos_Municipal_ICA_2015-2019.xlsx.
Moreover, the values found in the workbook Datos_Actividad_Homologados_IPCC_Bovinos_Serie_1990_2020 (4).xlsx for the selected review year of 2014 of the Orinoquia region (sum of column "Numero") per Departamento do not match the values reported in the AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx, sheet SA1 and 3A2, variable N(T), for any of the bovine categories (e.g. "Low Producing Cows" values reported for Arauca 52,002 vs 52,201 found, Casanare reported 4,875 vs 4,894 found, Meta reported 137,049 vs 137,572 found).

Swine
In reviewing the source data in the files provided in Folder # 1"Datos de actividad emisiones metano enterico", the audit team could not validate the total number of heads in the workbook Datos_Actividad_Homologados_IPCC_Porcinos_Serie_1990_2020 (2).xlsx, Sheet 1, Column G, nor those in the workbook Nacional-Porcinos_2005_2016.xlsx, sheet % Participacion, Column AO "Porcinos < 6 meses" and AP "Porcinos > 6 meses" for the selected year of 2014 and the Departamentos of the Orinoquia region. The values found were different for the Arauca, Casanare and Meta Departamentos in both swine categories >6 month and <6month.

ARAUCA Swine<6 month reported 13,597 vs 10,789 found
ARAUCA Swine>6 month reported 21,075 vs 27,441 found
CASANARE Swine<6 month reported 4,513 vs 3,909 found
CASANARE Swine>6 month reported 12,534 vs 13,902 found
META Swine<6 month reported 56,714 vs 59,400 found
META Swine>6 month reported 30,075 vs 23,985 found

Goats
In reviewing the data in the files provided in Folder # 1"Datos de actividad emisiones metano enterico", the audit team found that the total goat animals reported for the Orinoquia region, selected year 2014 in the workbook AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx are different than the source data from workbook Censos ICA Caprinos 2005 - 2020 Escala departamental.xlsx. For example, the total number of animals reported in 2014 for the Departamento Casanare reported in the workbook AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx is 827.

However, in the workbook Censos ICA Caprinos 2005 - 2020 Escala departamental.xlsx the assessment team found a total of 12,900 heads of goat. Likewise, in the Vichada department, 64 heads were reported in the workbook AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx, while 345 heads were found in the Censos ICA Caprinos 2005 - 2020 Escala departamental.xlsx . Moreover, reviewing those values in the workbook Datos_Actividad_Homologados_IPCC_Caprinos_Serie_1990_2020 (1).xlsx, the verification team found that the values reported for Casanare coincide 827 vs 827, and the same for Vichada 64 vs 64; however, the values for Meta are different: reported 6215 vs 6015 found.

Overall the assessment team has been unable to verify the total heads of livestock used for the calculation of emissions from enteric fermentation and manure management. Therefore the assessment team requests the following:
(1) Additional information and demonstration for how the heads of Bovine, Swine and Goats were calculated and/or the data source from where they were extracted.
(2) Goats, the team requires more clarification on the primary source used.
(3) Original published source data (i.e., vaccination record data) for bovine cattle from the (a) Arauca Department and (b) Vichada department for the year 2014.

Project Personnel Response: Dairy and meat cattle (bovines)
The activity data resources to estimate the generated emissions by the dairy and meet cattle represent the vaccination registry of Cattle Ranchers (FEDEGAN) from 2001 to 2013, and the livestock census of the Agricultural Colombian Institute (ICA) from 2014 to 2018.
The bovine municipal activity database (dairy and meat) for the 1990-2020 series (Datos_Actividad_Homologados_IPCC_vs_FEDEGAN_ICA_Bovinos_Serie_1990_2020.xlsx), was used to generate a dynamic table to estimate emissions by department. This dynamic table was updated after the files were sent and the inconsistencies were corrected in the spreadsheets of the national inventory of greenhouse gases in Colombia (AFOLU_1_MODELO_Depart2014_oct.xlsx). This update and verification of activity data was done as part of the quality assurance and quality control (QA/QC) process by the UNFCCC to the Third Biennial Update Report, which will be published in the coming months. The source files and approved data, as well as the updated spreadsheet are shared as attachments.

For the other animal species, the activity data files are attached:
Datos_Actividad_Homologados_IPCC_vs_FENAVI_Avicultura_Serie_1990_2020.xlsx;
Datos_Actividad_Homologados_IPCC_vs_ICA_Bufalos_Serie_1990_2020.xlsx;
Datos_Actividad_Homologados_IPCC_vs_ICA_Caprinos_Serie_1990_2020.xlsx;
Datos_Actividad_Homologados_IPCC_vs_ICA_Equinos_Serie_1990_2020.xlsx;
Datos_Actividad_Homologados_IPCC_vs_ICA_Mulas_Asnos_Serie_1990_2020.xlsx;
Datos_Actividad_Homologados_IPCC_vs_ICA_Ovinos_Serie_1990_2020.xlsx;
Datos_Actividad_Homologados_IPCC_vs_ICA_Porcinos_Serie_1990_2020.xlsx;

Auditor Response: The audit team has focused the assessment on the heads of cattle. We were able to verify that the values used in the calculation of enteric fermentation and manure management for cattle in the workbooks AFOLU_1_MODELO_Depart 2014_oct.xlsx (and others) match those values in the workbook Datos_Actividad_Homologados_IPCC_vs_FEDEGAN_ICA_Bovinos_Serie_1990_2020.xlsx. However, the values in the workbook Datos_Actividad_Homologados_IPCC_vs_FEDEGAN_ICA_Bovinos_Serie_1990_2020.xlsx do not match the number of heads of cattle reported in the ICA census or the FEDEGAN census from the vaccination registry. For instance, for the year 2014, the ICA census shows a total of 1,056,850 total cattle in Arauca. But the workbook Datos_Actividad_Homologados_IPCC_vs_FEDEGAN_ICA_Bovinos_Serie_1990_2020.xlsx shows a value of 1,023,096 total cattle in Arauca. The audit team found similar inconsistencies for years that utilized the FEDEGAN data. For instance, in 2008 the FEDEGAN records in the workbook 001-Inventario_bovino_fedegan 2001- 2020.xlsx shows 789,931 heads of cattle. But the workbook Datos_Actividad_Homologados_IPCC_vs_FEDEGAN_ICA_Bovinos_Serie_1990_2020.xlsx shows 1,026,184 heads of cattle, which is a large difference.
The following are requested:
(1) please provide additional information regarding why there are difference between the FEDEGAN Censo and ICA Censo and the values used to calculate enteric fermentation and manure management emissions.
(2) In the initial finding, the audit team requested a sample of vaccination records to confirm the heads of cattle. This has not yet been received. We understand now that FEDEGAN vaccination data was not used for 2014 (the year initially requested) thus we would like to request vaccination records for 2008 for the Arauca Department.
This finding remains open.

Project Personnel Response 2:
1. The activity data has been homologated and disaggregated at the municipal level based on the information reported by Fedegan (Colombian Federation of Livestock Farmers) and the ICA (Colombian Agricultural Institute), through validated data at the municipal level for the ICA data for the years 2016, 2017, 2018 and 2019 (review files Homologacion_Dato_Actividad_ICA_Bovinos_2016.xlsx, Homologacion_Dato_Actividad_ICA_Bovinos_2017.xlsx, Homologacion_Dato_Actividad_ICA Bovinos_2018.xlsx, Homologacion_Dato_Actividad_ICA_Bovinos_2019.xlsx). According to the following criteria:
i. 3A1ai High Production Cows: are equal to the sum of the females from 2 to 3 years old and those older than 3 years of all the municipalities with dairy orientation (Does not apply to Orinoquia).
ii. 3A1aii Low Production Cows: in the municipalities identified as dual purpose, it is equal to the sum of the females older than 3 years, in the municipalities with the following orientations: Dual Purpose (DP) - Fattening, Dual Purpose (DP) - Breeding, Double Purpose (DP) - Breeding - Fattening, Dual Purpose (DP) - for municipalities with Breeding - Fattening - Milk and Undefined, a proxy of 33.3% of females older than 3 years was used, defined in a technical table with the GHG team.
iii. 3A1aiii Cows used to produce offspring for meat: in the municipalities with the following orientations: Fattening, Fattening –breeding andbreeding is equal to all females older than 3 years; in the municipalities with the following guidelines: Dual Purpose (DP) - Fattening, Dual Purpose (DP) - Breeding, Dual Purpose (DP) - Breeding - Fattening, Dual Purpose (DP) - Breeding - Fattening - Milk and Undefined was used a proxy for 66.6% of females older than 3 years.
iv. 3A1aiv Bulls used principally for breeding purposes: equal to 55% of males older than 3 years
v. 3A1av Calves pre-weaning:is equal to the sum of all calves and calves less than one year old.
vi. 3A1avi Replacement dairy heifers: in the municipalities with the following orientations: Fattening, Fattening – Breeding, Breeding, Double Purpose (DP), Double Purpose (DP) – Fattening, Double Purpose (DP) – Breeding, Double Purpose (DP) - Breeding – Fattening, Double Purpose (DP) - Breeding - Fattening - Milk and Undefined is equal to the sum of the females from 1 to 2 and those from 2 to 3 years; in the municipalities with the herd oriented to milk, it is equal to all the females between 1 and 2 years old.
vii. 3A1avii Growing - fattening cattle: in all the municipalities it is equal to the sum of the males from 1 to 2 years old, the males from 2 to 3 years old and 45% of the males older than 3 years.

The orientation of the population was identified according to the orientation map of the cattle herd in Colombia reported by Fedegan (review files archivo adjunto Fedegan_carta_ganadera_130.pdf, Page 19. Map Orientación del hato colombiano por actividad ganadera 2010).

a. Based on approved data for 2016, 2017, 2018 and 2019. File Analisis_datos_de_Actividad_en_porcentaje.xlsx the percentage distribution by municipality on a national scale (population reference level) was calculated for each of the years (spreadsheet 2016, 2017, 2018 y 2019),This information was averaged by municipality for each IPCC category (spreadsheet 3A1ai Vaca Alta, 3A1aii Vaca Baja, 3A1aiii VAca Carne, 3A1aiv Toros, 3A1aiv Predestetos, 3A1avi Terneras y 3A1avii Engorde) and the average value was assigned to the year 1990 (spreadsheet 1990) to generate statistically reliable data.
b. With the information of the percentage distribution for the years 1990, 2016, 2017, 2018 and 2019, Linear regressions were performed for each municipality in the country and the parameters a

and b of the line were determined for each municipality in each IPCC category (review file Regresiones_lineales_multiples_porcentaje.xlsx)
c. With parameters a and b, the back-projection of the percentage distribution of cattle at the municipal level was carried out for each of the IPCC categories in the entire series from 1990 to 2019 (review file Retroproyeccion_de_porcentajes_municipales_para_la_serie_completa.xlsx)
d. Obtained the retroprojection of the percentage distribution of bovines by municipality and IPCC category at a national scale, this percentage was used on the national total of bovines for each year to disaggregate the national bovine inventory at a municipal scale and calculate the number of animals (review file Datos_actividad_escala_municipal_serie-1990_a_2019.xlsx), the municipal disaggregation was calculated for the series 1990 to 2015, for the years 2016, 2017, 2018 and 2019 the original data reported by the ICA was used.
When comparing the data of the inventory of animals at the departmental scale reported by Fedegan and the ICA respectively with the Homologated Data and grouped at the departmental scale (review file Comparacion_Datos_Homologados_ICA_Fedegan_Serie_1990_2020.xlsx)
We found differences in several of the retroprojected years, this is because the retroprojection was carried out with all the municipalities globally, respecting the national total, when comparing the national total, no differences are found, but when buying the apartments, this is because the inventory is presented on a national scale.

2. The information derived from the vaccination records is reported in the livestock inventory of Fedegan (review file 001-Inventario_bovino_fedegan 2001- 2020 .xlsx) and the Livestock Census reported by the ICA. In the compressed file Censos_ICA.rar, The ICA Censuses (2014 to 2020) are attached. Additionally, this information can be consulted at:
a. Fedegan (https://www.fedegan.org.co/estadisticas/inventario-ganadero) In the link you can download the information on the livestock inventory for the 2001 to 2020 series.
b. ICA Census year 2016 (https://www.ica.gov.co/areas/pecuaria/servicios/epidemiologia-veterinaria/censos-2016)
c. ICA Census year 2017 (https://www.ica.gov.co/areas/pecuaria/servicios/epidemiologia-veterinaria/censos-2016/censo-2017.aspx)
d. ICA Census year 2018 to 2021 (https://www.ica.gov.co/areas/pecuaria/servicios/epidemiologia-veterinaria/censos-2016/censo-2018)
Auditor Response 2: Thank you for your thorough explanation about the differences and mismatches from ICA-Fedegan. The assessment team was able to confirm your responses in the supporting data, links and files provided. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 2 Dated 6 Oct 2021
Standard Reference: ISFL Program Requirements
Document Reference: AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx
Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data." Section 4.2.2 of the ERPD states that "The enteric methane and methane emission factor from manure management come from the following sources: AGROSAVIA (provided bromatological information from different feed sources such as grasses and legumes) The Colombian Livestock Federation - FEDEGAN (information on productive and reproductive variables such as daily weight gains, milk production, birth and mortality percentages), Academia (fat and protein contents in meat and milk, genotypic characterization, manure management systems) and IDEAM (climate information)."
In replicating the calculation of the enteric fermentation and manure management emission factors, as demonstrated by the program team in the workbook "AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx", sheet 3A2 column G, the assessment team has been unable to verify the variable TAM "typical animal mass". In reviewing the source data in Folder # 3, workbook Modelo de Factores Emision Metano por Gestion Estiercol and Folder # 4, workbook Modelo IPCC-IDEAM Otras Especies_3A2.xlsx, the assessment team has been unable to verify the variable TAM for the following categories:
The value reported for "Replacement dairy heifers" is 239 vs 237.8 found, for "Buffalo" is 420 vs 576 found, for "Horses" is 300 vs 400 found, for "Mules and Asses" is 220 vs 300 found.

The assessment team requests the following:
(1) additional information and demonstration for how the animal mass (weight) was calculated and/or the data source from it was extracted for those animal categories. For example, please demonstrate how the average weight of 414 kg was derived for Low Production Beef cattle, and a value of 370 kg for Cows for meat production, etc.
(2) Original source data of animal mass (weight) for the bovine cattle categories from the a) Arauca Department and (b) Vichada department for the year 2014.

Project Personnel Response: Typical animal mass (TAM)
The average animal mass (weight), manure management systems and pasture supplement relationship for the dairy and meat cattle species as bovine, buffalo, ovine, goat, equine, mule and asses were collected by experts´ queries: Consulta_experto_Búfalos.xlsx; Consulta_experto_Ovinos_y_Caprinos.xlsx; Consulta_experto_Equinos_Mulas_y_Asnos.xlsx; Consulta_experto_Bovinos1.xlsx; Consulta_experto_Bovinos2.xlsx; Consulta_experto_Bovinos3xlsx. After the quality control assurement process, a transcription error was found regarding the weight of the replacement dairy heifers, buffalos, mules and asses, that was corrected on the spreadsheet "AFOLU_1_MODELO_Depart2014_oct.xlsx"
The animals weight values are mentioned on the file (1. Modelo calculo Factores de emisión por gestión de estiércol otras especies y Metano por defacto.xlsx) in folder 3 they are established values by the work team for the model effects. The used values at the estimation of emissions are the obtained ones through the experts´ queries, the spreadsheets AFOLU_1_MODELO_Depart2014_oct.xlsx y Modelo IPCC-IDEAM Otras especies – 3A2 gestión de estiércol.xlsx

Auditor Response: The audit team confirmed that the values for TAM have been corrected and updated across the AFOLU 1 emissions calculations workbooks (e.g., AFOLU_1_MODELO_Depart 2008_oct, AFOLU_1_MODELO_Depart 2014_oct.xlsx). The evidence of the source of this data has been proveed in the expert consultation file consulta_experto_Bovinos2.xlsx. as a result this request for new information has been statisfied and this finding is closed. However the audit team notes that we will be independently contacting the expert cited to confirm the values provided.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 3 Dated 6 Oct 2021
Standard Reference: ISFL Program Requirements
Document Reference: AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx
Finding: The ER Program Requirements states that "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines." In replicating the calculation Direct N2O Emissions from Manure Management Systems, workbook "AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx", sheet 3A2, column F, the assessment team was unable to validate the Nitrogen excretion rate used for swine animals. The Nrate used for swine <6 month is 0.69 vs 0.67 found in Table 10.19 from the 2019 IPCC V4 CH10 , and the Nrate used for swine > 6 month 0.32 vs 0.55 found in the 2019 IPCC V4 Ch.10
The assessment team requests additional information and demonstration for how the Nitrogen excretion rate was calculated and/or the data source from it was extracted for swines.

Project Personnel Response: Nitrogen Excretion Rates
The default values used for nitrogen excretion according to table 10.19 of the IPCC 2019 correspond to high productivity systems (swines> and <6 months) and low productivity. The values reported by IPCC were used as follows:
• 0.67 kg N (1000 kg animal) -1 day-1, for low productivity swines: this subcategory of the inventory corresponds to backyard pigs, which are over 6 months of age and are raised without any level of technification in rural properties for self-consumption or for sales in local markets. Their feeding system is incipient, the diets of these animals are usually based on food waste and crop residues.
• 0.69 kg N (1000 kg animal) -1 day-1, for swines under 6 months or in the growth phase and finishing for slaughter. In this production phase, the technified farms that correspond to the high productivity systems in Colombia supply diets with high percentages of crude protein (for example, 17% CP in swines de levante).
• 0.32 kg N (1000 kg animal) -1 day-1, for swines > 6 months that include sows and breeding males. In these production phases, the feeding systems are based on diets where the percentages of crude protein are lower (14% gestation sows), with a higher assimilation rate and lower nitrogen excretions. Tables of average nutritional content for rearing pigs and pregnant sows from commercial houses in Colombia are attached.
Auditor Response: Thank you for this explanation. The audit team has been able to confirm the nitrogen excretion rates from the IPCC data. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 4 Dated 6 Oct 2021
Standard Reference: ISFL Program Requirements
Document Reference: AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx
Finding: The ER Program Requirements states that "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines."
Section 10.5.3 of the IPCC 2006 guidance, Vol4 chapter 10 states "The best means of obtaining manure management system distribution data is to consult regularly published national statistics. If such statistics are unavailable, the preferred alternative is to conduct an independent survey of manure management system usage. If the resources are not available to conduct a survey, experts should be consulted to obtain an opinion of the system distribution. If country-specific manure management system usage data are not available, default values should be used. The IPCC default values for dairy cows, other cattle, buffalo, swine (market and breeding swine), and poultry should be taken from Tables 10A-4 through 10A-8 of Annex 10A.2. Manure from other animal categories is typically managed in pastures and grazing operations." Section 10.5.6 of the 2019 update to the 2006, vol4, chapter 10 states "If using country-specific data for Nex(T) and MS(T,S), the inventory agency should compare these values to the IPCC default values. Significant differences, data sources, and methods of data derivation, should be documented."

In verifying the calculation of emissions from manure management, the assessment team has been unable to confirm the values for MS(T,S) in the workbook, "AFOLU_1_MODELO_Depart 2014_version_quema_v_3.xlsx", sheet 3A2, column I. The assessment team requests more information regarding the source and derivation of the values used for the Fraction of total annual nitrogen excretion managed in each manure management system for each species/livestock category.

Project Personnel Response: Manure management systems
The proportion regarding the manure management systems usage in Colombia for the animal species as bovine, buffalo, ovine, goat, equine, mule and donkey were collected by experts´ queries. All the information may be checked on the files: Consulta_experto_Búfalos.xlsx; Consulta_experto_Ovinos_y_Caprinos.xlsx; Consulta_experto_Equinos_Mulas_y_Asnos.xlsx; Consulta_experto_Bovinos1.xlsx; Consulta_experto_Bovinos2.xlsx; Consulta_experto_Bovinos31.xlsx.

For the animal species as swine and poultry, the manure management systems were established through consultancies. The professionals in charge generated working meetings with the Colombian representative swine and poultry federations (PORKCOLOMBIA y FENAVI, respectively) and they performed field visits to some farms across the country. With the previous procedure the manure management systems were defined.

Auditor Response: The audit team has confirmed that the request for new information regard to the porportion of manure management system has been provided in the files consulta_experto_Bovinos1, consulta_experto_bovinos2, etc, and therefore this NIR has been satisfied. However the audit team notes that we will be independently contacting the expert cited to confirm the values provided.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 5 Dated 6 Oct 2021
Standard Reference: ISFL Program Requirements
Document Reference: Modelo IPCC-IDEAM FE metano entérico y de gestión de estiércol - 3A1a.xlsx
Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data." In the calculation of the enteric fermentation emission factors which accounts temperature, an average temperature of 27.1 degrees Celsius (StDev. Of 0.698) was applied for the Orinoquia region. The workbook, Modelo IPCC-IDEAM FE metano entérico y de gestión de estiércol - 3A1a.xlsx, sheet Hoja1 indicates that the ambient temperature value was sourced from the IDEAM 1981 - 2010. Base de datos promedios climatológicos. However, in reviewing the data in the link provided in the Bibliografia sheet, the audit team found that the average annual temperature attained as the average across each municipio in each department in Orinoquia, differed from that reported by program team (27.1). The assessment team requests additional information and demonstration for how the average temperature was calculated from this data source.
Project Personnel Response: The process to generate the annual multi-year average temperature map is described below:
1. The entire IDEAM database from 1981 to 2010 (http://www.ideam.gov.co/web/tiempo-y-clima/clima) was used and the annual multi-year mean temperature (in degrees Celsius) was calculated for each climatological station.
2. The elevation of each climatological station (in meters above sea level) was obtained by an interpolation using the 90-meter pixel DEM (SRTM 90 m) (https://srtm.csi.cgiar.org/).
3. A linear regression was performed between the interpolated elevation (X, in m.a s.l) and the temperature (Y, in °C) of all meteorological stations; the function obtained was y = -0.0054x + 28.104 (R2 = 0.9546).
4. An annual multi-year mean temperature raster map for Colombia was created using the ArcGIS raster calculator in by applying the obtained function to the SRTM 90 m DEM input raster. Then output raster was clipped using the agricultural frontier for Colombia (https://sipra.upra.gov.co/) shapefile as template extent. The resulting map (multi-year annual average temperature within the agricultural frontier of Colombia) was cut with the maps of each of the cattle regions of Colombia.
Auditor Response: The assessment team has confirmed that the requested information regarding the mean ambient temperature in the region has been provided. We confirmed the mean ambient temperature in the maps for the Orinoquia region. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 6 Dated 6 Oct 2021
Standard Reference: ISFL Program Requirements
Document Reference: Modelo IPCC-IDEAM FE metano entérico y de gestión de estiércol - 3A1a.xlsx
Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data." In replicating the calculation of the bovine enteric fermentation emission factors, the assessment team has been unable to verify the calculation or sources of several key parameters related to the calculation of metabolic rate include:
a. Tasa metabolica basal (MJ) from Fox et al. 2003, tabla 2.1 – The Fox et al. 2003 document appears to have been edited to include the values 0.288 and 0.268 which were applied in the workbook Modelo IPCC-IDEAM FE metano entérico y de gestión de estiércol - 3A1a.xlsx, sheet Hoja1. However it is unclear how these values were calculated. The assessment team requests clear demonstration of these calculations with active cell formulas in the workbook.
b. Ajuste tasa metabolica Basal (NRC, 1996; pg 9) - The assessment team requests clear demonstration of how the values in column BT were calculated from the NRC, 1996 pg. 9, with active cell formulas in the workbook.

Project Personnel Response: A. The values were converted, because the values reported in table 2.1 of Fox et al., 2003 (https://www.nutritionmodels.com/documents/CNCPS5manual.pdf) are in the Mcal (Mega calories), while the IPCC equations are in Mj (Mega joules), therefore, to go from Mcal to Mj, the Mcals are multiplied by 4.184 to obtain the value in Mj. Specifically, NEm values were taken from table 2.1 (Fox et al. 2003) for high production cows and in general animals with a Bos taurus genetic base, the value of 0.073 Mcal and equivalent to 0.305432 Mj (0.073 * 4.184), for the animals of meat production or of genetic base Bos indicus the value of 0.064 Mcal was used and that is equivalent to 0.267776 Mj (0.064 * 4.184). Finally, for low-production cows with a genetic base coming from the cross between Bos taurus and Bos indicus, the value of 0.069 Mcal corresponding to tropical dual-purpose breeds was used as suggested by Fox et al (2003) on page 2.3 (43 of the full document) and that is equivalent to 0.288696 Mj (0.069 * 4.184).

B. Equations 10.2 (Cfi (in_Cold) = Cfi + 0.0048 * (20- ° C), and 10.3 (NEm = Cfi * (Weight) ^ 0.75) of the IPCC (2019) are equivalent to the equation for the calculation of the requirement of net energy for climate adjusted maintenance (NEm) presented on both page 9 and page 114 of the National Research Council book (NRC, 1996); however, equation 10.2 presents an adjustment in the maintenance requirement (NEm) specifically for winter periods or very cold climates, this adjustment is specific for countries with strong winter periods and with very low temperatures. Therefore, equation 10.2 presents a bias for Colombia since this is a tropical country. You must make an adjustment that considers hot seasons as cold seasons (not very marked). Therefore, the value suggested by the NRC (1996) of 0.0007 Mcal is used, which is equivalent to 0.0029288 Mj (0.0007 * 4.184), the upper critical temperature was adjusted, which For both the IPCC (2006, 2019) and the NRC (1996, 2001), on average for all Bovine species it is around 20 ° C. While, for Nazar Anchorena (1980) the upper critical temperature for Bos taurus is 16 ° C, for Bois indicus it is 25 ° C and for Bos taurus and Bos indicus crossbred animals it is 20 ° C. The IPCC (2006 and 2019) suggests that more complex models such as the one presented on page 2.4 (44 of the full document) of Fox et al (2003) for adjusting the maintenance requirement due to heat or cold stress are more appropriate for TIER 3, so they were not considered for this model.
Auditor Response: The audit team confirmed the justification for the use of the values from the Fox et al. 2013 paper as well as the calculation for the conversion to MJ. We also confirmed the comoft temperature in Nazar Anchorena. This finding has been closed.

Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 7 Dated 6 Oct 2021
Standard Reference: ISFL Program Requirements
Document Reference: Modelo IPCC-IDEAM FE metano entérico y de gestión de estiércol - 3A1a.xlsx
Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data." In the workbook Modelo IPCC-IDEAM FE metano entérico y de gestión de estiércol - 3A1a.xlsx, sheet Hoja1, columns R through AZ indicate that the source Agrosavia, 2018 (https://alimentro.agrosavia.co/Estadisticas/) has been utilized to generate these values. The assessment team has attempted to verify these values for the Departments within the Orinoquia region, but has found some differences and/or has been unable to locate some values. For example, for the Guaratara- Axonopus purpusii-:
(1) For Crude Protein, the audit team has found values of 8.25 g 100 g-1 MS (stdev 1.50), but in the workbook, sheet hoja 1, a value of 8.81 (SD 1.32) has been reported.
(2) Digestibility – The assessment team found a value 54.28 (SD 1.84), but in the workbook a value of 54.65 (SD 1.57).
(3) Gross Energy – The assessment team found a value of 16.78, while the value reported in the workbook is 16.9.
(4) Ceniza – The assessment team found a value of 8.7, but a value of 7.86 was reported in the workbook.
(5) Energia digestible como % de energia bruta (%) – it does not appear that this value is reported in Agrosavia. We need additional evidence regarding the source of these values.
(6) Percentage of grass versus supplement – It does not appear that these values are reported in the Agrosavia source. We need additional evidence regarding the source of these values.
(7) Lastly the assessment team was unable to verify the values for the feed "Concentrado para vacas - DG 80 - PC 16 - FDN 33" as this is not a selection option in the Agrosavia
While the assessment team understands that these differences are generally small, differences were found across all feed types and all parameters listed. Therefore, we would like to request (1) evidence of the data and calculations from Agrosavia which have been specifically utilized in this workbook to calculate the enteric fermentation emission factor, and (2) additional information regarding why such differences in values have been found. For example, is this dataset continuously updated? Has it been updated since the enteric fermentation emission factor was calculated.

Project Personnel Response: Data source was Agrosavia's Alimentro database (https://alimentro.agrosavia.co/Estadisticas/ReporteAnalisis), consulted from November 2019 to January 2020 in its 4.0. version. Nowadays many data have changed since it is a database that is being constantly updated. However, it is expected that current values are close to those extracted back then.
Identification, species names for Orinoquía and filters used in the Alimentro database to select resources for the IPCC-IDEAM FE model for enteric methane and manure management were:
A. Brachiaria decumbens - Brachiaria decumbe - Orinoquia - Ceba - DP:

- Department: Arauca
- City: Saravena
- Resource name: Brachiaria decumbens - Brachiaria decumbens cv. Basilisk - Leaves - Stem
- Cutting age: 21, 28 and 35
- Harvest time: All
- Soil texture: All
- Topography: All

After applying filters to the database, 10 samples were selected. However, at the present time, this selection gives 34 samples, and some of the original values are gone. This shows that there are not only new values but that the database was cleaned.

B. Guaratara- Axonopus purpusii- H_1:

- Department: Arauca, Casanare
- City: Todos los municipios
- Resource name: Guaratara - Axonopus purpusii - Hoja, Tallo.
- Cutting age: 28, 35 and 42
- Harvest time: All
- Soil texture: All
- Topography: All

After applying filters to the database 15 samples were selected. However, at the present time this selection gives 60 samples. Results from both searches and model vs reported values are shown below.
1. Crude protein:
- Brachiaria decumbens: Reported value for the model (Spreadsheet) was 12.83 ± 1.53, while Alimentro showed a value of 10.87 ± 2.18. This indicates that the value from the model is within the sampled range.
- Axonopus purpusii: Reported value for the model (Spreadsheet) was 8.81 ± 1.32, while Alimentro showed a value of 8.78 ± 1.21. This indicates that the value from the model is within the sampled range.

2. Digestibility:
- Brachiaria decumbens: Reported value for the model (Spreadsheet) was 59.54 ± 1.39, while Alimentro showed a value of 57.71 ± 2.09. This indicates that the value from the model is within the sampled range.
- Axonopus purpusii: Reported value for the model (Spreadsheet) was 54.64 ± 1.57, while Alimentro showed a value of 54.96 ± 1.37. This indicates that the value from the model is within the sampled range.

3. gross energy:

• Brachiaria decumbens: Reported value for the model (Spreadsheet) was 17.19 (CI: 16.65 – 17.27), while Alimentro showed a value of 17.07 (4.08 * 4.184) (CI: 16.77 – 17.48). This indicates that the value from the model is within the sampled range.
• Axonopus purpusii: Reported value for the model (Spreadsheet) was 16.90 (range: 16.73 – 17.02), while Alimentro showed a value of 16.81 (4.02 * 4.184) (range: 16.48 – 17.07). This indicates that the value from the model is within the sampled range.
4. Ash:
• Brachiaria decumbens: Reported value for the model (Spreadsheet) was 10.02 ± 0.95, while Alimentro showed a value of 8.14 ± 1.05. This indicates that the value from the model is within the sampled range.
•Axonopus purpusii: Reported value for the model (Spreadsheet) was 7.86 ± 0.85, while Alimentro showed a value of 8.55 ± 1.41. This indicates that the value from the model is within the sampled range.

5. Value of Digestible energy as % of gross energy was not provided by Agrosavia. It is calculated from Agrosavia's information and calculated as:

Digestible energy as % of gross energy (%)= (Digestible energy (Ruminants(Mcal/kgms)))/(gross energy(Mcal/kgms))*100

This value is necessary to calculate IPCC's equation 10.16 and it is known as DE parameter (Digestibility of feed expressed as a fraction of gross energy (Digestible energy/Gross Energy))
6. Grass percentage vs. supplement is not a value given by Agrosavia, it is a value obtained through expert consultation and indicates feed management inside each livestock production system.
7. At the present time, concentrate for livestock – DG 80 – PC 16 – FDN 33 is not in Agrosavia's database. As it was removed by them out of internal policy.
A screenshot of the 4.0. version of Alimentro is indexed (AlimenTro 4.0.pdf).

Auditor Response: The audit team confirmed and understands that the Agrosavia database is continuously updated and that screen shots from the database were not taken at the time the values were extracted from it. However, in reviewing the current iteration of the database and the values queried, the values are very similar as to those used in the calculation of the emissions factors. Overall, we were able to reach a reasonable level of assurance of the values of animal feed acquired from Agrosavia and utilized in the calculation of the emission factors. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 8 Dated 6 Oct 2021
Standard Reference: ISFL Program Requirements
Document Reference: Modelo IPCC-IDEAM FE metano entérico y de gestión de estiércol - 3A1a.xlsx
Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data." In the workbook Modelo IPCC-IDEAM FE metano entérico y de gestión de estiércol - 3A1a.xlsx, sheet Hoja1, columns BO-BQ, the percentage of manure management systems (Feedlot- dry lot, pasture, Uncovered anaerobic lagoon) are provided. It is unclear where these values come from. The assessment team requests additional information and demonstration of the source of these values.
Project Personnel Response: Manure management systems dairy and meat cattle (bovines)
The proportion regarding the manure management systems usage in Colombia for the dairy and meat cattle were collected by experts´ queries. All the information may be checked on the files: Consulta_experto_Bovinos1.xlsx; Consulta_experto_Bovinos2.xlsx; Consulta_experto_Bovinos31.xlsx.
View cell response G13
Auditor Response: The audit team reviewed the submission of the expert responses and independently confirmed with these experts, the values reported for the proportion of manure management systems in the region. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 9 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements
Document Reference: 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx
Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data."
In replicating the calculation of the soil organic carbon, the audit team found that in the workbook 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx, sheet "Factores Suelos Tipificacion", the land-use factor (Flu), management factor (Fmg) and C input levels (Fi) applied for the Orinoquia region slightly differ from those reported in the "Informe de Inventario Nacional de GEI de Colombia" (IDEAM), table "Anexo 15" (page 535)for the following categories:
- 3B2b: The program team reported a value of 0.494752550912101. However the audit team verified a value of 0.49 from the IDEAM document.
- 3B3b: The program team reported a value of 0.602009361230362. However the audit team verified a value of 0.60 from the IDEAM document.
3B4b The program team reported a value of 0.372489879717274. However the audit team verified a value of 0.37 from the IDEAM document.
While these differences may appear to be minor, when they are utilized across the entire program area, it can result in material differences in the calculation of the baseline emissions. As a result, the assessment team requests additional information for how these aggregated factors where derived from data source.
Project Personnel Response: Both calculations (BUR and Biocarbon Fund program) were carried out as shown in the referenced Excel file, in which the values are presented up to fifteen decimal places. However, in the NIR document they are presented using only two decimal places for editing and presentation purposes.
Auditor Response: The audit team understands that the excel file includes all of the decimal places and that the NIR report rounded those decimal places. However, we need to be able to confirm the values applied and how those values (with the full decimal places) have been derived. The audit team intends to utilize the unrounded values for which we can confirm in the NIR document in our calculations and determination of materiality, unless we are provided with the evidence or opportunity to verify the unrounded values. Note that the use of unrounded values may result in material discrepancies. This request for new information has been satisfied and this finding is therefore closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 10 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements; the IPCC V4 CH2 guidelines, Table 2.3
Document Reference: 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx
Finding: The ER Program Requirements states that "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines."

In replicating the calculation of the soil organic carbon, the audit team found that in the workbook 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx, sheet "Factores Suelos Tipificacion", the SOCRef (Column E) value applied in the equation to estimate the SOC emissions and removals in the Orinoquia region (64.5109126301053) slightly differs from the value of 65 found in the IPCC V4 CH2 guidelines, Table 2.3. While this may appear to be a minor different in rounding it can result in a material discrepancy when applied across the entire program area. As a result, the assessment team requests additional information regarding the exact source of the value verify the source of the SOCRef value applied in the calculation workbooks.
Project Personnel Response: The country does not use the SOCref for natural forest derived from the aforementioned IPCC tables, this SOCref value is used from the COS value obtained from the IFN for each biome of the country (the values are consistent with those used in the national FREL on which you can consult at the following link: https://redd.unfccc.int/files/02012019_nref_colombia_v8.pdf)
Auditor Response: The audit team was able to confirm the value of 65 for the COSRef from Table 2 of the FREL for the Orinoquia biome. We confirmed a value of 74 for Amazonia, a value of 101 for Caribe, 92 for Pacifico and a value of 125 for Andes. However it must be noted that a value of 64.5109126301053 was utilized for Orinoquia, and a value of 124.647684956942 for Andes , etc by the program team in the calculation workbook. Essentially the values were rounded in the tables in the FREL, but the values were not rounded in the calculation workbook. The audit team will utilize the unrounded values for which we can confirm for our calculations of materiality, which could have implications on the materiality of the program. However, this request for new information was addressed and is therefore closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 11 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements
Document Reference: ISFL PD Colombia Chapter 4_19.07.21.docx; Cambio_2019-2020_v8_210702_3116_orinoquia.rrd
Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data."
In assessing the program area reported in theThe ERPD report "ISFL PD Colombia Chapter 4_19.07.21.docx", Table 1, page 4 indicates that the Orinoquia program area is (26, 004,000 ha.), theHowever, in reviewing the most recent raster map provided assessment team couldn't validate the extent of the program region in the most recent raster map sent "Cambio_2019-2020_v8_210702_3116_orinoquia", the assessment team was unable to confirm the extent of the program area. More specifically, When when multiplying the pixel size by the total number of pixels (273,064,293), the resulting size of the program area is 25,383,273.29575004 ha.
The assessment team requests the following: (1) additional information for how the program area was reported in the ERPD estimatedwas determined, and (2) the corresponding spatial dataset (shapefile) of the program area which was utilized for the quantification of the emissions baseline.
Project Personnel Response: The total area of the program corresponds to 25,383,273 ha, which is consistent with the spatial information sent, the area reported in the preliminary document will be adjusted.
Auditor Response: The audit team was able to confirm the value of 25.383.273 ha reported in the finding. However this finding will be kept open until section 2.1.1 of the ERPD is updated accordingly.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 12 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements
Document Reference: 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx; Operación Estadística Monitoreo de la Superficie de Bosque Natural en Colombia.pdf; cambio_2004_2006_v8_201016_3116_orinoquia.img (and all maps)
Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data."
The document Operación Estadística Monitoreo de la Superficie de Bosque Natural en Colombia.pdf has been provided and cited as the source of the deforestation mapping methodology. Table of this document indicates that a value of 2 in the maps signifies deforestation. Page 28 of this document also indicates that the "tamaño de pixel de 30.26 * 30.72m" which the audit team confirmed in the maps (cambio_2004_2006_v8_201016_3116_orinoquia.img).
In validating the area deforested area, reported in the workbook 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx, sheet "Linea Base (modelo)", column G, the assessment team found that the reported deforested areas per year differ from the values accounted for in the annual maps Cambio_2019-2020_v8_210702_3116_orinoquia, Cambio_2018-2019_v8_210702_3116_orinoquia …and so on, until year "cambio_2000_2002_v8_201016_3116_orinoquia". The values reported in the workbook are lower for each year. For example, the audit team found 44,195.166 ha deforested (value = 2) in the "2019-2020 change map", assuming each pixel is 0.092957 ha. However, the workbook shows an area of 8,821 ha deforested. Likewise, the audit team found 71,783.24 ha deforested in the 2000-2002 change map (value = 2, with a pixel size of 0.092957 ha), while the spreadsheet reports 8,258.96 ha deforested in 2001 and 2002. These are large differences and as a result the assessment team has been unable to verify the areas of deforestation utilized to calculate the emissions baseline.
The assessment team requests additional information for how these values of deforestation reported in the workbook were estimated.
Project Personnel Response: As mentioned, the information consolidated and delivered in the first semester of 2021 may be subject to adjustments in accordance with the information improvements, the current values have been adjusted to be consistent with the most updated version of the change maps provided. for this audit. The adjustment of this information and the derived emission estimate is attached in the Excel "3B1aii TFCOT Deforestacion NREF linea base ERPD – Actualizada"
Auditor Response: The audit team has now realized that there was confusion between the Region Orinoquia and the biome Orinoquia. We were originally looking at the deforestation rate from the biome Orinoquia, which is why we were seeing large discrepancies with the total area of deforestation in the Orinoquia region in the maps provided. We now understand the distinction better. The requested clarification has been provided and we confirmed that the workbook has been updated such that the total area of deforestation in the maps is reflected in the calculation workbook. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 13 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements; SFL Guidance note on application of IPCC guidelines_March 2021
Document Reference: 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx

Finding: Section 5.0 of the ISFL Guidance note on application of IPCC guidelines related to Change in biomass carbon stocks (above-ground biomass and below-ground biomass) for forest land converted to Cropland or Grassland, indicates that "Under the IPCC Guidelines, conversions from Forest Land to Cropland or Grassland take a similar approach:

- For lands converted to grassland the Guidelines define a two-phase approach. Phase 1 is estimated at the year of conversion and involves the abrupt change in biomass associated with the land-use change. The second phase accounts for gradual biomass loss and gain during a transition period to a new steady-state system.
- Similarly, for conversions to Cropland, it is assumed that the dominant vegetation is removed entirely leading to emissions, resulting in near zero amounts of carbon remaining in biomass (in Tier 1). Some type of cropping system, especially those with perennial woody biomass, increase the amount of carbon stored in biomass again leading to accumulations and losses in subsequent years. Moreover, for these conversions it is assumed that no biomass loss from belowground biomass occur as a result of these conversions, i.e. forest does not contain belowground biomass.

- For conversions from Forest Land to Cropland or Grassland , the IPCC Guidelines indicate that under Tier 2 it is good practice, if possible, to develop and use a disturbance matrix that provides the proportion of the carbon remaining in that pool, and the proportions transferred to other pools (e.g. biomass to deadwood or soil).

ISFL ER Programs in countries that have done multiple GHG inventories which has enabled the country to track land use change over time using Approach 2 or Approach 3 may apply this approach if they also have reliable d`ata that allows for estimations of accumulations and losses in the subsequent years using either the Gain-Loss Method (Equation 2.7 in Chapter 2) or the Stock-Difference Method (Equation 2.8 in Chapter2).

All other ISFL ER Programs, both for ISFL Reporting and ISFL Accounting, shall assume that in the year of conversion, the biomass carbon stocks (including both aboveground and belowground biomass) go instantly from the average biomass carbon stocks in forest to the average biomass carbons stocks in the new steady state system. ISFL ER Programs are also not required to assume transfer of carbon stocks between pools based on a disturbance matrix. Within the context of the ISFL (with ISFL ERPA Phases that are shorter than the 20-year transition period) this may be considered as conservative since it leads to lower emissions in the year of conversion."

Section 4.2.2 of the ERPD indicates that conversion of forest land to other lands (including grassland and cropland) "These categories are included in the program's accounting and are estimated from the gain and loss method using a Tier 2 method with emission factors based on country-specific data from the National Forest Inventory for the Orinoquia, Andean and Amazon biome." In the workbook the audit team was able to confirm that there phase 1 of the above described approach has been carried out. Note as the Guidance note states "Phase 1 is estimated at the year of conversion and involves the abrupt change in biomass associated with the land-use change." For instance, in the workbook 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx, sheet Tipificación AGB, columns DB-DD show the emissions from the transitions of forest to cultivated lands, which are occurring in the year of deforestation (this is also shown in the sheet Estimacion(tipicado), column AA). Likewise, columns DE and DF show the transitions from forest to grasslands, again which occur in the year of the deforestation event (this is also shown in the sheet Estimacion(tipicado), column AB). However, the audit team has been unable to find the tracking of gains/losses in the grassland or cultivated land use classes in the years after the deforestation event, which represent the new steady state. For instance, this steady stead would be the annual yield (tCO2/ha) of cropland or grassland. The audit team requests additional demonstration regarding how the gains/losses and the transition to a new steady

state system has been accounted for in the baseline emissions for all transitions from forest land to grassland and forest land to cropland.
Project Personnel Response: We thank the evaluation team for the finding, this recommendation will be taken into account for the final version. Currently the estimation was carried out by the gain and loss method because the country did not have a consistent series of typification of forest change for the entire time series. In the second semester of 2021, in addition to generating the complete matrix of changes for all uses, the country has generated the complete typification series which will allow estimates to be made using the proposed method, information that will be presented in March 2022.
Auditor Response: The assessment team appreciates that the program team plans for this future improvement. However, we are currently assessing the data and reported values in their current form, and we have been unable to confirm that any post-transition tracking of carbon has been accounted for in the two-phase approach outlined by the IPCC. The ISFL Program Requirements presents several options for tracking of the post-transition carbon in the new land use class, when there is a transition from forest to cropland and forest to grassland. Again the Program Requirements states that "All other ISFL ER Programs, both for ISFL Reporting and ISFL Accounting, shall assume that in the year of conversion, the biomass carbon stocks (including both aboveground and belowground biomass) go instantly from the average biomass carbon stocks in forest to the average biomass carbons stocks in the new steady state system." Thus, the assessment team confirmed that the first phase was accounted for (Phase 1 is estimated at the year of conversion and involves the abrupt change in biomass associated with the land-use change). However, the second phase occurs during the years after the land use conversion, in which the land takes the average biomass carbons stocks in the new steady state system. Please demonstrate the accounting of the average biomass carbon stocks of the cropland and/grassland steady state in the years after the transition from forest. This finding will remain open until it can be addressed in March 2022.
Project Personnel Response 2: With the latest deliver of chapter 4 of the ERPD document, new spreadsheets were sent including annual information on changes in forest areas to other land uses (deforestation typification), this information can be reviewed in the estimation files of emissions due to deforestation for each one of the departments of the Orinoquía and the corresponding consolidated one, which are found in the folder "3B1aii, 3B2bi, 3B3bi, 3B4bi, 3B5bi, 3B6bi TFCOT Deforestacion" of the zip file "Calculos categorias 3B.zip". We will be available to solve any doubts or comments you have about it.
Auditor Response 2: Thank you for sharing these updated workbooks. The audit team has been able to confirm that in the year of conversion from forest to nonforest land use classes, the biomass carbon stocks (including both aboveground and belowground biomass) go instantly from the average biomass carbon stocks in forest to the average biomass carbons stocks in the new steady state system.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 14 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements; SFL Guidance note on application of IPCC guidelines_March 2021
Document Reference: 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx
Finding: Section 3 of ISFL Guidance note on application of IPCC guidelines provides requirements pertains to the accounting for Change in biomass carbon stocks (above-ground biomass and below-ground biomass) for land converted to forest land. Section 3.2 states that "
The net annual CO2 removals shall be calculated using equations 2.15 and 2.16 from the 2006 IPCC Guidelines, Volume 4, Chapter 2. These equations shall be simplified by assuming that during the conversion from non-forest to forest, carbon stocks will go from average carbon stocks in non-forest to average carbon stocks in forests during a period of time. This calculation shall consider the maximum carbon stocks in different forest types and it shall be ensured that the estimated forests carbon stocks will not continue growing beyond this maximum value. A conservative default period of 20 years is suggested for the forest to grow from the carbon stock levels of non-forest to the level of biomass, stable soil and litter pools of the average forest. Alternative periods may be used but shall be justified and this justification shall also consider the maximum carbon stocks in different forest types."
It specifically indicates that the carbon stocks will go from average carbon stocks in non-forest to average carbon stocks in forests during a period of time. The audit team confirmed that in the workbook 3B1b OTCTF Restauración Linea Base.xlsx, sheet Biomasa (Base-Tipifica), there is a conversion to the average carbon stocks in the forest land use class over a period of 20 years. However, prior to that conversion, the steady state carbon stocks of the pre-transition land use class is set to zero. For example, cells J99-M99, show a value of zero in the shrubland (arbustales) land use class in the years 2000-2002 before starting the transition to the forestland class in the year 2003.

It is unclear to the audit team if these steady state carbon stocks in the pre-transition land use class are accounted for elsewhere. Thus the audit team requests additional demonstration regarding how the requirements of section 3.2 of the ISFL Guidance note on application of IPCC guidelines have been applied.
Project Personnel Response: In the example cells, it is observed that since 2000, as a new regenerated surface is reported, the carbon gain process for the category begins during the 20 years, this estimate already takes into account the reported carbon differential for the previous use category and only estimates carbon content removals down to the estimated average carbon content for the category of forest being regenerated. Before the year 2000, the country does not have information on the previous use of the reported category. These estimates may be adjusted once the country has the complete exchange matrix.
Auditor Response: The assessment team appreciates the clarification. Upon further review of the Guidance note, particularly the table on the top of page 11 of the guidance note, the assessment team has confirmed that the accounting of the conversion of other land to forest land in the baseline period is in conformance with the Guidance note. This finding has been rescinded.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 15 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements; IPCC 2006 Guidelines Ch3
Document Reference: 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx; ISFL PD Colombia Chapter 4_19.07.21

Finding: The ER Program Requirements states that “ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines.”
Section 4.2.2 of the ERPD states that for the Deforestation subcategories “The country has spatially explicit information consistent with Approach 3 described in Chapter 3 (Consistent Land Representation) of Volume 4 of the 2006 IPCC Guidelines. This information is specific to conversions between forest cover and other types of cover. Forest is defined as: "Land occupied mainly by trees that may contain shrubs, palms, bamboo, herbs and lianas, in which tree cover predominates with a minimum canopy density of 30%, a minimum canopy height (in situ) of 5 meters at the time of identification, and a minimum area of 1.0 ha. Tree cover of forest plantations, palm plantations, and trees planted for agricultural production are excluded". For the identification of land cover post-deforestation (identification of the cover or use to which the forest cover passes once it is lost) the country has information consistent with approach 2 of the IPCC 2006 guidelines for the years 2013 to 2014. As a short-term improvement plan, the entire time series to be presented under the program is being adjusted.”
Section 3.3.1 of the IPCC 2006 Guidelines ch3 states that “Approach 2 differs from Approach 1 in that it includes information on conversions between categories, but
is still only tracking those changes without spatially-explicit location data, often based on political boundaries
(i.e., locations of specific land use and land-use conversions are not known). Tracking land-use conversions in
this manner will normally require estimation of initial and final land-use categories for all conversion types, as
well as of total area of unchanged land by category. The final result of this Approach can be presented as a nonspatially-explicit land-use conversion matrix.” It later states that “Approach 3 is characterized by spatially-explicit observations of land-use categories and land-use conversions, often tracking patterns at specific point locations and/or using gridded map products, such as derived from remote sensing imagery.”
In reviewing the workbook “3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx” sheet, Tipificación AGB, columns C-O show the total area of forest lost per year in Orinoquia. Likewise columns Q-AC then show the percentages of deforestation by land use transition (e.g., in 2000-2005, 1% of forestland transitioned to shrubland, and 8% of forestland transitioned to agriculture, etc). These transition percentages are then used in the sheet Estimación (Tipificado) to calculate the total emissions due to deforestation. The audit team requests the following information:
(1) it is unclear from the description in the ERPD whether approach 2 or approach 3 has been applied. Please clarify and explain what data was used and how these values in the Tipificación AGB workbook were derived for both the total area deforested and the area deforested by land use class. If approach 2 was applied, the audit team requests verifiable evidence of the land use conversion matrix used including the original source data for this. If approach 3 was applied, the audit team requests the gridded map products and remote sensing information utilized to derive the deforestation rate and land use transitions.
(2) It appears that there are two total areas deforested 1. Modeled, and 2. Observed. It is unclear why the modeled valued are applied to the historical baseline period. The IPCC guidelines does not include guidance on the use of modeling quantifying historical deforestation from observed trends.

(3) The audit team has been unable to verify the origin of the total area deforested as described in the previous finding. We have also been unable to verify the post-deforestation land use transition areas per land use class. We request additional information and verifiable evidence of the values of the land use transitions shown in Tipificación AGB.
Project Personnel Response: 1) It is clarified that approach 2 is being used to estimate emissions, although the SMByC has spatially explicit information. As has been commented in other spaces, the change matrices are in adjustment, since there was only change information with a consistent methodology for the years 2013 and 2014. These matrices will be supplied to the team once the SMByC and the team of PDI delivers the adjusted matrices in the month of December. For the moment, only the files with spatially explicit information from the gross deforestation assessment will be delivered.

2) As mentioned in the first audit meeting, this confusion is due to the format of the file presented, the attached new format is sent, which we hope will solve the finding, but not before clarifying that only observed values were used for the estimation.

3) The total deforested area is recorded in the change maps delivered prior to the audit with which the latest version of the spreadsheets was adjusted. The complete exchange matrix is delivered in March with the ERPD adjustment.
Auditor Response: The audit team confirmed that #2 in this finding has been addressed such that the modeled values of deforestation have been removed and all calculations are based on the actual observed deforestation. However, parts #1 and #3 of this finding have not yet been addressed as these components are currently being updated by the program team. This finding will remain open until we receive the updated spatial files and land use matrix.
Project Personnel Response 2: 1) It is clarified that approach 2 is being used to estimate emissions, although the SMByC has spatially explicit information. In the latest version of the spreadsheets for estimating emissions from deforestation, a new analysis of typification of deforestation by biome is presented, prepared by the SMByC for each of the years of the available time series. Attached is the file "Tipificacion_deforestation_00-18_07102021" provided by the SMByC with the analysis of typification of deforestation for Colombia

2) As mentioned in the first audit meeting, this confusion is due to the format of the submitted file, we hope to resolve the finding with the latest version of the submitted spreadsheets, but not before clarifying that only observed values were used for the estimation.

3) The total deforested area is recorded in the updated change maps that were attached to the “Información de datos de actividad SMBYC” folder found in the zip file “Cálculos de categoría 3B.zip” in the "03.06.22 Sección 4 ERPD_complemento" folder.

Auditor Response 2: The audit team has been able to verify the total area deforested from the change maps provided. However we have been unable to verify the percentages/areas of the transition land use class for both deforestation and regeneration. For instance, in the new workbook Tipificacion_deforestacion_00-18_07102021.xlsx, it shows how the relative percentages of post-deforestation land uses were derived for the transition of forest land to various non-forest land uses. It appears that this analysis was based off of points in the landscape. The audit team must be able to verify these percentages and better understand where these number of points came from. Similarly, in the workbook Consolidado-Regeneración.xlsx, sheet Tipificación AGB, columns C-O, it also shows the relative percentage of nonforest land uses classes that transition to forest land. The audit team must be able to verify these percentages and if points were used, we need more information about the location of these points and how this analysis was conducted. Please provide additional information so that the audit team can replicate the determination of these land use percentages. This finding remains open.

Project Personnel Response 3: On one hand, deforestation analysis ("Tipificación de la deforestación") had an auditing process while UNFCCC evaluated the Third Biennial Update Report (BUR3) and it does not count with a formal methodological approach that explains how the analysis was carried out. However, documentation and its respective supporting evidence are under elaboration and expected to be ready as soon as possible. On the other hand, regeneration characterization does not have a robust analysis like deforestation has. To characterize it and report greenhouse gas estimates in Colombia's Third National Communication, cartographic information analysis was used. Changes in areas are estimated as percentages obtained from overlapping biome, forest/non-forest and land cover maps. This made possible to obtain the areas (%) with other land uses that are converted to forests (regeneration in forest/non-forest layer) in the following way:

1) Overlap of forest/non-forest map from the year 2000 (regeneration data) with a land cover map from the 2000-2002 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the year 2000.
2) Overlap of forest/non-forest maps from the year 2005 (regeneration data) with a land cover map from the 2005-2009 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2001-2005 period where it is assumed that change in percentage is the same year by year.
3) Overlap of forest/non-forest maps from the year 2010 (regeneration data) with a land cover map from the 2010-2012 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2005-2010 period where it is assumed that the change in percentage is the same year by year.
4) Overlap of forest/non-forest maps from the year 2012 (regeneration data) with a land cover map from the 2010-2012 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2010-2012 period where it is assumed that the change in percentage is the same year by year.
5) Overlap of forest/non-forest maps from the year 2013 (regeneration data) with a land cover map from the 2010-2012 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2012-2013 period.
6) Overlap of forest/non-forest from the year 2014 (regeneration data) with a land cover map from the 2010-2012 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2013-2014 period.
7) Change percentage from the 2014-2018 period is assumed to be the same as the 2013-2014 period.

It is expected to change the classification method of regeneration to a methodological approach like deforestation as a part of the National Inventory Improvement Plan. Description of this process will be included in the Annex 8 from the ERPD that will be delivered by the end of October 2022. This Annex will also include the improvement plan and the reach GHG accountability has.

Auditor Response 3: Thank you for your thorough explanation. However, since there is no space left to respond to this finding, please see the audit team's response as finding #41 and continue your response in that row. Thank you.

Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 16 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements; IPCC 2006 Guidelines Ch3
Document Reference: 3B1b OTCTF Restauración Linea Base; ISFL PD Colombia Chapter 4_19.07.21

Finding: The ER Program Requirements states that “ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines.”
Similar to the previous finding, this NIR seeks additionality clarity and supporting data for the area of land reforested and the area of original land use that is transitioning to forest land.
Section 4.2.2 of the ERPD states that for the Deforestation subcategories “The country has spatially explicit information consistent with Approach 3 described in Chapter 3 (Consistent Land Representation) of Volume 4 of the 2006 IPCC Guidelines. This information is specific to conversions between forest cover and other types of cover. Forest is defined as: "Land occupied mainly by trees that may contain shrubs, palms, bamboo, herbs and lianas, in which tree cover predominates with a minimum canopy density of 30%, a minimum canopy height (in situ) of 5 meters at the time of identification, and a minimum area of 1.0 ha. Tree cover of forest plantations, palm plantations, and trees planted for agricultural production are excluded". For the identification of land cover post-deforestation (identification of the cover or use to which the forest cover passes once it is lost) the country has information consistent with approach 2 of the IPCC 2006 guidelines for the years 2013 to 2014. As a short-term improvement plan, the entire time series to be presented under the program is being adjusted.” It later states that “The source of information for the activity data for the categories associated with deforestation and regeneration are the same, the change maps developed by the SMByC, in which 5 categories are established, stable forest, stable non-forest, deforestation and regeneration. The information included in this category (3B1b) corresponds to the areas called regeneration.”
Section 3.3.1 of the IPCC 2006 Guidelines ch3 states that “Approach 2 differs from Approach 1 in that it includes information on conversions between categories, but is still only tracking those changes without spatially-explicit location data, often based on political boundaries (i.e., locations of specific land use and land-use conversions are not known). Tracking land-use conversions in this manner will normally require estimation of initial and final land-use categories for all conversion types, as well as of total area of unchanged land by category. The final result of this Approach can be presented as a nonspatially-explicit land-use conversion matrix.” It later states that “Approach 3 is characterized by spatially-explicit observations of land-use categories and land-use conversions, often tracking patterns at specific point locations and/or using gridded map products, such as derived from remote sensing imagery.”

In reviewing the workbook 3B1B OTCTF Restaucion Linea Base, Sheet “Tipicacion de regeneracion” It indicates the percentages of reforestation by the various land use classes. For instance, the audit team interpreted that in 2007, 2% of the area reforested came from the shrubland class, while 77% came from the grassland class. However, we have not bee able to confirm the source and the values of (1) the area reforested and (2) the percentages from each land use class.
(1) it is unclear from the description in the ERPD whether approach 2 or approach 3 has been applied. If approach 2 was applied, the audit team requests verifiable evidence of the land use conversion matrix used including the original source data for this. If approach 3 was applied, the audit team requests the gridded map products and remote sensing information utilized to derive the deforestation rate and land use transitions.
(2) It appears that there are two total areas of reforestation reported 1. Modeled, and 2. Observed. For instance, in the sheet Biomasa (Base-Tipifica), column C, it shows the observed value for 2005 as 274 ha, but the modeled value for 2005 is 303 ha. It is unclear why the modeled valued are applied to

the historical baseline period. The IPCC guidelines does not include guidance on the use of modeling for quantifying historical reforestation from observed trends.
(3) The audit team has been unable to verify the origin of both the total area reforested or deforested as described in the previous finding. We have also been unable to verify the pre-reforestation land use transition areas per land use class. We request additional information and verifiable evidence of the values of the land use transitions shown in Tipificación de regeneración worksheet.
Project Personnel Response: The answers are the same as the previous finding, however the regeneration data update is not presented and will be adjusted in the March inventory version.
Auditor Response: This finding will remain open until the new regeneration data is updated and presented to the assessment team.
Project Personnel Response 2: 1. With the last delivery of chapter 4 of the ERPD document, the images were delivered with the information on deforestation and regeneration areas. Please see the folder “Información de datos de actividad SMBYC” folder found in the zip file “Cálculos de categoría 3B.zip” in the "03.06.22 Sección 4 ERPD_complemento" folder.

2) As mentioned in the first audit meeting, this confusion is due to the format of the file presented, the attached new format is sent, which we hope will solve the finding, but not before clarifying that only observed values were used for the estimation.

3) The typification analysis of regeneration is the same used in the INGEI of Colombia presented in BUR2 and BUR3, this information was obtained from the land cover map of the land of the year 2012 of Colombia, which is attached to this matrix, along with information on regeneration areas reported by SMBYC for that same year.
Auditor Response 2: As mentioned in the previous response, the audit team has been unable to verify the relative percentages of the various nonforest land uses that are converted to forestland. For instance in the Andes biome, for the year 2013, the workbook Consolidado-Regeneración.xlsx, sheet Tipificación AGB, columns C-O, indicate that 3% of the land regenerating was cultivos transitorios, where as 32% of the land was herbazales. The audit team must be able to verify these percentages from the initial spatial data used to derive them.Please provide additional information so that the audit team can replicate the determination of these land use percentages. This finding remains open.

Project Personnel Response 3: The regeneration characterization does not have a robust analysis like deforestation has. To characterize it and report greenhouse gas estimates in Colombia's Third National Communication, cartographic information analysis was used. Changes in areas are estimated as percentages obtained from overlapping biome, forest/non-forest and land cover maps. This made possible to obtain the areas (%) with other land uses that are converted to forests (regeneration in forest/non-forest layer) in the following way:

1) Overlap of forest/non-forest map from the year 2000 (regeneration data) with a land cover map from the 2000-2002 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the year 2000.
2) Overlap of forest/non-forest maps from the year 2005 (regeneration data) with a land cover map from the 2005-2009 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2001-2005 period where it is assumed that change in percentage is the same year by year.
3) Overlap of forest/non-forest maps from the year 2010 (regeneration data) with a land cover map from the 2010-2012 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2005-2010 period where it is assumed that the change in percentage is the same year by year.
4) Overlap of forest/non-forest maps from the year 2012 (regeneration data) with a land cover map from the 2010-2012 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2010-2012 period where it is assumed that the change in percentage is the same year by year.
5) Overlap of forest/non-forest maps from the year 2013 (regeneration data) with a land cover map from the 2010-2012 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2012-2013 period.
6) Overlap of forest/non-forest from the year 2014 (regeneration data) with a land cover map from the 2010-2012 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2013-2014 period.
7) Change percentage from the 2014-2018 period is assumed to be the same as the 2013-2014 period.

It is expected to change the classification method of regeneration to a methodological approach like deforestation as a part of the National Inventory Improvement Plan. Description of this process will be included in the Annex 8 from the ERPD that will be delivered by the end of October 2022. This Annex will also include the improvement plan and the reach GHG accountability has.

Auditor Response 3: Thank you for your thorough explanation. However, since there is no space left to respond to this finding, please see the audit team's response as finding #42 and continue your response in that row. Thank you.

Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 17 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements
Document Reference: 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx; 3B1b OTCTF Restauración Linea Base
Finding: The ER Program Requirements states that “The Program GHG Inventory shall utilize best available methods and existing data.”
Section 4.2.2 of the ERPD, Table 8, Page 33, states "For the estimation of emissions from deforestation, emission factors of aboveground and belowground biomass, soil carbon, and carbon content of aboveground biomass for three categories of land use (crops, pasture and shrubland), developed by the Forest and Carbon Monitoring System (SMByC) group of IDEAM and the Ministry of Environment and Sustainable Development (MinAmbiente) and determined from the National Forest Inventory - IFN, are used for the Orinoco biome, as well as for the Amazon Biome which covers part of the Orinoquia jurisdiction, and the Andean Biome as well". Looking into the Biennial Update Report “NIR_BUR2_Colombia” and the “National Forest Inventory Colombia_2018_IDEAM” provided, Tabla 5.21 Metodología y factores de emisiones para tierras forestales (3B1) y los Anexos referidos, the assessment team was unable to validate the source of the emission factors used in the workbook 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx, sheet
“Estimacion (Linea Base), Column E (AGB, 85.5762753357881), Column F (BGB, 20.574728727555) sheet “Tipificacion AGB”, Column AS – BD (Arbustales, 65.075; Plantaciones Forestales, 215.76; Vegetación Secundaria, 53.704; Areas agrícolas, 15.64; Cultivos Permanentes, 71.094; Cultivos Transitorios, 10.332, Herbazales, 42.3; Pastos, 33.02). The assessment team requests additional information for how these values were derived, as well as the source dataset to confirm these emission factors.
Project Personnel Response: In Annex 14 of the NIR document (IDEAM et al 2018) you can see the values used in the current estimates and their respective bibliographic references.
Auditor Response: Thank you for the clarification. The assessment team has been able to verify the emission factor values in Annex 14 of the NIR. However, we have only been able to verify the rounded values and will therefore utilize these rounded values in our re-calculations and final calculation of materiality, unless evidence and/or demonstation of how the unrounded values have been generated is provided. By using unrounded values, there is a risk discrepancies. This new information request has been addressed and this finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 18 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements; 2006 IPCC Guidelines V4 Chapter 2,
Document Reference: 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx; 3B1b OTCTF Restauración Linea Base.xlsx
Finding: The ER Program Requirements states that "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines."
The 2006 IPCC Guidelines V4 Chapter 2, Section 2.2.3 Conversion of C stock changes to CO2 emissions state that "The conversion to CO2 from C, is based on the ratio of molecular weights (44/12). The change of sign (-) is due to the convention that increases in C stocks, i.e. positive (+) stock changes, represent a removal (or 'negative' emission) from the atmosphere, while decreases in C stocks, i.e. negative (-) stock changes, represent a positive emission to the atmosphere.". The assessment team found the following nonconformities:
(1) in the workbook 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx, sheet Estimacion (Tipificado), Column AR to AW, a value of 3.67 is applied to convert carbon to CO2e. As a result, this is not in conformance with the program requirements.
(2) In the workbook 3B1b OTCTF Restauración Linea Base.xlsx, sheet Biomasa (Base-Tipifica), a value of 3.67 is applied to convert carbon to CO2e (e.g., Column AP, CH, DZ, etc). As a result, this is not in conformance with the program requirements.
Project Personnel Response: We appreciate the finding, the review team is right, a double check will be performed to adjust the value of 3.67 to the stoichiometric ratio (44/22).
Auditor Response: The audit team confirmed that in the sheet Estimation (Tificicado) in the workbook 3B1aii TFCOT Def NREF lineab ERPD-Actualizada.xlsx, the ratio of 44/12 has been utilized to convert carbon to CO2. However, we have not received any updated workbooks for the reforestation worksheet, nor has the ERPD been updated with the corrected values. Thus this finding will remain open.
Project Personnel Response 2: With the update of the calculations delivered with chapter 4 of the ERPD document, a double check was made to adjust the value of 3.67 to the stoichiometric ratio (44/22).
Auditor Response 2: The audit team confirmed that the stoichiometric ratio of 44/12 has been utilized to convert carbon to CO2. This finding has been addressed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 19 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements
Document Reference: 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx; 3B1b OTCTF Restauración Linea Base.xlsx; cambio_2004_2006_v8_201016_3116_orinoquia.img
Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data."
In a email dated 3 November 2021, the Program team stated by email that "Los datos 2000-2012 los datos son bienales y son anualizados para generar el reporte de área". However, in the workbook 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx, sheet "Linea Base (modelo)", column C, the ISFL-Colombia ER, the assessment team found that the deforested area reported in the year 2005 and 2006 are not equally divided by 2. Instead we found that the area reported for 2005 is 10483.45 ha & the area reported for 2006 is 10537.49. For the rest of the rest of the biennial years (e.g. 2003-2004; 14254.70 reported in both years). We observed the same differences between the area reported as deforested in 2005 and 2006 in the sheet "Estimacion (Linea base)", Column C and sheet "Suelos (Linea Base)", Column C, 10,483.45ha vs 10,537.49ha in 2005-2006, respectively. The audit team requests additional information regarding why the years 2005 and 2006 do not follow the biennial trend as indicated in the email on 3 November 2021.

Additionally refer to findings #12 and 15 above regarding other descrepancies found in the spatial datasets versus the deforestation areas reported in the workbooks.

Project Personnel Response: The previous finding has been corrected, which can be verified in the attached adjusted file.
Auditor Response: The audit team confirmed that in the udated workbook, 3B1aii TFCOT Def NREF lineab ERPD-Actualizada.xlsx, a value of 10457.3433656608 has been utilized for both 2005 and 2006. This request for new information has been satisfied and the finding has been closed
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 20 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements
Document Reference: Annex 6 GHG Inventory AFOLU Orinoquia 2001-2017; ISFL PD Colombia Chapter 4_19.07.21; cambio_2004_2006_v8_201016_3116_orinoquia.img (all maps)
Finding: The ER Program Requirements presents a three step process for selecting the subcategories for inclusion in the ISFL accounting for baseline setting.
Step 2 in section 4.3 of the ER Program requirements pertains is to "Review of the available data and methods for the subcategories from the initial selection against the quality and baseline setting requirements for ISFL Accounting."
Section 4.2.4 of the ER Program Requirements states "For accounting emission reductions from land use change-related subcategories, Approach 3 shall be used for land representation; Approach 2 may be used if this is not possible if ancillary information is available that allows to track land over time."
Section 4.3.12 then summarizes the quality requirements as it states "In summary, for the subcategories referred to in step 1, the following quality and baseline setting requirements for ISFL Accounting shall apply" and provides a table on page 13. In this table it indicates that for inclusion in the ISFL accounting baseline, the Subcategory "Forest Land remaining Forest Land" must meet the spatial information requirement of "Approach 2 or 3 for setting the Emissions Baseline and monitoring"

Section 4.2.2. of the ERPD indicates that for the subcategory 3b1ai "This information is not spatially explicit and uses Approach 1 for land representation. The country estimates this category with information at the municipality level associated with the consumption of firewood by the rural population (preliminary indicator of degradation)."
Section 4.2.3 of the ERPD includes Table 9 which shows the Final selection of the subcategories eligible for ISFL Accounting. For the Subcategory "3B1ai Forest land remaining forest land (Natural forest)" the third column "spatial information requirement(s))Yes/No) indicates that "No" the requirement has not been met. However, the fourth column "Eligible for ISFL Accounting? (Yes/No)" indicates "Yes" that the subcategory is eligible for ISFL accounting. In the Annex 6 GHG Inventory AFOLU Orinoquia 2001-2017.xls workbook, sheet AFOLU Orinoquía 2000-2017 (VF), it shows that subcategory 3bai has been included in the ISFL accounting.

It is unclear to the audit team why a value of "Yes" was identified in table 9 for the subcategory if it does not meet all the requirements spatial requirements indicated in section 4.2.4 of the ER Program requirements for eligibility in ISFL accounting. Please provide additional information and justification for the inclusion of this subcategory.

Project Personnel Response: The country is working to meet the methodological requirements associated with the aforementioned category, the category is established as eligible because if the category is excluded it could not be included in the first phase of the program once the associated improvement plan is developed.
Auditor Response: The country must meet the methodological requirements described pertaining to the selection and inclusion of subcategories at the time of validation in order to include a subcategory. The assessment team requests demonstration that the methodological requirements for the inclusion of 3B1ai Forest land remaining forest land (Natural forest) have been met. This finding remains open.

Project Personnel Response 2: The country is working to meet the methodological requirements associated with the aforementioned category, the category is established as eligible because if the category is excluded it could not be included in the first phase of the program once the associated improvement plan is developed .
Auditor Response 2: Thank you for this response. Please note that the subcategory cannot be included as far as reporting of the baseline because it does not meet the eligibility criteria. However, it can still be included in the first phase of the program provided that the improvements are made. This is described in This finding will be reference in a Forward Action Request.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 21 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements
Document Reference: Annex 6 GHG Inventory AFOLU Orinoquia 2001-2017; ISFL PD Colombia Chapter 4_19.07.21; cambio_2004_2006_v8_201016_3116_orinoquia.img (all maps)
Finding: The ER Program Requirements presents a three step process for selecting the subcategories for inclusion in the ISFL accounting for baseline setting.
Section 4.2.4 of the ER Program Requirements states "For accounting emission reductions from land use change-related subcategories, Approach 3 shall be used for land representation; Approach 2 may be used if this is not possible if ancillary information is available that allows to track land over time."
Section 4.3.12 states " In summary, for the subcategories referred to in step 1, the following quality and baseline setting requirements for ISFL Accounting shall apply:" and is followed by a table on page 13. The table indicates that for "Any subcategories involving conversions from or to forest land"… "Approach 2 or 3 for setting the Emissions Baseline and monitoring" are required.
Section 4.2.2 of the ERPD indicates that for Subcategory 3B1b Land Converted to forest land (Forest Regeneration) "The country has spatially explicit information consistent with Approach 3 described in Chapter 3 (Consistent Land Representation) of Volume 4 of the 2006 IPCC Guidelines. This information is specific to conversions between forest cover and other types of cover. Forest is defined as: "Land occupied mainly by trees that may contain shrubs, palms, bamboo, herbs and lianas, in which tree cover predominates with a minimum canopy density of 30%, a minimum canopy height (in situ) of 5 meters at the time of identification, and a minimum area of 1.0 ha. Tree cover of forest plantations, palm plantations, and trees planted for agricultural production are excluded". For the identification of the regeneration typification (identification of the cover or previous use prior to forest regeneration) the country has information consistent with approach 2 of the IPCC 2006 guidelines for the years 2013 to 2014. As a short-term improvement plan, the entire time series to be presented under the program is being adjusted.The source of information for the activity data for the categories associated with deforestation and regeneration are the same, the change maps developed by the SMByC, in which 5 categories are established, stable forest, stable non-forest, deforestation and regeneration. The information included in this category (3B1b) corresponds to the areas called regeneration." Thus by reviewing the maps provided, it appears that there is spatially explicit information available showing the transitions of nonforest land to forest land.
However in Table 9 which reports on Step 3 of the Subcategory selection process, it indicates that for "3B1b Land converted to forest land" the requirements of spatial information are not met (there is a value of "no" in column 4 of table 9). It is unclear to the audit team why the spatial requirements have not been met and why this subcategory is not eligible for ISFL accounting as indicated in Table 9 of the ERPD.
Project Personnel Response: The change matrix is currently being adjusted for all categories, it is expected in the March version to have complete information on the use prior to the change to forest lands. Currently it is indicated that it is not eligible until the aforementioned matrix is not generated.
Auditor Response: This finding will remain open until the updated data is provided to the audit team in March.
Project Personnel Response 2: We appreciate the finding, the review team is right, category 3B1b meets all requirements; this finding will be adjusted in the document.
Auditor Response 2: The audit team confirmed that table 18 of the ERPD has been updated to reflect that spatial data exists for lands converted to forestlands (3B1b). This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 22 Dated 3 Nov 2021
Standard Reference: ISFL Program Requirements
Document Reference: 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx;Annex 6 GHG Inventory AFOLU Orinoquia 2001-2017; ISFL PD Colombia Chapter 4_19.07.21
Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data."
The audit team has found inconsistencies in the values reported in the various calculation workbooks as well as those reported in the ERPD and seeks additional clarification regarding these inconsistencies.
For instance, in the workbook 3B1aii TFCOT Deforestacion NREF linea base 10-2021.xlsx;, sheet Estimación (Tipificado), for the subcategory 3B3b (forest to pasture), a value of 763,043 tCO2e is reported for the year 2011, for the net emissions across all pools (aboveground, belowground, dead organic matter, and soils). However, in the workbook, Annex 6 GHG Inventory AFOLU Orinoquia 2001-2017.xlsx, sheet AFOLU Orinoquía 2000-2017 (VF), a value of 6,010,554.42 tCO2e is reported in 2011 for the subcategory 3b3b (Forestland converted to pasture). The audit team has identified similar large differences between the values reported in the workbook 3B1b OTCTF Restauración Linea Base.xlsx and Annex 6 GHG Inventory AFOLU Orinoquia 2001-2017.xlsx, sheet AFOLU Orinoquía 2000-2017 (VF). It is unclear why there are such large differences in the values reported for the various subcategories between these workbooks. Please provide additional information and clarification.
Project Personnel Response: We thank the evaluating team for the finding, since the presentation of the sheets of the file 3B1aii TFCOT Deforestacion NREF line 10-2021.xlsx has generated confusion, by using the same file used for the national estimates in order to avoid errors in the formulation of calculations. The information presented in this file in its entirety corresponds only to the Orinoquia region, but discriminated by type of biome present in the region (Orinoquia biome, Amazonia biome, Andes biome) which are those present in the area of influence. In future deliveries the presentation of the file will be modified in order to show the estimates more clearly. Therefore, the information presented in ANNEX 6 GHG Inventory AFOLU Orinoquia 2001-2017.xlsx, corresponds to the total emissions for the Orinoquía region (area of influence of the Biocarbono Fund project) in gigagrams of CO2e; In the file 3B1aii TFCOT Deforestation NREF line 10-2021.xlsx and for the example of the finding, which shows a value of 763,043 tCO2e for the year 2011, it is clarified that this corresponds to the emissions for the Orinoquía biome, therefore the value total of the region and that is presented in ANNEX 6 corresponds to the data presented in cell CW169 of the sheet "Estimation (Typified)" of the file 3B1aii TFCOT Deforestation NREF line 10-2021.xlsx, which is found in tons of CO2e and corresponds to a value of 6010554.41528914. Thus, to compare the values presented in ANNEX 6, with those of the file 3B1aii TFCOT Deforestation NREF baseline 10-2021.xlsx, those presented in the rows referenced as National must be taken.
Auditor Response: Thank you for the clarification regarding the Orinoquia biome versus the Orinoquia region. This helps greatly in our review. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 23 Dated 23 Dec 2021
Standard Reference: ISFL PD Template January 2020.pdf
Document Reference: AFOLU_1_MODELO_Depart 2014_oct.xlsx, AFOLU_1_MODELO_Depart 2015_oct.xlsx, Annex 6 GHG Inventory AFOLU Orinoquia 2001-2017; ISFL PD Colombia Chapter 4_19.07.21
Finding: Section 4.1.2 of the ERPD template requires "Using the table below, provide a summary of the Program GHG Inventory. When completing the table, please list the subcategories in order of the relative magnitude of contribution of these subcategories to the absolute level of the total GHG emissions and removals in the Program GHG Inventory, starting with the subcategory that makes the largest contribution." The values from 4.1.2 are then used to populate the table in section 4.2.1 as well as Annex 6. While updates to the calculation of emissions in AFOLU 1 have been made in the workbooks (e.g., AFOLU_1_MODELO_Depart 2014_oct.xlsx, AFOLU_1_MODELO_Depart 2015_oct.xlsx and so on), these updates have not been incorporated into the ERPD. As a result, the values reported in the ERPD do not reflect those values reported in the AFOLU 1 model files (e.g., AFOLU_1_MODELO_Depart 2014_oct.xlsx) or in the workbook Annex 6 GHG Inventory AFOLU Orinoquia 2001-2017.xlsx which is summarized in Annex 6 of the ERPD, resulting in a nonconformity of the ERPD. As a result, the ERPD will not be considered to be in conformance with the ERPD template until it has been updated to reflect the actual values and calculations used in the calculation workbooks that have been submitted for review to the assessment team.
Project Personnel Response: The ERPD has not yet been updated because we expect to do it together for all AFOLU (1 and 2). When we have final data, we will update tables and texts of the ERPD, however, the ERPD will not have significant changes since the anomalies found do not differ significantly in the inventory.
Auditor Response:
Project Personnel Response 2: With the last delivery of the ERPD document, all the tables were updated, including the corresponding adjustments for the update of the complete AFOLU emissions baseline. Please see the version of the document delivered on June 15, 2022.
Auditor Response 2: The audit team was able to confirm that Table 14 in the ERPD as well as Appendix 9.1 LB_Orinoquia_2009-2018 of the ERPD matches the values that were verified in the workbooks AFOLU_1_MODELO_Depart 2013_oct.xlsx, etc. This finding has been satisified.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 24 Dated 7 Jan 2022
Standard Reference: ISFL PD Template January 2020.pdf
Document Reference: Annex 6 GHG Inventory AFOLU Orinoquia 2001-2017; ISFL PD Colombia Chapter 4_19.07.21; 3B1aii TFCOT Def NREF lineab ERPD-Actualizada
Finding: Section 4.1.2 of the ERPD template requires "Using the table below, provide a summary of the Program GHG Inventory. When completing the table, please list the subcategories in order of the relative magnitude of contribution of these subcategories to the absolute level of the total GHG emissions and removals in the Program GHG Inventory, starting with the subcategory that makes the largest contribution." The values from 4.1.2 are then used to populate the table in section 4.2.1 as well as Annex 6. While updates to the calculation of emissions in AFOLU 1 have been made in the workbooks (e.g., 3B1aii TFCOT Def NREF lineab ERPD-Actualizada.xlsx, findingd 18 and 19), these updates have not been incorporated into the ERPD. As a result, the ERPD will not be considered to be in conformance with the ERPD template until it is updated to reflect the actual values and calculations used in the calculation workbooks that have been submitted and validated by the assessment team.
Project Personnel Response: With the last delivery of the ERPD document, all the tables were updated, including the corresponding adjustments for the update of the complete AFOLU emissions baseline. Please see the version of the document delivered on June 15, 2022.
Auditor Response: The assessment team confirmed that the ERPD has been updated to match the values reported in the latest calculation workbooks. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 25 Dated 7 Jan 2022
Standard Reference: ISFL Program Requirements
Document Reference: 3B1aii TFCOT Deforestacion NREF linea base ERPD - Actualizada
Finding: The ER Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data." In the workbook 3B1aii TFCOT Deforestacion NREF linea base ERPD - Actualizada, sheet Tipificacion AGB, columns AE - AL, the total biomass (aboveground and belowground) emission factors for the various nonforest land use classes are provided, rather than only the aboveground biomass values. These total nonforest emission factors (above and belowground) are then utilized with the aboveground forest biomass emission factors (columns BH-BS) to utlimately calculate the net biomass emissions (columns CJ -CV). It is unclear why the aboveground and belowground nonforest emissions factors are applied with only the aboveground forest emission factors. Furthermore, in the worksheet Estimación (Tipificado), columns P-V, it indicates that the emisiones remanentes (ABG) are being calculated, however, because the aboveground and belowground combined emission factors for nonforest land uses are used, these columns actually represent the ABG and BGB emissions for nonforest classes. It is unclear to the audit team whether the belowground emissions are being double counted. Please clarify.
Project Personnel Response: The reviewers appear to have an older version of the FOLU Sector GHG Estimates spreadsheets. This finding was rectified with the last delivered of the ERPD document, also presenting information by department and consolidated for the Orinoquía region. Please see the zip file "Cálculos categoría 3B.zip" at the following link:
https://drive.google.com/drive/folders/1INViWd53QyNd4-c2Kwi8nrueV7BksDeK
Auditor Response: Thank you for clarifying. The audit team located the most up to date version and these issues were rectified.
Project Personnel Response 2:
Auditor Response 2: The audit team found the source of the confusion. The belowground nonforest carbon is being calculated within the Tipificacion AG worksheet rather than with the belowground forest carbon calculations of emissions. While the results are ultimately the same, the accounting of forest belowground carbon separately from the nonforest belowground is a source of confusion and has been identified as an area of approvement for accounting transparency. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 26 Dated 7 Jan 2022
Standard Reference: ISFL Program Requirements; 2019 IPCC V4 Ch10
Document Reference: Modelo IPCC-IDEAM FE metano entérico y de gestión de estiércol - 3Ala
Finding: The ER Program Requirements states that “ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines.” Section 10.4.2 of the 2019 IPCC V4 Ch10 is applied to calculat livestock methane emission factors and states that "The maximum methane-producing capacity of the manure (B0) varies by species and diet. The preferred method to obtain B0 measurement values is to use data from country-specific published sources, measured with a standardised method. It is important to standardise the B0 measurement, including the method of sampling, and to confirm if the value is based on total as-excreted VS or biodegradable VS, since the Tier 2 calculation is based on total as-excreted VS. If country-specific B0 measurement values are not available, default values are provided in Tables 10.16 where data is summarized from Table 10A-4 through 10A-9 of 2006 IPCC guidelines." The parameter B0 is then utilized in equation 10.23 for the calculation of CH4 emission factor from manure management. In workbook Modelo IPCC-IDEAM FE metano entérico y de gestión de estiércol - 3Ala.xlsx, Hoja1, column CS, a default value of 0.19 is used for the parameter B0 for all cattle categories in the Orinoquia region. However, table 10.16 in 2019 IPCC V4 Ch10 shows values of for Other Regions for dairy cows as 0.13 for low productivity systems (dairy and non-dairy cows), 0.24 for high productivity systems dairy cattle, and 0.18 for high productity system non-dairy cattle. A value of 0.19 is not reported in this table for cattle except for non-dairy cattle in North America. The assessment team requests more information and justification for why a value of 0.19 was selected for B0 and applied for all categories of cattle in Orinoquia.
Project Personnel Response: Table 10.16 of the 2019 IPCC guide proposes values for B0 of 0.13, 0.18 and 0.24 for low productivity cattle (Dairy and non-dairy), high productivity non-dairy cattle and high productivity dairy cattle respectively. However, on page 69 of the 2019 IPCC guide in number 2 of the footer of table 10.17 (Update), it is indicated that the pasture manure management system (Pasture/Range/Paddock) must always be used with a B0 of 0.19. Besides, for the case of Colombia where the pasture manure management system is predominant (Pasture/Range/Paddock), with a participation greater than 93% for all production systems, it was decided to use the value of 0.19 and continue the IPCC recommendation (2019).
Auditor Response: Thanks for the explanation. The assessment team was able to confirm your response in the aformentioned IPCC guidelines. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 27 Dated 5 Sep 2022
Standard Reference: ISFL Program Requirements; 2006 IPCC Guidelines V4 Chapter 2,
Document Reference: PRE_Biocarbono_Orinoquia_V2.9_English; Consolidado Ganancia Plantaciones.xlsx and Consolidado Perdida Plantacion.xlsx
Finding: The ER Program Requirements states that "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines." As indicated in section 2.3.1.1 of the IPCC 2006 Guidelines for land remaining in a land-use class, accounting includes estimation of biomass gains (growth) and biomass losses. It specifically states "Gains include biomass growth in aboveground and below-ground components. Losses are categorized into wood fellings or harvest, fuelwood gathering, and losses from natural disturbances on managed land such as fire, insect outbreaks and extreme weather events (e.g., hurricanes, flooding)." For subcategory 3Baiiii (forest plantations remaining forest plantations), section 4.2.2 of the ERPD states "This subcategory is included in program accounting and is estimated from the profit and loss method, level 2, with emission factors based on country-specific data obtained from statistics and studies of commercial forest plantations for the Orinoquia region." The audit team also reviewed the workbook Consolidado Ganancia Plantaciones.xlsx as well as the workbook Factores Plantaciones U Tolima.xlsx and we have been unable to determine exactly how the emission factors were derived and applied to determine the average annual increment in biomass in conformance with equation 2.10 of the IPCC 2006. Similarly with regards to the losses, the audit team reviewed the workbooks Factores Plantaciones.xlsx and Consolidado Perdida Plantacion.xlsx and have been unable to determine how the emission factors for losses (fires, harvests, fuelwood) have been calculated and applied in conformance with equations 2.12-2.14 of the 2006IPCC guidelines. As a reminder, the audit team must be able to replicate these calculations of emission removals to reach a reasonable level of assurance. Please provide additional information and a clear demonstration (with active cell formula in excel) of how the accounting of the Plantation land remaining plantation land subcategory is in conformance with the equations in section 2.3.1.1 of the IPCC 2006.

Project Personnel Response: Emissions and absorptions estimate from commercial forest plantations reported in 3B1aiii category (Forest Land Remaining Forest Land, Plantations) are calculated using spatially explicit information generated by the Forest and Carbon Monitoring System (Sistema de Monitoreo de Bosques y Carbono; SMByC) for Orinoquia. This information is discriminated in forest plantations (stable), forest plantation area gains and forest plantation area losses. In these areas is not possible to identify which tree species are present. Carbon absorption gains are calculated using growth from stable forest plantations and increases in forest plantation areas. To estimate emissions, carbon losses associated to decreases in forest plantation areas are used. This happens when cover losses from one year to the next are observed and it is assumed that the area from the plantation was harvested.

Emission factors used to estimate gains and losses in carbon contents in sowed areas are obtained through the consolidation of Orinoquía's commercial forest plantations. Calculation of these emission factors was made by Universidad del Tolima, and includes density data, Mean Annual increment (MAI), Biomass Expansion Factor (BEF), Root to Shoot ratio (RS), Shift Share y Carbon Fraction by species for the 12 identified species in the Orinoquía Region. Additionally, there is spatially explicit information from forest plantations consolidated in the forest bulletin made by the Ministry of Agriculture in 2021 which collects information from ICA (Instituto Colombiano Agropecuario), MADR (Ministerio de agricultura y desarrollo Rural), FINAGRO (Fondo para el Financiamiento del Sector Agropecuario), FNC (Federación Nacional de Cafeteros) y FEDECACAO (Federación Nacional de Cacaoteros) in the 1990-2018 period. This bulletin provided planted areas for 51 additional species in the Orinoquía Region. For these 51 species, emission factors were assigned taking into consideration taxonomic genre and growth information available at regional/country level. Information related to these factors are included in the Annex "Factores plantaciones Orinoquía" as a table.

Using this spatially explicit information, annual carbon gains were estimated using plantation growth until harvest. Annual carbon losses were estimated using harvest that would happen in the theoretical turn year of the planted species. These calculations were made for the Third Biennial Update Report (BUR3) of Colombia and were used as a baseline to assign emission factors to areas using spatially explicit information. Emission factor assignation also used emission calculation information, this led to obtain t C ha/year from gains (absorptions) and losses (emissions) for each year by state (Departamento). This allowed to obtain an emission factor differentiated by year and state (Departamento) according to emissions and absorptions reported for the areas and species registered in the Orinoquía region. After that, this emission factor was interpolated to the spatially explicit area.

Calculations can be found in the file "Factores plantaciones". Initially, in sheet "Biomasa especies y crecimientos", consolidated information of commercial forest plantations is found (columns A-N). Calculations begins in columns O and P where Total and Aerial Biomass with shifts are used to estimate all the biomass that will be produced for each record (e.g., O2 = L2*M2 and P2 = L2*N2). In the columns Q and R harvested biomass is calculated (e.g., Q2 = O2*J2 and R2 = P2*J2); however, each record must meet the condition of a higher than 60% use. From here, it is assumed that 70% of the carbon is emitted from the harvested biomass, since 30% is stored in carbon reservoirs of collected in products from harvested wood. In the S column there is the area (e.g., S2=J2), with the condition that rows must contain data. Finally, in columns T and U carbon from growth is calculated (e.g., T2=M2*J2 and U2=N2*J2). Using these calculations as baseline, 1977-2018 time series is built into a matrix. In columns V-BK areas (ha) are stablished from column J until plantation year (e.g., V2=J2). In columns BL-DA, total biomass (ton C, growth) from column T is calculated until plantation year (e.g., BL2=T2).

Growth emission factor calculation: In sheet "Biomasa especies y crecimientos", from cell V3352, start being totalized by year and for year (Ha) (columns V-BK) and total biomass (Ton C) (columns BL-DA)

for each state (Departamento): row 3352 Arauca, 3353 Casanare, 3354 Meta and 3355 Vichada. Finally, in the sheet “Factores Nuevos Crecimientos” there is the data from the dynamic table in columns A-I, rows 1-44, in columns J-M there the calculations for Aboveground biomass (Ton C, harvest)/Adjusted harvest surface (ha) (e.g., J3=B3/C3).
Harvest emission factor calculation: In sheet “TD Cosechas”, there is a dynamic table that uses data from columns A-U from sheet “Biomasa especies y crecimientos”. States (Departamentos) are in rows and the years from 1989-2043 are in the columns with two additional variables: 1. Aboveground biomass sum (Ton C, harvest) “Sheet Biomasa especies y crecimientos, Column R” 2. Adjusted harvest surface sum (ha) “Sheet Biomasa especies y crecimientos, Column S”. Finally, in the sheet “Factores cosechas” there is the data from the dynamic table in columns A-I, rows 1-49, in columns J-M there the calculations for Aboveground biomass (Ton C, harvest)/Adjusted harvest surface (ha) (e.g., J3=B3/C3).
Emissions estimates from losses are calculated using equations 2.12-2.14 for Orinoquia’s GHG Inventory. In this case, losses by fires are the only ones considered, since there is no information on losses from wood or harvest. Losses are estimated from area decreases in plantations; were it is assumed that they are being harvested.
It is important to mention that in the report table, specifically in the CO2 emissions column from category 3B1aiii Forest Land Remaining Forest Land (plantations), CO2 emissions from area losses and CO2 emissions from burning biomass are summed. These last emissions are reported in forest plantations according to the information provided by the National System of Forest Information (Sistema Nacional de Información Forestal; SNIF) and are estimated in the data sheet from 3C1 Fires category.

Auditor Response: Thank you for the detailed response. The audit team confirmed the areas of loss using the maps provided (e.g., cambio_wv_2010_2012_orinoquia_22042022_palma_plantacion_biocarbono_3116.img), but we are still having difficulty in confirming the areas gained in plantation. We have reviewed the workbook Areas_Finales_2000-2018_SMByC_Ajustado.xlsx and Areas_Finales_Cambios.xlsx and cannot make sense of this procedure applied. Furthermore it is not clear what land uses the plantaciones are transitioning to and from. For instance, if they are transitions from grassland or natural forest to plantation, these have very different emissions associated. If they are transitions from plantation to forest or to shrubland or cropland, these also have very different associated emissions.
(1) The audit team needs more information and a clear, transparent demonstration of what land uses these plantation areas are transitioning to and from. If some of the gains in plantation represent transitions from forest to Plantation, are they also being accounted for in the worksheet Consolidado-Deforestación. Please provide explanation and assurance that there is no double counting.
(2) we need a clear demonstration on exactly how the area of ganancia of plantation was derived with a detailed workflow of the process along with an explanation of the assumptions and reasons the area gained as been adjusted.
(3) related to point #2 above, it is unclear why the area of perdida is included in the area of ganancia and stable. In the workbook Areas_Finales_2000-2018_SMByC_Ajustado.xlsx, sheet Ajuste Áreas Finales, cells I1270:I1272 show that for Arauca 2011, plantaciones is 34.39 ha, perdida de plantaciones is 0.33 ha and ganancia de plantaciones is 1.12 ha, which sum to 35.84 ha. In the workbook, Arauca-Ganancia Plantaciones Forestales.xlsx, sheet Linea Base (modelo), for year 2011, the area of Ganancia is 35.84 ha. The accounting for areas in Ganancia is simply unclear. Please provide more information.
(4) Another note is that this subcategory class is titled "3B1aiii Forestland remaining as such (Forest plantation)," which is a misrepresentation as it actually contains land use transitions to and from plantation.

Project Personnel Response 2: 1. We appreciate the finding. After reanalyzing spreadsheets with deforestation estimates we found risk of double counting. Therefore, we subtracted natural forest areas that are converted into plantations and which are determined from the typification analysis of deforestation. This area adjustment can be observed in the Excel file “Areas_Finales_Cambios_FINAL” available in: ERPD Biocarbono Orinoquia/Insumos/4_1_2_GHGIN_AFOLU_2/Soportes_GHGIN_AFOLU2/03-DA_Areas_cambios.zip
2 y 3. In the estimates of commercial forest plantation gains we determined the area that is growing annually and therefore can generate absorptions.
To identify these growing areas, it is important to remember that the information used is spatially explicit in raster format, is generated by the SMBYC for the ERPD baseline emissions, includes the 2000-2018 historical series and reports areas in biennial periods between 2000-2012 and annual areas in the years 2013-2018. Since 2000-2012 has biennial reports we assumed that annual gains/losses are half of what is reported for that period.
In this way, annual area gains that grew in the biennial periods correspond to the stable areas reported for that period plus half the gained area reported in that period and half the area lost. This last part due to the area lost in the second year is still growing on the first year and has not been lost in that period (See figure below). In the second year, growing areas will correspond to the stable area from that period and the gains for the entire period (both first and second year). None of the lost areas are accounted as a gain on the second year. In order to better explain this process we built a diagram that can be found under the name "Explicación Calculos Bienales.pdf" in the ERPD Biocarbono Orinoquia/Matriz_hallazgos_SCSGlobal/Soportes/Explicación Calculos Bienales.pdf
As a practical example, we annex the file “Areas_Finales_2000-2018_SMByC_Ajustado” (ERPD Biocarbono Orinoquia/Insumos/4_1_2_GHGIN_AFOLU_2/Soportes_GHGIN_AFOLU2/03-DA_Areas_cambios.zip), sheet “PlantFor Ajustada Crecimiento”. In order to obtain total growth in Arauca in the year 2001 we add up PLANTACIONES FORESTALES (Forest plantations 2001) + GANANCIA PLANTACIONES FORESTALES (Gained areas - Forest plantations 2001) + PERDIDA PLANTACIONES FORESTALES (Lost areas - Forest plantations 2001) [G2=D2+E2+F3]. This is done because the series is reported for 2000-2002, so we must assume that in the first year (2000-2001) total gains are a sum of total stable area plus half the gains and half the losses for the next year. Half the losses are accounted as gains because we assume they have not been lost in the first year. After this, to obtain total growth in the end of the period (2001-2002) we add up PLANTACIONES FORESTALES 2002 (Forest plantations 2002) + GANANCIA PLANTACIONES FORESTALES (Gained areas - Forest plantations 2002) + GANANCIA PLANTACIONES FORESTALES (Gained areas - Forest plantations 2001) [G3=D3+E3+E2]. This is done because by the end of the period we know how much is gained and lost and we do not have to assume what happened with the areas. This calculation is carried out for the years 2001-2002, 2003-2004, 2005-2006, 2007-2008, 2009-2010 and 2011-2012.
Starting in 2013, we got annual information of gains and losses. So, for Arauca, growth area is obtained by adding up PLANTACIONES FORESTALES (Forest plantations 2013) + GANANCIA PLANTACIONES FORESTALES (Gained areas - Forest plantations 2013) [G14=D14+E14]. This calculation is carried out for the years 2013, 2014, 2015, 2016, 2017 and 2018.
As additional information, in the file "Areas_Finales_Cambios_FINAL" (ERPD Biocarbono Orinoquia/Insumos/4_1_2_GHGIN_AFOLU_2/Soportes_GHGIN_AFOLU2/03-DA_Areas_cambios.zip), the calculation is made of how the deforestation of natural forest areas that are converted into plantation areas, according to the typification of deforestation, is subtracted from the area of plantation gains to avoid double counting. In the “Perdida y Ganancia Bosque” sheet, the area of deforestation by year and department is found, and in the "Forest Plantations" sheet, the area of gains is taken in the "Surface (ha)" column and the area of deforestation is subtracted in the

"Superficie Deforestada_PF" column, with a result in the "Ajuste_PF_Deforestado" column. Additionally, an adjustment is made in the "Ajuste_Ganancia_PF" column when values are negative, leaving the initial gain value, this occurs when the deforested area is greater than the planted area, because the methodologies for determining the areas of gain and loss of plantations are different from the typification of deforestation of natural forest areas that are converted into forest plantation areas.
The files "Areas_Finales_2000-2018_SMByC_Ajustado" and "Areas_Finales_Cambios_FINAL" mentioned above can be found in the following location: ERPD Biocarbono Orinoquia/Insumos/4_1_2_GHGIN_AFOLU_2/Soportes_GHGIN_AFOLU2/03-DA_Areas_cambios.zip
4. The country does not yet have information on the previous and subsequent use of areas of forest plantations, only clear identification between losses of forest that were converted into plantations from deforestation analyses, which as discussed in the previous paragraph generates discrepancies between the areas.
In order to achieve coherence between the areas that are gained in forest plantations and that cease to be forest identified with the deforestation analysis and those reported in the area gain analyses of forest plantations identified in the SMBYC image analyses, a plan of improvement is proposed to carry out a classification analysis of the areas of gain, loss, and stable forest plantations, palm crops, and other woody vegetation, equally robust to that of deforestation (See Table 8 Page 16 from Annex VIII available at: ERPD Biocarbono Orinoquia/Anexos/Anexo VIII).
Auditor Response 2: Thank you for this response. The audit team has tracked the area that is considered to be growing (ganancia) in plantation remaining plantation and OVL remaining OVL. We confirmed these areas. However, the program team is assuming that areas classified as stable continue to grow potentially beyond 20 years. This is because land that was in the stable class in year 1 (2000) may have been in that stable pool for 20 years already but it continues to grow. Thus the total carbon stock in aboveground and belowground biomass may continue to grow beyond the total carbon stock of mature/stable plantations or OVL lands. In this end this results in additional removals which is considered conservative. An OBS will be issued regarding this.
This finding has been addressed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 28 Dated 5 Sep 2022
Standard Reference: ISFL Program Requirements; 2006 IPCC Guidelines V4 Chapter 2, ISFL Guidance note on application of IPCC guidelines_March 2021
Document Reference: Consolidado-Regeneración.xlsx
Finding: The ER Program Requirements states that "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines." Section 3.2 of the ISFL Guidance note on the IPCC guidelines thates " The net annual CO2 removals shall be calculated using equations 2.15 and 2.16 from the 2006 IPCC Guidelines, Volume 4, Chapter 2. These equations shall be simplified by assuming that during the conversion from non-forest to forest, carbon stocks will go from average carbon stocks in non-forest to
average carbon stocks in forests during a period of time. This calculation shall consider the maximum carbon stocks in different forest types and it shall be ensured that the estimated forests carbon stocks will not continue growing beyond this maximum value. A conservative default period of 20 years is suggested for the forest to grow from the carbon stock levels of non-forest to the level of biomass, stable soil and litter pools of the average forest." It then demonstrates this calculation in Box 2 with an example. The example assumptions are that "The average carbon stocks (aboveground and belowground) of forestland is 44 tonnes C/ha and
average carbon stocks in non-forest land is 4 tonnes C/ha. The annual increase in carbon stocks in total biomass (aboveground and belowground) due to net growth is (44 – 4) / 20 = 2 tonnes C ha-1 yr-1 ." However, in the woorkbook Consolidado-Regeneración.xlsx, sheet Tipificación AGB, it only shows that the carbon stock in the forestland is divided by 20 years, rather than the difference between the carbon stock in forestland and the nonforest carbon stock being divided by 20 years as is demonstrated in the guidance note and equation 2.16. This is not in conformance with the requirements.
Project Personnel Response: GHG estimates from regeneration for the Orinoquia region were obtained from the GHG National Inventory. These estimates were a part of the UNFCCC QA/QC process and the reviewers made the following recommendation on the annual increase of carbon reservoirs in total biomass "For biomass, growth is estimated for 20 years with a growth rate = (final biomass-initial biomass)/20. This is not aligned with the IPCC 2006 guidelines since biomass loss should happen in the first year and in the following years it should grow 1/20 of final biomass". For this reason, in the final emission report presented as a part of BUR3 and posterior reports like the GHG Inventory for Orinoquia, estimates are calculated as UNFCCC recommended. However, when performing calculations as it is being done, net accumulated emissions are the same as the ones estimated with the calculation proposed in this auditing.
Auditor Response: Thank you for your response. The audit team couldn't confirm the source of these QA/QC UNFCCC recommendations. However, the UNFCCC "Guide for Peer Review of National GHG Inventories", section 2, page 2 "Purpose of this document", states that "It will describe how to perform a review of national GHG inventory management systems and national GHG inventories for non-Annex I Parties, taking into consideration and ensuring consistency with the Intergovernmental Panel on Climate Change (IPCC) guidelines for national GHG inventories, and the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) and United States Environmental Protection Agency (US EPA) training materials, workbooks, templates on developing sustainable national GHG inventory systems.". Please provide the supporting evidence of the UNFCCC recommendations to support the use of your approach. This finding remains open.

Project Personnel Response 2: As previously mentioned in the present finding, since the estimates for regeneration and deforestation in the Orinoco were based on the information from the national INGEI, they were part of the QA/QC process carried out by the UNFCCC on these reports; within the comments made, the reviewers made the following note on the estimate of the annual increase in carbon reserves in the total biomass "For biomass, growth is estimated over 20 years with a growth rate = (final biomass - initial biomass) / 20. "This is not in line with the 2006 IPCC Guidelines, as the loss of previous biomass should occur in the first year and the rest of the years grow 1/20 of the final biomass." Also, the following recommendation was given "a) For the calculation of conversions, estimate the loss of previous biomass deposit in the first year based on the process that is being generated. Subsequently, calculate the capture based on the transition years."
In the Word document "QA Process - AFOLU Module Recommendations" attached as an annex to this matrix, which corresponds to the recommendations and comments made by the UNFCCC reviewers on the INGEI presented in BUR3, this appreciation and approach that Colombia has adopted and has been applying since then in its INGEI is shown on pages 22 and 23 (highlighted in yellow) within the findings. (See support in the file "Hallazgo 28_QA_ Process_BUR3" available at: ERPD Biocarbono Orinoquia/Matriz_hallazgos_SCSGlobal/Soportes/
Auditor Response 2: Thank you for providing this table and information on the approach applied. As you indicate in the response and as is documented in the BUR guidance document, the carbon in the initial subcategory must be lost in year 1 and then the carbon in the forest class accumulates over a period of 20 years. Since the program team does not have data on what the initial land use prior to conversion is, the initial subcategory carbon is not lost in accordance with the guidance. This ultimately results in fewer emissions and thus a conservative estimation of total emissions/removals from reforestation land uses. The audit team has closed this finding but will issue a FAR regarding the requirement for the initial land use carbon.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 29 Dated 5 Sep 2022
Standard Reference: ISFL Program Requirements; 2006 IPCC Guidelines V4 Chapter 2, ISFL Guidance note on application of IPCC guidelines_March 2021
Document Reference: Consolidado-Regeneración.xlsx
Finding: The ER Program Requirements states that "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines." Equation 2.25 of V4 Ch2 of the 2006 IPCC defines how changes in the SOC pool associated with conversion of forestland to other lands uses must be calculated. Section 2.2. of the ISFL guidance note on IPCC Guidelines states "For ISFL Accounting, the same Equation 2.25 from the 2006 IPCC Guidelines, Volume 4, Chapter 2 will be used
using the Tier 2 method. Since the ISFL ER Program Requirements in paragraph 4.2.3 require Approach 2 or 3 for
Activity Data Collection, formulation B from box 2.1 in the same IPCC chapter will be applied to replace Equation
2.25." In reviewing Forumulation B in Box 2.1 of the IPCC, it shows that for each land use type, the SOC for the land use before the transition is subtracted from the SOC for the land use after the transition and the entire numerator is divided by D which has a default of 20 years. In the client's regeneration workbook Consolidado-Regeneración.xlsx, sheet Suelos (Linea Base-Tipificado), it shows that only the forestland SOC is divided by 20 and not the difference between the two land use carbon stocks (e.g., (SOCnonforest - SOCforest)/20) as is required by the methodology. Thus the quantification of soil carbon removals due to conversions of nonforest land to forest land is not in conformance with the requirements.
Project Personnel Response: In order to stay coherent with biomass estimates, SOC estimates were calculated in the same way. This is, by assuming carbon content in soil from a land cover previous to forest is lost in the first year and for the next years it starts accumulating at the same rate each year for 20 years (depending on biome type). It is assumed that the forest reaches its maximum SOC content in 20 years after which no more carbon is stored.
Auditor Response: Thank you for the clarification. As indicated in finding 28, the audit team requests the QA/QC UNFCCC recommendations to confirm that this is a recommended and valid approach. Please provide this evidence.
Project Personnel Response 2: See previous answer number and support "Hallazgo 28_QA_Process_BUR3" available at: ERPD Biocarbono Orinoquia/ Matriz_hallazgos_SCSGlobal/Soportes/
Auditor Response 2: Thank you for providing this table and information on the approach applied. As you indicate in the response and as is documented in the BUR guidance document, the carbon in the initial subcategory must be lost in year 1 and then the carbon in the forest class accumulates over a period of 20 years. Since the program team does not have data on what the initial land use prior to conversion is, the initial subcategory carbon is not lost in accordance with the guidance. This ultimately results in fewer emissions and thus a conservative estimation of total emissions/removals from reforestation land uses. The audit team has closed this finding but will issue a FAR regarding the requirement for the initial land use carbon.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 30 Dated 5 Sep 2022
Standard Reference: ISFL Guidance note on application of IPCC guidelines_March 2021
Document Reference: PRE_Biocarbono_Orinoquia_V2.9_English; 3B1ai-3B2ax-3B3a_Suelos_orgánicos; 3B1ai TFPT-Consumo leña
Finding: Section 4 of the ISFL Guidance on the IPCC Guidelines states that "Changes in carbon stocks in dead organic matter shall only be considered for subcategories involving lands converted from Forest Land to any other land-use category (carbon losses) and for lands converted to Forest Land (carbon gains) in accordance with the guidance below. When considering dead organic matter for these subcategories, paragraph 4.2.2 of the ISFL ER Program Requirements shall still be applied to determine the
significance of this pool." Section 4.1.1 of the ERPD states "Forest land remaining as forest land was divided into three groups: 3B1ai Forest land remaining as forest land (Natural Forest), 3B1aii Forest land remaining as forest land (Transitions between natural forest and other forest lands), 3B1aii Forest land remaining as forest land (Commercial forest plantations). In each of the above subcategories, changes in C contents were estimated in three pools suggested by the IPCC guidelines: biomass, DOM, and soil." Thus it indicates that DOM is included even for category 3B1ai which does not involve conversion. Furthermore, Table 14 of the ERPD provides a summary of the GHG inventory and the fourth column indicates which pools are included for each subcategory. This table indicates that for category 3B1ai (natural forestland remaining natural forest land), the DOM pool is included, which would not be in conformance with the requirements. However, in reviewing the workbooks pertaining to this subcategory (3B1ai), it does not appear that DOM is accounted for. Please provide more information regarding whether the DOM pool is being accounted for in the forestland remaining forestland (natural forest) 3B1ai subcategory.
Project Personnel Response: We appreciate the finding, reviewers are right. For categories 3B1ai and 3B1aiii there are no DOM estimates since the country does not have this information so far. Table 14 from the document will be adjusted in the version that will be subsequently delivered and that includes additional adjustments required from the World Bank.
Auditor Response: Thank you for your response. The audit team confirmed the changes have been addressed in the ERPD. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 31 Dated 5 Sep 2022
Standard Reference: ISFL Program requirements
Document Reference: PRE_Biocarbono_Orinoquia_V2.9_English; BAU_vs_E.xlsx
Finding: Step 1 for the initial selection of subcategories in the ISFL Program Requirements states:
4.3.3 ISFL ER Programs shall list all the subcategories from the Program GHG Inventory, with the associated Carbon Pools and gases, in order of the relative magnitude of contribution of these subcategoriesto the absolute level of the total GHG Emissions and Removals in the Program GHG Inventory
4.3.4 From this list, all ISFL ER Programs shall initially select the following subcategories:
i. Any subcategories involving conversions from or to forest land;
ii. Forest land remaining forest land;
iii. Any subcategories involving conversions between land-use categories other than forest land that, cumulatively with the conversions from or to forest land, amount to 90% of the absolute level of the total GHG Emissions and Removals associated with all land use conversions in the Program GHG Inventory; and
iv. The single most significant of the remaining subcategories in order of the relative magnitude of contribution of these subcategories to the absolute level of the total GHG Emissions and Removals in the Program GHG Inventory.
4.3.5 Additional non-forest related subcategories may be included at the discretion of the ISFL ER Program if the quality requirements in Section 4.2 are met, provided there is a clear rationale for including these subcategories in terms of improving ISFL ER Program mitigation performance."
Table 14 of the ERPD includes virtually all potential GHG subcategories, but it is unclear how the program requirements (4.3.3-4.3.5) were applied to generate the initial list of subecategories for ISFL accounting. The audit team attempted to replicate the selection using the workbook BAU_vs_E.xlsx, sheet Resumen, but numerous subcategories are blank. The audit team requests a step by step demonstration (in an excel workbook) of the initial selection of subcategories for ISFL accounting, including a demonstration of which option under section 4.3.4 of the program requirements the subcategory meets.
Project Personnel Response: Table 14 could not be replicated using "BAU_vs_E.xlsx" since this file was built solely with the intention of elaborating the figures shown in the document. Hence, in order to replicate Table 14, we send the file "Porcentaje acumulado - Tabla 14.xlsx" with 3 sheets on it. First sheet contains the greenhouse gas inventory for the Orinoquia region. Second sheet has a dynamic table with the data from sheet 1, there we selected the categories with a level 3 disaggregation for most 3 and 4 categories from 3B - Land. Third sheet contains Table 14 information where we show the methodology used to elaborate it, each column contains performed calculations. Additionally, in Table 16 subcategories included in the initial selection are listed; there is also an explanation of why each category is included considering the criteria mentioned in 4.3.4. numeral.
Auditor Response: The audit team could not find the file with the calculations, "Porcentaje acumulado - Tabla 14.xlsx". The audit team followed up with an email, requesting to the ISFL Colombia team the submission of the file containing the response to this finding. Please submit the aforementioned file for the review.

Project Personnel Response 2: The "Inventory Summary" table mentioned as Table 14 in the "BAU_vs_E.xlsx" file, is currently Table 27 in the latest updated version of the Emissions Reduction Program (PRE) document (version 4.0), section 4.1.2 Inventory Summary. This table was constructed using the information compiled from the AFOLU sector inventory, which can be consulted in the folder: ERPD Biocarbono Orinoquia/Insumos/4_1_2_LB_Orinoquia_GHGIN.xlsx. To replicate the information or trace the data, you must review the " 4_1_2_Resumen_inventario" file, the access route is: ERPD Biocarbono Orinoquia/Insumos/4_1_2_Resumen_inventario.
Auditor Response 2: Thank you for providing this table and excel spreadsheet showing the calculation of these values. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 32 Dated 5 Sep 2022
Standard Reference: ISFL Program requirements
Document Reference: PRE_Biocarbono_Orinoquia_V2.9_English, Appendix 8_PRE_Biocarbono_Orinoquia_Junio2022_English
Finding: This finding relates to NIR 31 above.
Section 4.1.2 of the ERPD template requires the following: "Using the table below, provide a summary of the Program GHG Inventory. When completing the table, please list the subcategories in order of the relative magnitude of contribution of these subcategories to the absolute level of the total GHG emissions and removals in the Program GHG Inventory, starting with
the subcategory that makes the largest contribution." Section 4.1.2 does not contain this table (rather the table appears to be in section 4.2.1) and is therefore not in conformance with the template requirements.
Project Personnel Response: In the version of the ERPD that will be delivered at the end of October, numbering of the document was adjusted. In numeral 4.1.2 the information corresponding to the selection of categories eligible for accounting is presented.
Auditor Response: The audit team has been unable to verify the changes in the new version of the ERPD delivered in October 31st version 3, “20221031_ERPD_Biocarbono_Orinoquia_V3.0.docx”. Section 4.1.2 does not contain the table “Summary of the Program GHG Inventory” and is still in section 4.2.1. Hence, this finding remains open. Please modify accordingly.
Project Personnel Response 2: The "Summary of the Inventory" table is in section 4.1.2 (see Table 27) in the latest updated version of the Emissions Reduction Program (PRE) document (version 4.0).
Auditor Response 2: The audit team confirmed that this table has been included in section 4.1.2 of the ERPD. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 33 Dated 5 Sep 2022
Standard Reference: ISFL ERPD Template Requirements
Document Reference: PRE_Biocarbono_Orinoquia_V2.9_English; 3B1ai TFPT-Consumo leña.xlsx
Finding: The ER Program Requirements states that “ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines.” Section 2.3.1.1 of the 2006 IPCC Guidelines states "Equation 2.3 includes the five carbon pools for which stock change estimates are required. This section presents methods for estimating biomass carbon gains, losses and net changes. Gains include biomass growth in aboveground and below-ground components. Losses are categorized into wood fellings or harvest, fuelwood gathering, and losses from natural disturbances on managed land such as fire, insect outbreaks and extreme weather events (e.g., hurricanes, flooding)." It then states "The changes in C stock in biomass for land remaining in the same land-use category (e.g., Forest Land Remaining Forest Land) are based on estimates of annual gain and loss in biomass stocks." Part A1 of section 2.3.1.1 then describes the steps required to estimate the annual increase in biomass carbon stocks--which is based on annual growth rates. Part A2 of section 2.3.1.1 of the 2006 IPCC guidelines states that "Annual biomass loss is the sum
of losses from wood removal (harvest), fuelwood removal (not counting fuelwood gathered from woody debris),
and other losses resulting from disturbances, such as fire, storms, and insect and diseases. The relationship is
shown in Equation 2.11. For the subcategory 3B1ai (Forestland remaining forestland) section 4.2.2 of the ERPD indicates that "In this subcategory, CO2 emissions from the extraction of fuel wood (firewood) from the natural forest are reported, assuming that this activity directly impacts forest degradation and not deforestation." In the workbook 3B1ai TFPT-Consumo leña.xlsx, the audit team found that the consumption of firewood is being accounted for. However, it is unclear if and where the gains associated with forest growth rates are estimated as well as the other losses (wood removals and disturbances) are being accounted for. Please provide a demonstration of the complete accounting for forest gains forest losses in the forestland remaining forest land (natural) subcategory.

Project Personnel Response: In subcategory 3B1ai Forest Land Remaining Forest Land (Natural Forest), only emissions from firewood consumption are estimated as a factor of forest degradation. Emissions from wood extractions are not estimated, nor are disturbances such as forest fires, since up to now it cannot be determined whether or not these extractions or fires are already included in the loss of forest areas determined by Forest and Carbon Monitoring System (Sistema de Monitoreo de Bosques y Carbono; SMByC) as forest loss due to deforestation. If included, it could lead to double accounting.
Therefore, the emissions associated with the of forest areas are estimated in the emissions generated by deforestation (conversion of forest land to forest land or to other uses) reported in categories 3B1aii Forest Land Remaining Forest Land (Stock change), 3B2bi Forest Land Converted to Crops, 3B3bi Forest Land Converted to Grassland, 3B4bi Forest Land Converted to Wetland, 3B5bi Forest Land Converted to Settlement, and 3B6bi Forest Land Converted to Other Land.
Natural forest growth areas are only considered in the estimates of removals due to the regeneration of the natural forest, which are accounted for in subcategories 3B1aii Forest Land Remaining Forest Land (Stock change), 3B1bi Cropland Converted To Forest Land, 3B1bii Grassland Converted To Forest Land, 3B1biii Wetlands Converted to Forest Land, 3B1biv Settlements Converted to Forest Land, and 3B1bv Other Land Converted to Forest Land.
As part of the improvement plan, development of forest degradation analysis is proposed with which it is expected to obtain the necessary information for the estimation of emissions and absorptions of the managed natural forest; because so far, the country has not established in the natural forest what is managed and what is not, as requested by the 2006 IPCC Guidelines.
Auditor Response: Thank you for your response.

Given this statement that "Emissions from wood extractions are not estimated, nor are disturbances such as forest fires, since up to now it cannot be determined whether or not these extractions or fires are already included in the loss of forest areas determined by Forest and Carbon Monitoring System (Sistema de Monitoreo de Bosques y Carbono; SMByC) as forest loss due to deforestation" the audit team is now concerned that if deforestation includes emissions from fires, extractions, etc, that the deforestation emissions are being overestimated as these may not represent real, permanent land use changes, but rather temporary and not complete losses of forest cover within forestland remaining forestland. This would result in a non-conservative baseline violating the ISFP and IPCC principles. As a result, the audit team cannot close this nonconformity as given this uncertainty in the SMByC, the project does not appear to be applying the gain-loss method or accounting of deforestation in conformance with the IPCC requirements. The audit team requires greater certainty and evidence demonstrating that the areas included as deforestation are ONLY deforestation and do no include disturbances or harvesting from forest remaining forest. Please note that this is a serious finding and if certainty cannot be provided, the assessment team will be unable to reach a reasonable level of assurance regarding the emissions baseline.

Project Personnel Response 2: The SMBYC identifies forest area losses according to the country's official definition and identifies the area of loss of this cover. In category 3B1aii Forest lands that remain as such (stock change) when calculating emissions from the forest that was converted to another type of forest vegetation that is not part of the country's forest definition, the loss and gain method is used, subtracting the carbon content of the new coverage (other woody vegetation and commercial forest plantations) from the carbon content of the natural forest, so there is no overestimation of deforestation in this specific case. It is important to note that under this methodological approach, there are transitions considered as land use change, which are reported in categories 3B2bi, 3B3bi, 3B4bi, 3B5bi and 3B6bi, and other transitions corresponding to those reported in category 3B1aii, which do not necessarily imply a change in land use because the forest has been transformed into another forest category that does not meet the country's forest definition. The deforestation analysis performed by the SMBYC is primarily aimed at showing the loss of the stable natural forest cover, for example, a loss of forest that is converted into a commercial forest plantation is considered deforestation, even if both are considered forest covers.
Regardless of the forest transformation process being reported, whether it is carried out through a fire or wood extraction, by using the loss and gain method, overestimation is avoided as mentioned. Partial disturbances caused by fires or wood extraction that do not involve changes in the thresholds of the definition of stable forest will be counted in the degradation analyses that the SMBYC is performing, associated with the improvement plan already mentioned on other occasions (See Table 6 in Page 11 of Annex VIII available at: ERPD Biocarbono Orinoquia/ERPD).
Auditor Response 2: Thank you for this response. The audit team has issued a FAR so that this issue can be resolved fully at verification.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 34 Dated 5 Sep 2022
Standard Reference: ISFL ERPD Template Requirements
Document Reference: PRE_Biocarbono_Orinoquia_V2.9_English
Finding: Section 4.2.2 of the ERPD Template requirements states "For each of the subcategories selected in step 1, provide a summary of the review of the available data and methods for the subcategories against the quality and baseline setting requirements for ISFL
Accounting using the table template below. Copy and complete the table for each individual subcategory. Please provide the details of the full review in Annex 7 below. [Corresponds to ISFL ER Program Requirements 4.2.1 – 4.2.6 and 4.3.7 – 4.3.10." For subcategories "3B1aii, 3B2bi, 3B3bi, 3B4bi, 3B5bi, 3B6bi Forest land converted to other lands (deforestation)" the row "The primary data sources' summary (150 words or less) for determining emission or removal factors" does not provide any information about the dead organic matter (DOM) emission factors. Please update this table so that all included carbon pools are described.
Project Personnel Response: Annex was adjusted with the following information: “For the estimates of dead organic matter, the default factor of the 2006 IPCC Guidelines for mature tropical forests is used, corresponding to 2.1 t C ha-1, which can be see Table 2. 2 Tier 1 default values for carbon stocks in litter and dead wood” (Volume 4, Chapter 2 of the 2006 IPCC Guidelines).
Auditor Response: The audit team confirms the inclusion of the changes provided in Appendix 7 of the new version of the ERPD submitted (version 3). However, no additional information was provided in Table 30, Section 4.2.2, about the DOM emission factors. Please update accordingly.
Project Personnel Response 2: Thank you for the finding, the information will be included and updated in Table 30 of the ERPD (See Page 212 - Table 30 in the ERPD document available at: ERPD Biocarbono Orinoquia/ERPD).
Auditor Response 2: Confirmed the ERPD has been updated to incorporate information of the dead organic matter for deforestation subcategories. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 35 Dated 5 Sep 2022
Standard Reference: ISFL Program requirements
Document Reference: PRE_Biocarbono_Orinoquia_V2.9_English, Appendix 8_PRE_Biocarbono_Orinoquia_Junio2022_English
Finding: This finding relates to NIR 20 above. Section 4.3.14 of the ISFL Program requirements states "if a subcategory selected in step 1 has historic data available to construct an Emission Baseline over a Baseline Period of approximately 10 years but these data do not meet the other quality requirements of Section 4.2, it can only be included for accounting in the ISFL ERPA Phase if all the quality requirements can be met through the application of improved methods and data. ISFL ER Programs that intend to include such a subcategory need to ensure that the quality requirements can be met at the latest at the end of the ISFL ERPA Phase. In this case, ISFL ER Programs shall provide an interim Emissions Baseline at the beginning of the ISFL ERPA Phaseusing best available data to be able to provide ex-ante estimations of the emission reductions." Table 18 of the ERPD shows the final selection of eligible subcategories for ISFL accounting. It indicates that subcategory 3B1ai Forest lands remaining as such (Natural forest) is included in ISFL accounting, but that the spatial information requirement for ISFl inclusion has not been met. However, page 12 of Appendix 8 (GEI ACCOUNTING SCOPING AND IMPROVEMENT PLAN) indicates that for this subcategory, none of the ISFL accounting requirements are met. The table indicates 'No" for each requirement. The audit team requests the following information:
- Please provide more information as to they there are discrepancies between Appendix 8 and Table 18 of the ERPD with regards to the 3b1ai subcategory.
- The audit team reuqests additional information regarding how the program intends to meet the spatially explicit quality requirements, and when the program intends to meet them
Project Personnel Response: In the latest version of the ERPD document, the information in table 18 coincides with that in Annex 8, regarding compliance with the requirements for final selection of subcategories eligible for PRE accounting, in which it is indicated that currently it does not have spatially explicit information for Category 3B1ai (column Q3).
To meet this quality requirement in later stages of the program, the country is working on carrying out forest degradation analyses, which include information on firewood consumption as a factor in forest degradation, through satellite images available for the SMByC. The team is that makes this analysis is working on them currently, once they finish, dates and times will be confirmed for compliance with the requirements and expanded information on the methodology that is being worked on.
Auditor Response: Thank you for your response. It is correct, the audit team confirmed that the information in Table 18 coincides with the one in Annex 8, sorry for the oversight. As for the ISFL spatial information requirement for the inclusion of the “3B1ai Forest lands remaining as such (Natural forest)” category, SCS is striving to complete this baseline validation in the next 2 months or so. Therefore, unless this information can be provided by the end of January 2023, it will be assumed that this subcategory does not meet the ISFL requirements for inclusion. Please update the ERPD accordingly.

Project Personnel Response 2: Thank you for the finding. After analyzing finding 35, the necessary adjustments will be made in the document and calculations, excluding the 3B1ai key category, which is "Forested lands that remain as such (natural forest)," from the calculation of the maximum mitigation potential of the ERPA. Additionally, it is proposed that in the first monitoring period, this category should be included in the degradation analysis being carried out by the SMBYC within the improvement plan, and that it should be included in the first cycle of validation and verification of program results (See Table 6 in Page 11 of Annex VIII available at: ERPD Biocarbono Orinoquia/ERPD/Anexos/Anexo VIII).
Attached is the information on the calculations of Maximum mitigation potential, baseline scenario, and mitigation potential calculated excluding the aforementioned category (See file "4_6_Escenario_Mitigacion_2019_2029" "4_6_Categorias_BAU_Mitigacion" available at ERPD Biocarbono Orinoquia/Insumos, and the corresponding information in the ERPD available at ERPD Biocarbono Orinoquia/ERPD).
Auditor Response 2: Thank you for this response. A Forward Action Request will be issued requiring that the spatial requirements of the subcategory be met by the time of verification. This finding is therefore closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 36 Dated 8 Sep 2022
Standard Reference: ISFL Program requirements
Document Reference: 3B1ai TFPT-Consumo leña; PRE_Biocarbono_Orinoquia_V2.9_English
Finding: The ER Program Requirements states that “The Program GHG Inventory shall utilize best available methods and existing data.” For the subcategory 3B1ai, section 4.2.2 indicates that "For the GHG estimation, the rural population of the departments of the Orinoquia region from the 2018 National Population Census (DANE, 2018) and the information on the percentage of rural population consuming firewood from the 2018 quality of life survey is taken as activity data, both data provided by DANE." The audit team must confirm the values (population data, % of wood consumed, etc) shown in the workbook 3B1ai TFPT-Consumo leña.xlsx. Please provide the supporting published data and make clear reference to the tables, page numbers, documents, etc for which these values come from.
Project Personnel Response: For the estimation of 3B1ai Forest Land Remaining Forest Land (Firewood) category, rural population is taken as initial activity data, according to data of projections and retroprojections of the National Administrative Department of Statistics (Departamento Administrativo Nacional de Estadística; DANE) census of the year 2018. In the folder that contains calculation sheets of estimation of the category (folder 3B1ai TFPT Consumo de Leña) there is a subfolder called "Fuentes de información" in which the tables with the information reported by DANE are attached. In that subfolder, there is the rural population data: “Centros Poblados y Rurales Dispersos” with 4 files called "Departamental-población".
The factors of percentage of firewood consumption and firewood consumption (kgr/inhab/day) were obtained by agreement with the Mining and Energy Planning Unit (Unidad de Planeación Minero Energética, UPME). They were produced in the working tables of the 2020 Colombia NDC update and were used to estimate mitigation goals associated with the implementation of eco-efficient stoves, For this purpose, the measurement sheet " AMB -ESTUFAS EFICIENTES DE LEÑA v2 – Ambición " of the Ministry of Environment and Sustainable Development (Ministerio de Ambiente y Desarrollo Sostenible, MADS) is attached, where the factors used are shown in the factors sheet.
Auditor Response: Thank you for the information and additional data. This new information request has been satisfied.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 37 Dated 8 Sep 2022
Standard Reference: ISFL Program requirements; ISFL Guidance note on application of IPCC guidelines_March 2021
Document Reference: PRE_Biocarbono_Orinoquia_V2.9_English
Finding: Section 4.2.3 of the ISFL Requirements stats that "SFL ER Programs shall account for the Total Net Emission Reductions across eligible subcategories by estimating the baseline and monitoring Emissions and Removals for the eligible
subcategories using at minimum IPCC Tier 2 methods and data. Subcategories are considered to meet Tier 2 if all the significant13 pools and gasses are estimated using Tier 2 methods and data. ISFL ER Programs are encouraged to improve data and methods, and to move to a higher tier over time, as possible." Footnote 13 then definites significant as " Significant here refers to the individual pools or gases that make up at least 25% of the absolute level of the total GHG Emissions and Removals in the subcategory, and the pools and gases that, when listed in the relative magnitude of contribution to the Emissions of the overall subcategory, contribute to 60% of the cumulative Emissions." Table 14 of the ERPD indicates that for class 3B1aii2 (woody vegetation remaining woody vegetation), 3B1aiii (plantation remaining plantation), and 3B2aii-Palm, only aboveground and belowground pools are accounted for. While the ISFL Guidance note indicates that "Changes in carbon stocks in dead organic matter shall only be considered for subcategories involving lands converted from Forest Land to any other land-use category (carbon losses) and for lands converted to Forest Land (carbon gains) in accordance with the guidance below", it does not indicate that soil carbon emissions and removals do no need to be considered. The audit team requests demonstratation that the soil organic carbon pool is not significant for these 3 subcategories. Otherwise, please demonstrate the inclusion of the soil organic carbon accounting for these pools.
Project Personnel Response: Currently, the country only has information on aboveground and underground biomass. For this reason, no emissions are estimated due to the loss or gain of soil organic carbon within the National Inventory for Greenhouse Gases. With the implementation of the non-forest inventory and other consulting exercises for collection of information on different covers other than forest, it is expected to obtain information on the SOC according to their use. As part of the improvement plan, it is expected to incorporate this information that may be obtained, within the estimates of the National Inventory and the Inventory for the Orinoquía region.

Auditor Response: Thank you for your response. While is clear that you currently don't have the SOC data for these categories, including all pools is requirement of the ISFL. For instance, section 4.1.2 of the ISFL Program requirements states "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines. In accordance with the IPCC guidance and guidelines, the Program GHG Inventory shall apply the basic principles of Transparency, Accuracy, Completeness, Consistency over time and Comparability as defined by the IPCC." Thus all pools are required to be included. Next, section 4.1.3 of the ISFL Program Requirements states that "The Program GHG Inventory shall utilize best available methods and existing data. This may include the use of Activity Data Proxies if needed, and IPCC Tier 1 data and methods if no data are available to apply higher Tier methods. ISFL ER Programs are encouraged to apply higher Tiers over time, as possible." Therefore, if Tier 2 data is not available, tier 1 data must be used. Lastly section 4.2.3 states that "ISFL ER Programs shall account for the Total Net Emission Reductions across eligible subcategories by estimating the baseline and monitoring Emissions and Removals for the eligible subcategories using at minimum IPCC Tier 2 methods and data. Subcategories are considered to meet Tier 2 if all the significant13 pools and gasses are estimated using Tier 2 methods and data. ISFL ER Programs are encouraged to improve data and methods, and to move to a higher tier over time, as possible." Therefore, for inclusion in ISFL accounting, only subcategories which use a minimum of tier 2 methods and data for all "significant" pools are eligible for inclusion. If the program intends to include these referenced subcategories in ISFL accounting, all pools must be accounted for, and tier 2 data must be used for all significant pools or gases. Thus, please demonstrate that the soil pool is not significant for these subcategories. Note that foot note 13 of the ISFL program requirements states that "Significant here refers to the individual pools or gases that make up at least 25% of the absolute level of the total GHG Emissions and Removals in the subcategory, and the pools and gases that, when listed in the relative magnitudeof contribution to the Emissions of the overall subcategory, contribute to 60% of the cumulative Emissions." This finding remains open.

Project Personnel Response 2: We appreciate the finding. As it has been clear, at this time the country does not have information on the contents and changes in Soil and Dead Organic Matter (SOC and DOM) carbon contents for the categories of forest plantations, palm and other woody vegetation and that can be applicable to the study area of the Program. For this reason, the emissions and removals estimates associated with these covers have not been included in the above deposits. As you indicate and according to the instructions of the same Program, only subcategories that use a minimum of level 2 methods and data for all "significant" groups are eligible for inclusion.
The technical team has reviewed the available level 1 and level 2 information at their disposal to determine if the potential emissions or removals from soil or DOM deposits are theoretically significant, as we cannot make a direct comparison with field information between the emissions and removals calculated for biomass deposit (Level 2 data) and soil and DOM deposits.
Based on the level 1 information provided in the IPCC guidelines 2006, land use, management and input factors (FLU, FMG and FI, see Tables 5.5 and 5.10) of IPCC guidelines, the categories associated with forest covers and permanent crops suggest using values of 1 or close to 1, which would indicate that the possible changes in carbon content of this deposit (Soils) remain relatively stable over time or are minimal.
For the Third National Communication on Climate Change and the Second BUR, reported to the UNFCCC in 2015 and 2018 respectively, an indicative analysis of the three mentioned factors (FLU, FMG, FI) was carried out at the departmental level. Using the existing geopedological, climatic and cover information at the time, and with the help of experts it was established that these factors were not less than 0.85 for the four departments of the program. Based on this analysis, it would not be expected that the changes in soil carbon content over 20 years, would emit or remove more than 15% of the carbon content of soils with covers. Therefore, based on the available information, it is not expected that emissions associated with this deposit will exceed 25% significance in the total calculated emission or removal for these categories.
For the case of dead organic matter, since there are no level 1 or 2 values in the IPCC Guidelines or the country, this significance analysis has not been possible.
The country and the Program identified that the deposit of DOM constitutes a great challenge for the improvement of future reports regarding GHG emissions, but there are few studies that have evaluated this carbon deposit. The most relevant studies regarding this matter were carried out mainly for natural forest cover and are listed next. Yepes et al., (2010) generated a pilot exercise implemented in forests of the department of Antioquia. Phillips et al. did an altitude gradient analysis for the forests of the department of Putumayo. Restrepo et al. (2012) estimated the debris for a montane moist forest (bh-M) finding high variability. These studies do not allow to incorporate factors with a proper range of uncertainty at the proposed analysis scale.
The few studies found for other cover types like Castilla et al., (2004) for oil palm indicate that the carbon content associated with leaf litter is insignificant. It should be noted that these studies have used different methods, so the significance of this deposit is not conclusive to extrapolate it to the national or Program scale. However, in the improvement plan, the Program is executing different consultancies and projects that will allow incorporating Level 2 information for these deposits in a second phase. (See Table 9 in Page 19 of Annex VIII available at: ERPD Biocarbono Orinoquia/ERPD/Anexos/Anexo VIII).
Auditor Response 2: The audit team confirmed that the assumption of stable SOC in land remaining land has been applied. Therefore this finding has been addressed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 38 Dated 8 Sep 2022
Standard Reference: ISFL Program requirements
Document Reference:
cambio_wv_2012_2013_orinoquia_22042022_palma_plantacion_biocarbono_3116.img (and other years); Consolidado-Ganancia_Palma.xlsx; Consolidado-Perdida_Palma
Finding: The ER Program Requirements states that “ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines.” Volume 4 Chapter 3 of the 2006 IPCC Guidelines provides a description of the 3 approaches for tracking land use conversions (changes from one land use to another land use). Note that these approaches are relevant to conversions between classes. Section 2.3.1.1 of the IPCC Guidelines relates the the quantification of land remaining in a land-use category. It describes that "The Gain-Loss Method requires the biomass carbon loss to be subtracted from the biomass carbon gain
(Equation 2.7). This underpins the Tier 1 method, for which default values for calculation of increment and
losses are provided in this Volume to estimate stock changes in biomass. Higher tier methods use countryspecific data to estimate gain and loss rates." It further states "In applying the Gain-Loss or Stock-Difference Methods, the relevant area is clearly the area of land remaining in the relevant category at the end of the year for which the inventory is being estimated. Any other land will be in a conversion category (see Section 2.3.1.2)." Thus the quantification of 'gains' and quantification of 'losses' apply to the same land area. Later section 2.3.1.1(A1), the guidelines show that "gains" in biomass are calculated from the area of land remaining in the same land-use category (e.g., forestland remaining forestland, cropland remaining cropland) multipled by the mean annual growth rate. Section 2.3.1.1 (A2) then demonstrates the equations that must be applied to quantify the losses. In the spatial files provided by the program team, there are 3 categories for each land use (e.g., estable, perdida, y ganancia). The audit team has the following new information requests:
(1) Please provide clear definitions of each of these categories "perdida", "Ganancia" and "estable" (i.e., Vegetacion leñosa estable, Cultivos Palma de Aceite, Plantaciones Forestales)
(2) It is unclear if areas labeled as "perdida" represent a land use conversion to another category or if the areas labeled "ganancia" represent other land uses converting to this land use class. Note that if these three categories all represent land remaining in the same land use, then it does not appear that the quantification guidelines of section 2.3.1.1 of the 2006 IPCC are being applied correctly. It rather appears that the equations for land use conversions in section 2.3.1.2 are being applied. Please clearly demonstrate how equations in section 2.3.1.1 are applied the entire land area remaining in each land use class.
(3) For land classified as "estable" (or Cultivos Palma de Aceite, Plantaciones Forestales), please provide more information regarding why they are not included in the gains and losses calculations. These "stable" lands would, in theory, experience annual growth or potential losses due to harvesting or disturbances.

Project Personnel Response: 1) For the estimation of GHG emissions in the Orinoquía, woody vegetation areas are considered as forest lands that do not meet the definition of forest within the analysis of satellite images carried out by the Forest and Carbon Monitoring System (Sistema de Monitoreo de Bosques y Carbono, SMBYC), nor do they correspond to areas of plantations or other type of tree crops.
Forest plantations are sowing areas or areas with anthropogenically planted tree species to obtain and commercialize timber products. They have uniform planting density and a characteristic pattern that is clearly differentiated from other type of plantations.
Oil palm cover is a crop that has a star-shaped crown and a distance between individuals corresponding to coevals' crops, showing uniform cover, with a characteristic pattern that clearly differs from other types of plantations.
The gained areas of palm woody vegetation and forest plantations are identified as new areas of these types of cover using a multi-temporal analysis of images from one year to the next. If within the area identified as palm, plantations, or other woody vegetation the cover disappears from one year to the next, it is reported as loss of area.
On the other hand, the stable areas are those that, when performing the temporal analysis, remain in the same coverage and in area.
2) Other woody vegetation, palm and commercial forest plantations categories, are considered as categories that remain, that is, they do not change to another type of land use category. In these categories, only the gains and losses of areas within the same use are estimated, accounting for removals due to annual accumulation of aboveground and belowground biomass associated with the growth of coverage in gained areas and emissions due to the loss of total aboveground and belowground biomass of the coverage they represented, in the areas of loss.
3) Within the estimates of GHG removals for oil palm and forestry plantations, stable areas are included within the estimates of carbon gains associated with the growth of these crops, if both stable areas and gain areas obtain carbon gains. Therefore, the areas taken as activity data for these estimates correspond to the sum of the gain areas plus the stable areas.
Auditor Response: Thank you for providing this information. The audit team has interpreted that the ganacia y perdida represent real land use changes from other land use classes. We have closed this finding as this NIR has been addressed, but please see finding #40 and #41 below.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 39 Dated 8 Sep 2022
Standard Reference: ISFL ERPD Template Requirements
Document Reference: PRE_Biocarbono_Orinoquia_V2.9_English

Finding: Annex 7 of the ERPD Template requires the following: "For each of the selected subcategories in Section 4.2.1:
• Identify the parameters that were used to determine the activity data and emission factors in the calculation of the emissions and removals for that subcategory;
• For each parameter used to determine activity data, describe the historic time series available for that parameter including how they relate to the proposed start date and end date of the Baseline Period (see Section 4.4.1);
• Provide details on the source of the parameters (e.g. official statistics) or a description of the method for determining the parameter (e.g. for parameters derived from remote sensing images describe the process applied including details such as the type of sensors and the details of the images used). If proxies have been used, describe the data sources for the proxies and their application to estimate activity data;
• Provide details on the spatial level of the parameters (local, regional, national or international) and if they allow for spatially explicit observations of land-use categories and land-use conversions;
• Provide an analysis if the parameters comply with the requirements on the use of, at minimum, IPCC Tier 2 methods and data. For
parameters used for land use change-related subcategories, also provide an analysis if they data allows for the use of Approach 3 for land representation."
In applying expert judgement, the assessment team has concluded that not enough detail is provided in this section to allow the reader a comprehensive assessment of the subcategories, input datasets, and approaches applied. For exampl:
(1) Very little information is provided on the activity data. For example, for subcategory Forestland converted to other land' it states "The historical time series of activity data for the analysis of emissions from deforestry has information for the period 2001-2018 and corresponds to the analyses conducted by the SMByC on land use changes of forest areas according to the definition established for Colombia, and that is converted to other uses, whether shrublands, crops, pastures, wetlands, settlements or other lands." This annex requires that for "parameters derived from remote sensing images describe the process applied including details such as the type of sensors and the details of the images used." Please include a more detailed description of the SYMByC system for determining land use changes, including data/imagery used, processing, modeling, etc.
(2) There is also no description regarding how it was determined what non-forest land use class the forest converts into and how it was determined which non-forest land uses classes convert to forest. We understand from our review that percentages were derived from points on the landscape, but this is not described.
(3) For the Forestland reamining as such (natural forest), more specific activity data information is needed on how such datasets were utilized to determine the firewood consumption in the baseline. Details on disturbances and harvests are also lacking in this section.
(4) More specific information is needed on the Emission factors for all subcategories, with specific references to the sources of the data, tables, links, etc to guide readers to these emission factor datasets.
(5) There is no analysis on whether the parameters comply with the requirements on the use of, at minimum, IPCC Tier 2 methods and data. There is also no analysis of whether the data allows for the use of Approach 3 for land representation.
(6) All subcategories initially selected in section 4.2.1 must be described here. There are several missing subcategories, e.g., 3B3bii, 3B3biii, 3B2bii, 3D. Note that this is not an exhaustive list, but rather just gives some examples of the subcategories that are missing.
Due to the required information that is missing, Annex 7 is not in conformance with the requirements.

Project Personnel Response: Annex 7 is in the process of adjustment. The information in accordance with the requests of the reviewers is being extended. This version will be delivered together with the adjusted ERPD that includes comments made by the World Bank at the end of October.
It is clarified to the reviewers that in the latest version of the ERPD adjustments were made to the tables, according to the latest information included in the National Inventory delivered in June. This adjustment implied that the categories 3B3bii, 3B3biii, 3B2bii, for which it was expected to have information in this phase of the program, were excluded from the eligible categories, since according to the Forest and Carbon Monitoring System (Sistema de Monitoreo de Bosques y Carbono, SMBYC) analysis it was established that it is not possible to have the information of the complete matrix of changes in use due to the lack of information and time required to carry out these analyses.
Auditor Response: Thank you for your response. The audit team confirmed that the changes included in Annex 7 of the new version of the ERPD are now in conformance with the requirements. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 40 Dated 30 Nov 2022
Standard Reference: ISFL Program requirements
Document Reference: Consolidado-Perdida_Palma.xlsx Consolidado-Ganancia_Palma.xlsx
Finding: This finding relates to #38 above. Section 4.1.2 of the ER Program Requirements states "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLUcategories, subcategories, gases and pools12 in the Program Area (Program GHG Inventory)utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines. In accordance with the IPCC guidance and guidelines, the Program GHG Inventory shall apply the basic principles of Transparency, Accuracy, Completeness, Consistency over time and Comparability as defined by the IPCC." The audit team has interpretted the response to #38 above and the information in the workbooks Consolidado-Perdida_Palma.xlsx and Consolidado-Ganancia_Palma.xlsx to indicate that these workbooks show land use transitions to and from Cultivos Palma. The audit team confirmed the areas of loss using the maps provided (e.g., cambio_wv_2010_2012_orinoquia_22042022_palma_plantacion_biocarbono_3116.img), but we are still having difficulty in confirming the areas gained in palma. We have reviewed the workbook Areas_Finales_2000-2018_SMByC_Ajustado.xlsx and Areas_Finales_Cambios.xlsx and cannot make sense of this procedure applied as we found descrepancies (e.g., 2011-2012 the maps show 30,578 ha/yr gained, but the Consolidado-Ganancia_Palma.xlsx indicates 119,431.6 ha gained in 2011 and 148,877.5 ha gained in 2012). Furthermore, it is not clear what land uses the palma are transitioning to and from. For instance, if they are transitions from grassland or forest to palm, these have very different emissions associated. If they are transitions from palm to forest or to shrubland, these also have very different associated emissions.
(1) The audit team needs more information and a clear, transparent demonstration of what land uses these palma areas are transitioning to and from. If some of the gains in palma represent transitions from forest to palma, are they also being accounted for in the worksheet Consolidado-Deforestación?
(2) we need a clear demonstration on exactly how the area of ganancia of palma was derived, with evidence from spatial files that we can verify. Currently it is unclear how and why this adjustment was conducted and why the area of perdida is included in the area of ganancia and stable.
(3) Another note is that this subcategory class is titled "3B2aii Cropland remaining as such - Palm Oil," which is a misrepresentation as it actually contains land use transitions to and from palm.

Project Personnel Response: 1. We appreciate the finding. After re-analyzing the spreadsheet with the deforestation and palm oil estimates, we have identified a risk of double counting; therefore, the areas of palm oil gain were subtracted from the areas of natural forest that are converted into permanent crops (palm oil crop areas) determined from the deforestation typification analysis. This area adjustment can be seen in the Excel file "Areas_Finales_Cambios_FINAL" which is available at: ERPD Biocarbono Orinoquia/Insumos/4_1_2_GHGIN_AFOLU_2/Soportes_GHGIN_AFOLU2/03-DA_Areas_cambios.zip. Additionally, below is an explanation of the determination of the areas of gain and loss of the palm oil crop for better understanding.
2. To obtain the palm areas, information is taken from the "Areas_Finales_2000-2018_SMByC_Ajustado" file (ERPD Biocarbono Orinoquia/Insumos/4_1_2_GHGIN_AFOLU_2/Soportes_GHGIN_AFOLU2/03-DA_Areas_cambios.zip), in the "Ajuste Áreas Finales" sheet. Column "J" contains the areas adjusted to the standard area for the region provided by SMByC. This information is copied as values in the "Palma Ajustada Crecimiento" sheet, differentiating between: Oil Palm Crops, Gain Oil Palm Crops, and Loss Oil Palm Crops.
In the palm crop growth estimates, the area that is growing annually and can generate absorptions is determined.
To identify these growing areas, it is important to first remember that the spatially explicit information, in raster format, generated by SMBYC for the PRE's baseline emissions and covering the 2000-2018 historical series, reports data on areas in biennial periods between 2000 and 2012 and annual data between 2013 and 2018. Therefore, for biennial periods, it is assumed that the annual change in gain or loss area corresponds to half of the data reported for the period as described previously.
Thus, the annual growing area and the one that would be growing in biennial periods, in the first year, will correspond to the stable area reported for the period, plus half of the reported gain area, plus the loss area from the second year that for the first year is still growing and has not been lost; in the second year, the growing area will correspond to the stable area of the period, plus the growth area of the first year, plus the growth area of the second year. In the second year, the loss areas would not be considered, as the total area is lost at the end of the period.
As a practical example, in the "Areas_Finales_2000-2018_SMByC_Ajustado" (ERPD Biocarbono Orinoquia/Insumos/4_1_2_GHGIN_AFOLU_2/Soportes_GHGIN_AFOLU2/03-DA_Areas_cambios.zip) file, "Palma Ajustada Crecimiento" sheet, to obtain the growing area of Casanare in 2001, we sum CULTIVOS PALMA DE ACEITE + GANANCIA CULTIVOS PALMA DE ACEITE + PERDIDA CULTIVOS PALMA DE ACEITE [G20=D20+E20+F21]. We do this because, as the series is biennial, in year 1 the stable Oil Palm Crops area is added plus half of the gain areas (due to the raster presenting gain information from 2001 and 2002) and half of the losses in the following year (because losses occur in 2001 and 2002, so in 2001 half of the losses are still gains), later to obtain the growing area information for the end of this period, for Casanare in 2002, we sum CULTIVOS PALMA DE ACEITE + GANANCIA CULTIVOS PALMA DE ACEITE + GANANCIA CULTIVOS PALMA DE ACEITE from the previous year [G21 =D21+E21+E20], as it would be the stable area plus the total gains of the period. This calculation is performed in this way for the years 2001-2002, 2003-2004, 2005-2006, 2007-2008, 2009-2010 and 2011-2012.
For the years 2013 to 2018, as the information is annual and using Casanare as an example, the growing area is obtained by summing CULTIVOS PALMA DE ACEITE + GANANCIA CULTIVOS PALMA DE ACEITE [G32 =D32+E32], as the information is available annually and these are the areas that would be growing and therefore generating carbon gains.

As supplementary information, in the file "Areas_Finales_Cambios_FINAL," the calculation is made on how deforestation generated by Oil Palm Crops (permanent crops) is subtracted from the Oil Palm Crops gain area to avoid double counting. In the "Perdida y Ganancia Bosque" sheet, the deforested area by year and department is found, and in the "Oil Palm" sheet, the gain area is taken in the "Superficie (ha)" column and the deforested area is subtracted in the "Superficie Deforestada_P_Aceite" column, resulting in the "Ajuste_P_Aceite_Deforestado" column and an adjustment in the "Ajuste_Ganancia_P_Aceite" column when negative values are given because there is a higher deforested area than planted, the initial gain value is kept; this is done because the determination methodologies for crop gain and loss areas for oil palm are different from the classification of deforestation of natural forest areas that become oil palm areas, which generates a small shift in the areas.
The files "Areas_Finales_2000-2018_SMByC_Ajustado" and "Areas_Finales_Cambios_FINAL," in which the example described above can be verified, are available at: ERPD Biocarbono Orinoquia/Insumos/4_1_2_GHGIN_AFOLU_2/Soportes_GHGIN_AFOLU2/03-DA_Areas_cambios.zip
3. The country does not yet have information on the identification of the previous and subsequent land use to the gain or loss of forest plantation areas. There is only clear identification of losses of forest that became oil palm crops (permanent crops) from deforestation classification analyses, which, as mentioned in the previous paragraph, generates disparities between the areas.
In order to achieve consistency between the areas identified with the deforestation classification analysis and those reported in the oil palm crop area gain analyses identified in the SMBYC image analysis, it is proposed as an improvement plan to carry out a classification analysis of the areas of gain, loss, and stability of forest plantations, oil palm crops, and other woody vegetation, equally robust to the deforestation analysis (See Table 9 in Page 19 of Annex VIII available at: ERPD Biocarbono Orinoquia/ERPD/Anexos/Anexo VIII).
Auditor Response: Thank you for the response. The audit team was able to track the areas given this explanation. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 41 Dated 30 Nov 2022
Standard Reference: ISFL Program requirements
Document Reference: Tipificacion_deforestacion_00-18_07102021.xlsx; Consolidado-deforestacion.xlsx
Finding: This is a continuation of Finding #15 above. We have reissued it here as finding #42 due to a lack of space for further responses.
Thank you for your thorough explanation. However, this finding pertains to the deforestation percentages/areas of the transitions between land use class shown in the workbook Tipificacion_deforestacion_00-18_07102021.xlsx, which correspond to the percentages shown in the workbook Consolidado-deforestacion.xlsx, sheet Tipificación AGB. The audit team must be able to independently recalculation and confirm these percentages of the various land uses that forest is transitioning to. For example, the workbook Tipificacion_deforestacion_00-18_07102021.xlsx, sheet Región 2006-2008 shows that for Region Andes, 133 points out of 589 points transitioned to Arbustal for a percentage of 22.58%. We are requesting this point file and corresponding maps to be able to confirm these number of point and percentages. You have not provided this information. Thus this finding remains open. Please see finding below regarding the regeneration transitions.
Project Personnel Response: In the Drive ERPD Biocarbono/Orinoquia/Insumos/4_1_2_GHGIN_AFOLU_2/Soportes_GHGIN_AFOLU2 there is the file "11-DA_Tipificacion_deforestación" in zip format, which contains the shape file used for the deforestation classification analysis. In that Drive there is also the deforestation, regeneration, palm cultivation, forestry plantation, and other stable woody vegetation maps in raster format generated by the SMBYC. The base maps are in the folder and the "03-DA_SMBYC.tif" zip file is also available in the same drive route.
Auditor Response: Thank you for providing the requested information. The audit team has been able to track in the file "11-DA_Tipificacion_deforestación" the shapefiles of points used for the deforestation classification analysis used in the “typificacion deforestacion”. The audit team was able to confirm that the points and percentages reported in the file “tipificacion_00_18_11102022_Biocarbono.xlsx” correspond to those mapped in the shapefiles. However, the audit team couldn’t confirm the percentages of “tipificacion deforestacion” reported in the file “Consolidado-Deforestación.xlsx”, sheet “Tipificacion AGB” as the percentages reported in columns C to O are not the same as those derived in the file “tipificacion_00_18_11102022_Biocarbono.xlsx”. The project team has indicated that the "deforestation estimates will be adjusted taking into account the typification presented in the file "tipificacion_00_18_11102022_Biocarbono.xlsx". Therefore, this finding will remain open until we can verify these updates. Alternatively, if these updates cannot be made by the program team in a timely fashion, the audit team will issue a Forward Action Request regarding this component.
Project Personnel Response 2: Indeed, the error was found in the calculation sheets of deforestation estimates because they were based on national data, these tables were adjusted so that they were on the PRE study area, which can be consulted at the link Orinoquia-Deforestación.xlsx. The link 11-DA_Tipificacion_deforestación.zip contains the point-type geographic files and the corresponding maps with the sampling that was applied for each period for the PRE area at the biome level. In each file, all the points corresponding to each biome are discriminated. The adjusted estimates based on this data are found in the same zip file in the spreadsheet typification_00_18_11102022_Biocarbono.xlsx shared with the audit in January 2023. Link: 11-DA_Tipificacion_deforestación.zip
Auditor Response 2: The audit team confirmed the changes provided. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 42 Dated 30 Nov 2022
Standard Reference: ISFL Program requirements
Document Reference: Consolidado-Regeneración.xlsx
Finding: This finding is a continuation of Finding #16 above. Thank you for your thorough explanation. However, the audit team has been unable to verify the relative percentages of the various non-forest land uses that are converted to forestland. The audit team must be able to verify these percentages from the initial spatial data used to derive them. Please provide the land cover change matrices and/or calculation workbooks used in the spatial analysis so that the audit team can replicate the determination of these land use percentages.

Moreover, the audit team requests clarification regarding the following:

Point 2) indicates “Overlap of forest/non-forest maps from the year 2005 (regeneration data) with a land cover map from the 2005-2009 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2001-2005 period where it is assumed that change in percentage is the same year by year.”. Can you please explain what is the basis of this assumption? How are the 2005, 2005-2009 maps used to inform changes for the period of 2001-2005? Why 2005-2009?

Point 3) states “Overlap of forest/non-forest maps from the year 2010 (regeneration data) with a land cover map from the 2010-2012 period (land uses other than forest data). This allowed to quantify areas (%) that changed from other land uses to forests in the 2005-2010 period where it is assumed that the change in percentage is the same year by year.” Same question from above. How are the 2010, vs 2010-2012 maps used to inform changes for the period of 2005-2010?

Point 7) indicates “Change percentage from the 2014-2018 period is assumed to be the same as the 2013-2014 period”. What is the basis of this assumption, why not use the annual average change value?

This finding remains open.

Project Personnel Response: We appreciate the finding. The team from IDEAM has reviewed the regeneration analysis and after thoroughly reviewing the information sources used, they have concluded that it is not possible to reproduce the calculation of the regeneration classification and that this methodology is not replicable or comparable to the more robust methodology used for deforestation.
Therefore, the regeneration estimates were recalculated using the same approach used for the other vegetation, plantations, and palm estimates, which are crude estimates that do not take into account changes in carbon content associated with changes in land use, but only changes in biomass, SOC and DOM carbon content associated with the growth of natural forests.
The only category that has a replicable methodology to see land use changes is deforestation.
Therefore, a robust and replicable classification analysis for regeneration, palm, plantations, and other vegetation will be included in the improvement plan (See Table 5 in Page 9 of Annex VIII available at: ERPD Biocarbono Orinoquia/ERPD/Anexos/Anexo VIII).
Due to changes made to the regeneration estimates, it was necessary to adjust the greenhouse gas inventory, the baseline emissions and reductions of the PRE, making the necessary adjustments in the ERPD and corresponding annexes (See file zip "05-3B1b Regeneracion" available at drive ERPD Biocarbono Orinoquia/Insumos/4_1_2_GHGIN_AFOLU_2, file "4_6_Escenario_Mitigacion_2019_2029" and "4_6_Categorias_BAU_Mitigacion" available at ERPD Biocarbono Orinoquia/Insumos and the corresponding information in the ERPD available at ERPD Biocarbono Orinoquia/ERPD).
Auditor Response: Thank you for this response and explanation. The audit team confirmed that these updates are part of the improvement plan. This finding has therefore been closed. However, please see several findings below related to this regeneration subcategory (49, 55, 58).
Bearing on Material Misstatement or Conformance (M/C/NA):

OBS 43 Dated 3 Mar 2023
Standard Reference: ISFL Program requirements; ISFL Guidance note on application of IPCC guidelines_March 2021
Document Reference: Consolidado-Ganancia Plantaciones Forestales.xlsx; Consolidado-Ganancia_OVL.xlsx, Consolidado-Ganancia Palma.xlsx
Finding: This observational finding is in reference to the response to findings #27 and #40 above. Section 3.2 of the ISFL Guidance Note on the Application of IPCC Guidelines states "The net annual CO2 removals shall be calculated using equations 2.15 and 2.16 from the 2006 IPCC Guidelines, Volume 4, Chapter 2. These equations shall be simplified by assuming that during the conversion from non-forest to forest, carbon stocks will go from average carbon stocks in non-forest to average carbon stocks in forests during a period of time. This calculation shall consider the maximum carbon stocks in different forest types and it shall be ensured that the estimated forests carbon stocks will not continue growing beyond this maximum value. A conservative default period of 20 years is suggested for the forest to grow from the carbon stock levels of non-forest to the level of biomass, stable soil and litter pools of the average forest. Alternative periods may be used but shall be justified and this justification shall also consider the maximum carbon stocks in different forest types." While this section pertains to non-forest to forest conversions, the concept of ensuring that "the estimated forests carbon stocks will not continue growing beyond this maximum value" is relevant to all other land use categories.

In response to finding #27 above, the program team stated "In the estimates of commercial forest plantation gains we determined the area that is growing annually and therefore can generate absorptions. To identify these growing areas, it is important to remember that the information used is spatially explicit in raster format, is generated by the SMBYC for the ERPD baseline emissions, includes the 2000-2018 historical series and reports areas in biennial periods between 2000-2012 and annual areas in the years 2013-2018. Since 2000-2012 has biennial reports we assumed that annual gains/losses are half of what is reported for that period. In this way, annual area gains that grew in the biennial periods correspond to the stable areas reported for that period plus half the gained area reported in that period and half the area lost. This last part due to the area lost in the second year is still growing on the first year and has not been lost in that period (See figure below). In the second year, growing areas will correspond to the stable area from that period and the gains for the entire period (both first and second year). None of the lost areas are accounted as a gain on the second year." Thus, the program team is considering growth in stable plantation and stable other woody vegetation (OVL), but does not appear to consider if the growth continues beyond the maximum carbon stocks of that land use. If the plantation land or OVL continue to grow beyond their maximum carbon stocks, it results in additional removals and thus is a conservative assumption. Nonetheless, this may result in a less accurate accounting of removals. Furthermore to ensure methodological consistency, such assumptions would be required for the monitoring period emission reductions calculations.
Project Personnel Response: We appreciate the comment, as mentioned in the finding, the mentioned methodology is already applied in national inventories. The program, even with the available information it has, does not meet the minimum of 20 years proposed by IPCC for the coverages analyzed. Once the growing hedges reach 20 years, and if there is no evidence of losses, the assumption will be applied, ceasing to calculate absorptions for these areas.
Auditor Response:
Bearing on Material Misstatement or Conformance (M/C/NA):

OBS 44 Dated 3 Mar 2023
Standard Reference: ISFL Program requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4

Finding: Section 4.1.2 of the ER Program Requirements states “In accordance with the IPCC guidance and guidelines, the Program GHG Inventory shall apply the basic principles of Transparency, Accuracy, Completeness, Consistency over time and Comparability as defined by the IPCC.” In conducting this assessment, one of the challenges pertained to the unintuitive naming convention of the subcategories and terminology of this program, which we detail several examples:
(1) Forestland remaining as such: The program has multiple subcategories pertaining to forestland including 3B1aii1 - Tierras forestales que permanecen como tales (Stock Change), 3B1aii2 - Tierras forestales que permanecen como tales (Stock Change otra vegetación leñosa), 3B1aiii - Tierras forestales que permanecen como tales (Plantaciones), 3B1ai Tierras forestales que permanecen como tales (Bosque natural). One would think that each of these subcategories indicate they are forest land remaining as such and thus there is no land use change. However, that is not the case as the subcategory 3B1aii1 - Tierras forestales que permanecen como tales (Stock Change) is for land use change from natural forest land that is converted to other forestland (plantations and other woody vegetation). Rather than naming this subcategory something intuitive like "natural forest converted to other forest" by naming it "Forestland remaining as such", it has led to considerable confusion.

(2) Land USE versus Land Cover: Furthermore, for other categories such as 3B1aiii - Tierras forestales que permanecen como tales (Plantaciones), the program team includes in the description “This category estimates emissions and removals due to changes in the carbon content of biomass in stable, gaining and losing areas of cover classified as other woody vegetation and not included in the country's definition of forest.” The concept of ganancia and perdida are generally interpretted as land USE change (deforestation and reforestation), but the program team has indicated during some meetings that ganancia – gain refers to regrowth after disturbance or harvesting and no change in land use, whereas Perdida - loss refers to cover loss such as harvesting or disturbance. However, in an email on 16 March 2023, the program team stated "para las categorías 3B1aii2 Tierras forestales que permanecen como tales (Stock change otra vegetación leñosa) y 3B1aiii Tierras forestales que permanecen como tales (Plantaciones), se aclara que los datos de actividad para el cálculo, corresponden al análisis de áreas que realiza el SMByC de un año a otro, identificando: las áreas que permanecen en el mismo uso (Áreas estables), ganancia de áreas de un año a otro (áreas nuevas en ese USO) y pérdida de áreas de un año a otro (áreas que dejaron de existir en ese USO), por lo tanto, los términos “perdida, ganancia y estable” no se refiere a los incrementos o pérdidas de reservas de carbono en estas áreas, sino a los cambios en términos de superficie." By referring to these changes of ganancia/perdida as LAND USE CHANGE, it suggests that these are deforestation/reforestation events, meaning the land was once in plantation and then switched to a different land use, like pasture and vice versa.
Furthermore, in the ERPD, these descriptions of these categories seem to suggest land use change. For instance section 4.1.1 of the ERPD states “Subcategories 3B1aii2 Forest Land Remaining Forest Land (Stock Change other woody vegetation) and 3B1aiii Forest Land Remaining Forest Land (Plantations) estimate CO2 removals from carbon content gains in new areas of these land USES (plantations and other woody vegetation other than natural forest) and from carbon losses due to loss of areas in these land USES.” Likewise, in the Annex 8 Improvement Plan, for plantations it says “The SMByC has information about the gains, losses, and stability of commercial forest plantation areas. However, it cannot identify the activity that has produced the change, for example, when the planted areas are harvested, when a crop or pasture area is converted to a commercial forest plantation or abandoned.” Likewise for OVL it states “The SMByC has information on gains, losses and stability of areas of other woody vegetation, but cannot identify the use before and after the losses and gains.” This suggests that these subcategories may actually include land USE conversions, such as

“pasture area is converted to a commercial forest plantation.” Land use and land cover have different definitions and cannot be used interchangeably. The program team has not been clear whether these subcategories: Plantation, Palma, and OVL encompass land USE change, land COVER change, or both. This has resulted in inefficiency in the review process and is a clear area of improvement.

(3) Lastly, if these other forestland subcategories (platnation, OVL, and Palma), include both loss (change from forestland to other land use) and gain (change from other land use to forest land) in the same subcategory titled "Tierras forestales que permanecen como tales", it does not make much sense. The IPCC distinguishes quantification of land remaining in a land-use category (e.g., section 2.3.1.1 of the 2006 IPCC) from land being converted to a new land-use category (section 2.3.1.2 of the 2006 IPCC). The quantification of these subcategories does not appear to explicitly follow either these IPCC sections

Overall, the combination of the unintuitive subcategory naming, varying subcategory descriptions, and tracking of deforestation and reforestation within the same subcategory has led to confusion and difficulty in interpreting the analysis performed. Therefore, move intuitive and transparent subcategory names and descriptions has been identified as an area of improvement to ensure more efficient assessments and greater transparency in the program GHG inventory.
Project Personnel Response: "1. Regarding the observation by the audit on the use of the term Stock Change, in previous meetings it was clarified that what is quantified in this category are changes in forest cover to another type of vegetation that continues to be forest land, that is, when the forest is deforested and converted, for example, into a forest plantation or shrubland.To avoid confusion within the category 3B1a Remaining Forest Land, the subcategories will be named as follows: Remaining Forest, Forest Conversion to other forest land, Dynamics of other woody vegetation and Dynamics in Forest Plantations The adjustment of the names of the subcategories can be observed in tables 19 and 20 of the version 5 of the document.

2. Plantations are classified as lands that remain and not as conversions, this is because the analysis made by the Sistema de Monitoreo de Bosques y Carbono system regarding the OVL (Other Woody Vegetation) covers, palm and plantations, only analyzes the reduction or increase in area within these coverages. There is still no typification (identification of change of use) for these three coverages, for which we assume that in forest plantations there is not a change of use as such, it is simply a harvest within the area to collect the wood and in the case of palm a renewal of the crop is made (loss of coverage), for this reason, these lands are identified as lands that remain within the same use. As mentioned in the previous meetings, the Improvement Plan intends to identify the use before and after, with a classification analysis similar to deforestation, with which we hope to be certain when the reduction or increase of these coverages correspond to a harvest/renewal and when a change of use.

3. Until the categories Dynamics in forest plantations, Dynamics in other woody vegetation and Dynamics in palm cultivation are established, the area reductions and increases will be maintained, assuming that these correspond to harvesting/renewal processes, for which they will remain in permanence categories as there is no change of use, but rather an increase or reduction of biomass within the land managed in that same use. Once the aforementioned analysis is finished, it will be possible to identify when it corresponds to changes of use and it will be included in the estimates."

Auditor Response: Thank you for your response. As agreed, the audit team will reassess the improvements on these subcategories and their compliance at the start of the first verification. This finding is closed and will be followed up through a FAR.
Bearing on Material Misstatement or Conformance (M/C/NA):

OBS 45 Dated 27 Mar 2023
Standard Reference: ISFL Process Requirements_2021_Final
Document Reference: Columbia ISFL Kick-off Call_v2-0_080321.ppt
Finding: Section 7.4 of the ISFL Process Requirements outlines the process of the validation and the updating of the ERPD. Item 48 states "To initiate Part 1, the FMT shares the complete advanced draft of the GHG Elements of the ER-PD and Contributor feedback with the VVB." Items 50 and 55 indicate "Upon a desk review of documentation and a country visit, the VVB shall issue a list of findings to be addressed by the ISFL ER Program and revise the ER-PD." Basically, the ERPD is only updated in relation to specific findings.
Likewise, during the kick-off meeting, the audit team provided an overview of the audit procedures, including the desk review process and findings issuance and resolution. It was made clear during this presentation that the program documentation would be submitted to the audit team for review/data checks and that findings would be issued to the program team. Those findings would need to be addressed via updates to the program documentation and/or providing additional information to the audit team. It was indicated that the ONLY changes to the documentation (ERPD, quantification, selection of subcategories, etc), would be related to the findings. Despite this, the audit team has found that throughout this assessment, continuous updates have been made to the program that are not related to the findings. For instance, changes were made to update to the plantation emission factors as well as the to the permanent cropland emission factors, without any findings related to these original emission factors. The program team also added several crop subcategories and included new data and documentation related to those subcategories, such as Cacao and rice, which were not originally included. It has led us to conclude that at the outset of this audit, the program team presented to us a draft of the program and had planned to update the program has new data became available. This has led to the audit team having to re-do previously completed checks, issue findings for checks that had already been completed, and ultimately has led to a drawn out and less efficient audit process. This is because the product we are auditing has continued to change and evolve like a moving target. This finding is being issued as a reminder that the only updates that shall be made to the program documentation are those that pertain to specific findings issued by the audit team. We understand that data may be constantly improving, but such continuous updates only lead to confusion, additional work, and prolong the audit process.
Project Personnel Response: We appreciate the finding.
Auditor Response:
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 46 Dated 9 May 2023
Standard Reference: ISFL Program requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: This finding is related to OBS 44 above. Thus the audit team directs the program team to review the above finding first in order to fully understand the context of this finding. Section 4.1.2 of the ER Program Requirements states “In accordance with the IPCC guidance and guidelines, the Program GHG Inventory shall apply the basic principles of Transparency, Accuracy, Completeness, Consistency over time and Comparability as defined by the IPCC.” As described in OBS 44, the program team has not been clear whether these subcategories: Plantation, Palma, and OVL encompass land USE change, land COVER change, or both. This has resulted in inefficiency in the review process and is a clear area of improvement. Thus the goal of this finding is to establish, officially, in writing what activities these subcategories actually include. The audit team requests the following information to be explicitly described:
(1) Please define "Ganancia". Specifically, does ganancia include land USE change (e.g., change from pasture to plantation)? Does ganancia include land COVER change (e.g., regrowth of plantations after harvesting)? Does ganacia include both land USE and land COVER changes, or just one or the other? The audit team requests that the program team ensure that these definitions are explicity clear in the ERPD.
(2) Please define "perdida". Specifically, does perdida include land USE change (e.g., change from palma to pasture)? Does ganancia include land COVER change (e.g., harvesting of plantations, OVL, or palma)? Does perdida include both land USE and land COVER changes, or just one or the other? The audit team requests that the program team ensure that these definitions are explicity clear in the ERPD.
(3) Based on the answers above, please indicate how for these subcategories, the program conforms to either the 2006 IPCC Guidelines Ch2 requirements and specific equations in Land Remaining in a land-use category (section 2.3.1.1) OR specific equations in Land converted to a new land-use category (section 2.3.1.2).
(3) Does the program team intend to divide these 3 subcategories (e.g., 3B1aiii Forest Land Remaining Forest Land (Plantations)) into additional subcategories in the future once the improvement plan is completed. For instance, does the program team intend to have a subcategory of Plantation converted to pasture? Or Pasture converted to Plantation. Please provide clarity about how these 3 subcategories may change in the future and when the program intends make such changes if so.

Project Personnel Response: We appreciate the comment. Finding 44 explains that in Dynamics in forest plantations, Dynamics in palm cultivation and Dynamics in other woody vegetation, the change of use cannot yet be categorically identified. This information is included in the improvement plan. Following the observation and to avoid confusion with the IPCC method of gains and losses, we have proceeded to replace the terms of gain and loss by increase and reduction of area (from Dynamics in forest plantations, Dynamics in other woody vegetation, Dynamics in crop Palm).

When the country has the planned improvement against the typification of these coverages, it will be certain if there was a change in land use, and in what percentage it changes to another coverage; This will make it possible to divide the current subcategories more precisely, identifying which surface losses and gains of these coverages correspond to changes or permanence.
3. If after the classification of forest plantation areas there is evidence of a change of use, for example: plantation to pasture, this category will be included. When a change in use is identified, the 2006 IPCC Guidelines equations (equation 2.7) will be used for estimation on Land Remaining in a land use category (section 2.3.1.1).
On the other hand, the file Cronograma_Plan de mejora_PRE.xlsx is attached, in which information is presented on the categories that will be included within the baseline of GHG emissions of the program, but that do not yet meet the requirements to be included, indicating the required improvements, the data sources, the products to be delivered for the improvement, the tentative delivery date of the proposed products and the current percentage of progress.
Auditor Response: Thank you for your response. As agreed, the audit team will reassess the improvements on these subcategories and their compliance at the start of the first verification. This finding is closed and will be followed up through a FAR.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 47 Dated 9 May 2023
Standard Reference: PD template requirements; ER Program Requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 4.2.3 (step 3) of the ERPD Template Requires the following: “Based on the analysis above, complete the table below by listing all subcategories from step 1 and identifying those subcategories for which step 2 has shown that the historic activity data and emission factors available, and the methods used to collect these activity data and emission factors, meet the quality and baseline setting requirements for ISFL Accounting. [Corresponds to ISFL ER Program Requirement 4.3.13.] Section 4.3.13 of the ER Program Requirements states “For each ISFL ERPA Phase, ISFL ER Programs shall only account for those subcategories for which step 2 has shown that the historic Activity Data and Emission Factors available, and the methods used to collect these Activity Data and Emission Factors, meet the quality and baseline setting requirements for ISFL Accounting listed in Section 4.2 while taking into account the provisions of paragraph 4.3.10 and 4.3.11.”
In table 31 of the ERPD, the audit team found that there are several subcategories listed with a “Yes” in question 4 “Eligible for ISFL Accounting? (Yes/No)” even though it is not eligible because it is CURRENTLY not in conformance with the ISFL eligibility criteria. For instance, subcategory 3B2aiii Tierras de cultivo que permanecen como tales – Cacao does not use tier 2 data (says no under question 3), but yes under question 4. The same is for subcategories 3B3a Pastizales que permanecen como tales- Pastizales, 3C7a Arroz riego, 3C7b Arroz secano. The audit team understands that there is an improvement plan described in Annex 8 for the inclusion of these subcategories and that the accounting of these subcategories will be includes as part of the interium baseline per section 4.3.14 of the ER Program Requirements. However, this specific template section and table require that accurate information be provided regarding the baseline setting requirements for ISFL accounting (if any of questions 1-3 are no, then question 4 must be no as well). Table 31 is not in conformance with the requirements of the template. Note that section 4.4.1 of them template then requires the explanation of the interim Emissions baseline and the subcategories that are not currently eligible but will be included.
Project Personnel Response: Table 31, now table 24 V.5.0, has been corrected and the instructions according to the template have been followed.

For subcategories such as Rice cultivation and other similar subcategories whose response to Q4 criterion is "No" has been included within the baseline according to section 4.3.14.
Auditor Response: The auditors confirmed that Section 4.2.3 of the ERPD is now in conformance with the requirements. This finding is closed
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 48 Dated 9 May 2023
Standard Reference: ER Program Requirements
Document Reference: 4_4_BAU_2009_2029.xlsx., 4_1_2_Resumen_inventario.xlsx, Consolidado-Ganancia_Palma.xlsx; Consolidado-Perdida_Palma
Finding: Section 4.1.2 of the ER Program Requirements states “In accordance with the IPCC guidance and guidelines, the Program GHG Inventory shall apply the basic principles of Transparency, Accuracy, Completeness, Consistency over time and Comparability as defined by the IPCC. The audit team found that the emissions for 3B2aii (palma) differ in the workbook 4_4_BAU_2009_2029 versus the workbook 4_1_2_Resumen_inventario (sheet TR_LB_Orinoquia_2009-2018). For example: The values in the 4_1_2_Resumen_inventario match those in the Consolidado-Ganancia_Palma.xlsx and Consolidado-Perdida_Palma, but the values in 4_4_BAU_2009_2029 do not match. The Program Team indicated that ‘when reviewing the palm calculation files, we found that in the BAU scenario only the values for the Orinoco biome were taken into account, and not for the entire region. The corresponding adjustments will be made in the spreadsheets, ERPD and related annex’s.' This finding is to memorialize that these updates have been committed to.
Project Personnel Response: We appreciate the finding, the error was in the data presented in the file 4_4_BAU_2009_2029 where instead of the palm estimation data at the Orinoquía region level, the corresponding ones at the biome level were presented. This information was adjusted to ensure consistency across all documents. See adjusted files in the following links:

4_6_Escenario_BAU&Mitigación.xlsx
4_1_2_Inventario_Resumen_Historico.xlsx
(hoja TR_Hist_GHG_Orinoquia_2009-2018)
Orinoquia Disminución Palma.xlsx
Orinoquia Incremento Palma.xlsx
Auditor Response: Thank you. The auditors confirmed that this finding has been addressed that the estimation of palm emissions and removals cover the entire Orinoquia region. This finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 49 Dated 9 May 2023
Standard Reference: ER Program Requirements
Document Reference: Consolidado-Regeneración.xlsx
Finding: Section 4.1.2 of the ER Program Requirements states “ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools12 in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines.” In the workbook, Consolidado-Regeneración, sheet Estimación (Linea Base), column L, the program is not considering the accumulation of dead organic matter over time. They have simply divided by 20 years, but do not add the previous years of dead wood that have already accumulated. This is an error and is not conservative.

Project Personnel Response: We are grateful for the finding, in the GHG estimates of subcategory 3B1b (Forest that remains) the accumulated annual accumulation of dead organic matter was included, which will be limited when the 20-year period is over. This adjustment can be evidenced in the MOM (Base Line) and Estimation (Base Line) sheets of the Orinoquia Regeneración.xlsx, likewise, the other files were updated where the estimation of regeneration emissions information is presented.

4_6_Escenario_BAU&Mitigación.xlsx
4_1_2_Inventario_Resumen_Historico.xlsx
Auditor Response: Thank you. The audit team confirmed the changes provided. This finding is closed
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 50 Dated 9 May 2023
Standard Reference: ER Program Requirements
Document Reference: 4_4_BAU_2009_2029; ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: The program team has indicated that an emission intensity approach has been adopted for the livestock baseline subcategories. Section 4.2.7 of the ER Program Requirements states "If the emission intensity approach is used, the emission intensity (EI) will be calculated using equation 1 and by combining the emissions of the eligible subcategories and livestock species:
$EI = Emissions/Production$ (Equation 1)
Where:
- Production: Amount of protein from milk and meat produced from all included livestock species, expressed in kg;
- Emission intensity: Emission per unit of protein produced, expressed in CO2e / kg protein."
Section 4.3.9 of the ER Program Requirements states "For ISFL ER Programs that use the emissions intensity approach for estimating emission reductions from livestock, the same requirements apply. Data on production that is required as part of IPCC Tier 2 methods for calculations of emissions (for example milk production and protein content of milk; and meat production, dressing percent and protein content of meat) shall also meet these requirements. Other parameters required to estimate production shall meet the general requirements of Tier 2, i.e. use of country specific data and emission factors at minimum."
The audit team requests a demonstration of the accounting for the emission intensity approach including a clear and verifiable demonstration of the sources of the data used for this approach. Please also see Findings below pertaining to the reporting of the emissions baseline in the ERPD.
Project Personnel Response: To demonstrate the accounting of the emission intensity approach, a video is attached with the requested demonstration which is found in the link 4_6_Video_demostrativo_intensidad_emisiones.mp4 and; the spreadsheets available in the file 4_4-4_6_ISFL_Methodology_Livestock

When reviewing the new finding, the Fedegan projection was modified by a linear regression according to the requirements of the ISFL, for this reason the emission reduction potential of the program was modified.
Auditor Response: The audit team cofirmed the evidence provided. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 51 Dated 9 May 2023
Standard Reference: ER Program Requirements
Document Reference: 4_4_BAU_2009_2029; ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 4.2.6 of the of the ISFL Program requirements states "The Emissions Baseline shall be constructed based on the average annual historical GHG Emissions and Removals over a historical period (Baseline Period) of approximately 10 years. This Emissions Baseline shall be constructed based on at least two data points."
In Section 4.4.1 of the ERPD the program team has indicated that "En todas las categorías seleccionadas para la contabilidad del PRE, la línea base de emisiones usó un periodo histórico medio de 10 años (2009-2018), el cual sirvió como referencia para realizar proyecciones desde el año 2019 hasta 2029." Moreover, in section 4.4.2, the ERPD states "El estimado de la línea base de las emisiones está constituido por dos fases, la fase 1 representa las toneladas de CO2 eq desde el año 2019 hasta el 2023 la cual estima aportes de emisiones que van desde 19.481.291 hasta 20.859.292 tCO2eq, esto corresponde a una tasa de incremento promedio anual de emisiones de 1,73%. En la fase 2 las emisiones se estiman desde 20.962.562 en el año 2024 hasta 21.147.702 tCO2eq en 2029, lo cual representa una tasa de incremento de 0,23%. En la Tabla 32 se detallan las fases del ERPA, el año y la línea base de emisiones para la serie establecida como periodo de contabilidad (2019-2029)." This approach as described is not in conformance with the ER Program Requirements. However, it does not appear that the program has applied this approach so it is unclear why these statements are included in the ERPD. Please provide clarification regarding how the emission baseline was exactly constructed in conformance with the ER Program Requirements. Also please see the above finding pertaining to emission intensity approach as well as the below finding pertaining to section 4.4.1 of the ERPD.
Project Personnel Response: The approach and description are adjusted in a general way in section 4.4.1 of the ERPD V. 5.0 document, and the detail is included in annex IX.
Auditor Response: The auditors confirmed the changes provided. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 52 Dated 9 May 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 4.2.1 of the ERPD Template Requirements states "Using the table below, please analyze the subcategories involving conversions between land-use categories following the steps below. The table requires the reporting on the "Relative contribution to the total absolute GHG emissions and removals associated with all land use conversions in the Program GHG Inventory" and the "Cumulative contribution to the total absolute GHG emissions and removals associated with all land use conversions in the Program GHG Inventory." In reviewing Table 28 in the ERPD, it does not appear that these columns are in conformance. For instance, if the total emissions from subcategory 3b3bi are 9.642,65GgCO2e and the total emissions from all subcategories is 13.871,58 GgCo2e, then subcategory 3B3bi represents 69.5% of these emissions, and not 32,25%. The total cumulative contribution must add up to 100%. As a result, this table is not in conformance.

Project Personnel Response: Table 28 (table 21 version 5) is adjusted according to the ISFL requirements and the changes can be evidenced in version 5.0 of the ERPD that will be delivered in June.
Auditor Response: The audit team confirmed the changes provided, than you. This finding is closed
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 53 Dated 9 May 2023
Standard Reference: ER Program Requirements
Document Reference: 4_4_BAU_2009_2029; ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 4.6.1 of the ER Program Requirements states "ISFL ER Programs shall systematically identify and assess sources of uncertainty in the determination of the Emissions Baseline and the monitoring of Emissions and Removals following the most recent IPCC guidance and guidelines." Section 4.6.2 of the ER Program Requirements states "ISFL ER Programs shall, to the extent feasible, follow a process of managing and reducing uncertainty in the determination of the Emissions Baseline and the monitoring of Emissions and Removals20."Section 4.5.3 of the ERPD provides a description of the uncertainty for individual subcategories. It states "The methodology for the evaluation of GHG uncertainty is based on the use of Monte Carlo type simulations and error propagation in each category, generating variables with 10.000 simulations for each component of the emission factor estimation models." However, the audit team requests a transparent demonstration with references to source material, as well as the inputs and outputs to the monte carlo simulation so that we can assess the quantification of these uncertainty values. For example, Table 34 shows that the uncertainty for subcategory 3B3b - Tierras convertidas en pastizales is 24.4%. The audit team must be able to understand how this was quantified. Please provide a demonstration of the uncertainty analysis for all subcategories.
Project Personnel Response: The Incertidumbre link presents the documentation for the requested demonstration of version 4 uncertainty calculations. The inputs are being prepared to carry out the new analyzes of the updated data results based on the previous findings. No significant difference in the estimated global uncertainty is expected.
Auditor Response: The program team has provided an assessment of the uncertainty associated with the interim Emissions Baseline subcategories, but this assessment only includes demonstration for the year 2018 of the baseline. While the assessment approach appears to be in line with the IPCC guidance and guidelines, the assessment team will need to evaluate the complete uncertainty assessment which includes all years of the baseline and all subcategories. A FAR will be issued to complete the uncertainty analysis for all included subcategories and all baseline years be provided at the start of the first verification. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 54 Dated 9 May 2023
Standard Reference: ER Program Requirements; PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 4.4.1 of the ERPD requires the following be reported: "Building on the information provided in 4.2 above, please provide a short description (maximum two pages) of the approach used for estimating the Emissions Baseline. Please provide:
• A description of the general approach applied to estimate the Emissions Baseline in the current ERPA Phase
• Identification and assessment of uncertainty in the determination of the Emissions Baseline.
• The Baseline Period(s) used in the construction of the Emissions Baseline for the current ERPA Phase by indicating the start-date and the end-date for the Baseline Period(s). If different Baseline Periods are used for different subcategories, explain how this meets the requirements.
• In case an interim Emissions Baseline is provided at the beginning of the ERPA Phase, identify those subcategories that led to the use of the interim baseline and describe how best available data have been used.
• Ex-ante estimate, including assumptions made, of how the Emissions Baseline will change in future ERPA Phases."
Currently this section of the ERPD is lacking information. For instance, it does not provide a general approach for the estimate of the emissions baseline including information on the emission intensity approach for livestock subcategories (see finding above) versus the average baseline approach for land use subcategories. It does not provide a brief identification of the uncertainty assessment for the baseline. Most importantly it does not provide information on the interim emissions baseline or identify those subcategories that have led to this interim baseline, which will be updated once the improvement plan is completed and additional subcategories (e.g., cacao, pasture, rice) become eligible. It does not provide ex-ante estimate including assumptions of how the emissions baseline will change in future ERPA phases. Again, these last 2 points are highly relevant to the ER program which has expressed an intention to add several additional subcategories to the baseline and to update the emissions quantification for other subcategories following the improvement plan. As a result of these omissions, this section is not in conformance with the Template Requirements.
Project Personnel Response: Section 4.4.1 is adjusted as requested in the findings in version 5.0 of the ERPD that will be delivered in June.
Auditor Response: The audit team confirmed most of the changes provided. However, section 4.4.1mentions the category "Bosque que se conviete en otras tierras forestales" as part of the list of subcategories that meet all the requirements, but in table 23 of section 4.2.3 this subcategory shows it does not meet all the requirements yet. A FAR will be submitted to request this to be corrected accordingly. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 55 Dated 9 May 2023
Standard Reference: ER Program Requirements, IPCC 2006 Guidelines
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 3.1 of the 2006 IPCC Guidelines (Ch3) states "Approach 1 identifies the total area for each individual land-use category within a country, but does not provide detailed information on the nature of conversions between land uses. Approach 2 introduces tracking of conversions between land-use categories. Approach 3 extends the information available in Approach 2 by allowing land-use conversions to be tracked on a spatially explicit basis." It late provides more detail in Section 3.3.1 of the 2006 IPCC Guidelines (Ch3) states "The essential feature of Approach 2 is that it provides an assessment of both the net losses or gains in the area of specific land-use categories and what these conversions represent (i.e., changes both from and to a category)." Later it states "Approach 3 is characterized by spatially-explicit observations of land-use categories and land-use conversions, often tracking patterns at specific point locations and/or using gridded map products, such as derived from remote sensing imagery." Thus there are 2 components to these approach 2 and 3 spatial requirements: (1) whether they are spatially explicit (Approach 3) or spatially referenced (approach 1 and 2) and (2) whether they consider the changes to/from specific land use categories (approach 2 and 3) or do not track the land use changes (approach 1). In section 4.2.2 of the ERPD for Regeneration, it states "The country has spatially explicit information consistent with Approach 3 described in Chapter 3 (Consistent representation of land) of Volume 4 of the 2006 IPCC Guidelines." The audit team agrees that a key component of these approaches are that they use spatially explicit information and we agree the Program team has applied a spatially explicit approach through the use of the Sistema de Monitoreo de Bosques y Carbono (SMByC) for regeneration as well as most of the land categories. However, the other key component of approach 2 and approach 3 is that they are tracking the conversions relative to the specific 'land-use categories and what these conversions represent." For the subcategory 3B1b - Tierras convertidas en terrenos forestales (Regeneración forestal), there is no information on the pre-conversion land use. As a result, the program team has indicated they took a coarse approach and assume that there was a gain in forest land but do not consider what it transitioned from. Given this, this subcategory does not fully conform to the spatial requirements (Question 3) for inclusion in the ISFL. We understand that the improvement plan is in place to assess the pre-conversion land use. However, in table 31 and in Annex 8, it is not accurate to provide a response of Yes to question 3 or question 4, and results in a nonconformity. Likewise in section 4.2.2 it is not accurrate to states that this subcategory is in line with approach 3. Please note, that even if a subcategory does not conform to these spatial requirements or tier 2 requirements right now, they can still be included in the interim baseline per ER Requirement 4.3.14.
Project Personnel Response: The final selection table of the eligible subcategories for PRE accounting was adjusted both in the ERPD (Table 24 version 5) and in Annex 8 (Table 2) by placing in columns Q3 (Are the spatial information requirements met?) and Q4 (Can the accounting of the ISFL methodological framework be applied?) that category 3B1b Land Converted to Forest (Land Converted to Forest (Regeneration), does not meet the requirements, however it is considered as eligible , as it is a category that implies changes in the use of the land, and whose information on the use prior to conversion to forest will be obtained with the implementation of the improvement plan related to the classification of regeneration, and which is intended to include at the end of the year 2023; the above in accordance with numeral 4.13.14 of the ISFL requirements.
Auditor Response: Thank you for your response. As agreed, the audit team will reassess the improvements on these subcategories and their compliance at the start of the first verification. This finding is closed and will be followed up through a FAR.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 56 Dated 9 May 2023
Standard Reference: ER Program Requirements, IPCC 2006 Guidelines
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 3.1 of the 2006 IPCC Guidelines (Ch3) states "Approach 1 identifies the total area for each individual land-use category within a country, but does not provide detailed information on the nature of conversions between land uses. Approach 2 introduces tracking of conversions between land-use categories. Approach 3 extends the information available in Approach 2 by allowing land-use conversions to be tracked on a spatially explicit basis." It late provides more detail in Section 3.3.1 of the 2006 IPCC Guidelines (Ch3) states "The essential feature of Approach 2 is that it provides an assessment of both the net losses or gains in the area of specific land-use categories and what these conversions represent (i.e., changes both from and to a category)." Later it states "Approach 3 is characterized by spatially-explicit observations of land-use categories and land-use conversions, often tracking patterns at specific point locations and/or using gridded map products, such as derived from remote sensing imagery." Thus there are 2 components to these approach 2 and 3 spatial requirements: (1) whether they are spatially explicit (Approach 3) or spatially referenced (approach 1 and 2) and (2) whether they consider the changes to/from specific land use categories (approach 2 and 3) or do not track the land use changes (approach 1).
The audit team suspects that the 3 subcategories: Palma, OVL and Plantations do not meet the spatial requirements of Approach 2 or Approach 3, because these subcategories do contain conversions, but it is unclear what "specific land-use categories and what these conversions represent." For instance, during a call on 4 May 2023, the auditors asked what dyanmics are responsible for complete clearcut or clearing of OVL and it was indicated that this could potentially include land use transitions in the gain/loss. When the auditors asked whether after the improvements are initiated, there will be more subcategories like OVL--pasture and OVL--Cropland, the response was yes, possible (see NIR46 above this). Likewise, in the Annex 8 Improvement Plan, for plantations it says "The SMByC has information about the gains, losses, and stability of commercial forest plantation areas. However, it cannot identify the activity that has produced the change, for example, when the planted areas are harvested, when a crop or pasture area is CONVERTED to a commercial forest plantation or abandoned." Likewise for OVL it states "The SMByC has information on gains, losses and stability of areas of other woody vegetation, but cannot identify the USE before and after the losses and gains." And for palma one of the improvements is "An improvement contemplated for this category in the activity data is the identification of the US before and after the gain and loss areas, and to be consistent with the deforestation, forest plantation regeneration and OVL typing analyses." This suggests that these subcategories do include land USE conversions, such as "pasture area is converted to a commercial forest plantation" or "grassland is converted to palm plantation," etc, but that the program cannot distinguish the to/from land uses. The audit team understands that spatially explicit information is used, but that is not the only requirement for approach 2 and approach 3. Rather to fully adopt either approach, the data must include information on the pre- and post- land uses. If this data is lacking, then a response of No for Question 3 and No for Question 4 in table 31 of the ERPD would be required. Please justify why these 3 subcategories fully conform to approach 2 or 3 in that they are spatial explicit AND contain information on what the land conversions represent. Otherwise, please correct Table 31 to indicate NO for question 3 and question 4, and any other sections of the ERPD that reference the spatial requirements for these subcategories (e.g., Annex 8).
Please note, that even if a subcategory does not conform to these spatial requirements or tier 2 requirements right now, they can still be included in the interim baseline per ER Requirement 4.3.14.

Project Personnel Response: Final selection table of the subcategories eligible for PRE accounting is adjusted both in the ERPD (Table 32 version 5) and in Annex VIII (Table 2) by placing in columns Q3 (Are the spatial information requirements met?) and Q4 (Can the accounting of the ISFL methodological framework be applied?) that the categories 3B1aii2 Dynamics in other woody vegetation, Dynamics in forest plantations and Dynamics in palm cultivation, do not meet the requirements. However, they are considered eligible, as they are of importance to the region in terms of their mitigation potential and whose information on changes in prior and subsequent use will be obtained with the implementation of the improvement plan related to the typification for these three coverages. . This improvement is intended to be included by mid-2024; the foregoing in accordance with numeral 4.13.14 of the ISFL requirements.
Auditor Response: Thank you for your response. As agreed, the audit team will reassess the improvements on these subcategories and their compliance at the start of the first verification. This finding is closed and will be followed up through a FAR.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 57 Dated 9 May 2023
Standard Reference: ER Program Requirements, IPCC 2006 Guidelines
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4

Finding: This finding relations to 33 above. The ER Program Requirements states that “ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines.” Section 2.3.1.1 of the 2006 IPCC Guidelines (land remaining land) states "This section presents methods for estimating biomass carbon gains, losses and net changes. Gains include biomass growth in above-ground and below-ground components. Losses are categorized into wood fellings or harvest, fuelwood gathering, and losses from natural disturbances on managed land such as fire, insect outbreaks and extreme weather events (e.g., hurricanes, flooding). Two methods are provided for estimating carbon stock changes in biomass." This section then highlights the difference between the gain-loss method (“the biomass carbon loss to be subtracted from the biomass carbon gain”) and the stock-difference method (“requires biomass carbon stock inventories for a given land area, at two points in time.”)

Given that the Colombian team is only utilizing one set of forest biomass values, the gain-loss method is effectively applied. The program team has indicated in their response to NCR 33 “In subcategory 3B1ai Forest Land Remaining Forest Land (Natural Forest), only emissions from firewood consumption are estimated as a factor of forest degradation. Emissions from wood extractions are not estimated, nor are disturbances such as forest fires, since up to now it cannot be determined whether or not these extractions or fires are already included in the loss of forest areas determined by Forest and Carbon Monitoring System (Sistema de Monitoreo de Bosques y Carbono; SMByC) as forest loss due to deforestation. If included, it could lead to double accounting. Therefore, the emissions associated with the of forest areas are estimated in the emissions generated by deforestation (conversion of natural forest land to other forest land or to other uses).” Furthermore, Section 4.2.2 of the ERPD also states [translated to English] “It should be clarified that the SMByC estimates forest cover loss based on the country-specific definition of natural forest; for this reason, the loss of forest cover that does not change its use and remains as forest land is also reported as deforestation.”

To summarize, the above indicates that the program team cannot determine the areas that are permanent loss in natural forest (deforestation) versus temporary loss in forest due to harvesting, fuelwood collection, or natural disturbance (together termed here as degradation). As a result, the program team has made the assumption that all land cover change identified in the SMByC mapping system are classified as deforestation. This may result in inaccurate emissions estimates for the following subcategories:

- 3B1ai Forest Land Remaining Forest Land (Natural Forest) – Natural forest remaining forest, because it does not include temporary losses (degradation), thus emissions in this subcategory is not accurately accounted for
- All Deforestation subcategories (3B1aii, 3B2ai, 3B3ai, 3B4ai, 3B5ai, 3B6ai), because these subcategories may include emissions due to temporary losses (degradation) as permanent land uses changes, which have different emissions trajectories overtime. Counting forest degradation as deforestation can result in an overestimation of emissions.

We understand that the program team has improvement plans for determining the emissions related to degradation (harvesting, fuelwood removal, etc). Thus, this finding is to request more information regarding if/how the program intends to modify the deforestation subcategories to ensure that they do not include any land COVER change (i.e., degradation) and only include permanent land USE changes. The response to this finding will help the audit team determine whether a Forward Action Request may be necessary.

Project Personnel Response: The definition of forest for Colombia before the UNFCCC and that is used by the SMBYC for its analyzes is: "land occupied mainly by trees, which may contain shrubs, palms, guaduas, herbs and lianas, in which tree cover predominates with a minimum canopy density of 30%, a minimum canopy height (in situ) of 5 m at the time of identification, and a minimum area of 1.0 hectare. The tree covers of commercial forest plantations, palm crops and trees planted for agricultural production are excluded. NREF_Colombia_2020.

The definition of deforestation is "the direct and/or induced conversion of Forest cover to another type of Earth cover in a given period of time" (DeFries et al., 2006; GOFC-GOLD, 2009 cited by Galindo et al. al., 2014).

The initial use is identified as forest (forest land according to IPCC category), the use after deforestation is identified with the classification analysis (11-DA_Tipificacion_deforestación.zip), which is considered correct and includes an analysis of uncertainty (See columns F to P of each one of the sheets of the file typificacion_00_18_11102022_Biocarbono). Categories 3B2ai, 3B3ai, 3B4ai, 3B5ai, 3B6ai show a permanent change of use, category 3B1aii (Conversion of forest to other forest land) which implies a change of cover but not of use according to IPCC (continues in the forest land category) , includes the GHG estimation by the gain and loss method, which avoids overestimation of emissions since it considers the average value of the carbon content of other forest cover, including plantations and other woody vegetation.

The degradation analysis for its incorporation is currently being carried out as part of the improvement plan; Regardless of the result of this analysis and a possible change in the name of the 3B1aii category (if degradation or deforestation is considered), there would be no effect on accounting since the method for estimating emissions would not change. The adequate differentiation of the coverages it makes.
Auditor Response: Thank you for your response. As agreed, the audit team will reassess these improvements at the start of the first verification. This finding is closed and will be followed up through a FAR.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 58 Dated 9 May 2023
Standard Reference: ER Program Requirements, IPCC 2006 Guidelines
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: This finding is similar to the one above, however focuses on distinguishing forest growth from reforestation (land use change from nonforest to forest). Section 4.1.2 of the ER Program Requirements states "ISFL ER Programs shall, for the purpose of ISFL Reporting, compile a GHG inventory of all AFOLU categories, subcategories, gases and pools12 in the Program Area (Program GHG Inventory) utilizing existing data that have been collected using best available methods and approaches that are consistent with the most recent IPCC guidance and guidelines."

The project team indicated the following in response to finding NCR33: "Emissions from wood extractions are not estimated, nor are disturbances such as forest fires, since up to now it cannot be determined whether or not these extractions or fires are already included in the loss of forest areas determined by Forest and Carbon Monitoring System (Sistema de Monitoreo de Bosques y Carbono; SMByC) as forest loss due to deforestation. If included, it could lead to double accounting. Therefore, the emissions associated with the of forest areas are estimated in the emissions generated by deforestation (conversion of natural forest land to other forest land or to other uses)." While the response to the finding relates to the inability to distinguish between deforestation and degradation, it also suggests that the program is unable to distinguish between regrowth of forest (post-disturbance, post-harvest, etc.) from reforestation (conversion from a nonforest land use to forest land use). To accurately quantify removals across the various subcategories, the program must be able to accurately distinguish reforestation (conversion from a nonforest land use to forest land use) from forest growth/regrowth in forest remaining forest subcategories. The audit team understands that improvement plans are in place to better quantify the regeneration subcategory and determine the pre-forest land use. We also understand that there are improvement plans to determine areas that are temporary removals (harvesting, fuelwood extraction), but remain as forestland. Thus, this finding is to request more information regarding if/how the program intends to modify the regeneration subcategory with this new information to ensure that any regrowth after temporarily removals (harvests, extraction) are not counted as reforestation (land use change). The response to this finding will help the audit team determine whether a Forward Action Request may be necessary.

Project Personnel Response: The SMByC has spatially explicit information on forest areas, forest plantations, palm and OVL. The increases in carbon contents due to regeneration refer only to conversion to forest, while for the other categories the increases in area are reported in different subcategories as reported in the case of Dynamics in other woody vegetation, Dynamics in forest plantations and Dynamics in palm cultivation).

In the location: Incremento y disminución de áreas.pptx, a graphic example of the dynamics of forest, OVL and palm plantation coverage for the available period between 2000 and 2018 is attached, where the behavior of stable areas can be evidenced, and of the decrease and increase of areas for this period.

As previously mentioned, the categories where the increase in areas of the aforementioned categories is reported will be subject to the improvement plan identifying the classification of the previous use. Once this procedure is carried out, the respective adjustments will be made. However, no significant impact on accounting is expected, because the initial coverage identification process avoids double counting. Additionally, the geographic information that is currently identified will be complemented with georeferenced field information to identify different types of intervention associated with regeneration.
Auditor Response: Thank you for your response. As agreed, the audit team will reassess these improvements at the start of the first verification. This finding is closed and will be followed up through a FAR.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 59 Dated 9 May 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 2.1.1 of the ERPD template requires that table 1 be completed, which includes providing the 'Geographic area of the Program Area (hectares)' In recent correspondences with the ER Program team, the audit team learned that the official program area has changed to 25383265.8153269 ha. In the document ISFL_Colombia_FinalQuestions_032823 (1).docx, the program team states (translated to English). “The area defined for the program is 25,383,707 hectares, which corresponds to the latest information provided by the SMByC for the Orinoco region and includes the available coverage change analysis. The audit team has confirmed this total program area of 25,383,707 ha in the spatial files provided (e.g., Cambio_2013_2014.img). However section 2.1.1 of the ERPD indicates that the program area is 254.335 square kilometers. This converts to 25,433,500 ha. This differs from the official program area as represented by the data provided. Therefore section 2.1.1 of the ERPD is not in conformance.
Project Personnel Response: Program area information corresponding to 25,383,707 hectares was updated in the ERPD according to the area of the spatial files shared with the audit. This information can be verified in Table 1 in the version of the ERPD that will be delivered in June.
Auditor Response: The audit team confirmed the changes provided. This finding is closed
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 60 Dated 9 May 2023
Standard Reference: ISFL Validation and Verification Requirements; PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 8.3(37c) of the ISFL Validation and Verification Requirements indicates that " The criteria for Validation and Verification are:" … "Guidelines contained in the ISFL ER Program Document Template."
During the Non-GHG calls held with the program team during the last few weeks (April/May 2023), it was expressed to the audit team that several sections of the ERPD are out of date and may need to be updated. For instance, it was expressed that updates to the financing plan as well as components pertaining to socialization of the program and agreements will result in changes to the ERPD.

Likewise, there have been some changes to the emissions baseline as a result of the above finding and recent analyses. Thus, in order to fully assess the ERPD and its conformance with the PD Template, the audit team requests that the program team ensure that all sections of the ERPD are up to date with any new data, values, and or explanatory information. Please also note that the ERPD and all annexes are required to be submitted in English. This finding is a place holder for the pending June 2023 submission of the ERPD.
Project Personnel Response: According to the requested adjustments, the values will be updated in tables, graphs, and descriptive information, both in the ERPD and the corresponding inputs and annexes, which can be verified in the versión 5 of the document.
Auditor Response: The audit team confirmed the changes provided. This finding is closed
Bearing on Material Misstatement or Conformance (M/C/NA):

OBS 61 Dated 9 May 2023
Standard Reference: ER Program Requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 4.3.14 of the ER Requirements states "If a subcategory selected in step 1 has historic data available to construct an Emission Baseline
over a Baseline Period of approximately 10 years but these data do not meet the other quality requirements of Section 4.2, it can only be included for accounting in the ISFL ERPA Phase if all the quality requirements can be met through the application of improved methods and data. ISFL ER Programs that intend to include such a subcategory need to ensure that the quality requirements can be met at the latest at the end of the ISFL ERPA Phase. In this case, ISFL ER Programs shall provide an interim Emissions Baseline at the beginning of the ISFL ERPA Phase using best available data to be able to provide ex-ante estimations of the emission reductions."

In discussions with the program team, the audit team found that the following subcategories included in the interim emissions baseline will all be updated as a result of planned improvements:
(1) 3B2ai Tierras de cultivo que permanecen como tales – Café – does not comply with spatial requirements
(2) 3B2aiii Tierras de cultivo que permanecen como tales – Cacao - does not comply with spatial requirements
(3) 3B3a Pastizales que permanecen como tales- Pastizales - does not comply with spatial requirements
(4) 3C7a Arroz riego – Does not comply with tier 2
(5) 3C7b Arroz secano – does not comply with tier 2
(6) 3B2aii Tierras de cultivo que permanecen como tales – Palma de aceite – Does not distinguish between land use and land cover change
(7) 3B1aii2 - Tierras forestales que permanecen como tales (Stock Change otra vegetación leñosa) - Does not distinguish between land use and land cover change
(8) 3B1aiii Tierras forestales que permanecen como tales (Plantación forestal) – Does not distinguish between land use and land cover change
(9) 3B1b Tierras convertidas en tierras forestales – no information on pre-forest land use class. Also potentially to exclude any post-degradation regrowth (see finding #58)
(10) Potentially all deforestation subcategories – to exclude any degradation (see finding 57)
(11) 3B2aii Tierras de cultivo que permanecen como tales – Palma de aceite – Does not distinguish between land use and land cover change
(12) 3A2 Manure management – to include nitrogen excretion rates
(13) 3A1 Enteric fermentation – to include interannual variation in emission factors

As a result, essentially all subcategories included in the interim baseline will be updated prior to verification. The audit team only makes this observation so that all parties are aware, as it will be important to consider the scope and the necessary time to validate all of these updates. The audit team concludes that the next engagement (verification) will essentially be a new validation as the quantification of almost all baseline subcategories will be subject to change, and thus will require a significant time commitment for all parties.
Project Personnel Response: Thanks for the comment, the team is continuously working on updating and improving the estimates, documents, tables and different inputs of the ERPD, in such a way that the validation process meets the requirements, expectations and commitments acquired up to now.

Auditor Response: The audit team confirmed the improvements and updates in the subcategories of the interim baseline. As agreed, the audit team will reassess these categories and their compliance on the verification engagment. This finding is closed and will be followed up through a FAR.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 62 Dated 9 May 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 3.7.2 of ERPD "Where the ISFL ER Program, or any part of the Program Area, has been registered under any other GHG mitigation initiative, provide the registration number(s) and details for each of these." Section 3.7.2 lists the private voluntary carbon market projects which exist within the Orinoquia program area. These are listed by name, type of project, project proponent, etc. We understand that these projects have been or will be registered under the RENARE system and they may also be registered under other registries, such as the Verra registry. However, there are no registration numbers are listed for these projects/programs. Please indicate if registration numbers for these initiatives have been established and if so, please ensure that the ERPD is updated to include these numbers.
Project Personnel Response: We appreciate the comment, the RENARE platform generates automatic registrations as the initiatives register. The records that will be attributed to each of the initiatives will correspond to these records so that the program coincides with the national information, however, the update cannot be done at this time due to the current status of the platform, which is explained in the finding. 66. It is important to clarify that although each standard manages its own registry, these must be registered on the RENARE platform, so each initiative will have its national registration number. Once RENARE is opened to the public, the program will update the registration number of the initiatives identified in the territory, this detail can be found in section 3.7.2.
Auditor Response: Thank you for your response. The audit team will issue a FAR to follow up on the RENARE once is up and running. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 63 Dated 9 May 2023
Standard Reference: ER Program Requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 4.5.2 of the ER Program Requirements states "In estimating the subcategories and their associated Carbon Pools and gases included in the scope for ISFL Accounting, ISFL ER Programs shall ensure Methodological Consistency19 between the Emissions Baseline and the monitored net GHG Emissions." For the quantification of baseline emissions for plantations and palma, the program team has only considered coarse scale changes in land cover through the SMByC system. In review of section 3.1.2 of the ERPD, the audit team found there are numerous program activities directed at plantations and palma. For instance for plantations there are "Development and consolidation of the commercial forest plantation production chain as a contribution to the increase of GHG removals ", "Development and implementation of sustainable production practices with commercial rubber plantations" and "Establishment of dendroenergy plantations." For Palms there are "Implement and monitor low-carbon best practices associated with palm oil production" and "Planning and rehabilitation of palm oil crops under a landscape approach." It appears that these measures would require fine-scale monitoring and measurements to evaluate the emissions reductions associated with these activities. The audit team requests clarification regarding how the program intends to monitoring the emissions reductions associated with plantation and palm activities while maintaining methodological consistency with the baseline estimation approaches.
Project Personnel Response: To guarantee the coherence of the baseline methodologies in the categories of plantations and palm, the monitoring will be carried out with two approaches: the first related to the spatial identification of the areas and monitoring carried out by SMByC, which will allow the identification of the area of these coverages and therefore the decrease and increase of areas. The second approach consists of capturing data in the field associated with the mitigation practices implemented, this will be carried out through an articulated work with regional actors such as unions or other producer associations that will allow the identification of specific mitigation activities in palm and fine-scale plantations.

This same work will be carried out for the other prioritized productive chains (eg rubber, cashew, cocoa, etc.). In order to nest the information collected at the field level, agreements and sub-agreements with regional actors must be developed, which will include protocols and formats to collect and consolidate the information, including georeferenced information at the local scale (see section 4.5) and, the commitment to apply the mitigation practices that will have associated reduced volumes of GHG from the consultancies that are being developed.

Guidelines for the MRV of the PRE will be developed and finalized in the third quarter of 2023. The progress to date can be found in the document at the link:
Sistema_MRV_AFOLU_Orinoquia_6_2023.pdf
Auditor Response: The audit team confirmed the evidence submitted and changes provided to section 4.5.2. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 64 Dated 9 May 2023
Standard Reference: ER Program Requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 3.1.4 of the ISFL ERPD Template states "Please identify any potential compliance issues of the actions and interventions with these laws, statutes, regulatory frameworks, conventions and agreements; and identify legal and regulatory gaps. If applicable discuss how these issues will be addressed". In reviewing section 3.1.4 of the ERPD, the audit found that the ERPD does not mention any legal or regulatory gaps and how will these be addressed, as well as compliance actions taken by the program to meet all the listed laws and regulations. Please provide more information regarding whether there are any potential compliance issues or regulatory gap and update the ERPD accordingly.
Project Personnel Response: We appreciate this new comment. After sending the revised version, the country incorporated two new regulations, the first associated with international Agreements and conventions signed and incorporated into Colombian legislation, specifically Law 2273 of 2023. Approval of the Escazú Agreement, and the second, the Law 2294 of 2023 that Approves the National Development Plan 2022 - 2026, which will be included in the updated version.

These regulations strengthen the legal and jurisprudential framework already presented, for which reason the implementation of the Orinoquia BioCarbon Program proposed for the region is considered legally viable, taking into account that the portfolio of measures proposed for the PRE (Section 3.1.2) is nested in current policies, plans, mechanisms, agreements or commitments, and that they have a legal or regulatory basis that is within the provisions set forth in the Colombian Political Constitution.

However, as will be detailed in numeral 3.7 of the new version and that will be sent on June 30, a legal and regulatory development is needed, which allows the country to enter in a clear, transparent manner, minimizing possible risks, in the transfer of RE titles, however, as mentioned in said section, the country has been working to advance in the respective regulatory development that allows it to carry out the respective transfers.

Carifications have been incorporated into the final document in section 3.1.4.
Auditor Response: Thank you for your response. The audit team confirmed the changes provided. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 65 Dated 9 May 2023
Standard Reference: ER Program Requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 4.3.14 of the ER Requirements states "If a subcategory selected in step 1 has historic data available to construct an Emission Baseline over a Baseline Period of approximately 10 years but these data do not meet the other quality requirements of Section 4.2, it can only be included for accounting in the ISFL ERPA Phase if all the quality requirements can be met through the application of improved methods and data.
ISFL ER Programs that intend to include such a subcategory need to ensure that the quality requirements can be met at the latest at the end of the ISFL ERPA Phase. In this case, ISFL ER Programs shall provide an interim Emissions Baseline at the beginning of the ISFL ERPA Phase using best available data to be able to provide ex-ante estimations of the emission reductions."
In discussions with the program team, the audit team found that most of the subcategories included in the emissions baseline will all be updated as a result of planned improvements (please see Observation #X (OBS) below).In order to assess whether the program will be able to achieve these improvements in a timely manner, the audit team requests an update of the status of each one of these categories, the percentage of progress done up to date, and the month/year that is expected to be concluded.
Project Personnel Response: To respond to this finding, an improvement plan schedule is attached, available at the link: Cronograma_Plan de mejora_PRE.xlsx
Auditor Response: Thank you for your response. The audit team confirmed the changes provided to the imiprovement plan. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 66 Dated 9 May 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4
Finding: Section 3.7.3 of the ISFL template requirements states “Please describe the selected appropriate arrangement to avoid having multiple claims to ER title generated under the ISFL ER Program, including the implementation process for a Program and Projects Data Management System”.Section 3.7.3 of the ERPD states “La plataforma tecnológica RENARE está en funcionamiento desde septiembre 2020 y se puede consultar en la página renare.siac.gov.co.” When consulting the RENARE webpage it currently shows “Portal en Mantenimiento”. During a call on 25 April 2023, the auditors asked about the RENARE system and were told “La plataforma esta apagada por un tema regulatorio. El Ministerio de Ambiente, esta dando validación de cada una de las fases del documento regulatorio”. The auditors request additional information about the status of this system, such as when this system expected to be up and running, and if you could share a copy of this regulatory document you mentioned during our call.

Project Personnel Response: Through Article 175 of Law 1753 of 2015, the National Registry for the Reduction of GHG Emissions - RENARE is created, subsequently Resolution 1447 of 2018 of the Ministry of Environment is issued, which regulates the monitoring system, reporting and verification of the mitigation actions at the national level referred to in article 175 of Law 1753 of 2015, and other provisions are issued. In this regulation, it is established that RENARE is part of the national MRV system and that the owner of any GHG mitigation initiative must present to RENARE the supports of the validation processes of its baseline and verification of its results in accordance with the RENARE Technical Guide. Additionally, other provisions associated with the aforementioned Registry are established.

The RENARE was enabled to the public by means of an official communication since September 8, 2020 for the registration of GHG mitigation initiatives, which seek to qualify for payments for results or similar compensation and/or demonstrate compliance with established national climate change goals. under the United Nations Framework Convention on Climate Change - UNFCCC. Since this date, the licensees have been registering their mitigation initiatives, going through the different phases provided by the regulatory framework. During the years 2021 and 2022, the Ministry of Environment and IDEAM, in the RENARE administration exercise itself, which includes the management of phase changes of GHG mitigation initiatives, identified opportunities for improvement and advanced in their implementation, through of various development and test cycles; that will make it possible to have a renewed platform, with optimized technical and technological conditions based on updated forms for each of the stages and in accordance with the type of initiatives registered in the RENARE platform. With the foregoing and as part of the production process of the developments carried out, the platform is temporarily closed from Wednesday, August 9, 2022, likewise, by means of an Administrative Act of September 23, 2022 issued by the Council of State, the Administration of the RENARE Platform is assumed by the Ministry of Environment and Sustainable Development.

On May 19, article 230 of Law 2294 of 2023 (National Development Plan 2022 – 2026) was approved, through which the NATIONAL REGISTRY OF EMISSIONS REDUCTION AND GREENHOUSE GAS REMOVAL is modified, which gives it powers to the Ministry of Environment and Sustainable Development to delegate the administration of the platform.

For this reason, the Ministry of the Environment will proceed, through legal means, to delegate said administration. Subsequently, the delegated entity will develop the functional tests of the platform, carry out the stabilization process of the same and open the RENARE to the public. These last steps will be corrected in the second half of 2023. The above is stated in section 3.2.7 of the ERPD

Complying with the request, we attach resolution 1447 of 2018 (98-RES 1447 OF 2018.pdf).
Auditor Response: Thank you for your response. The audit team will issue a FAR to follow up on the RENARE system once is up and running. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 67 Dated 9 May 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4; Anexo VII.docx, AnexoVI.docx
Finding: The audit team understands that Annex 7 was previously subject to a finding. Upon closer inspection of the latest Annex 7, the audit team has concluded that the finding was prematurely closed.
The ERPD Template Requirements states that Annex 7 requires the following: "For each of the selected subcategories in Section 4.2.1:
• Identify the parameters that were used to determine the activity data and emission factors in the calculation of the emissions and removals for that subcategory;
• For each parameter used to determine activity data, describe the historic time series available for that parameter including how they relate to the proposed start date and end date of the Baseline Period (see Section 4.4.1);
• Provide details on the source of the parameters (e.g. official statistics) or a description of the method for determining the parameter (e.g. for parameters derived from remote sensing images describe the process applied including details such as the type of sensors and the details of the images used). If proxies have been used, describe the data sources for the proxies and their application to estimate activity data;
• Provide details on the spatial level of the parameters (local, regional, national or international) and if they allow for spatially explicit observations of land-use categories and land-use conversions;
• Provide an analysis if the parameters comply with the requirements on the use of, at minimum, IPCC Tier 2 methods and data. For parameters used for land use change-related subcategories, also provide an analysis if they data allows for the use of Approach 3 for land representation."
Furthermore, one of the Contributor Comments made is "More information is needed to assess and validate the sources of land use conversion and formula to achieve the numbers presented, information should be available since emissions and removals are indicated. Information should be included in the document." If annex 7 were complete and in conformance with the requirements, this contributor comment would have been addressed. However, Annex 7 is missing key details including:
(1) Identify the parameters that were used to determine the activity data and emission factors – This requires actually showing parameter values and emission factors used in the calculations. If calculations were used to derive a parameters pertaining to the activity data or emission factors, this must be provided. This section is devoid of tables, equations, or any indication values applied for the baseline.
(2) Details on the source of the parameters (e.g. official statistics) or a description of the method for determining the parameter –this suggests that for each value/parameter, clear details on source of the parameter value and if any further calculations were necessary (demonstrating these).
Overall, annex 7 (and/or Annex 6) is intended to provide a transparent analysis of the parameters which when combined with Annex 9, provide the reader with the ability to understand the flow of data, the specific parameter values, the sources of values, the equations applied, and the overall baseline approach for each of the selected subcategories. There is some leniency on which Annex of the ERPD includes such details on the parameters as they could be detailed in Annex 6, 7, and/or 9. However, the audit team concludes that required information and transparency is not provided in these annexes and we have ultimately concluded based on the annex requirements that Annex 7 is not in conformance. Likewise, given the lack of detail on the GHG inventory, baseline parameters, and baseline estimation approach, the audit team does not consider that this major Contributor Comment has been addressed.

Project Personnel Response: According to the finding, the adjustment of Annex VII is made, complementing the information of data, parameters and equations that allow a better understanding of the estimates and their transparency.
Auditor Response: The audit team confirmed the changes provided to Annex VII. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 68 Dated 9 May 2023
Standard Reference: ER Program Requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4;
Finding: Section 3.2.1 of the ER Requirements states "The design of the ISFL ER Program shall be informed by the contribution of key sources and sinks
to the total GHG Emissions and Removals in the Program GHG Inventory (described in section 4.1) and an analysis of trends. Together these shall be the basis to specify interventions to address the key drivers of AFOLU Emissions and Removals and to identify the entities that would
undertake them." Table 8 in section 3.1.2 of the ERPD provides 41 measures that will be implemented by the program. While the rest of section 3.1.2 includes some further description of the actual planned actions, from our discussions with the program team we found that each of these 41 measures include several submeasures. It is unclear exactly which submeasures will be implemented. The audit team requests further details on each of the proposed actions/measures/partnerships that fall under each of the 41 proposed interventions.

Project Personnel Response: The Excel file attached to the ERPD (Matriz_Portafolio_Medidas_Mitigación_PRE_2023-06-28.xlsx) contains the portfolio of measures and actions generated within the framework of the Orinoquia Emissions Reduction Program (PRE) . This matrix contains the specific information, constructed under a multi-stakeholder approach, for the 41 measures that will be implemented by the PRE. The file includes tabs with basic concepts, description of the objectives of the intervention (theory of change), description of the construction process of the portfolio of measures and actions, and information on the 41 measures and actions of the PRE classified into five thematic groups (agriculture, forestry and restoration chains, cattle farming, reduction of deforestation, and planning and governance). The scope of the information presented in the portfolio for this phase of the PRE corresponds to what was agreed with the technical team of the World Bank.

Detailed information on the corresponding measures is included in the tab for each thematic group, in two sections:

1. Description of each measure: consecutive numbering, identification code, name of the measure, type of measure, specific actions proposed in each measure (column E), description of the scope of the measure and elements for geographic targeting.

2. Relationship of each measure with the regional GHG inventory and the PRE mitigation scenarios: main source of emissions to which the measure contributes, relationship with the activities of the IPCC subcategories, main cause of related emissions, specification of the subcategories of the related GHG inventory, narrative of the construction of the PRE mitigation scenarios, integration of the measure in the mitigation scenario and supporting information.

It is important to highlight that the 203 specific actions that make up the 41 measures were formulated with the contributions of the different technical teams of the BioCarbono project and experts at a national, regional and local level; In addition, these measures and actions incorporated into the PRE already have the adjustment required by the ISLF based on the technical results and recommendations of the experts who developed the analysis of the risk of displacement of GHG emissions (which incorporates the analysis of trends for the main drivers of emissions in the region).

Taking the foregoing into account, we believe that the minimum requirements established in the ISFL methodological framework were met and additional elements that were agreed upon with the World Bank at the time were even incorporated.

Finally, it is worth mentioning that based on the agreements with the World Bank team, it was defined that the scope of the current phase of the PRE would be to propose the necessary actions for each measure, and that, in the next phase and from After the formulation of the implementation plan, both the definitive actions and the mechanisms for their implementation will be established. However, the country has already advanced in the construction of the financing plan (include the number of the annex that corresponds to the financing plan) taking into account these preliminary actions to carry out the costing of each measure of the current PRE.

1) The language of section 3.1.2 was revised, and it was considered that it was causing confusion and therefore the questions that generated this finding. Based on this, the language of the paragraphs

was adjusted for greater clarity and to answer question one. It is clarified that the Spatial Data Infrastructure of the Orinoquia-IDE, is a tool that allows access and visualization of spatial and alphanumeric information, and not to store it, the monitoring of the activity data will be carried out directly by the SMByC and the Crop Monitoring System , as proposed in section 4.5
2) It is the same consultancy.
3) As mentioned in finding 63, to guarantee the coherence of the baseline methodologies in the categories of plantations and palm, the monitoring will be carried out with two approaches: the first related to the spatial identification of the areas and the follow-up carried out by SMByC, which will allow the identification of the surface of these coverages and therefore the decrease and increase of areas. The second approach consists of capturing data in the field associated with the mitigation practices implemented, this will be carried out through an articulated work with regional actors such as unions or other producer associations that will allow the identification of specific mitigation activities in palm and fine-scale plantations. In this sense, said consultancy will generate information for the second approach.
Auditor Response: The audit team confirmed the evidence provided. This finding is closed
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 69 Dated 9 May 2023
Standard Reference: ER Program Requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4;
Finding: Section 4.5.2 of the ER Program Requirements states "In estimating the subcategories and their associated Carbon Pools and gases included in the scope for ISFL Accounting, ISFL ER Programs shall ensure Methodological Consistency19 between the Emissions Baseline and the monitored net GHG Emissions." Section 3.1.2 indicates that for the palm subcategory "On the other hand, the BioCarbon Program is developing the Spatial Data Infrastructure of the Orinoquia-IDE, through which it will be possible to consult the crop monitoring system and monitor the area of rice and palm oil crops to determine changes in land cover. The crop monitoring system will harmonize the areas of coverage resulting from the low-carbon sustainable rice production model that the AGROSAVIA consultancy is developing; likewise, the areas of coverage resulting from the palm oil production model will be harmonized, and from the Orinoquia SDI will be possible to access both the crop monitoring information layers and reference cartographic information from the agriculture and environment sectors. Currently, a consultancy is being contracted directly with the two leading entities in the Colombian palm oil sector, Fedepalma and Cenipalma. The primary function of this consultancy is to strengthen the extension of good low-carbon practices in the palm oil chain in the Orinoquia and promote the development of sustainable business cases.
Among the specific activities to be developed by the consultancy are the baseline survey of the palm oil sector in the Orinoquia; the prioritization of good low-carbon practices according to their relevance in terms of GHG reduction and/or capture and validation of the methodologies required for their monitoring, reporting and verification (MRV)." The audit team unerstands that the program intends to incorporate improvements to palm subcategory. In Annex 8 it states "Through the information generated by a consultancy, the aim is to establish qualitative and quantitative characteristics that will allow for greater certainty regarding the use of palm oil prior to and after the establishment of the crop in the region." The audit team requests:
(1) additional information regarding how the Spatial Data Infrastructure of the Orinoquia-IDE and/or the consultancy referenced in 3.1.2 will be utilized to improve the baseline and the monitoring of the palm subcategory.
(2) We also request whether this consultancy referenced in 3.1.2 is the same consultancy referenced in Annex 8.
(3) We ultimately request how this consultancy and the Spatial Data Infrastructure of the Orinoquia-IDE, will be integrated into the baseline as well as the monitoring to ensure methodological consistency in the palm subcategory. Please provide more information.

Project Personnel Response:
1) Language of section 3.1.2 was revised, and it was considered that it was causing confusion and therefore the questions that generated this finding. Based on this, the language of the paragraphs was adjusted for greater clarity and to answer question one. It is clarified that the Spatial Data Infrastructure of the Orinoquia-IDE, is a tool that allows access and visualization of spatial and alphanumeric information, and not to store it, the monitoring of the activity data will be carried out directly by the SMByC and the Crop Monitoring System , as proposed in section 4.5

2) It is the same consultancy.

3) As mentioned in finding 63, to guarantee the coherence of the baseline methodologies in the categories of plantations and palm, the monitoring will be carried out with two approaches: the first related to the spatial identification of the areas and the follow-up carried out by SMByC, which will allow the identification of the surface of these coverages and therefore the decrease and increase of areas. The second approach consists of capturing data in the field associated with the mitigation practices implemented, this will be carried out through an articulated work with regional actors such as unions or other producer associations that will allow the identification of specific mitigation activities in palm and fine-scale plantations. In this sense, said consultancy will generate information for the second approach.
Auditor Response: The audit team was able to confirm the changes provided. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 70 Dated 9 May 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4;
Finding: Section 4.3 of the PD Template requires the following: "For subcategories that were included in Section 4.2.1 above as part of the initial selection (step 1) but were not eligible for ISFL Accounting, please provide a summary of the time bound plan (approximately 500 words) to increase the completeness of the scope of accounting, improve data and methods and start collecting data to be able to estimate the Emissions Baseline for the subsequent ERPA Phases during the ERPA Term. Also, discuss those subcategories selected in step 1 that have historic data available to construct an Emission Baseline over a Baseline Period of approximately 10 years but where these data do not meet the other quality requirements and identify if all the quality requirements can be met through the application of improved methods and data at the latest at the end of the current ERPA Phase." In section 4.3 of the ERPD, some information is provided regarding the improvements of some categories but is not clear or specific. For instance, 4.3 of the PD states "The improvements focus on achieving Approach 3 of consistent land representation and a historical time series for all land use changes among the non-forest categories and on generating spatially explicit emission factors and activity data in particular for non-forestland uses rice, marañón, cocoa, forest plantations, and N2O emissions from managed soils related to cattle. In addition, it is expected that the consultancies associated with these chains will generate information (maps, characterization of the systems, Etc.) that will make it possible to improve the estimates and reflect the regional context." However, this section must make explicit mention of each subcategory selected in step 1, but that do not meet all quality requirements. The audit team notes that there is no mention of Pastures remaining pastures, or of the subcategories Plantations, OVL, or Palma which all have spatial improvements planned. Likewise, there is no mention of 3B1b Land converted to forestland, which also has improvement plans to ensure the pre-conversion land use is specified. Due to the key omissions, section 4.3 of the ERPD is not in conformance with the template requirements.
Project Personnel Response: Adjusted Section 4.3 and Annex VIII.
Auditor Response: The audit team was able to confirm the changes provided are now in conformance. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 71 Dated 9 May 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V4_CAP4; Annex VIII
Finding: Section B of Annex 8 of the PD Template requires the following: "Please provide a summary of the analysis done to determine the final selection of the subcategories eligible for ISFL Accounting (section 4.2.3 of the ISFL PD template) by completing the table below (copy from ERPD table 9)." Below in section C of Annex 8, it requires further details on the requirements for inclusion in ISFL, and what improvements are needed. The audit team found some discrepancies between Section B of Annex 8 and Section C of Annex 8. For example, for subcategory 3b1ai Tierras forestales que permanecen como tierras forestales, table 6 (Annex 8, section C) indicates that all ISFL requirements for inclusion are not met. However, table 2 (annex 8, section B) shows an answer of yes for Question 1, suggesting that this subcategory does meet the baseline setting requirement. Similiarly for subcategory 3D1 Productos de madera recolectada table 2 (annex 8, section B) indicates No for Q1, Q2, Q4 (Q3 is N/A), but in Table 12 (annex 8, section C), it shows answers of yes. Due to these inconsistencies for several subcategories in this Annex as well as inconsistencies between Annex 8 and what is reported in section 4.2.3 (Table 31) of the ERPD, the audit team is unclear of which subcategories meet the requirements and which do not. Please address these inconsistencies. Lastly, due to these inconsistencies in this annex, as well as table 31, it is unclear whether the program team intends to include the Forest remaining forest (natural forest) subcategory during this ERPA phase and in the interium baseline. Please clarify.
Project Personnel Response: Adjustment and consistency was ensured between the table in section 4.2.3 of the ERPD, with the information included in section B and section C of annex VIII.
Auditor Response: Thank you for the updates. The audit team was able to confirm the changes provided. However, in Annex 8, Table 5, the category "Bosque que permanece", has indicated NO in the first question "Series temporales historicas para la fijacion de la linea base", and in Section 4.2.3, table 23 of the ERPD it is indicated "SI" to this first question. The audit team will follow up on this through a FAR. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 72 Dated 12 Oct 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V5_English version.docx
Finding: After the table in Section 2.1.4 of the ERPD template, the following is required: "Please provide a brief summary roughly 100 words or less) of the measures proposed to address financing gap, if any and arrangements for flow of funds." This information is not included in the ERPD and thus represents a nonconformity.
Project Personnel Response: A brief summary regarding proposed measures to address the financial gap was added after Table 3 in page 38 of the ERPD:
Here some of the language: “The financial gap will be covered with resources from result-based payments from BioCarbon Fund, as well as from the General System of Royalties (SGR); the Fondo de Vida (Fonsurec), which administers the Colombian carbon tax revenue, as well as institutional cooperation grants and the Emissions Trading System. Additional details are provided on Section 3.1.3 “Arrangements for flow of funds”.
Auditor Response: The audit team confirmed the changes provided and the finding is closed
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 73 Dated 12 Oct 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V5_English version.docx, ERPD_Biocarbono_Orinoquia_V5.docx (Spanish)
Finding: Section 3.5.1 of the ERPD states "The Biocarbon ERP is formulated for the jurisdiction of the Departments of Arauca, Casanare, Meta and Vichada, which together cover an approximate area of 25.989.000 hectares, which constitutes 22,8% of the area of the national territory. Indigenous reserves are located in 18% of the regional territory, although they are mostly represented in Vichada, where they occupy 38% of the departmental area. Environmental entities, including natural parks, paramos, wetlands, the Macarena special management area (AMEM) and forest reserve zones, among others, represent 23% of the territory, with special importance in the department of Meta, where they account for 41% of the regional area. The land area of the four departments that make up the Orinoquia is 21.865.822 hectares, distributed among 317.395 owners…". First, why is there a differences in the land areas described in this section (25.989.000 hectares vs. 21.865.822 hectares)? Second, Table 1 in section 2.1.1 indicates an area of 253,836 km2 which is 25,836,000 ha. The auditors validated a total area of 253,837 km2 (ERPD in Spanish) using the land use change spatial files provided (e.g., cambio_wv_2010_2012_orinoquia_22042022_palma_plantacion_biocarbono_3116.img). Please indicate which is the correct area of the jurisdiction and why there are discrepancies.
Project Personnel Response: The language was corrected in the ERPD and the ERP area was homogenized throughout the document as 25.383.700 hectares; which is the one in the baseline maps mentioned in the finding. Of that area, approximately 86% (21.865.822 hectares) have cadastral information which was what we were referring to when mentioning that number of ha
Auditor Response: The audit team confirmed the response of the program team and the changes into the ERPD. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 74 Dated 12 Oct 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V5_English version.docx
Finding: Section 3.5.1 of the ERPD template requires the following: “Please describe (roughly 500 words or less) the land and resource tenure regimes in the Program Area, including:
i. The range of land and resource tenure rights (including legal and customary rights of use, access, management, ownership, exclusion, etc.) and categories of rights-holders present in the Program Area (including Indigenous Peoples and other relevant communities);
ii. The legal status of such rights, and any significant ambiguities or gaps in the applicable legal framework, including as pertains to the rights under customary law;
iii. Areas within the Program Area that are subject to significant conflicts or disputes related to contested or competing claims or rights, and if critical to the successful implementation of the ISFL ER Program, how such conflicts or disputes have been or are proposed to be addressed; and
iv. Any potential impacts of the ISFL ER Program on existing land and resource tenure in the Program Area.
Please elaborate how the assessment has been conducted in a consultative, transparent and participatory manner, reflecting inputs from relevant stakeholders.
Please describe any relevant issues gaps, conflicts, contested claims and potential impacts related to land and resource tenure regimes in the Program Area that have been identified and that are considered
critical for the successful implementation of the ISFL ER Program and explain how these have been or will
be taken into consideration in the design and implementation of the ISFL ER Program.”
Section 3.5.1 of the ERPD does not explicitly address item iii or iv above, nor elaborate on “how the assessment has been conducted in a consultative, transparent and participatory manner, reflecting inputs from relevant stakeholders.” It is noted that the consultative and participatory manner of the assessment is described in section 3.2 of the ERPD, but no reference to this section is made. Likewise, it is noted that item iii above is described in section 3.5.2, but no reference is made there. Ultimately this results in a nonconformity with the template.
Project Personnel Response: Adjustments were made as suggested in Section 3.5.1. The following language was added:
"All matters related to the construction, feedback, and design of the PRE , including the analysis of land tenure distribution, were carried out through a participatory process that constituted an inclusive, and transparent consultation; with active participation from stakeholders, including indigenous peoples and local communities (IPLC), local associations and ethnic groups, among others (see further details in section 3.2). Contributions from stakeholders highlighted that land tenure is informal for 43% of landholders, which was considered in the analysis of Rural Land Distribution and Tenure in the Orinoco region (see section 3.5.2 and Annex III). It also became clear that there are parts of the ERP area that are subjected to significant conflicts or disputes related competing ownership claims among property owners, possessors, and occupants; with overlapping land tenure types as well as urban expansion, disposed and forcefully displaced peoples (section 3.5.2). Considering this, stakeholders emphasized the need for regulation and understanding the nation's vacant land (Presumption of Vacant Land) and the need to work more intensively and in a decentralized manner in land regularization processes through the National Land Agency - ANT, the entity responsible for this task...
Auditor Response: The auti team confirmed the changes included in section 3.5.1. This finding has been addressed and closed.

Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 75 Dated 12 Oct 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V5_English version.docx
Finding: Table 21 of the ERPD lists the subcategories included in the initial selection as well as the justification for the initial selection. For the subcategories 'forest remaining forest, dynamic in OWV, and Dynamic in forest plantations' the justification states “Mandatory category because it is part of forest land remaining grassland..”. However, Table 18 indicates that these three subcategories are under the 3B1 forest lands category and do not involve grasslands. Please clarify.
Project Personnel Response: The correct name of the category is forest land remaining as forest land. It was changed accordingly in the categories “Forest remaining forest”, “Dynamic in OWV” and “Dynamic in forest plantations”.
Auditor Response: The audit team confirmed the response of the program team and the changes into the ERPD. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 76 Dated 12 Oct 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V5_English version.docx
Finding: Figures 26, 27, 28, 29 of the ERPD are blurry and not legible. This results in a lack of transparency in the ERPD.
Project Personnel Response: Blurred sections of Figures 26-29 were removed as suggested and an explanation was provided explaining these figures were zoom-ins from figure 23. References to the figures were also included in the ERPD relevant sections
Auditor Response: The audit team confirmed that the figures 26-29 have been updated in the new ERPD: ERPD_Biocarbono_Orinoquia_V5_English version _Limpio 1.docx, and the World Bank is in agreement with them.
Bearing on Material Misstatement or Conformance (M/C/NA):

NCR 77 Dated 12 Oct 2023
Standard Reference: PD template requirements
Document Reference: ERPD_Biocarbono_Orinoquia_V5_English version.docx
Finding: Section 4.5.3 of the ERPD template states "The details on all data and parameters to be monitored in Annex 10 below should also provide a systematic identification and assessment of uncertainty in the data and parameters to be monitored. Based on the information provided in the Annex, indicate how uncertainty will be managed and reduced in the monitoring of emissions and removals." Section 4.5.3 of the ERPD provides a systematic assessment of the uncertainty, but it does not include how the uncertainty will be managed and reduced in the monitoring of emissions and removals. This represents a nonconformity to the template requirements.
Project Personnel Response: Details about uncertainty management in the monitoring of emissions and removals were added in the end of Section 4.5.3. as suggested:
"Regarding monitoring emissions and reducing uncertainty, these will be managed the in similar way as it was done for the interim baseline (e.g. Annex X describes protocols used for image processing and national forest inventory data collection for each category included in the interim baseline, detailing the QA/QC processes). Improvements will be incorporated and implemented as per the framework established by the improvement plan (Annex VIII)that is aimed among other things, at reducing the baseline uncertainty and deliver complete MRV compliance with ISFL requirements for all selected subcategories. Furthermore, field data collection protocols are being developed to develop QA/QC procedures for producing activity data at the parcel and/or specific intervention levels. This will lead to an improvement in emissions and removals monitoring as well as a reduction in uncertainty...
Auditor Response: The audit team confirmed the changes provided to Section 4.5.3, this finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

Appendix D: Responses to Contributor Comments

Written comments by the ISFL Contributors were submitted to the audit team prior to the outset of the assessment process. Where relevant, all such comments were taken into due account during the assessment process. The below table provides a brief description, for each comment received, of (1) how the comment was addressed during the assessment process, if said comment was deemed relevant by the assessment team, or (2) if said comment was deemed not relevant by the assessment team, the assessment team's reasons for this determination.

No.	Comment Type	Contributor	Text of Comment	Audit Team Response
1	Major	Unknown	We would like to ask for more clarity on removals, and the plans to expand plantations. For example: what mechanisms are in place to measure any emissions before the plantations are established, safeguards to ensure the plantations are not replacing natural forests, use of endogenous vs exogenous tree species, procedures to ensure the survival rate of seedlings, will the plantation area be used for other purposes (pasture for example).	The auditors assessed the impacts of transitions to and from plantations that make up the emissions baseline. We confirmed that information on the pre- and post-transition land uses were utilized for accurate carbon accounting. The project has not yet implemented activities to expand plantations, however, it was indicated that native species will be considered and prioritized, specifically rubber.
2	Major	Unknown	More information is needed to assess and validate the sources of land use conversion and formula to achieve the numbers presented, information should be available since emissions and removals are indicated. Information should be included in the document.	The program team provided the auditors with all necessary calculation workbooks, source data, and spatial files needed to recalculate the baseline as well as to evaluate the subcategory selection process and the ex-ante emissions reductions.
3	Major	Unknown	On page 48 it is stated that "In this regard, the ISFL is expected to be considered an eligible mechanism under Article 6.2 of the Paris Agreements whereby Internationally Transferred Mitigation Outcomes (ITMOs)	This statement has been removed from the ERPD.

			are Generated." It should be noted that negotiations on Article 6.2 have not yet been concluded and therefore respective wording should be chosen carefully.	
4	Technical	Unknown	Our technical experts were unable to review the calculation sheets and therefore found analysis of the information provided impossible in some cases. Annex 9 A refers to files that should be provided to undertake this analysis/assessment	The program team provided the auditors with all necessary calculation workbooks, source data, and spatial files needed to recalculate the baseline as well as to evaluate the subcategory selection process and the ex-ante emissions reductions.
5	Technical	Unknown	One of the main ecosystems in the Orinoquia region are the upland and flooded (temporal and permanent) savannas, in the report titled as wetlands and grasslands. The transformation of these ecosystems releases substantial amounts of GHG. There is a greater focus of deforestation and forest degradation in the GHG accounting, than on the transformation of these wetland/grassland ecosystems. This lack of visibility hides the role they play in storing carbon. In addition, these ecosystems are also underrepresented in the Colombian National System of Protected Areas.	The auditors confirmed that emissions and removals from all subcategories existing within the program area have been assessed and that their relative impacts have been quantified according to the ER Program Requirements and specifically the subcategory selection process. The transformations of grasslands and wetlands both to and from forestland has also been included. The auditors have evaluated the subcategory selection process including the data quality section to confirm which subcategories are eligible for inclusion in ISFL accounting.

6	Technical	Unknown	Not clear if rubber, A*cacia mangium* and palm oil plantations fall under the Cropland or Forest Land category of Land. These are not mentioned in the description yet are mayor cultivations in the region; and should be distinguished from natural forests.	The auditors confirmed that timber crops fall under the plantation category which includes Acacia mangium (this excludes cocoa, rubber, etc). Instead rubber and palm fall under the crop categories and have their own crop-type specific subcategories. These subcategories do not meet the definition of natural forest per the country definition.
7	Technical	Unknown	In terms of the entire contribution of GHG emissions, ¿what is the contribution of GHG emissions from wetlands to croplands (including rice, etc., and oil palm, etc.)? Surprising to not see this category towards the top of the table. Fundación Cataruben has conducted research on the carbon storage of these wetland ecosystems for the carbon market. If data does not exist, it would be beneficial to include a column stating which subcategories are thought to be substantial contributors yet lack information.	The auditors confirmed that emissions and removals from all subcategories existing within the program area have been assessed and that their relative impacts have been quantified according to the ER Program Requirements and specifically the subcategory selection process.
8	Technical	Unknown	For the land categories (3B) it would be useful to get an overview over the annual loss in hectares.	The auditors confirmed that the annual hectares of deforestation have been presented in the ERPD.
9	Technical	Unknown	The transformation of wetlands to other ecosystems is not estimated but should be a major contributor of GHG emissions. Focus is given to forested areas, yet most of the land cover in the region is grasslands and wetlands.	See response to number 5 above.

10	Technical	Unknown	When identifying subcategories that are eligible for ISFL Accounting, why were subcategories not involving conversions between land-use categories not included in Step 1: Initial selection: 3A1a Enteric Fermentation - Total Bovine Cattle 3B1aii Forest land remaining forest land (Stock change) 3B1ai Forest land remaining forest land (Natural forest) Etc. Why is a table such as Table 6, which outlines the Net emissions and removals (t CO2eq), not included for these subcategories?	The auditors confirmed that emissions and removals from all subcategories existing within the program area have been assessed and that their relative impacts have been quantified according to the ER Program Requirements and specifically the subcategory selection process. We confirmed that the ERPD meets the reporting requirements.
11	Technical	Unknown	Livestock data sources in the development of methane emissions factor are identified. There is no information on the data assessment for each of those sources.	The auditors confirmed that all datasets supporting the livestock activity data and emission factors have been identified in the latest version of the ERPD and are traceable. We recalculated the total emissions due to enteric fermentation (methane).
12	Technical	Unknown	Information on how Tier 2 data was validated is not included in the document. The data improvement plan is not included either, it should have information on the inventory changes for 2022	The auditors confirmed the only subcategories that fully conform to the data quality requirements (tier 2) have been included in the ISFL emissions baseline. For subcategories that have baseline data (10 years) but do not yet conform to the tier 2 data quality requirement, we have confirmed that an improvement plan is in place in reported on in the ERPD in conformance with the reporting requirements.

13	Technical	Unknown	Technical experts assessed that uncertainty values seemed low and recommended that Monte Carlo simulation should follow at least the IPCC recommendation of 10,000 runs.	The auditors confirmed that the ERPD has been corrected to indicate 10,000 runs in the Monte Carlo Simulation.
14	Technical	Unknown	IDEAM financed by USAID's Natural Wealth Program, is adding to the Sync (National Carbon and Forest Monitoring System) the monitoring of changed to wetland ecosystems which can be used for the baseline estimate.	See response to item 5 above.
15	Technical	Unknown	Wetland/grassland conversion must be eligible for ISFL accounting as it stores substantial amount of carbon – but herein seems that it is not even being measured or included. This sends the message that it is OK to transform natural wetland and grassland ecosystem for plantations (oil-palm, etc.).	See response to item 5 above.
16	Technical	Unknown	Is the increase in the emissions baseline estimate in Table 10 due to the Emission intensity approach for cattle?	It is unclear which Table 10 is referenced here. However, the auditors confirmed that the ERPD is in conformance with all template requirements.

17	Technical	Unknown	It is stated that “The Program must define mitigation goals (Articles 25 and 30). These goals have not yet been defined but should be defined prior to submission of the full ERPD.” Indeed, this information together with a clear outline of measures to reach these goals will be decisive to assess the quality of the ERPD. When can this information be provided to contributors?	The auditors have confirmed that the program has defined mitigation goals and mitigation activities that directly address the key drivers of emissions and are appropriate to quantify given the subcategories eligible for inclusion in the ISFL program.
18	Technical	Unknown	It would be good to have further explanations on the differences shown in Figure 2 regarding the mitigation scenario (net emissions) in grey and the ISFL Baseline scenario (in blue) for the Sustainable Cattle Ranching NAMA in Orinoquia.	It is unclear which Figure 2 is being referenced. However, the auditors confirmed that the quantification of the emissions baseline and the ex-ante are in conformance with the ISFL requirements.
19	Technical	Unknown	Please explain how the targets of the GNU-COL Joint Declaration of Intent from 2020/21 have been taken into account in the additionality assessment – in the context of the mitigation scenario for the Orinoquia with the implementation of NDC mitigation measures.	The ERPD has been updated and additional sections pertaining to mitigation and NDC measures have been added addressing this comment.
20	Technical	Unknown	The program has estimated a reduction of 66 million tons CO2e by 2030. However, in the overview table, there is no breakdown by categories. Providing this would make the projection more transparent. The document should describe more sepcificaly which activities (in tonnes) that will generate the emission reductions.	The auditors confirmed that information regarding the relative contribution of the various emission reduction activities and the subcategories impacted by these activities has been included in the ERPD.

21	Technical	Unknown	As mentioned above, IDEAM financed by USAID's Natural Wealth Program, is adding to the SMByC (National Carbon and Forest Monitoring System) the monitoring of changed to wetland ecosystems which can be used for the baseline estimate.	See response to item 5 above.
22	Minor	Unknown	We would appreciate being able to review this once more with the full ERPD (non-GHG sections) - it is difficult to get a comprehensive picture of the ERP without a full review (I.e., appreciate having an opportunity to provide any follow-up questions in December once we have the full ERPD).	The auditors confirmed that the latest ERPD contains information for all relevant sections and is in conformance with template requirements.
23	Minor	Unknown	Please could the technical team talk through the implications for natural grassland/savannah of the ERP: 1. Are managed systems (e.g. plantations) in Orinoquia likely to have more carbon than natural grasslands/savannah and could the ERP therefore, by paying for removals, create an incentive to encourage conversion (i.e. via 3B1b, Table 5 or via 3B2aii) - 2. How does the ERPD protect these ecosystems and not accelerate conversion? 3. How do environmental safeguards consider the impact on biodiversity and e.g. water? 4. Is it possible to distinguish these natural ecosystems from converted agricultural systems with the sort of MRV likely (4.1.1, p17: is natural grassland distinguished from other systems in the 3B3 subcategories)?	The auditors reviewed all emission factors and quantification and it is true that managed systems like plantations may store more carbon than unmanaged savanna/grasslands. Whether this incentives any sort of management is outside the scope of our assessment. According to the planned mitigation activities conversion from natural grassland/savanna or any conversion from natural forest to managed forest is not a promoted activity. The auditors confirmed that the program is operating under the regulatory compliance of the National Safeguards System under MinAmbiente.

			5. Have considerations around conversion of savannah come up in the FCPF? 6. Is there anything in the programme requirements which would protect other natural ecosystems in the same way as natural forests (apart from the non-carbon benefits clause)? We would like to understand this to see whether it is a major issue.	The program does distinguish between grasslands versus pasture lands versus agricultural lands, but the level of management cannot be identified in the land use change data. Only conversions of grassland/savannah to or from forestland are included in the accounting scope of this framework. The WB has evaluated the program's compliance with section 2.1.1 of the ER Program requirements which considers environmental safeguards. In discussions with the program team regarding the implementation of planned activities and objectives to address the drivers of AFOLU emissions, the auditors did not find evidence that the program promotes the conversion of natural ecosystems.
24	Minor	Unknown	How reliable is the head determination of livestock by relying on the data obtained from the single municipal vaccination registry of the Colombian Federation of Cattle Ranchers (FEDEGAN), given the potential informality in the cattle sector?	The auditors confirmed the livestock head counts by verifying the source data from FEDEGAN. We also reviewed expert opinions on various parameters from specialists in the field. We reached a reasonable level of assurance that the best available data has been utilized.
25	Minor	Unknown	Subcategories estimates that are not yet included in document (i.e., those intending to be updated in December 2021) – could more information be outline on how this will interact with the ERPD/ERPA approval	The program has included all subcategories existing with the Program Area. They have followed the subcategory selection process which allows them to only include subcategories that meet the

			timelines – is the intention for this to be before final ERPD submission (which is scheduled for December 2021)? Are these intending to be subcategories for inclusion in subsequent ERPA phases, or within this ERPA phase?	ISFL requirements. However, they can add additional subcategories once data and methodological improvements are made. Therefore, the current baseline represents an interim baseline. Annex 8 of the ERPD specifies the improvement plan that will be implemented so that other subcategories can be included within this ERPA phase.
26	Minor	Unknown	We are not noting that cropland (forest converted to cropland (3B2bi) and cropland remaining cropland (3b2aii, 3B2av, 3B2aiii, 3B2avii, 3B2axi,…) is reported as a net sink overall. Is it a sink because only a minor part of the deforested land is converted to cropland directly? If the conversion occurs in many cases first through grassland (3B3bi) before conversion to cropland at a later stage, could Colombia further expend on the likely impact of not estimating emissions and removals from grassland converted to cropland (3B2bii is marked as not estimated).	This category has been changed since the initial submission. The subcategories for individual crop types (cacao, café, etc), have now been included in the Other Woody Vegetation subcategory. The program has accounted for losses and gains that occur from
27	Minor	Unknown	What is the difference between 3B1aii and 3B1ai?	The auditors confirmed the differentiation between subcategories during the assessment but have issued a finding regarding the confusing naming conventions. 3B1aii is a deforestation subcategory tracking the conversion of natural forest land to other forested lands (plantation, other woody vegetation, palma) and 3B1ai refers to the natural

				forest remaining natural forest subcategory.
28	Minor	Unknown	Any subcategories involving conversions between land-use categories other than forest land that, cumulatively with the conversions from or to forest land, amount to 90% of the absolute level of the total GHG emissions and removals associated with all land use conversions in the Program GHG Inventory should be included, but conversion not involving Forestry are not estimated yet. In table 7, Colombia mentioned for several conversion categories: "*Expected to be significant for land conversion – selection not yet confirmed". In a note below the table, Colombia added "Colombia has the expectation to include the non-forest land use change categories that are the most relevant and whose initial inventory and baseline estimation would be available in December 2021, in time for the full ERPD submission".* Could Colombia clarify: - whether the selection will include conversion amounting to 90% of the absolute level of the total GHG emissions and removals associated with all land use conversions as per the IPSL criteria or if another threshold will be used? - what is Colombia plan if baseline estimation for some LUC categories are still Not Estimated in December 2021?	The auditors confirmed that the program has used the 90% of the absolute level of the total GHG emissions and removals threshold. Additional non-forest subcategories are included at the discretion of the program as relevant justification has been provided for the inclusion. However, it is important to note that several subcategories selected for the emissions baseline will be updated as new data becomes available as part of the improvement plan.

29	Minor	Unknown	Conversion of natural forest to plantation is considered as stock change? Isn't there a category for conversion to plantation? Useful to clarify, I did not fully understand as the final summary row on p33 defines forest as excluding forest plantations.	
30	Minor	Unknown	Is 20 years sufficient for a regenerating forest to 'totally recover' in carbon terms?	The auditors confirmed that 20 years is the default transition period taken from the 2006 IPCC Guidelines.
31	Minor	Unknown	Are there other causes of emissions e.g. selective timber harvesting?	Other causes would be degradation which has not yet been accounted for by the program but is part of the improvement plan and included in the Forward Action Requests listed in Section 5.2.
32	Minor	Unknown	Removals from e.g. oil palm: How does the methodology take into account the recent conversion of natural ecosystems to this use (and also prior to time series (2008))?	The subcategory of Forest converted to cropland (3B2b) accounts for natural forest that has transitioned to palm plantation. For the growth and removal of palm remaining palm this is accounted for in the subcategory Dynamics in Palm.
33	Minor	Unknown	Will the change maps distinguish between natural grassland/savanna and managed systems	Yes the change maps distinguish between grasslands and managed pasture lands. However the level of management between the two categories is not identified.

34	Minor	Unknown	Numbers of cattle are projected to increase from 4.9m to 6.6m in 2030, with a 'stable emissions intensity' – is there an aim to reduce emissions intensity? Is it possible to see spreadsheets referenced in Annex 9?	The program has taken an emissions intensity approach that considers the conservatively project heads of cattle. The auditors have verified through independent review of source data and recalculation, that the data and calculations in the quantification workbooks are free of material error.
35	Minor	Unknown	When will length of ERPA phases be defined?	This will be determined during the coming ERPA negotiations.
36	Minor	Unknown	On registries – could avoidance of double-counting be further clarified – i.e, intentions for the interaction of RENARE and CATS systems if ERs are being registered on both systems – noting the ERPD currently states that procedures for addressing this have yet to be developed – when will they be/what will that look like under CATS? On RENARE – it would be useful for contributors (particularly those in country) to be kept looped into development and implementation – v crucial for COL's carbon markets and lots of cross-over with other programmes.	The auditors have issued a Forward Action Request pertaining to the RENARE system as it has not yet been completed or operational (see section 5.2 above). Through discussions with the program team we have confirmed that RENARE is a platform for registering greenhouse gas mitigation initiatives such as voluntary market projects and this Orinoquia jurisdictional program. The platform will serve to ensure these initiatives are free of double counting and acts as a registry transaction platform.
37	Minor	Unknown	P49: please could the team talk through how the ISFL historic baselines are nested within the NDC's baselines? P50: *'The procedures addressing non-compatible overlaps between sectoral programmes and sectoral projects do not exist yet….'*	See number 36 above. The auditors have issued a Forward Action Request (section 5.2) requiring that the RENARE system be operational and verifiable by the time of verification.

			What happens if these are not developed in time or the final ERPD?	
38	Minor	Unknown	'Protocols for monitoring of forest cover in Colombia' Will there also be monitoring of other natural ecosystem area eg grassland/savanna?	The auditors confirmed that a robust MRV system is in place to monitor the dynamics of land covers and land use transitions included in the program's subcategories. This is through the SymBYC.
39	Minor	Unknown	The methodology for uncertainty analysis states that it has been carried out for livestock, manure management, enteric fermentation and partially for deforestation, can Colombia confirm that it will be carried out for all land use changes (if baseline estimations are carried out (see query above)?	A Forward Action Request has been issued regarding the uncertainty analysis. The auditors confirmed that the uncertainty analysis considers the emission factors and the activity for the baseline subcategories and will utilize a monte carlo based approach. However, due to the pending updates to the Emissions Baseline subcategories, we have not reviewed the complete uncertainty analysis.
40 41	Minor	Unknown	Clarification request – the data used for the four dimensions of enteric estimates and manure management – are the sample sizes from FEDEGAN statistically acceptable? Were the data collection methods assessed? Were the surveys paper surveys – as part of the data collection assessment	The auditors reviewed the livestock data from both FEDEGAN and ICA and found that together they achieve a statistically valid sample as they constitute a nearly complete census. The data was derived from a field based census used for vaccination determination.

42 43			What was the frequency of the surveys or was this data from the single vaccination event	According to the program team, paper surveys are used in the data collection. According to the data received, they survey was carried out twice per year, annually and covers the entire baseline period.
44	Minor	Unknown	The BAU-AV scenario seem to correspond to a greater increase in emissions than a mere projection of trends over 2008-2017. Could Colombia share the spreadsheet of calculation of the ISFL baseline scenario for the Sustainable Cattle Ranching NAMA in Orinoquia?	As part of this validation engagement, the auditors have independently reviewed all data and recalculated the emissions baseline following the ISFL requirement and IPCC guidelines. There are several outstanding Forward Action Requests pertaining to the quantification that will be validated at the time of the first verification.
45	Minor	Unknown	The mitigation scenario net emissions are significantly larger than those in the BAU scenario in 2018. Could Colombia clarify in which year the trees leading to those additional removals were planted? If all were supposed to be planted in 2018, could Colombia clarify whether its afforestation modeling does include the impact of any clearing of pre-existing vegetation on plantations?	The BAU scenario is an average of the emissions across the reference period (2009-2018) thus individual baseline years are not directly considered in the quantification of emission reductions. The mitigation actions will be tracked after this baseline period, starting in 2019.
46	Minor	Unknown	In the mitigation scenario for rice cultivation, Colombia assume that good practices for rice cultivation are implemented in 100% of the rice cultivation areas in the Orinoquia region from 2018 onward. What were the measure	Correction is that the mitigation scenarios begin in 2019, after the baseline period. The validated ex-ante emission reductions only consider projections and assumptions and the actual monitored data of adoption rates will be used to determine the

			that allowed such a drastic take-up of good practices in that year?	emission reductions due to good practice rice cultivation.
47	Minor	Unknown	The mitigation scenario within section 4.6.A do not explicitly reflect the impact of the end of the armed conflict. Could Colombia elaborate further whether the change in pressure on land resulting from these changing circumstances have been taken into account?	The risk of reversals and the reversal set-aside percentage does consider the land pressure resulting from socio-economic & anthropogenic conditions.
48	Minor	Unknown	Different unit Gg (Gigagram?) than in the rest of the document.	N/A. The auditors confirmed all quantification and units are free of material error.
49	Minor	Unknown	Risk factor A. Risk indicator, bullet No. 5 Explanation needed – "encouragement of the expansion of unsustainable agricultural and livestock activities, which generate new transformation fronts" In other areas the document indicates there is livestock NAMA, which should have established a set of policies and actions for mitigation.	During meetings with the program team the auditors found that this bullet point signifies the risk of potential for socio-economic conditions resulting in unsustainable agricultural practices or increased deforestation.
50	Minor	Unknown	Could Colombia clarify the categories driving the spike in emissions in 2019. Is it deforestation to grassland only?	The program has not reported on observed emissions yet as that will be done at verification and submission of a monitoring report. The average emissions over the period 2009-2018 start in 2019 onward which is why there is a punctuated difference between 2018 and 2019. It is not a real increase in baseline emissions though.