

VALIDATION AND VERIFICATION REPORT FOR THE COMACO LANDSCAPE MANAGEMENT PROJECT

Document Prepared By: Francis Eaton

Project Title	COMACO Landscape Management Project
Report Title	Validation and Verification Report for the COMACO Landscape management Project
Version	01
Report ID	082817
Verification Period	1 July 2012 to 31 October 2015
Client	World Bank
Pages	76
Date of Issue	28 August 2017
Prepared By	SCS Global Services (SCS)
Contact	2000 Powell Street, Suite 600, Emeryville, CA 94608, USA http://www.scsglobalservices.com Email: cpollet-young@scsglobalservices.com Telephone: +1 (510) 452-8000
Approved By	Christie Pollet-Young
Work Carried Out By	Lead Verifier: Francis Eaton Local Expert: Boniface Mumbai Technical Reviewer: Dr. Letty B Brown

Summary:

This report describes the validation and verification audit of the COMACO Landscape Management Project (“the project”), a Reduced Emissions from Deforestation and Degradation (REDD) project located in nine chiefdoms in five districts in the Eastern Province of Zambia, namely: Chikomeni, Chikuwe, Jumbe, Luembe, Magodi, Mwasemphangwe, Mwape, Nyamphande, and Zumwanda, that was conducted by SCS. The purpose of the validation and verification audit was to assess the conformance of the project with the validation and verification criteria. The validation and verification audit was performed through a combination of document review, recalculations, interviews with relevant personnel and on-site inspections. A total of 19 findings were raised during the audit. The project complies with all of the validation and verification criteria, and the assessment team has no restrictions or uncertainties with respect to the compliance of the project with the validation and verification criteria, therefore the audit team has validated and verified the Project's compliance with the VCS Program requirements as set out in the VCS Rules.

Table of Contents

1	Introduction	6
1.1	Objective	6
1.2	Scope and Criteria	6
1.3	Level of Assurance.....	6
1.4	Summary Description of the Project	6
2	Validation and verification Process.....	7
2.1	Method and Criteria.....	7
2.2	Document Review	7
2.3	Interviews	14
2.4	Site Inspections	15
2.5	Resolution of Findings.....	16
2.5.1	Forward Action Requests.....	16
3	Validation Findings.....	16
3.1	Project Details	16
3.1.1	Project type, technologies and measures implemented, and eligibility of the project.....	16
3.1.2	Project proponent and other entities involved in the project	17
3.1.3	Project Start Date	17
3.1.4	Project crediting period	17
3.1.5	Project scale and estimated GHG emission reductions or removals.....	17
3.1.6	Project location.....	17
3.1.7	Conditions prior to project initiation	17
3.1.8	Project compliance with applicable laws, statutes and other regulatory frameworks	17
3.1.9	Ownership and other programs.....	18
3.1.10	Additional information relevant to the project.....	18

3.2	Participation under Other GHG Programs	19
3.3	Application of Methodology	19
3.3.1	Title and Reference	19
3.3.2	Applicability	19
3.3.3	Project Boundary	21
3.3.4	Baseline Scenario	30
3.3.5	Additionality	34
3.3.6	Quantification of GHG Emission Reductions and Removals	36
3.3.7	Methodology Deviations	43
3.3.8	Monitoring Plan	44
3.4	Non-Permanence Risk Analysis	44
3.4.1	Internal Risk	44
3.4.2	External Risk	48
4	Safeguards	53
4.1	No Net Harm	53
4.2	Environmental Impact	53
4.3	Local Stakeholder Consultation	53
4.4	Public Comments	54
5	VERIFICATION FINDINGS	54
5.1	Accuracy of GHG Emission Reduction and Removal Calculations	54
5.2	Quality of Evidence to Determine GHG Emission Reductions and Removals	57
6	Validation AND VERIFICATION conclusion	58
	APPENDIX A: Validation and verification Findings	60

1 INTRODUCTION

1.1 Objective

The purpose of the validation and verification audit activity was to conduct an independent assessment of the COMACO Landscape Management Project (“the project”) to determine whether the project complies with the validation and verification criteria, as set out in the guidance documents listed in Section 1.2 of this report.

1.2 Scope and Criteria

In accordance with Section 4.3.4 of ISO 14064-3:2006, the scope was defined as follows:

- The project and its baseline scenarios;
- The physical infrastructure, activities, technologies and processes of the project;
- The GHG sources, sinks and/or reservoirs that are applicable to the project;
- The types of GHGs that are applicable to the project; and
- The project crediting period, as discussed in Section 3.1.4 of this report.

In accordance with Section 5.3.1 of the VCS Standard, the criteria for validation and verification was the VCS Version 3, including the following documents:

- VCS Program Guide
- VCS Standard
- VCS AFOLU Requirements
- VCS AFOLU Non-Permanence Risk Tool

Unless otherwise indicated, the assessment was performed against the most recent version of the relevant VCS guidance document.

1.3 Level of Assurance

In accordance with Section 5.3.1 of the VCS Standard, the level of assurance of this report is reasonable.

1.4 Summary Description of the Project

The project located in nine chiefdoms in five districts in the Eastern Province of Zambia, namely: Chikomeni, Chikuwe, Jumbe, Luembe, Magodi, Mwasemphangwe, Mwape, Nyamphande, and Zumwanda and is aimed at reducing deforestation and improving agricultural land management.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

The assessment was performed through a combination of document review, interviews with relevant personnel and on-site inspections, as discussed in Sections 2.2 through 2.4 of this report. At all times, the project was assessed for conformance to the criteria described in Section 1.2 of this report. As discussed in Section 2.5, findings were issued to ensure that the project was in full conformance to all requirements.

The team performing the assessments (the verification team) created a sampling plan following a proprietary sampling plan workbook developed by SCS. Per Section 4.4.3 of ISO 14064-3:2006, the verification team identified possible risks of errors, omissions and misrepresentations with respect to the validation and verification criteria. For each identified risk, the verification team assessed the likelihood of the material discrepancy occurring, the likelihood of the material discrepancy not being prevented or detected by the controls of the project the material discrepancy and the likelihood of the material discrepancy not being detected by the verification team. Sampling and data testing activities were planned to address any risk where the likelihood of a material discrepancy not being detected by the verification team was judged to be unacceptably high. The verification team then created a verification plan that took the sampling plan into account.

2.2 Document Review

The project description (2016-09 VCS PD COMACO SALM REDD integrated, dated 26 September 2016) (PD) and supporting documentation were carefully reviewed for conformance to the validation and verification criteria.

Particular attention was focused on the PD, given its central role in the description of “the project and its context” (VCS Standard, Section 3.19.1). Through review of the PD, the verification team ensured that:

- The project design, as described in the PD, is in conformance with the VCS rules and the requirements of the methodology
- The PD satisfies all applicable documentation requirements of the VCS rules and the methodology

In addition to the project description, the following written documents (e.g., reports, memos, land deeds and titles) were reviewed to ensure conformance of the project to the VCS rules and the methodology. It should be noted that given the fact that the validation and verification assessments were performed concurrently, the document list below includes documentation for both assessments:

Document Description	File Name	Ref.
Risk Report	2016-05-04 VCS Non-Permanence Risk Report_COMACO	/1/
Risk Calculation Tool	2015-05-04 VCS Risk Report Calculation	/2/

	Tool_COMACO v3 0	
Deforestation Drivers	2015-03-20 Drivers and Effectiveness Factor Analysis CLMP	/3/
Conservation Farming	Andersson and D'Souza 2014_Conservation Agriculture adoption among smallholder farmers in southern Africa	/4/
Zambia Law	Lands Act_highlighted text	/5/
Project Budget	CLMP_Breakeven_analysis	/6/
Additionality Evidence	NCR 7 - Widespread deforestation in project region in 2002-2013	/7/
Applicability Evidence	NCR 13 Deforestation & Nonforest_1km_map	/8/
Applicability Evidence	NCR 13 Deforestation & Slope_02-13	/9/
Training Evidence	NIR 1 Performance Monitoring Training Manual-2016 version	/10/
Accuracy Evidence	NIR 1 PlotSize Verification Analysis (2016) march	/11/
Data Requirements	NIR 2 SALM FARMER REGISTRATION FORM DESCRIBER	/12/
COMACO Project Description	Project Description Document	/13/
COMACO Project Description	RNE Project Description Document	/14/
Soil Model Evidence	SALM crop grouping and dry matter values	/15/
Zambia Law	The Forest Act 2015_highlighted text	/16/
Zambia Law	Van Loenen 1999_LAND TENURE in	/17/

	ZAMBIA	
Monitoring Report	2016-09-29 COMACO VCS Monitoring Report_1st Period	/18/
Soil Model Evidence	2013-08-13 Guidance RothC model	/19/
Soil Model Evidence	2016-09-20_RothC model_COMACO_2013	/20/
Soil Model Evidence	2016-09-20_RothC model_COMACO_2014	/21/
Soil Model Evidence	2016-09-20_RothC model_COMACO_2015	/22/
Soil Model Evidence	Monthly Max-Min Temp_1998-2014	/23/
Soil Model Evidence	monthly Rainfall_1998-2014	/24/
Project Calculation Workbook	2016_26_09_COMACO REDD results	/25/
Project Calculation Workbook	2016-20-09 COMACO_Monitoring Report ER summaries	/26/
Project Calculation Workbook	2016-27-09_COMACO_REDD+monitoring_ER calculations_final	/27/
Start Date Evidence	2 COMACO Carbon FN 4062012_DLTracked_6_7_12FN070612 (2)_latestDLrevised	/28/
Start Date Evidence	2014-03-12 Project start date assessment SALM REDD	/29/
Baseline Evidence	Descriptive Agricultural Statistics and Analysis for Zambia	/30/
Baseline Evidence	wp76	/31/
Baseline Evidence	Zambia 2013 FTF ZOI PBS Country Report - 20140404	/32/

Applicability Evidence	2011 USDA Hydrologie and Land Use Change	/33/
Applicability Evidence	Kaonga2008	/34/
Applicability Evidence	2004 VAC Zambia livelihood maps	/35/
Additionality Evidence	2011 McNulty Presentation Watershed Management	/36/
Additionality Evidence	2011 Sitko et al Descriptive Agricultural Statistics and Analysis for Zambia	/37/
Additionality Evidence	2013 Sperling et al Seed System Security Assessment	/38/
Additionality Evidence	2014 Lindsey et al Underperformance of African PA networks - Case Zambia	/39/
Additionality Evidence	2015 Persha et al Strong Land Tenure Smallholder and CSA	/40/
Additionality Evidence	2015 UNEP Benefits of Forest Ecosystems in Zambia	/41/
Baseline Evidence	2014 USAID Winrock AFOLU Calculator Series Cropland	/42/
Baseline Evidence	2014-12-30 LandCoverAnalysis_Procedure	/43/
Baseline Evidence	2015-03-20 Drivers and Effectiveness Factor Analysis CLMP	/44/
Baseline Evidence	Ariga 2013 zambia-fertilizer-assessment	/45/
Baseline Evidence	Implementation plan for expanding SALM Instances and REDD management	/46/
Baseline Evidence	Implementation Plan Workplan_2016_to_2017 (2)	/47/

Baseline Evidence	Jha and Hojjati 1993 Fertilizer use on smallholder farms in eastern province	/48/
Baseline Evidence	Kaonga 2012	/49/
Baseline Evidence	V4_05_Ch5_Cropland	/50/
Leakage Evidence	Ministry of Agriculture and Livestock 2013 Annual Report -Livestock	/51/
Monitoring Plan	2015-03-23 COMACO OPERATIONAL PLAN-Landscape Project	/52/
Monitoring Plan	ABMS technical guidelines for SALM projects	/53/
Monitoring Plan	Carbon Project management and responsibilities- Nov 2015	/54/
Monitoring Plan	COMACO Organization Structure	/55/
Environmental Impact	COMACO Final ESMP Nov 18 2014	/56/
Environmental Impact	COMACO EPB_REVIEWED_07_5_2015	/57/
Environmental Impact	COMACO impact study	/58/
Environmental Impact	ZEMA_CLMP_EPB_APPROVAL_LETTER	/59/
Stakeholder Comments	Various documents and meeting minutes	/60/
COMACO Guidelines	COMACO Manual for Community Conservation Plans and Conservation Areas	/61/
COMACO Guidelines	COMACO sustainable land mdelines sustainable agriculture, wildlife and forestry compliance scoring	/62/
COMACO Model	COMACO Conservation Model	/63/

COMACO Model	COMACO Crop Fund	/64/
Community Conservation Plan	CHIKOMENI COMMUNITY CONSERVATION PLAN	/65/
Community Conservation Plan	CHIKUWE COMMUNITY CONSERVATION PLAN	/66/
Community Conservation Plan	JUMBE COMMUNITY CONSERVATION PLAN	/67/
Community Conservation Plan	Luembe CCP	/68/
Community Conservation Plan	MAGODI COMMUNITY CONSERVATION PLAN	/69/
Community Conservation Plan	MWAPE COMMUNITY CONSERVATION PLAN	/70/
Community Conservation Plan	MWASEMPHANGWE COMMUNITY CONSERVATION PLAN	/71/
Community Conservation Plan	NYAMPHANDE COMMUNITY CONSERVATION PLAN	/72/
Community Conservation Plan	ZUMWANDA CONSERVATION PLAN	/73/
Farmer Compliance	Compliance 2014 raw data	/74/
Farmer Compliance	Compliance Farmers and Fields Final 2015	/75/
Project Boundaries	Various Shapefiles	/76/
Land-Use	Various .tiff files	/77/
MIS Database Instructions	2016-09-10 COMACO MIS user manual	/78/
Risk Evidence - External	COMACO Environmental and Social Management Plan Nov 18 2014	/79/
Risk Evidence - External	COMACO Conservation Model Document	/80/

Risk Evidence - External	DUMas 2015 COMACO impact study	/81/
Risk Evidence - External	External risks documents to add	/82/
Risk Evidence - External	WB_World Governance Indicators_Zambia	/83/
Risk Evidence - Internal	2015-03-23 COMACO OPERATIONAL PLAN-Landscape Project	/84/
Risk Evidence - Internal	CLMP project management and responsibilities	/85/
Risk Evidence - Internal	COMACO Manual for Community Conservation Plans and Conservation Areas	/86/
Risk Evidence - Internal	COMACO_overall_organization structure	/87/
Risk Evidence - Internal	DUMas 2015 COMACO impact study	/88/
Risk Evidence - Internal	Financial_analysis_COMACO	/89/
Risk Evidence - Natural	COMACO Pest Management Plan November 2014	/90/
Risk Evidence - Natural	Fire incidences in the project chiefdoms_FIRMS	/91/
Risk Evidence - Natural	Geological risk_Seismicity map East Africa	/92/
Baseline Evidence	Energy Usage Questionnaire -2014	/93/
Baseline Evidence	Fuel- wood Questionnaire (2014)	/94/
Baseline Evidence	FuelWoodSurvey_results	/95/
Ex-Ante SALM Evidence	2016-20-09_COMACO SALM ER calculations	/96/
Ex-Ante SALM Evidence	2016-20-09_COMACO_RothC model_project_scenario	/97/

Ex-Ante SALM Evidence	2016-22-09_COMACO ER calculations_REDD	/98/
Ex-Ante SALM Evidence	COMACO_compost_input	/99/
Applicability Evidence	18775-62511-1-PB	/100/

2.3 Interviews

Interviews constituted an important component of the audit process. The following personnel associated with the project proponent and/or implementing partner were interviewed. The phrase “throughout audit” under “Date(s) Interviewed” indicates that the individual in question was interviewed on multiple occasions throughout the audit process.

<i>Individual</i>	<i>Affiliation</i>	<i>Role</i>	<i>Date(s) Interviewed</i>
Gilbert Wathum	UNIQUE Forestry	Technical Support	Throughout Audit
Prashant Kadgi	UNIQUE Forestry	Technical Support	Throughout Audit
Whiteson Daka	COMACO	Extension manager	Throughout Audit
Moses Mwenda	COMACO	Cooperative Coordinator	Throughout Audit
Filius Jere	COMACO	Radio Producer	Throughout Audit
Nemiah Tembo	COMACO	Conservation Manager	Throughout Audit
Dale Lewis	COMACO	Director/CEO	Throughout Audit
Japhet Seulu	COMACO	GIS Manager	Throughout Audit
Angel Makungu	COMACO	GIS Assistant	Throughout Audit
Gertrude Nyirenda	COMACO	Monitoring and Evaluation managerManager	14 March 2017
Nezuma Kanyata	COMACO	Administrative Officer	Throughout Audit

Marina Kvashnina	World Bank	Forests and Landscapes Climate Finance	1 March 2017
Neeta Hooda	World Bank	Senior Carbon Finance Specialist	Throughout Audit
Matthias Seebauer	UNIQUE	Monitoring	Throughout Audit

2.4 Site Inspections

The objectives of the on-site inspections performed were to:

- Ensure that the geographic area of the project, as reported in the project description and the accompanying KML file, is in conformance with Section 3.11.1 of the VCS Standard;
- Select samples of data from on-the-ground measurements for validation and verification in order to meet a reasonable level of assurance and to meet the materiality requirements of the project, as required by Section 5.1.3 of the VCS Standard;
- Perform a risk-based review of the project area to ensure that the project is in conformance the eligibility requirements of the VCS rules and the applicability conditions of the methodology; and
- Perform a risk-based review of the project area to ensure that the project conforms to all other requirements of the VCS rules and the methodology

In fulfilment of the above objectives, the verification team performed an on-site inspection of the project area on the dates 27 February – 4 March 2017. The main activities undertaken by the verification team were as follows:

- Interviewed project personnel (see Section 2.3 of this report) to gather information regarding the design of the project;
- Interviewed project personnel (see Section 2.3 of this report) for the purpose of seeking evidence of conformance with respect to the specific requirements of the methodology and the VCS rules;
- Interviewed residents of several communities (see Section 2.3 above) located in the immediate vicinity of the project area to confirm the claims of the project proponents with respect to the extent of community engagement, the determination of the baseline scenario and the demonstration of additionality.
- Perform ground trothing for assessment of remote sensing imagery

2.5 Resolution of Findings

Any potential or actual material discrepancies identified during the assessment process were resolved through the issuance of findings. The types of findings issued by SCS were characterized as follows:

Non-Conformity Report (NCR): An NCR signified a material discrepancy with respect to a specific requirement. This type of finding could only be closed upon receipt by SCS of evidence indicating that the identified discrepancy had been corrected. A total of 12 NCR's were issued during the assessment. Resolution of all open NCRs was a prerequisite for issuance of a validation or verification statement.

New Information Request (NIR): An NIR signified a need for supplementary information in order to determine whether a material discrepancy existed with respect to a specific requirement. Receipt of an NIR did not necessarily indicate that the project was not in compliance with a specific requirement. A total of 7 NIR's were issued during the assessment. However, resolution of all open NIRs was a prerequisite for issuance of a validation or verification statement.

Opportunity for Improvement (OFI): An OFI indicated an area that should be monitored or ideally, improved upon. OFI's were considered to be an indication of something that could become a non-conformity if not given proper attention, and were sometimes issued in the case that a non-material discrepancy was identified. No OFI's were issued during this assessment. OFIs were considered to be closed upon issuance.

All findings (19) issued by the verification team during the validation and verification process have been closed. In accordance with Section 5.3.6 of the VCS Standard, all findings issued during the validation and verification process, and the impetus for their closure, are described in Appendix A of this report.

2.5.1 Forward Action Requests

No forward action requests were issued during the validation and verification.

3 VALIDATION FINDINGS

3.1 Project Details

The verification team confirmed that the PD provides a detailed description of the project design that is both accurate and complete, as it conforms to Section 3 of both the VCS Standard and the AFOLU Requirements. Moreover, it is the opinion of the verification team that the PD provides a comprehensive understanding of the nature of the project.

3.1.1 Project type, technologies and measures implemented, and eligibility of the project

The project exists under sectoral scope 14 (AFOLU). As described in Section 4.2 of the VCS AFOLU Requirements, the project falls under the category of Reduced Emissions from Deforestation and Degradation (REDD).

3.1.2 Project proponent and other entities involved in the project

The verification team reviewed the project documentation, the VCS website and contracts between community members and confirmed that the project proponent is indeed COMACO as stated in the PD.

In addition, the verification team is under contract with the World Bank who is also participating in the project, mainly as a funding entity. Finally, the verification team held meetings with Unique Forestry and Land Use during the site visit and confirmed that UNIQUE are the technical consultants with the project.

3.1.3 Project Start Date

The verification team reviewed the start date (1 July 2012) evidence /28-29/ provided by COMACO and confirmed that consultations regarding the VCS project with local communities. In addition, the verification team held interviews with local community members who corroborated such claims.

3.1.4 Project crediting period

The verification team reviewed the PD and confirmed that the project crediting period is accurately listed and has a start date consistent with the start date of the project and covers 20 years (1 July 2012 – 30 June 2032), as is allowed by the VCS rules.

3.1.5 Project scale and estimated GHG emission reductions or removals

The verification team reviewed the PD and confirmed that it appropriately list the project as “project” scale based on the validated ex-ante estimates of GHG emission reductions. The average reductions are under 300,000 tons annually.

3.1.6 Project location

The verification team reviewed the KML imagery and performed on site ground truthing to confirm that the project location stretches across nine chiefdoms in five districts in the Eastern Province of Zambia, namely: Chikomeni, Chikuwe, Jumbe, Luembe, Magodi, Mwasemphangwe, Mwape, Nyamphande, and Zumwanda as stated in the PD.

3.1.7 Conditions prior to project initiation

The verification team reviewed the project baseline evidence /3-4/ and /30-32/ and held interviews with officials and community members on site and confirmed that conditions prior to project initiation are appropriately and accurately described in the PD.

3.1.8 Project compliance with applicable laws, statutes and other regulatory frameworks

The verification team reviewed the PD and confirmed that it includes an exhaustive list of laws and regulations applicable to the project activities. While on site, the verification team held interviews with government officials who confirmed that the list is inclusive of all rules governing the project activities. Finally, the verification team has a history of working in Zambia and agree that the claims in the PD are accurate and that the project activities are not in violation of any laws, statutes or other regulatory frameworks.

3.1.9 Ownership and other programs

3.1.9.1 Project ownership

As stated above in the project location section of this report, the project is located across nine chiefdoms in five districts in the Eastern Province of Zambia, namely: Chikomeni, Chikuwe, Jumbe, Luembe, Magodi, Mwasemphangwe, Mwape, Nyamphande, and Zumwanda. During the assessment the verification team reviewed Zambian law regarding land ownership and land tenure /16-17/ and confirmed project claims about ownership within the project area. In addition, during the site visit, the verification team met with government officials and headmen and community members for the chiefdoms included in the project and confirmed that the carbon agreements with COMACO in place were entered into voluntarily. Based on the verification sample, the verification team has a reasonable level of assurance that the ownership rights are in place and meet the requirements of the VCS rules.

3.1.9.2 Emissions trading programs and other binding limits

As the project has not reduced GHG emissions from activities that are included in an emissions trading program or any other mechanism that includes GHG allowance trading, this section is not applicable. It is the verification team's understanding that emissions from unplanned deforestation and improved land management activities in Zambia are not included in any emissions trading programs.

3.1.9.3 Other forms of environmental credit sought or received

As the project has not sought or received other forms of environmental credit, this section is not applicable.

3.1.9.4 Rejection by other GHG programs

As the project has not been rejected by any other GHG programs, this section is not applicable.

3.1.10 Additional information relevant to the project

3.1.10.1 Eligibility for grouped projects

The verification team reviewed the PD and confirmed the project is appropriately listed as a grouped project. In addition, the verification team reviewed the eligibility criteria described in section 1.13 of the PD and confirmed the eligibility criteria are adequate for the inclusion of new project activity instances.

3.1.10.2 Leakage management for AFOLU projects

Prior to the site visit, the verification team reviewed the leakage management section of the PD. While on site, the verification team visited leakage management areas and held interviews with both project personnel and community members who confirmed the claims in the PD regarding leakage management.

3.1.10.3 Commercially sensitive information

As no commercially sensitive was excluded from the PD, this section is not applicable.

3.1.10.4 Further information

As no further information was included in the PD nor discovered during the validation assessment, this section is not applicable.

In closing, through a combination of document review and observations on site, the verification team was able to confirm the project conforms to all of the VCS rules regarding additional information relevant to the

project and the project description is accurate, complete, and provides an understanding of the nature of the project.

3.2 Participation under Other GHG Programs

As the project is not participating under other GHG programs, this section is not applicable.

3.3 Application of Methodology

3.3.1 Title and Reference

The project has applied the following:

- VM0015 - Methodology for Avoided Unplanned Deforestation version, 1.1
- VM0017 - Adoption of Sustainable Agricultural Land Management, version 1.0
- CDM Tool for testing significance of GHG emissions in A/R CDM project activities, version 01
- CDM Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities, version 01
- VCS VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities, version 3.0
- CDM Tool for the identification of degraded or degrading lands for consideration in implementing CDM A/R project activities, version 01
- CDM Tool: Estimation of direct nitrous oxide emission from nitrogen fertilization, version 01
- CDM Tool: Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities", version 04.2
- Tool: Estimation of emissions from the use of fossil fuels in agricultural management (Section VI.2 of the SALM methodology)

3.3.2 Applicability

VM0015 v1.1	Methodology for Avoided Unplanned Deforestation
Condition	Steps taken to assess compliance

a)	Confirmation that baseline activities, as described in Section 3.3.3 below, constitute unplanned deforestation
b)	Confirmation that, as baseline activities constitute deforestation and project activities constitute forest protection; project activities are included within scope of activities as set out in Table 1 of methodology
c)	Confirmation that project area is limited to area defined as “forest” at project start date (as described further in Section 3.2.3.1.2 below
d)	Confirmation that project area is limited to area defined as “forest” 10 years prior to project start date (as described further in Section 3.2.3.1.2 below)
e)	On-site observations of absence of peat soils within project area
VT0001 v3.0	Tool for the Demonstration and Assessment of Additionality in VCS AFOLU Project Activities
1)	AFOLU activities the same or similar to the proposed project activity on the land within the proposed project boundary performed with or without being registered as the VCS AFOLU project shall not lead to violation of any applicable law even if the law is not enforced The verification team met with members of the Zambian government who confirmed that no activities, the same or similar to the proposed project activity, that exist within the project area are in violation of any applicable law. In addition, the verification team reviewed the suite of laws applicable to the project area and were unable to find any existence of laws that prohibit such activities
2)	The use of this tool to determine additionality requires the baseline methodology to provide for a stepwise approach justifying the determination of the most plausible baseline scenario. Project proponent(s) proposing new baseline methodologies shall ensure consistency between the determination of a baseline scenario and the determination of additionality of a project activity The verification team reviewed the PD and confirmed that it provides a stepwise approach justifying the determination of the most plausible baseline scenario
VM0017 v.0	Methodology for the Adoption of Sustainable Agricultural Land Management
a)	Land is either cropland or grassland at the start of the project The verification team reviewed the aerial imagery from the project start date and visited farms lands and confirmed that the project areas were indeed cropland at the beginning of the project

b)	The project does not occur on wetlands The verification team reviewed the aerial imagery from the project start date and visited farms lands while on site and confirmed that the project areas were indeed cropland at the beginning of the project
c)	The land is degraded and will continue to be degraded or continue to degrade The verification tea reviewed the literature provided by project personnel and confirmed that it shows the region of the project area is replete with lands that are degraded and will continue to degrade. The verification team confirmed that the classification of degraded lands follow the requirements of the tool
d)	The area of land under cultivation in the region is constant or increasing in absence of the project The verification team reviewed the remote sensing imagery /77/ and the literature /33/ provided by project personnel and confirmed that the area under cultivation is increasing in the absence of the project
e)	Forest land, as defined by the national CDM forest definition, in the region is constant or decreasing over time See item d) above
f)	There must be studies (for example: scientific journals, university theses, local research studies or work carried out by the project proponent) that demonstrate that the use of the Roth-C model is appropriate for: (a) the IPCC climatic regions of 2006 IPCC AFOLU Guidelines, or (b) the agro-ecological zone (AEZ) in which the project is situated The verification team reviewed the literature /34/ provided by project personnel and confirmed the project is location in an agro-ecological zone that has been validated for the use of the ROTH C model.

In the conclusion, the verification team was able to confirm that the use all of the tools and methodologies employed by project personnel is appropriate and all applicability conditions have been met.

3.3.3 Project Boundary

Overall, the project boundary and selected sources, sinks and reservoirs are justified for the project. A further discussion of this is given below.

3.3.3.1 Spatial boundaries

3.3.3.1.1 Reference Region

It is the understanding of the verification team that, given that a jurisdictional REDD program has not yet been fully developed for Zambia, no sub-national or national baselines exist. Moreover, Zambia (or a subset of it) has not been divided into spatial units for deforestation baseline establishment.

During meetings as a part of the April 2017 site inspection, the verification team undertook a detailed set of analyses, with the assistance of project personnel, to confirm that the reference region, as described

by the reference region shapefile and maps included in the PD, is fully compliant with each requirement of the methodology, as discussed in detail below.

Requirement	Step(s) taken to assess compliance
The reference region should contain strata with agents, drivers and patterns of deforestation that in the 10-15 year period prior to the start date of the proposed AUD project activity are similar to those expected to exist within the project area	Confirmed, through interviews with project personnel and site inspections (including interviews with residents of areas near project area), that main agent of historic unplanned deforestation (termed "small holder agriculture and sometimes charcoal production" in PD) in reference region are similar to those expected to exist within project area
The reference region... must be larger than the project area and include the project area	Recalculated reference region area (1,444,088 ha) and project area (116,629 ha) from tiff in ArcGIS to confirm that reference region is over 10 times the size of project area; observation of reference region and project area shapefiles to confirm that reference region includes project area
Deforestation agent's groups (as identified in Step 3 Part 2 of the PD) expected to encroach into the project area must exist or have existed and caused deforestation elsewhere in the reference region during the historical reference period.	Confirmed, through interviews with project personnel and site inspections (including interviews with residents of areas near project area), that main agent of historic unplanned deforestation in reference region are similar to those expected to exist within project area
If new or improved infrastructure (such as roads, railroads, bridges, hydroelectric reservoirs, etc.) is expected to develop near or inside the project area, the reference region must include a stratum where such infrastructure was built in the past and where the impact on forest cover was similar to the one expected from the new or improved infrastructure in the project area	Confirmed, through site inspections and conversations with project personnel and individuals within and adjacent to project area, that new or improved infrastructure is not expected to develop near or inside project area (project area is mainly bisected by dirt roads, which are not expected to be developed)
Any spatial deforestation driver considered relevant according to the analysis of Step 3 Part 2 of the PD (e.g. resettlement programs, mining and oil concessions, etc.) must exist or have existed elsewhere in the reference region. The historical impact of such drivers must have been similar	Confirmed, through site inspections, and review of PD, that main drivers considered relevant according to analysis of Step 3 Part 2 of the PD have existed in reference region, with similar impact as those expected in project area

Requirement	Step(s) taken to assess compliance
to the one expected in the project area.	
Forest/vegetation classes: At least 90% of the project area must have forest classes or vegetation types that exist in at least 90% of the rest of the reference region	During onsite observations, the verification team confirmed the claims in the PD that all forest types that exist in the project area also exist in the Reference region
Elevation: At least 90% of the project area must be within the elevation range of at least 90% of the rest of the reference region	Observations during site inspections to confirm that, given that topography of entire region in which reference region is located is homogeneous, the risk of non-compliance is miniscule
Slope: Average slope of at least 90% of the project area shall be within + 10% of the average slope of at least 90% of the rest of the reference region	Same as for elevation
Legal status of the land: The legal status of the land (private, forest concession, conservation concession, etc.) in the baseline case within the project area must exist elsewhere in the reference region. If the legal status of the project area is a unique case, demonstrate that legal status is not biasing the baseline of the project area (e.g. by demonstrating that access to the land by deforestation agents is similar to other areas with a different legal status)	While on site, the verification team interviewed government officials who confirmed that the project area parcels are indeed under the ownership of the respective villages through the processes described in Zambian law /5/, /16-17/. In addition, this is common practice for the area comprising the reference region. Interviews with village councils also support this claim.
The land-tenure system prevalent in the project area in the baseline case is found elsewhere in the reference region.	See above
Land use: Current and projected classes of land-use in the project area are found elsewhere in the reference region	Review of remotely sensed imagery to confirm that forest classes in project area also exist elsewhere in reference region, as described in more detail in Section 3.3.3below
Enforced policies and regulations: The project area shall be governed by the	Through interviews with village councils and local officials, along with a review of Zambian law /5/, /16-17/, the

Requirement	Step(s) taken to assess compliance
same policies, legislation and regulations that apply elsewhere in the reference region	verification team was able to confirm that lands in the project area, as well as lands across the reference region are governed by village by-laws

3.3.3.1.1 Project Area

The verification team reviewed the project area shapefiles /76/ to confirm that all requirements of the methodology were complied with, as described below.

Requirement	Step(s) taken to assess compliance
The project area is the area or areas of land under the control of the project proponent on which the project proponent will undertake the project activities	Confirmed that, as described in Section 3.1.9.1 above, project proponents have control of all land within project area
At the project start date, the project area must include only forest land.	Confirmed, through independent GIS analysis, that project area includes only land classified as forest, as of project start date, by land classification analysis discussed in Section 3.3.3 below; confirmed, through review of Step 1.1.2, Part 1 of the PD and conversations with project personnel, that land classification analysis was such that pixels classified as deforested were never classified as forest at a later date, and therefore, confirmation that project area included only forest as of project start date automatically constitutes confirmation that project area included only forest as of 10 years prior to project start date.
Any area affected by planned deforestation due to the construction of planned infrastructure (except if such planned infrastructure is a project activity) must be excluded from the project area	Confirmed, through site inspections and conversations with project personnel and individuals within and adjacent to project area, that new or improved infrastructure is not expected to develop near or inside project area (project area is mainly bisected by dirt roads, which are not expected to be developed). It should be noted that some paved roads border the Project Area; however, this is used mainly for areas near the Project Area and is not likely to change
The project area must include areas projected to be deforested in the baseline case	Confirmed that, as discussed in the baseline deforestation analysis described in Section 3.3.4 below, the project area includes areas projected to be deforested in baseline case
The boundary of the project area shall	Review of PD to confirm that delineation of project boundary

Requirement	Step(s) taken to assess compliance
be defined unambiguously as follows	therein is consistent with village boundaries (Project Area) shapefile /76/
Name (or names, as appropriate) of the project area	Confirmed that project area is named "COMACO Landscape Management Project)" in PD
Physical boundary of each discrete area of land included in the project area (using appropriate GIS software formats)	Reviewed village boundaries (project area) shapefile/76/ to confirm that it contains an accurate representation of this information
Description of current land-tenure and ownership, including any legal arrangement related to land ownership and the AUD project activity	Confirmed that Section 1.1 of the PD contains this information
List of the project participants and brief description of their roles in the proposed AUD project activity	Confirmed that Sections 1.4 and 1.5 of PD contain this information

3.3.3.1.2 Leakage Belt

The leakage belt is shown in Figure 9 of the PD. As documented in Section 1.1.3 of the PD and methodological annex, a mobility analysis (Option II) was undertaken to delineate the leakage belt. The verification team reviewed the leakage_belt tiff file /77/ to confirm that all requirements of the methodology were complied with, as described below.

Requirement	Step(s) taken to assess compliance
Using historical data, expert opinion, participative rural appraisal (PRA), literature and/or other verifiable sources of information list all relevant criteria that facilitate (at least one criterion) and constrain (at least one criterion) the mobility of the main deforestation agents identified in Step 3 part 2 of the PD. The overall suitability of the land for the activities of deforestation agents shall be considered	Confirmed that expert opinion was appropriately used to list relevant criteria that facilitate (proximity and deforestation probability) and constrain (distance and slope) mobility of main deforestation agent (small holder agriculture) identified in Step 3 Part 2 of the PD; facilitating and constraining factors are consistent with verification team's general knowledge of factors that facilitate and constrain deforestation, both in Zambia and elsewhere
For each criterion, generate a map	Carried out observations during site inspections to affirm that

Requirement	Step(s) taken to assess compliance
using a GIS	all of project area is readily accessible for agricultural purposes; reviewed village boundary (project area) shapefiles showing roads and settlements centers for each criterion to confirm that they are reasonable and consistent with on-site observations (i.e., they depict roads traveled, and settlements visited, by verification team during site inspections); confirmed, through visual inspection, that map of each criterion in Figure 7 of the PD appeared to be appropriately produced in manner described in Section 1.1.3 of the e PD; confirmed the existence of the required GIS maps, through observation of maps showing historical deforestation(see Section 3.3.3 below for discussion of these maps), as stated in PD. The resulting maps were confirmed through observations of the creation of these maps reproduced by project personnel during the site visit
Using multi-criteria analysis, determine the boundary of the leakage belt. Justify any assumption and weight assigned to the individual criteria	Used professional judgment to confirm that approach taken is a straightforward and defensible approach; visually observed leakage_belt tiff file /77/ in comparison to input criteria and associated rationales to confirm that procedure was carried out correctly. In addition, interviews with village councils, while on site, further confirmed these assumptions
Methods used to perform the analysis shall be transparently documented and presented to VCS verifiers at the validation	Reviewed Step 1.1.3, Part 2 of the PD to confirm that analysis was transparently documented; assessed inputs, methodological steps and outputs to confirm that procedure was implemented as reported.
Consideration of other VCS AFOLU projects	Confirmed, through review of VCS Project Database (http://www.vcsprojectdatabase.org/ ; most recently accessed 20 April, 2017) that leakage belt does not include any part of area of any other VCS AFOLU projects and therefore these requirements are not applicable

3.3.3.1.3 Leakage management areas

The leakage management areas/participating villages, as shown in Figure 2 of the PD (and thus “clearly defined using the common projection and GIS software formats used in the project”, per Step 1.1.4 of Part 2 of the methodology) are those areas that would be located within the project area or leakage belt except that they were deforested as of the project start date. The plans for leakage management are clearly stated in Section 1.13 of the PD.

3.3.3.1.4 Forest

The verification team carried out the activities described below to ensure that all requirements of Step 1.1.5, Part 2 of the methodology were complied with.

Requirement	Step(s) taken to assess compliance
To define the boundary of the forest, specify... The definition of forest that will be used for measuring deforestation during the project crediting period (see appendix 1 for criteria to define "forest")	Reviewed Step 1.1.5 of Part 2 of the PD to confirm that a definition of "forest" is set out as "an area of at least 0.5 ha with at least 10% crown cover of trees able to reach 5 m"; confirmed that above thresholds are consistent with those stated on the REDD.unfccc website (http://redd.unfccc.int/files/2016_submission_frel_zambia.pdf ; accessed 20 April 2017)
The Minimum Mapping Unit (MMU). The MMU size of the LULC maps created using RS imagery shall not be more than one hectare irrespective of forest definition	Reviewed Step 1.1.5, Part 2 of the PD to confirm that Minimum Mapping Unit is not more than one hectare
An initial Forest Cover Benchmark Map is required to report only gross deforestation going forward. It should depict the locations where forest land exists at the project start date	Reviewed Figure 11 of the PD to confirm that a Forest Cover Benchmark Map is reported in PD
[rules pertaining to cloud cover]	Confirmed, through steps described in Section 3.3.4 below, that all areas covered by clouds at any one point in time were masked out as required

3.3.3.2 Temporal Boundaries

The project complies with all requirements of Step 1.2, Part 2 of the methodology regarding temporal boundaries, as discussed below.

Requirement	Steps taken to assess compliance
The starting date should not be more than 10-15 years in the past and the end date as close as possible to the project start date	Reviewed description of historical reference in Step 1.2.1, Part 2 of the PD; confirmed that image start date (2002) is less than 15 years prior to project start date and end date (2013) is immediately prior to project crediting start date
The length of the project crediting period shall be established as set out on the most recent version of the VCS	See Section 3.1.4 above

Requirement	Steps taken to assess compliance
Standard	
The fixed baseline period shall be 10 years. The starting and end dates must be defined	Reviewed description in Step 1.2.2, Part 2 of the PD; confirmed that start and end dates were provided and that duration was 10 years
The minimum duration of a monitoring period is one year and the maximum duration is one fixed baseline period	Reviewed descriptions of planned monitoring periods in Section 1.2.4 of the PD to confirm that they are consistent with requirements

3.3.3.3 Carbon Pools

The steps taken to assess whether each carbon pool has been selected (or not selected) correctly in accordance with the methodology are described below.

Carbon Pools	Included/Excluded	Steps(s) Taken to Assess Compliance
Above Ground	Tree: Included	Checks against Table 3 of methodology to confirm that pool is required to be included
	Non-tree: Excluded	Checks against Table 3 of methodology to confirm that pool “can be excluded only when its exclusion does not lead to a significant over-estimation of the net anthropogenic GHG emission reductions of the AUD project activity “; observation, during site inspections, that common land uses do not involve perennial non-tree crops; assessment of analysis of post-deforestation land use in Step 1.3, Part 1 of the PD, which supports this observation; application of professional judgment to determine that, therefore, pool will be larger in with-project case and can be conservatively omitted
Below Ground	Included	Checks against Table 3 of methodology to confirm that pool is allowed to be included
Deadwood	Excluded	Checks against Table 3 of methodology to confirm that pool can be optionally excluded.
Harvested Wood Products	Excluded	Checks against Table 3 of methodology to confirm that pool must be included when significant; assessment of significance analysis as reported in Section 3.2.6 below
Litter	Excluded	Checks against Table 3 of methodology to confirm that pool “can be excluded only when its exclusion does not lead to a significant over-estimation of the net

		anthropogenic GHG emission reductions of the AUD project activity “; application of professional judgment to confirm that pool will typically be greater in natural forest settings than in post-deforestation agricultural settings
Soil Organic Carbon	Included	Checks against Table 3 of methodology to confirm that pool is recommended by methodology, when forests are converted to cropland, carbon stock change can be significant.

3.3.3.4 Sources of emissions of greenhouse gases (GHG's)

The steps taken to assess whether each GHG emission source has been selected (or not selected) correctly in accordance with the methodology are described below.

Source		Gas	Included?	Steps(s) Taken to Assess Compliance
Baseline Scenario	Biomass Burning	CO ₂	Excluded	Checks against Table 4 of methodology to confirm that source is required to be excluded
		CH ₄	Included	Checks against Table 4 of methodology to confirm that source “can be excluded only when its exclusion does not lead to a significant over-estimation of the net anthropogenic GHE [sic] emission reductions of the AUD project activity”; review of PD to confirm that burning is not a project activity; interviews with residents of areas near project area to confirm that burning is an integral part of the slash and burn agricultural activities in the baseline
		N ₂ O	Excluded	Checks against Table 4 of methodology to confirm that source is required to be excluded
	Livestock Emissions	CO ₂	Excluded	Checks against Table 4 of methodology to confirm that source “can be excluded only when its exclusion does not lead to a significant over-estimation of the net anthropogenic GHE [sic] emission reductions of the AUD project activity”; review of PD to confirm that project and leakage management activities are not likely to impact density of livestock and, therefore, exclusion of source will not lead to significant over-estimation (or any other significant impact) on net emission reductions
		CH ₄	Excluded	
		N ₂ O	Excluded	

Source		Gas	Included?	Steps(s) Taken to Assess Compliance
Project Scenario	Biomass Burning	CO ₂	Excluded	Checks against Table 4 of methodology to confirm that source is required to be excluded
		CH ₄	Included	Review of Table 4 of methodology to confirm that source “can be excluded only when its exclusion does not lead to a significant over-estimation of the net anthropogenic GHE [sic] emission reductions of the AUD project activity” and subsequent text which states that “non-CO ₂ emissions from forest fires must be counted in the project scenario when they are significant”; understanding that this requires inclusion of this source when CH ₄ emissions from forest fires are significant
		N ₂ O	Excluded	Cross-check against Table 4 of methodology to confirm that source is required to be excluded

3.3.4 Baseline Scenario

Overall, the identified baseline scenario is justified. The verification team’s high-level assessment of the baseline scenario is included in the table below.

Item assessed	Step(s) taken to assess item
Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable	- Confirmed that data on historical deforestation rates, as used in identification of baseline scenario, is derived from high-quality land classification analysis and that processing to extract deforestation rates were conducted correctly - Confirmed, through interviews with project personnel who produced analysis documented in Step 3, Part 2 of the PD, that said personnel have a wealth of experience, both regionally and internationally, assessing drivers and key underlying causes of deforestation
Documentary evidence used in determining the baseline scenario is relevant, and correctly quoted and interpreted in the project description	- Reviewed Step 3, Part 2 of the PD to confirm that relevant documentation is cited - Interviews with project personnel confirmed that COMACO has a wealth of experience in the region, further justifying the accurate

Item assessed	Step(s) taken to assess item
	interpretation of the available documentation in the PD
Relevant national and/or sectoral policies and circumstances have been considered and are listed in the project description	Reviewed Section 1.11 of the PD to confirm that relevant policies pertaining to forest protection are included
The procedures for identifying the baseline scenario have been correctly followed and the identified scenario reasonably represents what would have occurred in the absence of the project	- Assessed procedures against all applicable methodology requirements, as described below - On-the-ground observations of spreading deforestation in immediate vicinity of project area as evidence that area observed on-the-ground by verification team was deforested within historical reference period, which together confirm that project area is under a real threat of deforestation and that identified baseline scenario reasonably represents what would have occurred in absence of project

The specific steps taken to validate the baseline scenario against each requirement of steps 2 and 3 of Part 2 of the methodology are stated below.

Step	Step(s) taken to assess compliance
2.1	- Confirmed, through interviews with project personnel and observation of remotely sourced imagery, that 30-meter medium-resolution images (complying with the methodology resolution requirements) were appropriately acquired and used - Confirmed, through assessment of accuracy assessment (see description under Step 2.5 below), that high-resolution data were appropriately accessed and used - Reviewed Table 5 of the PD to confirm that it contains all information required by methodology
2.2	- Reviewed Table 6 of the PD to confirm the following: - LU/LC classes include "Forest" and "Non-Forest" - Criteria and thresholds complying with Step 2.2 of the methodology are given for each LU/LC class - Table 6 contains all information required by methodology - Carried out following activities to confirm that carbon stocks can reasonably be

Step	Step(s) taken to assess compliance
	assumed to not be degrading in baseline scenario (and, therefore, a “sequence of maps” is not required): - o Reviewed analysis presented in Step 2.3, Part 1 of the PD and supporting Excel workbook and confirmed it appeared reasonable - o Carried out following checks on assumptions listed in the PD: ▪ Interviewed local community members as to the sequence of deforestation in the reference region ▪ Interviewed local officials as to the land use classes in the reference region ▪ Observed the process for determining forest classes using remote sensing imagery. In addition, observing current forest conditions in the project area and interviewed local community members to confirm the current trend in carbon stocks of forest classes as described in the PD.
2.3	• Confirmed that Tables 7a and 7b of methodology were appropriately filled out and included in the PD
2.4.1-2.4.3	• Reviewed Step 2.5 of the PD to confirm that steps are well-described and all steps listed comply with methodology requirements • Interviewed project personnel responsible for Steps to gain additional assurance that steps were carried out as described • Reviewed classification in the land class training shapefile to confirm that it constitutes sources for maps (a)-(d) in Step 2.4.3 of the methodology • Confirmed that Figures 12-14 in Step 2.5, Part 2 of the PD constitute required maps (a)-(d) in Step 2.4.3 of the methodology • Reviewed Table C in Step 2.5, Part 2 of the PD to confirm it is a “Land-Use and Land-Cover Change Matrix”
2.5	• Reviewed description of accuracy assessment in Step 2.6, Part 2 of the PD to confirm that described process is compliant with methodology • Description of the accuracy assessment provided in Step 2.6, Part 2 of the PD is consistent with the processes observed during the office portions of the site visit. The verification team confirmed that these processes are consistent with best practices and the general understanding of the verification team.

Step	Step(s) taken to assess compliance
	- Carried out following assessment of KML file with coordinates of accuracy assessment points and associated assessment results: - Re-calculated accuracy assessment results to confirm that accuracy of map was over 90% - While on site, spot checked a sample of 20 previously sampled locations and confirmed that all random selections were consistent with the original assessment.
2.6	Reviewed Step 2.5 , Part 2 of the PD to confirm it meets all requirements for a methodology annex
3.1	- Reviewed Step 3, Part 2 of the PD to confirm that main group of deforestation, and its relative importance, is described in manner required by methodology, with items (a)-(d) fulfilled in particular - Reviewed Step 3, Part 2 of the PD to confirm that description is reasonable - Interviewed local community members and confirmed the description presented in Step 3.1 of the PD was consistent with local knowledge.
3.2	- Reviewed Step 3.2, Part 2 of the PD to confirm that information required by methodology is provided in a high degree of detail - Reviewed Step 3.2, Part 2 of the to confirm that description is reasonable
3.3	- Reviewed Steps 3.2.1 and 3.2.2, Part 2 of the PD to confirm that five key underlying causes are listed with all required information in criteria (2)-(4) in methodology, as confirmed through interviews with local community members, as well as the knowledge of the verification team regarding subsistence agriculture in east Africa - Reviewed Steps 3.2.1 and 3.2.2, Part 2 of the PD to confirm that description is reasonable
3.4	- Reviewed Step 3.3, Part 2 of the PD to confirm that information requirements of methodology have been complied with - Confirmation, through conversations with project personnel, that personnel are “local experts” for purposes of discussing this topic - Corroboration of Steps 3.3 and 3.4, Part 2 of the PD with local residents, during site inspections in August 2014, who confirmed that, in several villages, people have had issues with non-village members clearing land for agriculture

Step	Step(s) taken to assess compliance
	Assessed legality and prevalence of baseline deforestation activities as described in Section 3.2.5.2 below
3.5	- Reviewed Step 3.5, Part 2 of the PD to confirm that information requirements of methodology have been complied with - Reviewed Step 3.5, Part 2 of the PD to confirm that weight of evidence (especially historical deforestation rates presented in Table B) conclusively indicates that overall trend in future baseline deforestation rates will increase (see discussion for Step 4.1, Part 2, in Section 3.2.6.1 below, for more details)

3.3.5 Additionality

Overall, additionality is justified for the project. In accordance with the methodology, and as well-documented within Step 3 Part 1 of the PD, Version 3.0 (the most recent version) of the VCS-approved “Tool for the Demonstration and Assessment of Additionality in VCS AFOLU Project Activities” has been used to demonstrate additionality. The verification team’s findings regarding the application of this tool are as follows.

3.3.5.1 Sub-Step 1a

The identified land use scenarios identified in sub-Step 1a of the PD include those scenarios required by VT0001. The verification team’s findings regarding the identified scenarios are as follows:

Scenario	Audit Findings
1	As the continuation of the pre-project land use is required by the VT0001 Tool, the verification team deems this alternative land-use scenario as credible
2	Through interviews with local community members the verification team was able to confirm that the rationale provided in the additionality section is accurate. Past funding has resulted in the creation of community based forest management projects, therefore this scenario is credible

3.3.5.2 Sub-Step 1b

The verification team reviewed the 2015 Forest Act and confirmed that scenario 2 described in the PD is allowed by law and therefore meets the requirements of the VT0001 Tool. The continuation of pre-project land-use, however, does include practices which are not in compliance with applicable mandatory laws and regulations.

While on site, the verification team reviewed a suite of aerial imagery, as well as visiting areas of the project area and confirmed that this regulation was not being enforced across one hundred percent of the

smallest administrative unit that are the 'chiefdoms.' Therefore the verification team agrees that the project is in compliance with sub-Step 1b of the VT0001 Tool.

3.3.5.3 Sub-Step 3a

The identified land use scenarios identified and justified in sub-step 1a and 1b of the PD include those scenarios required by VT0001. As required by the VT0001 Tool, the project chose to perform a barrier analysis to determine the most likely baseline scenario and that the proposed project activities are indeed additional. The verification team's findings regarding the identified scenarios are as follows:

Barriers	Audit Findings
Investment barriers	Interviews with project personnel, as well as local officials and confirmed that high costs associated with the training and inputs necessary to implement the project activities are not feasible given the low value of the forests comprising the project area. Local officials orally attested that government funding is not present for such activities without some return on investment and that the main profitable activities consist by forest conversion. Moreover, all of the community members interviewed during the site visit confirmed that the only way to implement the proposed project activities is through upfront funding, which is currently only available from the project grant funding as a REDD project
Institutional Barriers	The verification team reviewed and confirmed the accuracy calculations of historical deforestation rates and confirmed the claims in the PD regarding the deforestation and lack of enforcement in the project area. In addition, based on community interviews, as well as the experience of the verification team working in similar regions with similar deforestation agents, the verification team confirmed a lack of enforcement to stop deforestation and therefore allows for the continuation of the current slash and burn agricultural practices, therefore acting as a barrier to the implementation of project activities
Barriers relating to land tenure, ownership, inheritance and property rights	The verification team held interviews with local officials, chiefdom headmen, and community members who confirmed claims in the PD that given the current land tenure conditions, there are no barriers to continued expansion of farmland and continued deforestation

3.3.5.4 Sub-Step 3b

As all of the barriers mentioned above are also barriers from moving away from the continued land use practices, the identified barriers would not prevent this alternative scenario and therefore is in compliance with the VT0001 Tool.

3.3.5.5 Step 4 Common Practice

The verification team has a history of working in Zambia and agree with claims in the PD that only one REDD project is currently taking place in the country. Given the scale of deforestation in Zambia and the absence of other projects the project activities are not common practice in the region.

In conclusion, the verification team confirmed that the project faces the same challenges for implementing both project activities. Based on the information provided and the assessment activities performed by the verification team, the verification team confirmed that the project is truly additional.

3.3.6 Quantification of GHG Emission Reductions and Removals

3.3.6.1 Baseline Emissions

The specific steps taken to assess the calculation of baseline emissions against each requirement of Steps 4-9 of Part 2 of the methodology are stated below. The same methods were employed for the SALM baseline emissions.

Step	Step(s) taken to assess compliance
4.1	- Confirmed, as described in section 3.1 of the PD that the stratification of the reference region was performed by highly skilled project personnel and was free from calculation error - Reviewed Table 13 and 15 of the PD to confirm that it meets all requirements of Table 8 of methodology - Confirmed, as discussed above, that Zambia (or a subset of it) has not adopted a VCS or UNFCCC registered (and VCS endorsed) baseline deforestation rate
4.1.1	- Whereas, the baseline deforestation analysis proposes scenarios, supported by local experts, the lack of data over the historical reference period does not allow for a statistically sound analysis of such data. It is the opinion of the audit team that choosing the historical average approach is not only appropriate, but also conservative. - Reviewed each .tiff file in GIS used to calculate land class areas and re-ran the analysis to ensure that the values used as inputs for the deforestation rates were consistent with what is provided in the PD.
4.1.2.1	Reviewed each .tiff file in GIS used to calculate land class areas of the reference region for the first ten years of the crediting period, as well as re-ran the analysis to ensure that the values used as inputs for the areas of deforestation were consistent with what is provided in the PD.
4.1.2.2	See Step 4.2.4 below

Step	Step(s) taken to assess compliance
4.1.2.3	Confirmed that Tables 9.a-9.c of methodology were correctly filled in within Tables 28-30 of the PD
4.2.1	- Confirmed, through visual observation of all factor maps in GIS system used by project personnel, that valid factor maps have been created using an empirical approach - Observed the replication of the process of creating each factor map using the inputs defined in section 3.1.2 of the of the PD
4.2.2	- Reviewed the process for the preparation of deforestation maps which included approved model LCM - Confirmed that modeling was carried out by appropriately qualified personnel - Confirmed, through review of Table 31 in 3.1.2 of the PD, that several risk maps were created - Reviewed Table 31 in section 3.1.2 of the PD, to confirm that it contains “A list of Factor Maps, including the maps used to produce them and the corresponding sources” (in required format).
4.2.3	Observed process of calculating FOM statistic and “net observed change” for selected risk map
4.2.4	- Observed the replication of baseline deforestation maps for each year of baseline period to confirm that baseline deforestation followed a realistic pattern - Confirmed that modeled deforestation in reference region was constrained to predicted quantities projected under section 3.1.2 - Confirmed that required maps were included in section 3.1.2 of the PD
5.1	Confirmed that calculation of values in Tables 11.a-11.c of methodology, as presented in the PD, was carried out correctly in calculation workbook
5.2	- Confirmed that “Method 1” was appropriately carried out - As only one “zone” or post deforestation class was present VM Table 12 and 13 were not applicable (see tables 32-34).
5.3	Confirmed that Step 5.3, Part 2 is not applicable, as “Method 2” was not implemented
6.1.2-	Confirmed that all calculations required by Steps 6.1.1-6.1.3, Part 2 were correctly

Step	Step(s) taken to assess compliance
6.1.3	carried out through thorough data checks of carbon stock change calculation workbook and confirmation that information was correctly transferred to the PD in tables required by methodology
6.2	- Confirmed that, baseline non-CO2 emissions from forest fires have been calculated correctly, using the appropriate equations from the methodology, as well as the appropriate IPCC default emission factors - The audit team confirmed that the values calculated in the carbon change workbooks were correctly transferred to the PD in tables required by methodology

3.3.6.2 Project Emissions

The specific steps taken to assess the calculation of project emissions against each requirement of Step 7 of Part 2 of the methodology are stated below. The same methods were employed for the SALM methodology.

Step	Step(s) taken to assess compliance
7.1.1	Confirmed that, as project activities do not include planned deforestation or planned degradation, ex-ante quantification is not required
7.1.2	Confirmation that an effectiveness index has been calculated, as reported in Table 52 of the PD
7.1.3	Confirmed that required calculations were correctly carried out through thorough data checks of the carbon stock change workbooks and confirmation that information was correctly transferred to Table 53 of the methodological annex of the PD.
7.2	Confirmed that the Non-CO2 emissions from forest fires have been accurately calculated in the carbon stock change workbook and correctly transferred to table 54 of the methodological annex of the PD.
7.3	Confirmed that required calculations were correctly carried out through thorough data checks of carbon stock change workbook and confirmation that information was correctly transferred to table 55 of the methodological annex of the PD required by methodology

3.3.6.3 Leakage

3.3.6.3.1 SALM Leakage

The verification team reviewed section 3.3.1 of the PD and confirmed that the assumptions included in the claim are consistent with requirements of section III.2 of the methodology. Whereas, the verification team has a reasonable level of assurance that the estimated leakage value is zero, that this will need to be confirmed during verification.

3.3.6.3.2 REDD

The specific steps taken to assess the calculation of leakage emissions against each requirement of Step 8 of Part 2 of the methodology are stated below.

Step	Step(s) taken to assess compliance
8.1.1, 8.1.2, 8.1.3	Confirmed that, as leakage management activities (as described in section 3.3.2 of the PD) do not include activities that are likely to cause decrease in carbon stocks or emissions due to use of grazing animals, ex-ante accounting of any emissions is not required
8.2, 8.3	- Confirmed that a displacement leakage factor, as presented in section 3.3.2 of the PD, has been calculated correctly - Confirmed that required calculations were correctly carried out through thorough data checks of carbon stock change workbook and confirmation that information was correctly transferred to table 56 of the PD.

3.3.6.4 Net GHG Emission Reductions

The specific steps taken to assess the calculation of leakage emissions against each requirement of step 9 of Part 2 of the methodology are stated below. In addition SALM reductions were confirmed against section III.3 of the methodology.

Step	Step(s) taken to assess compliance
9.1	All required pools have been included
9.2	Confirmed that required calculations were correctly carried out through thorough data checks of carbon stock change workbook and confirmation that information was correctly transferred to table 60 of the methodological annex of the PD.

3.3.6.5 Uncertainty

The verification team reviewed the PD and confirmed that for both REDD and SALM activities, the project is using default values, as allowed by the respective methodologies. In both cases the verification team confirmed that the most conservative values are being employed (i.e., the lower end of the range for the project scenario and the upper end of the range for the baseline scenario). The verification analysis is located under the cover of the SCS calculation workbooks. The uncertainty of soil carbon values will be re-assessed at verification.

3.3.6.6 Data Sources

The verification team confirmed that the majority of the source data used in the emission calculations were provided by the respective methodologies. Default values not provided by the methodology were assessed for conformance against section 3.1.5 and the applicable sections of section 4.1.7(1) are as follows:

Document	Default Value	Parameter
Jha and Hojjati, 1993 , and Ariga, 2013	120kg/ha	$BSN_{t=0}$ - synthetic fertilizer use
Kamelarczyk (2009)	89.5tCO ₂ e/ha	lcl - initial carbon stocks Fcl - final carbon stocks perportion
Minishiet al., 2010	60%	lcl _c – proportion of forest burned

The verification team reviewed the data and parameters available at validation in section 4.1 of the PD and also the data and parameters monitored in section 3.2 of the monitoring report and compared to the requirements of the respective methodologies and confirmed that all applicable parameters have been included in the PD and subsequent calculations. The following table shows a complete list of data and parameters and the validation activities employed for assessing conformance.

Parameter	Step(s) taken to validate suitability and eligibility of monitoring equipment and procedures
$BSN_{t=0}$	Reviewed the literature provided by project personnel and confirmed that 120kg/ha is extremely conservative when compared to the 69kg/ha stated by the literature

Parameter	Step(s) taken to validate suitability and eligibility of monitoring equipment and procedures
	Recalculated project baseline emissions and confirmed the appropriate values was utilized
$CROP_{i, t=0}$	- Confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Confirmed the validated data in the project MIS database was appropriately and accurately used as an input for the project ROTH C model
$Area_{i, t=0}$	- Confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Recalculated area based on a sample of farms in the project area and confirmed the areas to be calculated accurately or otherwise conservatively
$Areaburnt_{i, t=0}$	- Confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Recalculated non-CO₂e emissions and confirmed 100% of deforested areas were included in the area burnt calculations
$MB_{C, t=0}$	- Confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Confirmed that the biomass values to be appropriately sourced using IPCC default values as required
$PA_{C, Mc, t}$	- Confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Reviewed baseline survey data with community farmers and confirmed accuracy of the MIS data - Recalculated area based on a sample of farms in the project area and confirmed the areas to be calculated accurately or otherwise conservatively
$SOC_{C, Mc, t}$	- Assessed at verification - Confirmed t=0 SOC values used the appropriate default values taking the appropriate conservative measures required by the methodology

Parameter	Step(s) taken to validate suitability and eligibility of monitoring equipment and procedures
PP _{C, Mc,t}	- Reviewed the post-harvest survey data and confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Reviewed the project calculations and IPCC default values and confirmed the resulting values were calculated correctly
PR _{C, Mc,t}	- Reviewed the post-harvest survey data and confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Reviewed the project calculations and IPCC default values and confirmed the resulting values were calculated correctly - Interviewed project personnel responsible for collecting field data and confirmed that the data collection process was performed with great care at a high level of accuracy
PM _{C, Mc,t}	- Reviewed the post-harvest survey data and confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Reviewed the project calculations and IPCC default values and confirmed the resulting values were calculated correctly - Interviewed project personnel responsible for collecting field data and confirmed that the data collection process was performed with great care at a high level of accuracy
PCC _{C, Mc,t}	- Reviewed the post-harvest survey data and confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Interviewed project personnel responsible for collecting field data and confirmed that the data collection process was performed with great care at a high level of accuracy
TEMP _m	- Reviewed climate data provide by project personnel and confirmed that the values were appropriately utilized in the project ROTH C model - Reviewed invoices from the purchase of weather data and confirmed the chain of custody of the climate data

Parameter	Step(s) taken to validate suitability and eligibility of monitoring equipment and procedures
TEMP _m	- Reviewed climate data provide by project personnel and confirmed that the values were appropriately utilized in the project ROTH C model - Reviewed invoices from the purchase of weather data and confirmed the chain of custody of the climate data
EVAP _m	Reviewed the project calculations and confirmed that project personal accurately calculated potential evapo-transpiration
D	The verification team reviewed the IPCC default values for the region and confirmed that the project is using the appropriate transition period of 20 years
Forest Cover Maps Deforestation Maps	- Confirmed that PD, contain all necessary information to replicate classification procedure to produce future forest cover and deforestation maps - Reviewed baseline classification procedure discussed in Section 3.3.1 above to confirm that project personnel have access to technical capacity and equipment as needed to competently carry out this task
ABSLPAt,icl	Confirmed that PD contain all necessary information to replicate classification procedure to produce annual areas of deforestation in the Project Area
ABSLKt,icl	Confirmed that PD contain all necessary information to replicate classification procedure to produce annual areas of deforestation in the leakage belt
ΔCabicl,t	Confirmed the PD contain all necessary information to replicate the process for determining the aboveground carbon stock change factor in the Project area and Leakage Belt

In conclusion, the verification team confirms with a reasonable level of assurance that the methodology and all referenced tools have been applied correctly to calculate baseline emissions, project emissions, leakage and net GHG emission reductions and removals during the project crediting period.

3.3.7 Methodology Deviations

As no methodology deviations were employed during this validation and verification, this section is not applicable

3.3.8 Monitoring Plan

The PD provides an exhaustive and complete description of the monitoring plan. Whereas, the project monitoring report contains a complete list of data and parameters monitored from the methodology, only items actually considered in the project calculations are considered here. Data and parameters do not change between validation and monitoring except for the dates of imagery employed in the remote sensing analysis. Please see section 3.3.6.6 of this report for a complete list of data and parameters monitored.

For both the SALM and REDD activities the PD provides all of the monitoring plan requirements from the methodology and are provided in a step-wise manner, as required by the methodology. The verification team reviewed the monitoring report and compared against the monitoring plan and confirmed that all necessary monitoring activities were implemented during the monitoring period. The verification team was able to access and recalculate both baseline, project, and leakage emissions using the verification sample of data and confirmed that the monitoring plan is complete in its instructions for the calculating of both ex-ante and ex-post GHG emission reductions.

In conclusion, the verification team confirms without exception that the project adheres to both the monitoring plan and the associated methodologies.

3.4 Non-Permanence Risk Analysis

The audit team assessed and evaluated the claims provided by project personnel regarding the risk scores provided in the non-permanence risk report and the evidence supporting such claims. A complete description the assessment of the project non-permanence risk report is as follows.

3.4.1 Internal Risk

Project Management

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
(a)	The project is a REDD/AUD AFOLU project and therefore does not rely on tree planting to generate GHG credits. Whereas, there is tree planting is employed for the SALM component of this project, however no credits have previously been issued	N/A	Risk rating is appropriate
(b)	The project is simultaneously undergoing validation and verification; therefore no credits have been issued at this time	N/A	Risk rating is appropriate

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
(c)	The audit team reviewed the work history and training of the project personnel and implementing partners. The audit team confirmed that the management team includes individuals with significant experience necessary undertake all project activities (i.e., any area of required experience is not covered by at least one individual with at least 5 years' experience in the area)	The audit team reviewed training records as well as publications confirming 5+ years in any areas of required experience	Risk rating is appropriate
(d)	Audit team assessed the project in the country at both the project offices and in the project area and confirmed that the project management team offices are less than a day's drive from the Project Area	N/A	Risk rating is appropriate
(e)	This is the first verification of a project of the management team	N/A	Risk rating is appropriate
(f)	The audit team assessed the project documentation /66-75/ which clearly defines the adaptive management plan is in place. In addition, the audit team interviewed local residents near the project area who had a firm understanding of how consultation is used to enhance the project	The project management plan is well written and clearly defines the adaptive management process	

Financial Viability

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
(a)	-	-	N/A

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
(b)	-	-	N/A
(c)	The audit team reviewed the financial budget of the project including grant funding documentation. The audit team also sampled inputs driving the model and also confirmed that the future sale of credits is based on conservative estimates	The audit team found the project cash flow budget and associated documentation neat, organized and user friendly. The project team were able to provide a clear description of the inner workings of the budget as well as record keeping	Risk rating is appropriate
(d)	-	-	-
(e)	-	-	N/A
(f)	-	-	N/A
(g)	-	-	N/A
(h)	See above for assessment of rationale The project has received over 80% of the funding needed for cash out prior to breakeven. The verification team reviewed the project breakeven analysis and traced a sample of inputs through the calculations. The verification team also reviewed grant funding earmarked for the project and found all the calculations to be accurate	The audit team found the project cash flow budget and associated documentation neat, organized and user friendly. The project team were able to provide a clear description of the inner workings of the budget as well as record keeping	Risk rating is appropriate
(i)	-	-	N/A

Opportunity Cost

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
------	--	--	---

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
(a)	-	-	N/A
(b)	-	-	N/A
(c)	-	-	N/A
(d)	Whereas, the project documentation provides a financial analysis of the project and baseline scenarios, this risk score is justified by the baseline activities being subsistence driven. The audit team interviewed local communities members who confirmed that local farming provides only for the basic needs of the community members	The audit team was provided with quality peer reviewed literature supporting the claims in the risk report. In addition project personnel organized access to local residents in order to corroborate the values and decisions provided in the justification	Risk rating is appropriate
(e)	-	-	N/A
(f)	-	-	N/A
(g)	The verification team held interviews with local officials and performed a web-based review to confirm that COMACO is a non-profit organization	-	Risk rating is appropriate
(h)	-	-	Risk rating is appropriate
(i)	-	-	-

Project Longevity

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
a)	The audit team reviewed the project documentation and confirmed that the project documentation, including MOU's between the communities and COMACO. The verification team agrees that based on the current production under SALM management, that even if COMACO was to cease payments that these activities that such activities would continue. Moreover, given the supply of fuelwood provided by tree planting that both project activities are likely to continue in perpetuity.in which the project lifetime is in perpetuity, thus confirming the risk score	The project documentation, including the village MOU's and village bylaws is of high quality and transparency	Risk rating is appropriate

3.4.2 External Risk

Land Tenure and Resource Access/Impacts

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
(a)	-	-	-
(b)	The audit team interviewed local government officials who corroborated the claims of project personnel that the project area is owned and resource access/use rights are held by the villages that comprise them. The audit team received documentation, which was consistent with evidence gathered through interviews on site, that all disputes have been resolved at the time of this verification event.	The verification teams reviewed the project maps and found them to be of high quality	Risk rating is appropriate

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
(c)	-	-	-
(d)	-	-	-
(e)	-	-	-
(f)	-	-	-
(g)	-	-	-

Community Engagement

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
(a)	The verification team reviewed records of consultations and meeting minutes from such meetings. In addition, the verification team met with local official and chiefdom headmen, who confirmed that widespread consultation had been undertaken and that the REDD project areas lay wholly within the chiefdoms and that no individuals outside of the chiefdoms are reliant on the project area.	The project documentation was provided to the audit team and was of high quality. In addition the audit team had access to all communities reliant on the project area	Risk rating is appropriate
(b)	See item a) above	See item (a) above	Risk rating is appropriate

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
(c)	The verification team reviewed project documentation and literature and also interviewed local communities and confirmed that the project is generating net socio economic impacts. Participants are improving crop yield and now have contracts to ensure a premium price for their crops	N/A	Risk rating is appropriate

Political Risk

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
(a)	-	-	-
(b)	-	-	-
(c)	The audit team downloaded dataset from World Bank Institute's Worldwide Governance Indicators (for the most recent five years, 2010 - 2014 [as of April 2017] and confirmed the WGI score of -0.39	The dataset used is required by the AFOLU Non-Permanence Risk Tool, and can be considered high quality	Risk rating is appropriate
(d)	-	-	-
(e)	-	-	-

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
(f)	Zambia has an established Designated National Authority under the CDM, i.e., Ministry of Lands, Natural Resources and Environmental Protection, but does not have a registered CDM A/R project yet. The country is, however, currently implementing REDD+ Readiness activities: it is a UN-REDD Programme Partner Country. http://www.unredd.net/index.php?option=com_unregions&view=overview&Itemid=495	The UN-REDD Programme is the official source for countries taking part in the program and can be considered high quality.	Risk rating is appropriate

Natural Risk

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
Fire	The audit team reviewed the imagery used to determine the baseline analysis and confirmed that there was no evidence of catastrophic fire in the imagery. In addition, the audit team interviewed project personnel, who have a wealth of local knowledge and confirmed that the likelihood of catastrophic fire is minor. Moreover, the audit team is experienced with miombo woodlands and attest that these forests are extremely fire adapted and that the risk of any significant loss of carbon stocks due to fire is insignificant. The audit team agrees that the improved agricultural activities that require the use of stoles as ground cover instead of being piled and decreasing the mosaic of agricultural lands will result in a decrease in conditions ripe for natural fire	The remote sensing imagery provided by project personnel is from a reputable source and the technical team are highly skilled in the interpretation of such imagery. In addition, the project team have a wealth local knowledge. Overall, the quality of documentation and data provided is very high	Risk rating is appropriate
Pest and Disease Outbreaks	The audit team interviewed project personnel, who have a wealth of local knowledge and confirmed that the likelihood of catastrophic fire is minor. Moreover, the audit team is experienced with miombo woodlands and attest that these forests are not prone to insect outbreaks and attest that while termites are found regularly throughout these forests, they feed only on dead wood and do not represent a risk to the current carbon stocks. Finally, the audit team performed a web based review and found no instances of outbreaks in the region	Whereas, the audit team was provided with a wealth of local knowledge, no documentation was required for this indicator	Risk rating is appropriate

Risk	Assessment of rationale, assumptions and justification	Assessment of quality of documentation and data provided	Conclusion regarding appropriateness of the risk rating
Extreme Weather	Based on the available literature, the audit team was able to confirm that the insignificant rating claimed by project personnel is both accurate and conservative. This is also the case with the likelihood claims. In addition, the audit team is very familiar with eastern Africa and agree that cyclones are very rare	The literature provided to the audit team was published in the peer reviewed literature and of high quality. The audit team also attained separate literature, also peer reviewed, corroborating the literature provided by project personnel.	Risk rating is appropriate
Geological Risk	The audit team performed a web based review to confirm the local knowledge of the project team and confirmed that the likelihood of earthquakes or other geological risks resulting in any loss to the project carbon stock extremely low	The audit team was not provided with documentation, nor did they request documentation as this risk is not applicable to the project area	Risk rating is appropriate

In conclusion, the audit team found the risk analysis provided by the client to be accurate and well documented. The audit team agrees with the overall risk rating to be 11% as required by the VCS AFOLU Non-Permanence Risk Tool.

4 SAFEGUARDS

4.1 No Net Harm

The verification team has a long history of assessing projects including forest protection and improved agricultural activities. The project is already providing net socio-economic benefits to the communities in the region and is unlikely to cause any harm.

4.2 Environmental Impact

The verification team was provided with evidence of assessments from both the World Bank and the Zambia Environmental Management Agency (ZEMA) and confirmed that environmental impacts had been performed prior to the implementation of project activities. As stated in section 4.1 above no negative impacts are expected or have occurred as a result of project activities.

4.3 Local Stakeholder Consultation

While on site, the verification team reviewed meeting minutes from stakeholder consultation and interviewed both local officials and community members. In all cases, community feedback was positive. Implementation activities, including the location and size of project areas, which crops to grow and data

reporting were derived through a collaborative process. Based on the findings from the sample of meeting minutes and interviews on site, the verification team has a reasonable level of assurance that all pertinent comments have been considered in the project design and implementation.

4.4 Public Comments

As no public comments were received as a result of project listing, this section is not applicable.

5 VERIFICATION FINDINGS

5.1 Accuracy of GHG Emission Reduction and Removal Calculations

Parameter	Step(s) taken to validate suitability and eligibility of monitoring equipment and procedures
$BSN_{t=0}$	- Reviewed the literature provided by project personnel and confirmed that 120kg/ha is extremely conservative when compared to the 69kg/ha stated by the literature - Recalculated project emissions and confirmed the appropriate values was utilized
$CROP_{i, t=0}$	- Confirmed the data from the monitoring has been accurately transferred into the project MIS database - Confirmed the validated data in the project MIS database was appropriately and accurately used as an input for the project ROTH C model
$Area_{i, t=0}$	- Confirmed the data from the monitoring has been accurately transferred into the project MIS database - Recalculated area based on a sample of farms in the project area and confirmed the areas to be calculated accurately or otherwise conservatively
$Areaburnt_{i, t=0}$	- Confirmed the data from the monitoring has been accurately transferred into the project MIS database - Recalculated non-CO₂e emissions and confirmed 100% of deforested areas were included in the area burnt calculations
$MB_{C, t=i}$	- Confirmed the data from the monitoring has been accurately transferred into the project MIS database - Confirmed that the biomass values to be appropriately sourced using IPCC default values as required
$PA_{C, Mc, t}$	Confirmed the data from the monitoring has been accurately

Parameter	Step(s) taken to validate suitability and eligibility of monitoring equipment and procedures
	transferred into the project MIS database - Reviewed monitoring data with community farmers and confirmed accuracy of the MIS data - Recalculated area based on a sample of farms in the project area and confirmed the areas to be calculated accurately or otherwise conservatively
$SOC_{C, Mc, t}$	- Observed the running of the ROTH C model with the verified inputs and confirmed the SOC values to be accurate - Confirmed $t=i$ SOC values used the appropriate default values taking the appropriate conservative measures required by the methodology
$PP_{C, Mc, t}$	- Reviewed the post-harvest monitoring data and confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Reviewed the project calculations and IPCC default values and confirmed the resulting values were calculated correctly
$PR_{C, Mc, t}$	- Reviewed the post-harvest monitoring data and confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Reviewed the project calculations and IPCC default values and confirmed the resulting values were calculated correctly - Interviewed project personnel responsible for collecting field data and confirmed that the data collection process was performed with great care at a high level of accuracy
$PM_{C, Mc, t}$	- Reviewed the post-harvest monitoring data and confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Reviewed the project calculations and IPCC default values and confirmed the resulting values were calculated correctly - Interviewed project personnel responsible for collecting field data and confirmed that the data collection process was performed

Parameter	Step(s) taken to validate suitability and eligibility of monitoring equipment and procedures
	with great care at a high level of accuracy
PCC _{C, Mc,t}	- Reviewed the post-harvest monitoring data and confirmed the data from the baseline survey has been accurately transferred into the project MIS database - Interviewed project personnel responsible for collecting field data and confirmed that the data collection process was performed with great care at a high level of accuracy
TEMP _m	- Reviewed climate data provide by project personnel and confirmed that the values were appropriately utilized in the project ROTH C model - Reviewed invoices from the purchase of weather data and confirmed the chain of custody of the climate data
TEMP _m	- Reviewed climate data provide by project personnel and confirmed that the values were appropriately utilized in the project ROTH C model - Reviewed invoices from the purchase of weather data and confirmed the chain of custody of the climate data
EVAP _m	Reviewed the project calculations and confirmed that project personal accurately calculated potential evapo-transpiration
D	The verification team reviewed the IPCC default values for the region and confirmed that the project is using the appropriate transition period of 20 years
Forest Cover Maps Deforestation Maps	- Confirmed that the monitoring report, contain all necessary information to replicate classification procedure to produce future forest cover and deforestation maps - Reviewed classification procedure discussed in Section 3.3.2 above to confirm that project personnel have access to technical capacity and equipment as needed to competently carry out this task
ABSLPAt,icl	Confirmed that monitoring report contains all necessary information to replicate classification procedure to produce annual areas of deforestation in the Project Area

Parameter	Step(s) taken to validate suitability and eligibility of monitoring equipment and procedures
ABSLLKt,icl	Confirmed that monitoring report contains all necessary information to replicate classification procedure to produce annual areas of deforestation in the leakage belt
$\Delta C_{bicl,t}$	Confirmed the monitoring report contains all necessary information to replicate the process for determining the aboveground carbon stock change factor in the Project area and Leakage Belt

In addition to the parameters set out above the audit team reviewed the carbon stock change (ex-post) workbook in order to assess the flow of data and calculations required to produce the GHG emission reductions for this reporting period. In addition, the audit team reviewed all pertinent imagery against Google Earth imagery to test a sample of accuracy assessment ground truthing points. In addition, the verification team used hand held GPS devices to map land use classes across the project area.

In conclusion, the audit team confirmed the values assessed at validation had been correctly pasted into the carbon stock change (ex-post) workbook. The audit team then recalculated the GHG emission reductions using the biomass values (confirmed at validation), as well as the areas of deforestation and confirmed that the project calculations were consistent with the verifier values. Finally, the GHG emission reductions have been quantified correctly in accordance with the project description and the applied methodologies.

5.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

The evidence used to determine the GHG reductions and removals was of sufficient quantity and appropriate quality. An identification of the categories of evidence used to determine the GHG emission reductions and removals, and a description of the steps taken to assess the sufficiency of quantity, and appropriateness of quality of each category of evidence follows.

	Steps taken by audit team to assess...		
Category	reliability, source, nature of evidence	information flow from data generation and aggregation, to recording, calculation and final transposition into the monitoring report	appropriateness of implemented calibration frequency of monitoring equipment
Reporting workbooks	Workbooks originated from project personnel and were determined,	In all cases, audit team traced data contained in workbooks back to	N/A

	after thorough testing, to be of high quality and highly reliable; quantity of workbooks provided to audit team was sufficient /19-24/	their respective sources, which were:	
Satellite Imagery	Evidence is documentation provided by project personnel and sourced from Landsat 7, Landsat 8, and GeoEye satellite imagery; it is considered highly reliable by audit team stratification /76-77/	Audit team downloaded images to ensure consistency of imagery and that the images had not been altered.	N/A
Roth C Model Databases	The verification team has experience working with the ROTH C model and confirmed that the model was used as designed and that the inputs to the model are accurate	The verification team observed the replication of each model run by project personnel and confirm the results to be consistent with the reported values /24-27/	N/A

In conclusion, the audit team found the risk analysis located in the document titled “2016-09-29 COMACO VCS Monitoring Report_1st Period” provided by the client to be accurate and well documented. The audit team agrees with the overall risk rating to be 11% as required by the VCS AFOLU Non-Permanence Risk Tool.

6 VALIDATION AND VERIFICATION CONCLUSION

The audit team asserts, with no qualifications or limitations, that:

- The project complies with the verification criteria for projects and their GHG emission reductions or removals set out in VCS Version 3
- The project complies with the validation criteria for projects set out in VCS Version 3

The audit team has been able to confirm that the project has been implemented in accordance with the project description and subsequently validated variations.

The audit team has been able to confirm, with a reasonable level of assurance, that the quantity of GHG emission reductions and removals set out below has been quantified in accordance with the VCS rules. As documented in Section 3.4 above, the audit team can also confirm that the non-permanence risk score

of 11% has been quantified in accordance with the VCS rules. Net change in carbon stocks were calculated in order to determine the buffer pool and are as follows:

Carbon Stock Change

2013 – 65,412

2014 – 144,747

2015 – 18,758

Buffer Pool

2013 – 7,195

2014 – 15,922

2015 – 2,063

Verification period: From 1 July 2012 to 31 October 2015

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2013	233,840	165,000	0	68,840
2014	325,552	173,590	0	151,963
2015	37,927	19,074	0	19,074
Total	597,319	371,865	0	239,876

APPENDIX A: VALIDATION AND VERIFICATION FINDINGS

The following tables include all issues raised during the validation and verification audit of the COMACO Landscape Management Project. It should be noted that all language under "Client Response" is a verbatim transcription of responses to findings as provided by project personnel. It should be noted that validation and verification assessments were performed concurrently and therefore findings from both assessments are included below.

NIR 1 Dated 16 May 2017

Standard Reference: The VCS Standard v3.6 Section 2.4.1

Document Reference: N/A

Finding: The VCS standard defines the principle of conservativeness as "Use conservative assumptions, values and procedures to ensure that net GHG emission reductions or removals are not overestimated."

During the site visit, the verification team sampled farms in which tree seedlings appeared to have been recently planted. In addition the project is using a default value for tree biomass of these trees. In order to ensure the project is not overestimating the project GHG emission reductions, please provide evidence that trees less than one year in age are not being included in the reduction calculations.

Project Personnel Response: Only trees that are at least 1 year old are counted. The project training manual that is used (file: Performance Monitoring Training Manual-2016 version) clearly instructs enumerators to only record Gliricidia trees that are at least 1 year old - see instruction number 17, page 10, as well as screenshot picture number 15 of the ODK collect questionnaire on page 22.

Auditor Response: The verification team received and reviewed the documentation referenced in the client response and confirmed that procedures are in place to ensure that only trees 1 year or older are to be included in the agroforestry calculations. In addition, the language in the documentation is consistent with observations on site. Moreover, the data collected on Gliricidia by the verification team showed consistency with project reporting. The information provided is sufficient for resolving this issue.

NIR 2 Dated 16 May 2017**Standard Reference:** The VCS Standard v3.6 Section 2.4.1**Document Reference:** N/A

Finding: The VCS standard defines the principle of conservativeness as "Use conservative assumptions, values and procedures to ensure that net GHG emission reductions or removals are not overestimated."

During the office visit portion of the site visit, the verification team were informed that two separate methods were employed to estimate farmlands. Whereas, the verification team collected boundary data for a sample of farms, the verification team is unable to appropriately test the calculation of farm areas without fully evaluating the methods employed by project personnel. Please provide evidence of exactly how farm boundaries were determined and any associated calculations.

Project Personnel Response: The project estimates farm boundary and areas using one approach - a locally known method of walking/pacing along the boundary of farm, and taking 50 m X 50 m steps as one lima (which is 0.25 ha). This is farmer reported estimate. Furthermore, the enumerator visits the farm and collect a GPS location and confirms this area estimate for each field crop that is reported by the farmer. See instruction number 7 in Performance Monitoring Training Manual on page 9, and data recording form, file: SALM FARMER REGISTRATION FORM DESCRIBER, page 4.; also see screenshot number 14 on page 22. The farmer reported values are used as long as they are validated and are conservative. To validate the farmer estimated/reported areas, measurements of areas of a sample of the farms have been done using GPS, and the values compared with the farmer reported values (see - Excel PlotSize Verification Analysis (2016) march). The result shows the farmer reported areas are conservative - compared to areas measured by GPS.

Auditor Response: The verification team reviewed the documents referenced in the client response and confirmed that the training manual provides adequate guidance for farmers to provide a rough estimate of SALM areas. In addition, the verification team confirmed that according to project GPS data that farms are conservatively reporting SALM areas. Finally, the verification team used hand held GPS units to measure SALM areas while onsite and also resulted in area values that supported the fact that the farmers are conservatively reporting SALM areas. The information provided is sufficient for closing this finding.

NIR 3 Dated 16 May 2017**Standard Reference:** The VCS Standard v3.6 Section 3.11.1**Document Reference:** N/A

Finding: The VCS Standard states "The project description shall be accompanied by one or more of the following types of evidence establishing project ownership accorded to the project proponent(s), or program ownership accorded to the jurisdictional proponent(s), as the case may be (see VCS document Program Definitions for definitions of project ownership and program ownership). To aid the readability of this section, the term project ownership is used below, but should be substituted by the term program ownership, as appropriate..."

During discussions with project personnel, the verification team were informed that farm owners hold the right to claim ownership of the land through a chiefdom system in which the land is given to community members. In addition, the verification team was informed that the system is granted by law. During these conversations, the project team were unable to produce documentation of such laws. Please provide documentation of the Zambian laws supporting these claims by project personnel.

Project Personnel Response: The laws supporting this claim is The Lands Act, 1995 (file: Lands Act_highlighted text), and the Forests Act, 2015 (file: The Forest Act_highlighted text).

Auditor Response: The verification team reviewed the applicable sections of both the land act and the forest act of Zambia and confirmed that the language supports the claims made in the project description. In addition, the verification team met with the chief's headman from each chiefdom who confirmed the rights of individuals to claim ownership of the project area lands. The information provided is sufficient for clarifying this issue.

NCR 4 Dated 16 May 2017**Standard Reference:** The VCS Standard v3.6 Section 3.18.2, 3.11.1**Document Reference:** N/A

Finding: The VCS Standard states "For validation, the project proponent shall make available to the validation/verification body the project description, evidence of project ownership and any requested supporting information and data needed to support statements and data in the project description and evidence of project ownership."

And "The project description shall be accompanied by one or more of the following types of evidence establishing project ownership accorded to the project proponent(s), or program ownership accorded to the jurisdictional proponent(s), as the case may be (see VCS document Program Definitions for definitions of project ownership and program ownership). To aid the readability of this section, the term project ownership is used below, but should be substituted by the term program ownership, as appropriate..."

During discussions with project personnel, the verification team were informed that farm owners hold the right to claim ownership of the land through a chieftdom system. Moreover, during community visits, the verification team was informed that land title documents are given to each chief by the Zambian government. While these claims were supported by some local officials during the site visit, the verification was not provided with documentary evidence of such and therefore cannot be confirmed is not in conformance with the rules.

Project Personnel Response: The Lands Act gives the chiefs rights over customary land, and hence, the power to appropriate it to members of their communities. There is no land title given to chiefs by the government, but there are GIS maps indicating the boundaries of the chieftdoms and thus the customary land therein (see folder: NCR 4 - Chieftdom_Boundaries). Also see publication by van Loenen, 1999 (file: Van Loenen 1999. LAND TENURE in ZAMBIA) explaining land tenure in Zambia. Thus, the chiefs' rights over customary land and their authority to appropriate it to their communities are guaranteed by the Lands Act.

Auditor Response: In addition to the information provided in the client response, the verification team met with government officials near the project area, who confirmed the ownership rights of each chieftdom in the project area. The verification team considers this issue resolved.

NIR 5 Dated 16 May 2017**Standard Reference:** The VCS Tool VT0001 v3.0 Section 2.4.3**Document Reference:** N/A

Finding: The VT0001 states "If activities similar to the proposed VCS AFOLU project activity are identified, then compare the proposed project activity to the other similar activities and assess whether there are essential distinctions between them. Essential distinctions may include a fundamental and verifiable change in circumstances under which the proposed VCS AFOLU project activity will be implemented when compared to circumstances under which similar activities were carried out. For example, barriers may exist, or promotional policies may have ended. If certain benefits rendered the similar activities financially attractive (e.g., subsidies or other financial flows), explain why the proposed VCS AFOLU project activity cannot use the benefits. If applicable, explain why the similar activities did not face barriers to which the proposed VCS AFOLU project activity is subject."

During the site visit, the verification team was made aware of a history of funding that has dwindled to the point of no longer providing support for conservation farming practices, however, no evidence was made available to support such claims and therefore cannot be confirmed by the verification team. Please provide such evidence.

Project Personnel Response: See publication by Andersson and D'Souza, 2014 (file: Andersson and D'Souza 2014_Conservation Agriculture adoption among smallholder farmers in southern Africa), which assert that the Zambian government has not been providing noteworthy financial support for conservation farming in the country. The limited donor-funding for conservation farming has been directed at the Zambia Conservation Farming Unit (CFU). Hence, the project lacked the source of funding that would have enabled it to undertake this project - see COMACO's proposals submitted to Norwegian Embassy seeking for funding (file: RNE Project Description Document), which enabled COMACO to leverage additional financial support (such as from the B Llyod Endowment, see breakeven analysis - file: CLMP_Breakeven_analysis), and to recruit needed staff, i.e., Carbon Manager, A GIS/Remote Sensing Specialist and a Data Management Specialist, and build the technical capacity necessary to implement the project.

Auditor Response: The verification team reviewed the literature provided by the client and compared with the client supplied project budget and confirmed that distinctions exist including a fundamental and verifiable change in circumstances under which the proposed VCS AFOLU project activity will be implemented when compared to circumstances under which similar activities were carried out. The information provided is sufficient for closing this finding.

NCR 6 Dated 16 May 2017

Standard Reference: The VCS Tool VT0001 v3.0 Section 2.4.3

Document Reference: 2016-09 VCS PD COMACO SALM REDD integrated pp. 72

Finding: The VT0001 states "If activities similar to the proposed VCS AFOLU project activity are identified, then compare the proposed project activity to the other similar activities and assess whether there are essential distinctions between them. Essential distinctions may include a fundamental and verifiable change in circumstances under which the proposed VCS AFOLU project activity will be implemented when compared to circumstances under which similar activities were carried out. For example, barriers may exist, or promotional policies may have ended. If certain benefits rendered the similar activities financially attractive (e.g., subsidies or other financial flows), explain why the proposed VCS AFOLU project activity cannot use the benefits. If applicable, explain why the similar activities did not face barriers to which the proposed VCS AFOLU project activity is subject."

During the site visit, the verification team was made aware of a history of funding that has dwindled to the point of no longer providing support for conservation farming practices, however, the PD does not "explain why the proposed VCS AFOLU project activity cannot use the benefits." Or, "If applicable, explain why the similar activities did not face barriers to which the proposed VCS AFOLU project activity is subject" and therefore is not in conformance with the rules.

Project Personnel Response: A limited effort to promote conservation farming (CF) has been taken using short-term donor funding (see a review by Andersson and D'Souza, 2014), such efforts have been short-term. The government does not provide noteworthy funding support to CF, instead supporting monocropping - a practice that is contrary to CF. This project is different as it is promoting long-term CF (SALM project component), and forest conservation (REDD+ project component) undertaken by small scale farmers, and targeting a long period, i.e., the project crediting period and beyond, and, therefore, requires long-term funding, a barrier that CF supported by short-term donor-funds does not face

Auditor Response: The verification team reviewed the information provided by the client and confirmed that it supports the claims of the PD regarding project funding. In addition, the verification team has a history working in the region and is well versed in the problems associated with conservation funding. The information provided is sufficient for closing this finding.

NCR 7 Dated 16 May 2017

Standard Reference: The VCS Tool VT0001 v3.0 Section 2.4.3

Document Reference: 2016-09 VCS PD COMACO SALM REDD integrated pp. 73

Finding: The VT0001 states "This sub-step does not consider laws, statutes, regulatory frameworks or policies implemented since 11 November 2001 that give comparative advantage to less emissions-intensive technologies or activities relative to more emissions-intensive technologies or activities.

a) Apply the following procedure:

- i) Demonstrate that all land use scenarios identified in the sub-step 1a: are in compliance with all mandatory applicable legal and regulatory requirements;
- ii) If an alternative does not comply with all mandatory applicable legislation and regulations then show that, based on an examination of current practice in the region in which the mandatory law or regulation applies, those applicable mandatory legal or regulatory requirements are systematically not enforced and that non-compliance with those requirements is widespread, i.e., prevalent on at least 30% of the area of the smallest administrative unit that encompasses the project area..."

Whereas, the PD states "The pre-project land-use dominated by agricultural expansion (specifically slash and burn with fallow systems). However, the current, widespread practice of these activities in the region and throughout Zambia shows that the laws and regulations governing them are systematically not enforced and that non-compliance is widespread, there is no evidence to support this claim, as the PD does not show that the illegal activity is "those applicable mandatory legal or regulatory requirements are systematically not enforced and that non-compliance with those requirements is widespread, i.e., prevalent on at least 30% of the area of the smallest administrative unit that encompasses the project area" and therefore cannot be confirmed.

Project Personnel Response: That existing regulations are not enforced is evidenced by the fact that despite the existence of regulations (see Forests Act), deforestation is widespread - over all parts of the project reference region, encompassing the project area (see file: NCR 7 - Widespread deforestation in project region in 2002-2013). Furthermore, CIFOR (2013) reports that there is systematic lack of enforcement of forestry laws and regulations throughout the country as official permits for forest use reportedly account for less than 5% of the forest products consumed in Zambia (CIFOR, 2013).

Auditor Response: The verification team reviewed the evidence provided by the client and confirm that it shows widespread deforestation across the region encompassing the project area. Whereas, the location of the project area means that the smallest administrative unit encompassing the project area would be the nation of Zambia, the verification team has received guidance from the VCSA in the past that exceptions exist when assessing this criterion. The verification teams that the illegal activity is indeed widespread throughout the region and the evidence provided is sufficient for closing this finding.

NIR 8 Dated 16 May 2017**Standard Reference:** N/A**Document Reference:** 2016-09 VCS PD COMACO SALM REDD integrated pp. 55**Finding:** Page 55 of the PD states the following:

"Land cover data used were mid-resolution LANDSAT satellite imagery for 2002, 2008 and 2013 of the entire reference region. The analysis of deforestation rates and patterns has been produced using these satellite data, which are described in detail in Table 14, and includes three dates over the 10-year historical reference period: 2002, 2008, and 2013. These are freely available Landsat imagery. Ground-truthing or validation consisted of comparing results from high resolution images from Google Earth (Digital Globe imagery, 1m spatial resolution)."

Table 14: Data used for historical LU/LC change analysis of the PD, however shows that imagery from 2007 and not 2008 was used for the baseline analysis and therefore does not allow for assessment by the verification team.

Project Personnel Response: Table 14 in the PD has been corrected by inserting the correct date, i.e., 2008, for the imagery used.

Auditor Response: As stated in the client response, the PD has been update to accurately depict the data used to perform the analysis. The update to the PD is sufficient for resolving this issue.

NCR 9 Dated 16 May 2017**Standard Reference:** The VCS Methodology VM0015 v1.1 Section 2.5**Document Reference:** 2016-09 VCS PD COMACO SALM REDD integrated pp. 66

Finding: The methodology states "A verifiable accuracy assessment of the maps produced in the previous step is necessary to produce a credible baseline..."

In review of the PD, the verification team noted two deforestation maps (2002-2008 and 2008-2013), however only one accuracy assessment is provided and therefore is not in conformance with the methodology.

Project Personnel Response: Two accuracy assessments, i.e., for 2002-2008, and 2008-2013, have been provided and the PD updated accordingly.

Auditor Response: As stated in the client response, the PD has been update to accurately depict the data used to perform the analysis. The update to the PD is sufficient for resolving this issue.

NCR 10 Dated 16 May 2017

Standard Reference: The VCS Methodology VM0015 v1.1 Section 4.2.2

Document Reference: 2016-09 VCS PD COMACO SALM REDD integrated pp. 88

Finding: The methodology states "A Risk Map shows at each pixel location the risk (or "probability") of deforestation in a numerical scale (e.g., 0 = minimum risk; 255 = maximum risk). Models use different techniques to produce Risk Maps and algorithms may vary among the different modelling tools. Algorithms of internationally peer-reviewed modelling tools are eligible to prepare deforestation risk maps, provided they are shown to conform to the methodology at time of validation.

Several Risk Maps should be produced using different combinations of Factor Maps and modelling assumptions in order to allow comparison and select the most accurate map.

A list of Factor Maps, including the maps used to produce them and the corresponding sources shall be presented in the PD (table 10) together with a flow-chart diagram illustrating how the Risk Map is generated."

Whereas the PD provides a description of the process for creating risk maps, the PD does not conform to the methodology, as no maps are present showing the probability of deforestation nor is there a "PD (table 10) together with a flow-chart diagram illustrating how the Risk Map is generated."

Project Personnel Response: Table 31 in PD is updated with list of variables used. The factor maps used in the process of deriving deforestation risk map as well as a flow-chart diagram illustrating how the risk map was generated have been inserted in the PD. together with actual risk map.

Auditor Response: As stated in the client response, the PD has been update to accurately depict the data used to perform the analysis and also includes the resulting required maps. The update to the PD is sufficient for resolving this issue.

NCR 11 Dated 16 May 2017

Standard Reference: The VCS Methodology VM0015 v1.1 Section 2.6

Document Reference: 2016-09 VCS PD COMACO SALM REDD integrated

Finding: The methodology states "LU/LC-change analysis is an evolving field and will be performed several times during the project crediting period. A consistent time-series of LU/LC-change data must emerge from this process.

In general, the same source of remotely sensed data and data analysis techniques must be used within a period for which the baseline is fixed (fixed baseline period). However, if remotely sensed data have become available from new and higher resolution sources (e.g. from a different sensor system) during this period, these can only be used if the images based on interpretation of the new data overlap the images based on interpretation of the old data by at least 1 year and they cross calibrate to acceptable levels based on commonly used methods in the remote sensing community. To achieve a consistent time-series, the risk of introducing artefacts from method change must be minimized. For this reason, the detailed methodological procedures used in pre-processing, classification, post classification processing, and accuracy assessment of the remotely sensed data, must be carefully documented in an Annex to the PD. In particular, the following information must be documented..."

As no methodological annex to the PD has been provided, the PD is not in conformance with the rules.

Project Personnel Response: A methodological annex to the PD has now been provided - documenting all methodological procedures used - including data sources, image processing, and accuracy assessments.

Auditor Response: Whereas, the processes and analyses involved in the creation of the methodological annex were reviewed during the site visit, the annex itself was not completed at the time. The verification team reviewed the updated PD and confirmed that it now includes a methodological annex that conforms to the requirements of the methodology.

NCR 12 Dated 16 May 2017

Standard Reference: The VCS Methodology VM0015 v1.1 Section 1.1.1

Document Reference: 2016-09 VCS PD COMACO SALM REDD integrated

Finding: The methodology states the following:

Landscape configuration and ecological conditions: At least three of the following four conditions must be satisfied:

- Forest/vegetation classes: At least 90% of the project area must have forest classes or vegetation types that exist in at least 90% of the rest of the reference region.
- Elevation: At least 90% of the project area must be within the elevation range of at least 90% of the rest of the reference region.
- Slope: The average slope of at least 90% of the project area shall be within + or - 10% of the average slope of at least 90% of the rest of the reference region.
- Rainfall: The average annual rainfall in at least 90% of the project area shall be within + or - 10% of the average annual rainfall of at least 90% of the rest of the reference region."

During the site visit the verification team was informed that the project chose forest/vegetation classes, elevation, and slope to meet this criteria, however no evidence of slope is provided in the PD and cannot be confirmed. Moreover, the verification team was informed that rainfall data was not available for the entire reference region, yet values are provided in the PD.

Project Personnel Response: The PD has been updated with map (Figure 15) showing the slope of reference region and project area. A table showing the statistics is also included in the PD, page 45.

Auditor Response: As stated in the client response, the PD has been updated to include the required information. The verification team reviewed the updated PD and confirmed that it is now in conformance with the methodology.

NCR 13 Dated 16 May 2017

Standard Reference: The VCS Methodology VM0015 v1.1 Section 1.1.3

Document Reference: 2016-09 VCS PD COMACO SALM REDD integrated

Finding: The methodology states "If the project area is located within a jurisdictional program, leakage may not have been assessed and a leakage belt may not be required because any decrease in carbon stocks or increase in GHG emissions outside the project area would be measured, reported, verified and accounted under the jurisdictional program. In such cases, the most recent VCS JNR Requirements shall be applied. In all other cases, leakage is subject to MRV-A in an area called "leakage belt" in this methodology. The leakage belt is the land area or land areas surrounding or adjacent to the project area in which baseline activities could be displaced due to the project activities implemented in the project area.

To define the boundary of the leakage belt, two methodological options can be used:

- Opportunity cost analysis (Option I); and
- Mobility analysis (Option II)."

And "Mobility analysis can always be used but must be used where Option I is not applicable, i.e. when less than 80% of the area deforested in the reference region (or some of its strata) during the historical reference period has occurred at locations where deforesting was profitable. With this option, the potential mobility of deforestation agents is assessed using multi-criteria analysis. The following methodology steps shall be applied:

- a) Using historical data, expert opinion, participative rural appraisal (PRA), literature and/or other verifiable sources of information list all relevant criteria that facilitate (at least one criterion) and constrain (at least one criterion) the mobility of the main deforestation agents identified in step 3. The overall suitability of the land for the activities of deforestation agents shall be considered.
- b) For each criterion, generate a map using a GIS."

In review of the PD, no GIS map for each criterion is provided and therefore is not in conformance with the methodology.

Project Personnel Response: GIS maps are now provided (see Figure 17, PD page 51), and files: NCR 13 Deforestation & Slope_02-13, and NCR 13 Deforestation & Nonforest_1km_map. Also the associated Excel file is provided: NCR 12 -13 - Deforestation_Non-forest-area & Slope

Auditor Response: As stated in the client response, the PD has been updated to include the required information. The verification team reviewed the updated PD and confirmed that it is now in conformance with the methodology.

NIR 14 Dated 16 May 2017

Standard Reference: The VCS Methodology VM0015 v1.1 Section 1.1.3

Document Reference: 2016-09 VCS PD COMACO SALM REDD integrated pp. 49

Finding: The methodology states "If the project area is located within a jurisdictional program, leakage may not have been assessed and a leakage belt may not be required because any decrease in carbon stocks or increase in GHG emissions outside the project area would be measured, reported, verified and accounted under the jurisdictional program. In such cases, the most recent VCS JNR Requirements shall be applied. In all other cases, leakage is subject to MRV-A in an area called "leakage belt" in this methodology. The leakage belt is the land area or land areas surrounding or adjacent to the project area in which baseline activities could be displaced due to the project activities implemented in the project area.

To define the boundary of the leakage belt, two methodological options can be used:

- Opportunity cost analysis (Option I); and
- Mobility analysis (Option II)."

And

"a) Using historical data, expert opinion, participative rural appraisal (PRA), literature and/or other verifiable sources of information list all relevant criteria that facilitate (at least one criterion) and constrain (at least one criterion) the mobility of the main deforestation agents identified in step 3. The overall suitability of the land for the activities of deforestation agents shall be considered..."

In addition, the PD states "In order to determine the leakage belt a mobility analysis was carried out as per the methodology. The final result of the analysis shows that the leakage belt is presented by the forests which are inside of a 1 km buffer around the existing non-forest areas within the CCAs.

This result is primarily based on:

- Historical land use analysis
- Expert opinion
- Participatory rural appraisal"

No evidence of the participatory rural appraisal has been provided and therefore cannot be assessed by the verification team.

Project Personnel Response: Evidence of PRA is the method used in conducting the drivers of deforestation assessment for the project, i.e., group discussions and key informant interviews. See file provided: 2015-03-20 Drivers and Effectiveness Factor Analysis CLMP, pages 5 and 6.

Auditor Response: As stated in the client response, a PRA describing the collaborative process of determining the leakage belt has been provided to the verification team. The verification team reviewed the PRA and confirmed it to be consistent with observations and interviews during the site visit. The information provided is sufficient for resolving this issue.

NCR 15 Dated 16 May 2017

Standard Reference: AFOLU Non-Permanence Risk Tool v3.3 Section 2.2.1

Document Reference: 2016-05-04 VCS Non-Permanence Risk Report_COMACO

Finding: The risk tool states the following:

"Each project management risk factor set out in Table 1 shall be assessed. Where a risk factor does not apply to the project, the score shall be zero for such factor."

Additionally, the internal risks section of the project risk report shows a number of items that are not applicable to the project, however a score of zero was not included and therefore is not in conformance with the tool.

Project Personnel Response: For each risk factor that does not apply, a score of zero has now been stated in the Non-Permanence Risk Report.

Auditor Response: As stated in the client response, the risk report has been updated to conform with the VCS rules. The updated risk report is sufficient for closing this finding.

NCR 16 Dated 16 May 2017

Standard Reference: AFOLU Non-Permanence Risk Report Template v3. Section 1

Document Reference: 2016-05-04 VCS Non-Permanence Risk Report_COMACO

Finding: The template states the following:

"Document and substantiate the risk and/or mitigation for each risk factor applicable to the project. Include any relevant documentary evidence. Where a risk or mitigation is not relevant to the project, please write "Not applicable."

Additionally, the internal risks section of the project risk report shows a number of items that are not applicable to the project, however do not appropriate state that the item is not applicable and therefore is not in conformance with the tool.

Project Personnel Response: For each risk factor that is not applicable to the project, it has now been stated as "Not applicable" in the project Non-Permanence Risk Report.

Auditor Response: As stated in the client response, the risk report has been updated to conform with the VCS rules. The updated risk report is sufficient for closing this finding.

NIR 17 Dated 16 May 2017**Standard Reference:** AFOLU Non-Permanence Risk Tool v3.3 Section 2.2.2**Document Reference:** N/A**Finding:** The risk tool states the following:

"The cash flow breakeven point is the year in which the cumulative cash flow is positive (i.e., cash flow in exceeds cash flow out) and stays positive. Breakeven should be calculated on a cash flow basis based on generally accepted accounting principles. Cash flow in may include commercial revenue streams associated with the project, secured revenue and conservatively projected revenues from the sale of GHG credits, other funding sources such as donor funds, upfront investments, or carbon prepayments, equity or loans. Cash flow out shall include, at a minimum, project implementation costs, costs associated with GHG credit generation (egg, validation, verification and registration), and, where applicable, interest expenses, repayment of loans or forward purchase agreements, and any required equity distributions."

In review of the project financials, the verification team were unable to appropriately trace or vouch any of the inputs to the project breakeven analysis and therefore cannot confirm the claims of the breakeven analysis score nor confirm that generally accepted accounting principles were employed.

Project Personnel Response: The project breakeven analysis has been revised, and the revised file provided: CLMP_Breakeven_analysis. The sources of input data for the breakeven analysis have now been clearly indicated, and source/reference documents specified.

Auditor Response: As stated in the client response, the verification team was provided with an updated project budget that now follows generally accepted accounting principles and allows for assessment by the verification team. The information provided is sufficient for closing this finding.

NCR 18 Dated 16 May 2017

Standard Reference: The VCS Standard v3.6 Section 3.19.1

Document Reference: 2016-09 VCS PD COMACO SALM REDD integrated Section 4.1

Finding: The VCS standard states "The project description describes the project's GHG emission reduction or removal activities. The project proponent shall use the VCS Project Description Template or the VCS Joint Project Description & Monitoring Report Template (or approved GHG program project description template where the project is registered under an approved GHG program) and adhere to all instructional text within the template."

In addition the PD template states "Instructions for completing the project description template are given under the section headings in this template. All instructions must be followed, as set out in the VCS Standard. Instructions relate back to the rules and requirements set out in the VCS Standard and accompanying program documents. As such, this template must be completed in accordance with such documents, and the preparer will need to refer to the VCS program documents and the methodology in order to complete the template. It is also expected that relevant guidance, as it relates to the project and methodology, is followed. Note that the instructions in this template are intended to serve as a guide and do not necessarily represent an exhaustive list of the information the preparer should provide under each section of the template."

The VCS PD Template provides tables, replete with column and row headings to guide the use as to the necessary inputs. These headings should be understood as guidance and thus conformed to by users.

In review of the PD, it is clear that the tables provided in the data and parameters available at validation section are not those provided by the template and is not in conformance with the rules.

Project Personnel Response: The parameters tables have been updated following the VCS template.

Auditor Response: As stated in the client response, the PD has been updated to conform with the VCS rules. The updated PD is sufficient for closing this finding.

NCR 19 Dated 16 May 2017

Standard Reference: The VCS Standard v3.6 Section 3.16.6

Document Reference: 2016-09-29 COMACO VCS Monitoring Report_1st Period

Finding: The VCS Standard states "The monitoring report describes all the data and information related to the monitoring of GHG emission reductions or removals. The project proponent shall use the VCS Monitoring Report Template or the VCS Joint Project Description & Monitoring Report Template and adhere to all instructional text within the template."

In addition, the VCS Monitoring Report Template states "Instructions for completing the monitoring report template are given under the section headings in this template. All instructions must be followed, as set out in the VCS Standard. Instructions relate back to the rules and requirements set out in the VCS Standard and accompanying program documents. As such, this template must be completed in accordance with such documents, and the preparer will need to refer to the VCS program documents and the methodology in order to complete the template. It is also expected that relevant guidance, as it relates to the project and methodology, is also followed. Note that the instructions in this template are intended to serve as a guide and do not necessarily represent an exhaustive list of the information the preparer should provide under each section of the template. All sections must be completed using Arial 10pt, black, regular (non-italic) font. Where a section is not applicable, same must be stated under the section (the section must not be deleted from the final document)."

In review of the monitoring report it is clear that a number of section headings have been changed and tables that are not those provided by the template and therefore is not in conformance with the rules.

Project Personnel Response: The section headings and tables have been revised, and now make use of the VCS template.

Auditor Response: As stated in the client response, the monitoring report has been updated to conform with the VCS rules. The updated monitoring report is sufficient for closing this finding.