


## CDM-VCR-FORM

 <b>Verification and certification report form for CDM project activities (Version 03.0)</b>	
Complete this form in accordance with the instructions attached at the end of this form.	
BASIC INFORMATION	
<b>Title and UNFCCC reference number of the project activity</b>	Ibi Batéké degraded savannah afforestation project for fuel-wood production (Democratic Republic of Congo). UNFCCC Ref. No. 4176
<b>Scale of the project activity</b>	<input checked="" type="checkbox"/> Large-scale <input type="checkbox"/> Small-scale
<b>Version number of the verification and certification report</b>	2.2Aa
<b>Completion date of the verification and certification report</b>	09/06/2020
<b>Monitoring period number and duration of this monitoring period</b>	First monitoring period from 01/07/2008 – 30/08/2018
<b>Version number of the monitoring report to which this report applies</b>	1.4
<b>Crediting period of the project activity corresponding to this monitoring period</b>	01/07/2008 – 30/06/2038
<b>Project participants</b>	<p><b>Democratic Republic of the Congo:</b> MUSHIETE &amp; Compagnie SARL.</p> <p><b>Spain:</b> International Bank of Reconstruction and Development (IBRD) as Trustee of the BioCarbon Fund (BioCF); Kingdom of Spain – Ministry for the Ecological Transition &amp; Ministry of Economy and Business; Zeroemissions Carbon Trust S.A.</p> <p><b>Ireland:</b> Government of Ireland, Department of Communications, Climate Action and the Environment.</p>
<b>Host Party</b>	Democratic Republic of Congo
<b>Applied methodologies and standardized baselines</b>	AR-ACM0001 version 03 of 29/03/2009: Afforestation and reforestation of degraded land.
<b>Mandatory sectoral scopes</b>	14
<b>Conditional sectoral scopes, if applicable</b>	NA
<b>Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD</b>	219,534 tCO <sub>2e</sub> .
<b>Certified amount of GHG emission reductions or GHG removals for this monitoring period</b>	43,776 tCO <sub>2e</sub>
<b>Name and UNFCCC reference number of the DOE</b>	RINA SERVICES SPA E-0037
<b>Name, position and signature of the approver of the verification and certification report</b>	<p><b>Laura Severino</b> (Authorized officer signing for the DOE) Head of Certification Innovation &amp; Sustainability Unit</p> 

## CDM-VCR-FORM

**SECTION A. Executive summary****Purpose and general description of the project activity**

The project activity has been implemented with the aim to restore the Batéké plateau subjected to progressive degradation and deforestation for subsistence farming (maize, cassava) and charcoal production. Restoration covers approximately 4,226.53 ha and it is expected to achieve an annual average of GHG removals by sink of 39,289 tCO<sub>2</sub>e.

Different types of plantations and silvicultural models are established:

- (a) plots to be harvested with *Acacia sp*, *Eucalyptus sp* and *Pinus sp*, intercropped with cassava;
- (b) plots not to be harvested with mixture of local and exotic species intercropped with cassava;
- (c) plots not to be harvested with various local and exotic species;
- (d) enhancement of natural regeneration through fire control.

**Scope of verification**

This report summarizes the findings of the verification of the project, performed based on UNFCCC criteria for CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The objective of the verification is to have an independent review ex-post determination by a Designated Operational Entity (DOE) of the monitored GHG removals by sink that have occurred as a result of the registered CDM project activity during a defined monitoring period. Certification is the written assurance by the DOE that, during a specific period, a proposed CDM project activity achieved the net GHG removals by sink as verified.

The scope of the verification is to verify that:

- the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- the GHG removals by sink data and express a conclusion with a reasonable level of assurance about whether the reported GHG removals by sink data are free from material misstatement;
- the reported GHG emission data is sufficiently supported by evidence.

Verification shall ensure that reported GHG removals by sink are complete and accurate in accordance with applicable UNFCCC criteria for CDM in order to be certified.

**Verification process**

Verification is conducted using RINA procedures in line with the requirements specified in the CDM Validation and Verification Standard, latest version available, relevant decisions of the CDM EB and applying standard auditing techniques. RINA assesses and determines that the implementation and operation of the project activity, and steps taken to report GHG removals by sink comply with the CDM criteria and relevant guidance provided by the Board. The verification assessment involved a document review of relevant documentation and the on-site visit. Verification does not mean to provide any consultancy towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring.

**Conclusion**

The World Bank has commissioned RINA to carry out the verification and certification of GHG removals by sink reported for the registered project activity "*Ibi Batéké degraded savannah afforestation project for fuelwood production (Democratic Republic of Congo)*" in Democratic Republic of Congo, UNFCCC reference 4176, for the monitoring period 01/07/2008 to 30/08/2018. The project was validated by ERNST & YOUNG ET ASSOCIES /32/ and it was registered on 18/02/2011. The GHG removals by sink were calculated based on the approved methodology AR-ACM0001 version 03 of 29/03/2009: Afforestation and reforestation of degraded land /6/, and the monitoring plan included in the revised Project Design Document (PDD), version 2.4 of 28/04/2020 /31/. As per modalities and procedures for afforestation/reforestation projects the crediting period shall begin at the start of the project activity under the CDM, which is July 1, 2008.

In conclusion, it is RINA's opinion that the project activity "*Ibi Batéké degraded savannah afforestation project for fuelwood production (Democratic Republic of Congo)*" as described in the Monitoring Report version 1.4 of 04/06/2020, meets all relevant requirements for CDM activities, all relevant Host Party criteria and correctly applied the baseline and monitoring methodology AR-ACM0001 version 03 of 29/03/2009. Hence RINA is able to certify that the emission reductions from the project during the monitoring period 01/07/2008 – 30/08/2018 amount to 43,776 tCO<sub>2</sub>e.

## CDM-VCR-FORM

**SECTION B. Verification team, technical reviewer and approver****B.1. Verification team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader Verifier Technical Expert TA 14.1	IR	VALOROSO	Rita	RINA Central Office	√	√	√	√
2.	Technical Expert TA 14.1	EI	MASO	Daria	RINA Central Office	√			√

**B.2. Technical reviewer and approver of the verification and certification report**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Menon	Rekha	RINA India office
2.	Approver	IR	Severino	Laura	RINA Central office

**SECTION C. Application of materiality****C.1. Consideration of materiality in planning the verification**

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human error in the quantification of emissions (which may be more likely to occur if personnel are unfamiliar with, or not well trained regarding emissions processes or data recording).	Low	This is the 1st monitoring period with 10 years length. Standard operating procedures for field measurements and data entry are in place as well as a fully trained team working on field measurements and data analysis. Different personnel independently check 10% of the field measurements. All the data are entered into the data analysis spreadsheet (Ibi-tool).	The verification team will verify the field collection data process, the competency of personnel involved and will cross check a sample of data with the final GHG removals by sink calculation spreadsheet. The sample of plots for which the data will be crosschecked is described in section <i>D.4 (Sampling approach)</i> of this report.
2.	Undue reliance on a poorly designed information system, which may have few effective quality controls.			
3.	Manual adjustment of otherwise automatically recorded activity levels.			

**CDM-VCR-FORM****C.2. Consideration of materiality in conducting the verification**

In order to detect errors, omissions and misstatements in emission removal being claimed by project participants in the monitoring report, the materiality have been applied by RINA as per clause 9.1.2.3. *Application of materiality* of the CDM VVS for project activities /14/. The project is a large scale and a 2% materiality threshold is applied.

- (a) In planning the verification, RINA is able to understand the environment in which the project activity operated, the sources of project emissions and leakage within the project boundary, the monitoring activities, the equipment used to monitor or measured activity data, the origin and application of data used to calculate the emissions, data flow, the internal quality control system and the overall organization with respect to monitoring and reporting.
- (b) A verification plan and intensive sampling has been designed to minimize risks that a material discrepancy would not be detected. The field data of the monitored parameters are verified according to the sampling approach described in section D.4 of this report. The use of spreadsheets shows the adequate controls related to data updates, version tracking, traceability and security.
- (c) During the verification, any individual or aggregate errors, omission or misstatement identified, which resulted in discrepancies have been considered material and requested to be corrected.

RINA confirms that the claimed emission reductions are free from material errors, omissions or misstatement with a reasonable level of assurance, and proceed with the verification as defined in the verification plan.

**SECTION D. Means of verification****D.1. Desk/document review**

The monitoring report version 1.4 of 04/06/2020/1/ and previous versions, the GHG removals by sink calculation provided in the form of a spreadsheet (IbiBateke\_GHG-cal-Summary Sheet\_Inv\_Dec2019.xlsx – last version submitted and previous versions) /2/, were assessed as part of the verification. In addition the registered and revised PDD /31/, in particular the baseline estimations and the monitoring plan were reviewed. The monitoring report version 1.0 was made publicly available at the CDM UNFCCC website on 25/09/2018 (<http://cdm.unfccc.int/Issuance/MonitoringReports>). Appendix 3 of this report lists all documents reviewed during the verification including CDM regulatory documents.

## CDM-VCR-FORM

## D.2. On-site inspection

Duration of on-site inspection: 06/11/2018 to 08/11/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	Actual implementation and operation of the project activity.	Mbankana village Ibi Estate	06/11/2018	Rita VALOROSO
2.	Field measurement		07/11/2018	
3.	Cross-check between collected field data and calculation spreadsheet. QA/QC procedures, records and storage data. Measuring instruments. ER calculation		08/11/2018	
4.	Closing meeting and communication of the assessment findings			

## D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	SHONGO	Roger	Novacel through GI-Agro	06/11/2018 to 08/11/2018	History and background of the project.	Rita VALOROSO
2.	MBUYAMBA	Aaron				
3.	BAMOLONA	Fabrice				
4.	NZUMBA	Denis				
5.	MAKAMBU	Germaine			Operational and management structure.	
6.	MULAMBA	Nestor				
7.	MEKELELA	Serge				
8.	NGALUNGA LU	Joseph			Project starting date and start of crediting period.	
9.	MUTOY	Jean			Actual implementation and operation of the project activity.  QA/QC procedures.  Records and storage data.  Measuring instruments.  ER calculation.  Field measurements.	

## CDM-VCR-FORM

**D.4. Sampling approach**

According the validated and registered PDD /31/ a stratified sampling scheme is adopted based on species and planting technique; 9 strata were expected by the PDD but only 3 strata have been planted and thus monitored during the actual monitoring period.

**Determination of the sample.**

The sample of the PP's sample records is calculated and defined in 37 plots, using sample size calculator /15/ taking into account the minimal statistical constraints:

- 90% of confidence level
- 10% of confidence interval
- 50% of population proportion
- 52 plots as population size

Using the above approach is established the sampling of each strata:

- (a) Strata 1 (41 PSP), sampling 26 of which 13 field-measurements and 13 cross-check between forest inventory field sheet and the final GHG removals by sink calculation spreadsheet;
- (b) Strata 2 (2 PSP), sampling 2 with field measurements;
- (c) Strata 3 (9 PSP), sampling 9 of which 5 field-measurements and 4 cross-check between forest inventory field sheet and the final GHG removals by sink calculation spreadsheet;

Due to weather conditions (rain season: <https://www.climatestotravel.com/climate/democratic-republic-congo>) and time restriction, it was possible to re-measure the tree data for 6 plots all of them in strata 1, all the other 31 plots have been cross-checked the data between the forestry inventory field sheets and the final GHG removals by sink calculation spreadsheet. During the field visit, the way of measuring trees was assessed. People from GI-Agro (NGO created by the PP, who manage the project), demonstrated how they carry out the monitoring measurements: in each plot a tree is identified as reference point and all the trees inside the plot are measured.

The PP' sample size is calculated according the related methodological tool /8/. The calculation sample plots spreadsheet /30/ shows that confidence level of 90% for the desired level of precision is taken into account. It is confirmed that the 51 sample plots are correctly calculated. According the guidelines on application of specified version of A/R methodologies /38/, a maximum allowable relative margin of error of the mean, for estimation of above-ground tree biomass, of +10% at 90% confidence level is allowed and replaced the methodology requirement to meet the 10% precision level at the stratum level.

**Check the acceptability of the data.** The sampling design was developed by the PP following the procedures in the approved methodology AR-ACM0001 as described in the revised PDD /31/; three strata based on species and planting technique are identified and 52 permanent plots are selected for the forestry inventory; the total number of plots is determined with 90% of confidence level /30/. The following sample plots, covering strata 1 are those re-measured during the field visit:

Strata	Block ID	Plot ID	Notes
1	C06-SW	2	17 trees living. All of them have been re-measured.
		1	22 trees living and 5 dead. 10 trees have been re-measured.
	C06-NW	3	23 trees living and 3 dead. 10 trees have been re-measured.
		1	23 trees living and 3 dead. 10 trees have been re-measured.
	A05-SW	2	8 trees living. 4 trees have been re-measured.
		2	4 trees living. All of them have been re-measured.

The following sample plots, the data collected on the field by the project team and recorded using the field measurement sheets /28/ have been cross-checked with the inventory data /3/ and calculation spreadsheet /2/:

Strata	Block ID	Plot ID	Notes
1	C06NW	2	<b>Tree 32 dbh 54 (excel sheet 55)</b>
		1	OK - FIELD
		3	OK - FIELD
	C06SW	1	<b>Tree 24, stem "c" repeated</b> FIELD
		2	OK - FIELD
	A03SE	1	OK
		2	<b>Tree n. 7b DBH28 (excel sheet 27)</b>

## CDM-VCR-FORM

	A05SW	3	OK	
		1	OK - FIELD	
		2	OK - FIELD	
		3	OK	
	D06SE	4	OK	
		1	OK	
		2	OK	
		3	OK	
		A04SW	1	OK
			2	OK
	3		OK	
	4		OK	
	5		OK	
	B05NE	1	Tree n. 20 DBH6 (excel sheet 60) Tree n. 32 HEIGHT 4 (excel sheet 6)	
		2	OK	
	B05SE	1	Tree n. 18 HEIGHT 5 (excel sheet 7) Tree n. 22 HEIGHT 10 (excel sheet 11) Tree n. 30 HEIGHT 8 (excel sheet 9)	
2		Tree n. 11 HEIGHT 4 (excel sheet 6) Tree n. 16 HEIGHT 5 (excel sheet 6) Tree n. 19 HEIGHT 5 (excel sheet 6) Tree n. 21b DBH 28.5 (excel sheet 28) Tree n. 21c DBH 23.5 (excel sheet 24) Tree n. 33 HEIGHT 8 (excel sheet 9)		
3		OK		
4		OK		
2	A6SE	1	Tree n. 18 HEIGHT 5 (excel sheet 5) FIELD	
		2	Tree n. 16 DBH 23 (excel sheet 23.5) Tree n. 18 HEIGHT 3 (excel sheet 5) Tree n. 20 HEIGHT 3 (excel sheet 5) FIELD	
3	A04SE	1	OK FIELD	
		2	OK FIELD	
		3	OK	
		4	Tree n. 7 DBH 78.5 (excel sheet 78) Tree n. 11 DBH 50 (excel sheet 50.5)	
	A5SE	1	OK FIELD	
		3	Tree n. 4 HEIGHT 12 (excel sheet 11)	
		3	OK FIELD	
		4	OK FIELD	
		5	OK	

Based on the 31 sampled plots for which the field data of the monitored parameters have been cross-checked with the spreadsheet calculation as well as the 6 sample plots re-measured on the field which covered all the strata, RINA confirms the acceptability of the data for each record in the PPs' sample records.

## CDM-VCR-FORM

**D.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised**

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form		1	
Compliance of the project implementation and operation with the registered PDD		1	
Post-registration changes			
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines			
Compliance of monitoring activities with the registered monitoring plan	1	2	
Compliance with the calibration frequency requirements for measuring instruments			
Assessment of data and calculation of emission reductions or net removals		1	
Assessment of reported sustainable development co-benefits			
Global stakeholder consultation			
Remaining forward action requests from validation and/or previous verifications	1		
<b>Total</b>	<b>2</b>	<b>5</b>	

**SECTION E. Verification findings****E.1. Compliance of the monitoring report with the monitoring report form**

<b>Means of verification</b>	Comparing the monitoring report /1/ with the monitoring report form provided by CDM EB listed in the UNFCCC website /10/
<b>Findings</b>	<p><b>According the instructions for completing the form, take into account that:</b></p> <p><b>(a) International standard for numbers shall be used;</b></p> <p><b>(b) PRC shall be mentioned only in case of submission along with the request of issuance</b></p> <p><b>(c) List of PPs (cover page and section A.3) is not consistent with the data available in the UNFCCC project view page.</b></p> <p><b>CAR ID 1 – The monitoring report is updated accordingly, therefore the CAR is closed.</b></p>
<b>Conclusion</b>	The monitoring report version 1.2 /1/ submitted for verification process is compliance with the latest MR form (version available at the UNFCCC website) and with the instruction for completing the form therein /10/. Compliant with para 9.2.2. of the VVS for project activities /14/.

**E.2. Remaining forward action requests from validation and/or previous verifications**

This is the first verification, and the following FAR was raised during the validation process /31/:

*The project proponent shall take into account the new project area in the sampling design and stratification (experimental area).*

According with the registered PDD version 2 of 21/02/2018 and revised version 2.4 of 28/04/2020 /31/ the total project area was 4,129.70 ha already excluding the experimental area; therefore it is confirmed that the experimental area is not included in the sampling and in re-stratification.

## CDM-VCR-FORM

**E.3. Compliance of the project implementation and operation with the registered project design document**

<b>Means of verification</b>	<p>The registered project activity aims the restoration of the Batéké plateau subjected to progressive degradation and deforestation for subsistence farming (maize, cassava) and charcoal production. The Ibi estate is located in the Village of Mbankana that belongs to the Municipality of Malaku, Province of Kinshasa. As confirmed during the site visit the main aims of the project are the carbon sequestration, charcoal production through sustainable fuelwood production, reduce soil erosion, degradation and deforestation, alleviate the poverty introducing long term income enhancement mechanism for local communities. According the registered and revised PDD, the original planning was to plant the whole project area from 2008 and 2012 covering 4,226.43 ha; due to adverse factors occurred in 2009, as confirmed by the PP during the on-site visit, the actual planted area stands at 1,457.54 of which 323,68 falls into the GHG removals calculation. Three strata are defined based on species and planting technique: strata 1 (agroforestry) Acacia; strata 2 (agroforestry) Eucalyptus; strata 3 (agroforestry) Pinus.</p> <p>Based on the agreement with the DRC Government /27/ Mushiete family NOVACEL has the right to use the land where the project is implemented. As per the validation report /31/ control for 100% of the project area was established. The land tenure situation of the project has no changes and there are no further areas of land for which control has been established since validation, as confirmed by the PP during the on-site visit. The geographical delineation of the project boundary are also confirmed by the forestry inventory /3/.</p>
<b>Findings</b>	<p><b><i>The MR does not contains details about the re-planting plan and the planting plan for the area not yet planted but included in the project area. The changes in year-wise areas planted shall be reported. CAR ID 2 - The monitoring report version 1.2 of 01/07/2019 and the revised PDD version 2.4 of 28/04/2020 are updated accordingly. The plating &amp; harvest monitoring schedule expects planting activities from 2019 to 2022 to the reach the project area planned at the time of project validation/registration. CAR CLOSED</i></b></p>
<b>Conclusion</b>	<p>By means of the on-site inspection, RINA has assessed that all physical features of the registered CDM project activity specified in the registered PDD are in place and confirms that the implementation and operation of the project activity has been conducted in accordance with the description contained in the registered/revised PDD, and the minor change identified during the first verification. The change specific to afforestation or reforestation project activity is identified as minor in nature as per the <i>Guidelines on accounting of specified types of changes in A/R project activities from the description in registered PDD /9/</i>. It is also confirmed that the areas of land for which the control over the project activity are those established by the PP since the validation as well as the boundary geographically delineates the project activity under the control of PP.</p>

## CDM-VCR-FORM

**E.4. Post-registration changes**

Project participants in the revised PDD /31/ are updated to be in line with the revised MoC submitted to EB on 09/2019. According § 227 of the PS requirements /14/ the modalities or information changes must be submitted revising the MoC.

On 23/08/2018 the EB approved PRC in relation to the following:

- 1) The modification on confidence level from 95% to 90%
- 2) The GHG emissions from site preparation were excluded.

**E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents<sup>1</sup>**

NA

**E.4.2. Corrections**

NA

**E.4.3. Changes to the start date of the crediting period**

NA

**E.4.4. Inclusion of a monitoring plan**

NA

**E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents**

The calculation sample plots spreadsheet /30/ shows that confidence level of 90% for the desired level of precision is taken into account. It is confirmed that the 51 sample plots are correctly calculated. According the guidelines on application of specified version of A/R methodologies /38/, a maximum allowable relative margin of error of the mean, for estimation of above-ground tree biomass, of +10% at 90% confidence level is allowed and replaced the methodology requirement to meet the 10% precision level at the stratum level. The applied change falls into types of changes in registered A/R CDM project activities that does not require prior approval by the Board according the *Guidelines on accounting of specified types of changes in A/R CDM project activities* /9/. Being a minor change in A/R project, it is not requested to submit notification or request for approval but it is requested to address it through the verification stage /11/.

The applied methodology /6/ requires to update the stratification when unexpected disturbances and forest management activities (e.g. harvesting) occur during the crediting period. The current monitoring period uses as stratification criteria the species planted as forest management regime. The revised PDD /31/ is updated in order not to prescribe any stratification. As indicated in the guidelines for sampling and surveys, stratification does not have an impact on the estimates but it serves to reduce standard errors of the estimate. Not stratifying causes the estimate to be less precise or to require a higher sampling intensity to achieve the same level of precision. In this case the level of precision is below the 10% at 90% required by the applicable methodology.

The applied change falls into types of changes in registered A/R CDM project activities that does not require prior approval by the Board according the *Guidelines on accounting of specified types of changes in A/R CDM project activities* /9/. Being a minor change in A/R project, it is not requested to submit notification or request for approval but it is requested to address it through the verification stage /11/.

<sup>1</sup> Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

## CDM-VCR-FORM

**E.4.6. Changes to the project design**

NA

**E.4.7. Changes specific to afforestation and reforestation project activities**

According the registered, the original planning was to plant the whole project area from 2008 and 2012 covering 4,226.43 ha; due to adverse factors occurred in 2009, as confirmed by the PP during the on-site visit, the actual planted area stands at 1,457.54 of which 323,68 falls into the GHG removals calculation. Therefore the timing of harvest and year-wise areas planted changed. The applied change falls into types of changes in registered A/R CDM project activities that does not require prior approval by the Board according the *Guidelines on accounting of specified types of changes in A/R CDM project activities* /9/. Being a minor change in A/R project, it is not requested to submit notification or request for approval but it is requested to address it through the verification stage /11/.

According the registered PDD /31/ the project designed square sampling plots is of 250 m<sup>2</sup>. However, field tests have shown that measuring 36 tree locations on 250 m<sup>2</sup> might increase artificially the tree density above its nominal 1111 tree/ha value. Therefore, the plot size has been increased to remain conservative to 12m x 27m = 324m<sup>2</sup> with the same number of trees.

The applied change falls into types of changes in registered A/R CDM project activities that does not require prior approval by the Board according the *Guidelines on accounting of specified types of changes in A/R CDM project activities* /9/. Being a minor change in A/R project, it is not requested to submit notification or request for approval but it is requested to address it through the verification stage /11/.

**E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents**

<b>Means of verification</b>	During this monitoring period, the validated and registered monitoring plan was found to be in accordance with the applied methodology /6/ and methodological tools /7/.
<b>Findings</b>	/
<b>Conclusion</b>	By means of reviewing the registered monitoring plan /31/ with the applied methodology /6/ and methodological tools /7/ RINA confirms that the registered monitoring plan is in accordance with the applied methodology and methodological tools.

**E.6. Compliance of monitoring activities with the registered monitoring plan**

The monitoring has been carried out according to the monitoring plan in the registered/revised PDD /31/. The following table describe for each parameter which is to be measured according the monitoring plan and how RINA has verified that the actual monitoring complies with the monitoring plan and that data have been assessed to correctly support the emission removals being claimed. The GHG data monitoring follows project own procedures with regard to management and monitoring /16-19/ /22-24/. Monitoring organization and responsibilities are identified in section C of the monitoring report /1/; the relevant responsibilities are for data collection process and quality assurance process.

In accordance with the VVS /14/ RINA has assessed the information provided by the PP by: reviewing the data and information to verify their completeness, the registered/revised monitoring plan /31/, the applied methodology /6/ and methodological tools /7/; evaluating the data management and the quality assurance and quality control of the reported emission removals. The on-site inspection is also carried out to assess the implementation and operation of the registered project activity, review the information flows, and interview the relevant personnel in the data collection procedures, cross-check the information in the monitoring report and the raw data, review of calculation and assumptions used for the GHG removals by sink calculation.

## CDM-VCR-FORM

## PART II.

## A.1.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	Data and parameters fixed ex-ante as listed in the monitoring report /1/ have been cross-checked and reviewed as applicable against the registered/revised PDD and monitoring plan /31/, applied methodology /6/ and other relevant CDM documentation. The following list shows the default values used in this verification for ER calculation:		
	Parameter	Description	Value applied
	Rj	Root-shoot ratio for species j kg d.m.yr-1 (kg d.m.yr-1)-1	Acacia mangium: 0.159 Acacia auriculiformis: 0.132 Eucalyptus: 0.30 Pinus: 0.25 Local species: 0.29 Regeneration stands: 0.29
	P	Desired level of precision Percent	90
	Dj	Basic wood density for species j t d.m. m-3	0.50
	CFj	Carbon fraction of dry matter for species j t C t-1 d.m.	0.50
Findings	<b><i>The root ratio of Acacia stated in the MR is not consistent with the data stated in the PDD. CAR ID 3 - The monitoring report version 1.2 of 01/07/2019 is updated accordingly. The root shoot ratio in the MR and in the calculation is in accordance with data in the registered PDD, therefore CAR is closed.</i></b>		
Conclusion	RINA confirms that the parameters listed above are fixed ex-ante and used for baseline, project and leakage emissions calculation in accordance with the applied methodology and methodological tools and they are the same used at the validation stage.		

## A.1.2. Data and parameters monitored

<b>Means of verification</b>	<p>The following list shows the monitored parameters during this monitoring period and used for ERs calculation:</p> <table border="1"> <thead> <tr> <th>Parameter Value applied</th><th>Assessment</th></tr> </thead> <tbody> <tr> <td>A<sub>s</sub> Area of the stratum slashed and burnt (ha).</td><td> <p><b><i>Evidences on how the total area slashed before planting was determined shall be provided. CAR ID 4-CAR is closed.</i></b></p> <p>The monitoring report version 1.2 of 01/07/2019 is updated including the follow up activities carried out according the internal procedures /22/ /24/. It results that slashed area from biomass was 1,711.30 ha. No burning is occurred.</p> </td></tr> <tr> <td>% distributed A<sub>i</sub> proportion of soil disturbance of stratum i</td><td> <p><b><i>Evidences of the annual monitoring of the proportion of soil disturbance of stratum shall be provided. CAR ID 4-CAR is closed.</i></b></p> <p>The monitoring report version 1.2 of 01/07/2019 is updated including the follow up activities carried out according the internal procedures /22/ /24/. It results that slashed area from biomass was 1,711.30 ha but the soil disturbance through ploughing was on 1,361.76 ha/26/</p> </td></tr> </tbody> </table>	Parameter Value applied	Assessment	A <sub>s</sub> Area of the stratum slashed and burnt (ha).	<p><b><i>Evidences on how the total area slashed before planting was determined shall be provided. CAR ID 4-CAR is closed.</i></b></p> <p>The monitoring report version 1.2 of 01/07/2019 is updated including the follow up activities carried out according the internal procedures /22/ /24/. It results that slashed area from biomass was 1,711.30 ha. No burning is occurred.</p>	% distributed A <sub>i</sub> proportion of soil disturbance of stratum i	<p><b><i>Evidences of the annual monitoring of the proportion of soil disturbance of stratum shall be provided. CAR ID 4-CAR is closed.</i></b></p> <p>The monitoring report version 1.2 of 01/07/2019 is updated including the follow up activities carried out according the internal procedures /22/ /24/. It results that slashed area from biomass was 1,711.30 ha but the soil disturbance through ploughing was on 1,361.76 ha/26/</p>
Parameter Value applied	Assessment						
A <sub>s</sub> Area of the stratum slashed and burnt (ha).	<p><b><i>Evidences on how the total area slashed before planting was determined shall be provided. CAR ID 4-CAR is closed.</i></b></p> <p>The monitoring report version 1.2 of 01/07/2019 is updated including the follow up activities carried out according the internal procedures /22/ /24/. It results that slashed area from biomass was 1,711.30 ha. No burning is occurred.</p>						
% distributed A <sub>i</sub> proportion of soil disturbance of stratum i	<p><b><i>Evidences of the annual monitoring of the proportion of soil disturbance of stratum shall be provided. CAR ID 4-CAR is closed.</i></b></p> <p>The monitoring report version 1.2 of 01/07/2019 is updated including the follow up activities carried out according the internal procedures /22/ /24/. It results that slashed area from biomass was 1,711.30 ha but the soil disturbance through ploughing was on 1,361.76 ha/26/</p>						

## CDM-VCR-FORM

	/28/																														
<b>A<sub>i</sub></b> Area of stratum <i>i</i> , (ha)	<p>The area of stratum is measured through GPS according the internal procedures /24/ /4/. Due to adverse factors occurred in 2009, as confirmed by the PP during the on-site visit, the actual planted area stands at 1,457.54 of which 323,68 falls into the GHG removals calculation. Three of the nine expected strata are planted. Following the actual area of stratum:</p> <table border="1"> <thead> <tr> <th>Strata</th><th>Area ha – actual</th><th>Area ha - PDD</th></tr> </thead> <tbody> <tr><td>1</td><td>272.95</td><td>2,440.65</td></tr> <tr><td>2</td><td>16.16</td><td>442.62</td></tr> <tr><td>3</td><td>34.57</td><td>136.02</td></tr> <tr><td>4</td><td>0</td><td>452.64</td></tr> <tr><td>5</td><td>0</td><td>119.26</td></tr> <tr><td>6</td><td>0</td><td>74.11</td></tr> <tr><td>7</td><td>0</td><td>69.64</td></tr> <tr><td>8</td><td>0</td><td>162.30</td></tr> <tr><td>9</td><td>0</td><td>232.46</td></tr> </tbody> </table> <p>The changes in year-wise areas planted shall be reported. CAR ID 2- The monitoring report version 1.4 of 04/06/2020 and the revised PDD version 2.4 of 28/04/2020 are updated accordingly. The planting &amp; harvest monitoring schedule expects planting activities from 2019 to 2022 to reach the project area planned at the time of project validation/registration. CAR is closed.</p>	Strata	Area ha – actual	Area ha - PDD	1	272.95	2,440.65	2	16.16	442.62	3	34.57	136.02	4	0	452.64	5	0	119.26	6	0	74.11	7	0	69.64	8	0	162.30	9	0	232.46
Strata	Area ha – actual	Area ha - PDD																													
1	272.95	2,440.65																													
2	16.16	442.62																													
3	34.57	136.02																													
4	0	452.64																													
5	0	119.26																													
6	0	74.11																													
7	0	69.64																													
8	0	162.30																													
9	0	232.46																													
<b>% A<sub>i</sub></b> Survival rate for planting	<p>The parameter is not requested by the applied methodology, but expected by the registered monitoring plan, to assess the project performance.</p> <p><b>The excel sheet with the monitoring of the survival rate is not readable. CL ID 2-CL is closed.</b></p> <p>The survival rate for planting /35/ is the following: Acacia 59.4%; Eucalyptus 43.1%; Pinus 48.3%.</p>																														
<b>A<sub>h</sub></b> Harvested area (ha)	<p>The parameter is not requested by the applied methodology, but expected by the registered monitoring plan, to assess the project performance. All the activities related to the forest establishment and events occurred are recorded in the specific survey on forest registry according the internal procedures /24/ /4/.</p> <p><b>The total harvested area is not reported in section D.2 of the monitoring report. CAR ID 4-CAR is closed.</b></p> <p>As presented in the new table Planting &amp; harvest monitoring and schedule included in the monitoring report in section B.1, the total harvested area since project start was 423.78 ha.</p>																														
<b>V<sub>h</sub></b> Harvested volume (m <sup>3</sup> .ha <sup>-1</sup> )	<p>The parameter is not requested by the applied methodology, but expected by the registered monitoring plan, to assess the project performance.</p> <p><b>Clarification is requested on how the parameter is calculated and from where the C<sub>tree</sub>, i, t is sourced. CL ID 2-CL is closed.</b></p> <p>The carbon stock in trees in stratum is correctly</p>																														

## CDM-VCR-FORM

		calculated according the formula in the registered/revised PDD; the same is done to calculate the carbon stock in below-ground and above-ground biomass.								
<b>ID<sub>sp</sub></b> Sample plot ID (alphanumeric)		The plot ID is identified before to carry out the forest inventory /3/. As observed by the on-site visit the project area is divided in blocks and inside the blocks are identified the plots. Both the blocks and the plots are identified with the appropriate ID /2/								
<b>n<sub>i</sub></b> Total number of sample plots for stratum <i>i</i> (dimensionless)		<p>The sampling design was developed by the PP following the procedures in the approved methodology AR-ACM0001 as described in the revised PDD /32/; three strata based on species and planting technique are identified and 52 permanent plots are selected for the forestry inventory; the total number of plots is determined with 90% of confidence level /30/. The following sampling plots are identified for each strata:</p> <table><tr><th>Strata</th><th>Total number of sample plots</th></tr><tr><td>1</td><td>41</td></tr><tr><td>2</td><td>2</td></tr><tr><td>3</td><td>9</td></tr></table>	Strata	Total number of sample plots	1	41	2	2	3	9
Strata	Total number of sample plots									
1	41									
2	2									
3	9									
<b>AP</b> Sample plot area for sample plot ID <sub>sp</sub> (ha)		<p>The sample plot area is calculated and accounts to 0.0324 ha. The planted project area is 323.68 ha</p> <p><b>The PP is requested to explain how the sample plot area is calculated for arriving to 0.0324 ha considering the planted project area and the number of plots. CL ID 2-CL is closed.</b></p> <p>According the registered PDD /31/ the project designed square sampling plots is of 250 m². However, field tests have shown that measuring 36 tree locations on 250 m² might increase artificially the tree density above its nominal 1111 tree/ha value. Therefore, the plot size has been increased to remain conservative to 12m x 27m = 324m² with the same number of trees</p>								
<b>n<sub>i</sub>AP</b> Total area of sample plots in stratum <i>i</i> (ha)		<p><b>The total area of sample plots in stratum stated in the MR is not consistent with the area considered in the sample plots spreadsheet. CAR ID 4-CAR is closed.</b></p> <p>The total area of sample plots is the following: Stratum 1.3300 ha; stratum 2 0.05040 ha; stratum 3 0.2879 ha.</p>								
<b>A</b> Total area of all strata (ha)		The area of stratum is measured through GPS according the internal procedures /24/ /4/. Due to adverse factors occurred in 2009, as confirmed by the PP during the on-site visit, the actual planted area stands at 1,457.54 of which 323,68 falls into the GHG removals calculation. Three of the nine expected strata are planted.								
<b>N</b> Maximum number of sample plots in the project area (dimensionless)		The maximum number of sample plots in the project area is estimated to be 9900.								
<b>n</b> Total number of sample plots in the project area (dimensionless)		<p><b>The total number of sample plots stated in the MR is not consistent with the GHG removal calculation. CAR ID 4-CAR is closed.</b></p> <p>Actually 51 and a conservative approach to obtain a more accurate results is adopted by the PP (re-stratification and re-calculation based on the actual project status).</p>								

## CDM-VCR-FORM

	<b>N<sub>i</sub></b> Maximum number of sample plots in stratum <i>i</i> (dimensionless)	<b><i>The expected maximum number of sample plots in stratum is not consistent with the total number stated in parameter N. CAR ID 4- The number of sample plots for each stratum was corrected in the MR. CAR is closed.</i></b> Stratum 1 8,425; stratum 2 499; stratum 3 1,067.
	<b>AP<sub>loc</sub></b> Sample plot location (ddmmss)	The plot location is determined using GPS and checked during the forestry inventory /3/.
	<b>j</b> Tree species (dimensionless)	Tree species is checked during the forestry inventory /3/.
	<b>DBH</b> Diameter at breast height (cm)	The diameter is measured for all the living trees in the plot using a graduated pole placed at the foot of the tree at 1.30 m height. In the calculation are considered all the tree with diameter >2 cm. Where more stems there are in one tree, they are considered as separate trees, which is a more conservative approach compared to the approach which consider the sum of squares of the two diameters.
	<b>H</b> Height of tree (m)	The height of the tree is measured according the internal procedure /18/.
	<b>f<sub>j</sub> (DBH, H)</b> Allometric equation for species <i>j</i> linking diameter at breast height (DBH) and possibly tree height (H) to above ground biomass of living trees.	<b><i>The allometric equation used taken from a third party source is not in compliance with the methodology requirements. In particular the source used states that the data are calculated based on a sample of tree of 8 while the methodology requires a data set of at least 30 sample trees. CAR ID 4-CAR is closed.</i></b> A peer-reviewed study /36/ is adopted where the equation is elaborated based on 8 samples. The approach is in compliance with the methodology requirements.
	<b>C<sub>BB_tree,j,i,t</sub> (tC)</b> <b>Mean carbon stock in above-ground biomass per unit area for species, stratum, at time.</b>	It is calculated according the registered PDD considering the sum of above and below ground mass multiplied to carbon fraction /3/
	<b>C<sub>AB_tree,j,i,t</sub> (tC.ha<sup>-1</sup>)</b> <b>Mean carbon stock in above-ground biomass per unit area for species, stratum, at time</b>	It is calculated according the registered PDD considering the measured DBH and H /3/.
	<b>C<sub>BB_tree,j,i,t</sub> (tC.ha<sup>-1</sup>)</b> <b>Mean carbon stock in below-ground biomass per unit area for species, stratum, at time</b>	
	<b>Δ C<sub>AG,i,t</sub> (tC.yr<sup>-1</sup>)</b> <b>Annual carbon stock change in above-ground biomass of trees for stratum at time</b>	It is calculated according the registered PDD considering the above ground mass multiplied to carbon fraction /3/.
	<b>Δ C<sub>BG,i,t</sub> (tC.yr<sup>-1</sup>)</b>	It is calculated according the registered PDD

## CDM-VCR-FORM

	<b>Annual carbon stock change in below-ground biomass of trees for stratum at time</b>	considering the above ground mass multiplied to carbon fraction /3/.
	$\Delta C_{P_i}(tCO_2-e)$ <b>Sum of the changes in above and below ground tree biomass in the project scenario</b>	Calculated through the sum of $\Delta C_{AG,i,t}$ and $\Delta C_{BG,i,t}$ (
<b>Findings</b>	<p><b>Refer to all findings stated in each of the monitored parameter. Moreover:</b></p> <p>(a) <i>The formula used to calculate the below-ground biomass for Acacia Mangium is that expected for Acacia Auriculiformis. CAR ID 4</i></p> <p>(b) <i>According the applied methodology and the registered PDD, the monitoring frequency is established every 5 years from the project establishment. The implementation of the project started on 2008. From 2008 until 2018 two monitoring activities shall be available. Between the first (2012) and the second (2018) the interval is more than 5 years. The PP is requested to clarify any impact on the GHG removals calculation. CAR ID 4</i></p> <p><b>Please refer to Appendix 4 – CAR 4 is closed since the PP has provided satisfactory responses.</b></p>	
<b>Conclusion</b>	<p>RINA confirms that:</p> <ul style="list-style-type: none"> <li>- The registered monitoring plan has been properly implemented and followed by the PPs except for the minor change in A/R project discussed in the previous section;</li> <li>- All parameters stated in the registered monitoring plan have been monitored including project emissions, baseline emissions and leakage;</li> <li>- The responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the registered monitoring plan;</li> <li>- Quality assurance and quality control procedures have been applied in accordance with the registered monitoring plan;</li> <li>- The monitoring has been carried out in accordance with the registered monitoring plan.</li> </ul>	

## A.1.3. Implementation of sampling plan

<b>Means of verification</b>	The validated sampling plan is implemented for the first monitoring period. Permanent sample plots are defined and monitored for the actual monitoring period; 52 permanent sample plots are accounted applying the procedure for sampling design described in the registered PDD /31/ and they have been allocated to each stratum as described in section E.6.2 of this report.
<b>Findings</b>	/
<b>Conclusion</b>	RINA confirms that the PPs have implemented the sampling and surveys according to the sampling plan in the registered monitoring plan.

## A.2. Compliance with the calibration frequency requirements for measuring instruments

<b>Means of verification</b>	<p>The measuring equipment are:</p> <p>(a) GPS Garmin for the determination of geographical coordination.</p> <p>(b) Calliper for the determination of diameter</p> <p>(c) Measurement stick for the determination of height of species.</p>
<b>Findings</b>	/
<b>Conclusion</b>	RINA confirms that the monitoring equipment used are not equipment to be subjected to calibration and by the on-site visit there is the evidence of the right use of the GPS (digital instrument) and of the all other manual equipment.

## CDM-VCR-FORM

## A.3. Assessment of data and calculation of emission reductions or net removals

## A.3.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	According the applied the registered PDD /31/ the baseline net GHG removals by sinks are assumed to be zero.
Findings	/
Conclusion	RINA confirms that the calculations of baseline GHG removals have been carried out in accordance with the formulae and method described in the monitoring and applied methodology and the applicable CDM guidelines.

## A.3.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	<p>Increase in GHG removals within the project boundary resulting from removal or burning vegetation attributable to the project activity shall be considered insignificant and therefore accounted as zero. Moreover, as confirmed during the field visit no burning of biomass attributable to the project activity occurred during the monitoring period.</p> <p>The applied methodology does not expect the estimation of uncertainty. The achieved precision of the sampling practice for biomass estimation within each stratum is calculated according the methodological tool AR-TOOL14 /37/. The uncertainty would be 9% at 90% of confidence level, the % relative margin of error account to 9%, therefore the 10% is achieved as per spreadsheet calculation /30/. . Therefore, the actual GHG removals by sinks is equal to change in the carbon stocks in project occurring in the selected carbon pools. The actual GHG removals by sinks account to 43,776 tCO<sub>2</sub>e.</p>
Findings	/
Conclusion	RINA confirms that the calculation of project net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodologies and the applicable CDM guidelines.

## A.3.3. Calculation of leakage GHG emissions

Means of verification	Leakage shall be accounted due to the displacement and increase in use of wood posts for fencing that have not taken in place in the project area during the monitoring period as confirmed during the field visit. Therefore leakage are assumed to be zero.
Findings	/
Conclusion	RINA confirms that the calculations of leakage have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodologies and the applicable CDM guidelines.

## A.3.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	<p>According the applied methodology AR-ACM0001 /6/ the net anthropogenic GHG removals by sinks is calculated as:</p> $\Delta C_{AR-CDM,t} = \Delta C_{ACTUAL,t} - \Delta C_{BSL,t} - LK_t$ <p>Since the baseline GHG removals and GHG emissions due to leakage are assumed to be zero, the net anthropogenic removal by sinks are equal to the actual net GHG removals by sinks 43,776 tCO<sub>2</sub>e.</p> <p>This is the first verification therefore no temporary CERs were issued based on the previous verification and certification.</p>
Findings	<b><i>Emission reductions calculation shall be updated according the errors found during the cross-check with the field sheets and the forest inventory, as detailed in Section D.4 of the verification report. CAR ID 5- The spreadsheet calculation /2/ is updated accordingly. The actual GHG removals account to 43,883 tCO<sub>2</sub>e. CAR is closed.</i></b>
Conclusion	RINA confirms:

**CDM-VCR-FORM**

	<ul style="list-style-type: none"> <li>- The values reported in the monitoring report /1/ were verified against the data presented in the emission reduction spreadsheet /2/;</li> <li>- The calculation of emission reductions has been carried out in accordance with the formulae and methods described in the registered monitoring plan /31/ and applied methodology /6/;</li> <li>- IPCC default values and other references values have been correctly applied in the calculation in accordance to the registered PDD /31/;</li> <li>- Since the monitoring period starts before 31/12/2012 and ends on 30/08/2018 the specific approach was applied to the calculation of the GHG emission reductions.</li> </ul>
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**A.3.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD**

<b>Means of verification</b>	The GHG removals by sinks with the ex-ante estimation in the registered PDD account for the monitoring period 219,534 tCO <sub>2</sub> e while the GHG removals by sinks with the ex-post accounts to 43,776 tCO <sub>2</sub> e.
<b>Findings</b>	/
<b>Conclusion</b>	The actual GHG removals by sinks are lower than the expectations stated in the registered PDD.

**A.3.6. Remarks on difference from estimated value in registered PDD**

<b>Means of verification</b>	NA
<b>Findings</b>	
<b>Conclusion</b>	

**A.3.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards**

<b>Means of verification</b>	The GHG removals by sinks for the monitoring period accounts to 43,776tCO <sub>2</sub> e.
<b>Findings</b>	/
<b>Conclusion</b>	The specific approach for A/R project was applied to the calculations of GHG removals by sinks.

**A.4. Assessment of reported sustainable development co-benefits**

<b>Means of verification</b>	NA
<b>Findings</b>	
<b>Conclusion</b>	

**A.5. Global stakeholder consultation**

<b>Means of verification</b>	The monitoring report was made publicly available at the CDM UNFCCC web site on 25/09/2018 and the on-site inspection was undertaken 21 days after the monitoring report publication.
<b>Findings</b>	/
<b>Conclusion</b>	This is the first monitoring period, and no comments were received by stakeholders within the 14 days of publication of the monitoring report.

**SECTION B. Internal quality control**

The draft final verification report before being submitted to the client will be subjected to an independent internal technical review to confirm that all the verification activities had been completed according to the pertinent RINA instructions.

The technical review will be performed by a technical reviewer qualified in accordance with RINA's qualification scheme for CDM validation and verification.

**CDM-VCR-FORM****SECTION C. Verification opinion**

RINA Services Spa (RINA) has performed verification of the GHG removals by sinks reported for the project activity "*Ibi Batéké degraded savannah afforestation project for fuelwood production (Democratic Republic of Congo)*" in Democratic Republic of Congo, UNFCCC reference 4176, for the monitoring period 01/07/2008 to 30/08/2018, with regard to the relevant requirements for CDM activities.

The project participant of the activity "*Ibi Batéké degraded savannah afforestation project for fuelwood production (Democratic Republic of Congo)*" are responsible for:

- The preparation of greenhouse gas removals data and the reported greenhouse gas removals by sinks from the project on the basis set out in the monitoring plan contained in the registered PDD version 2 of 21/02/2018 and revised PDD version 2.4 of 28/04/2020 /31/.
- The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG removals by sinks of the project.

It is the responsibility of RINA to express an independent verification opinion about the project's conformity with the requirements to paragraph 62 of the CDM modalities and procedures and on the reported greenhouse gas removals by sinks from the project.

Based on the documented evidence and corroborated by an on-site assessment RINA can confirm that:

- The project has been implemented and operated as per the registered and revised PDD;
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable CDM requirements;
- The monitoring is in place as per the applied baseline and monitoring methodology;
- The monitoring complies with the monitoring plan in the registered and revised PDD;
- The monitoring plan in the registered and revised PDD is as per the applied baseline and monitoring methodology.

**SECTION D. Certification statement**

It is RINA's opinion that the GHG removals by sinks stated in the monitoring report version 1.4 of 04/06/2020 for the "*Ibi Batéké degraded savannah afforestation project for fuelwood production (Democratic Republic of Congo)*" in Democratic Republic of Congo, UNFCCC reference 4176, for the monitoring period 01/07/2008 to 30/08/2018 are fairly stated. The GHG removals by sinks were calculated correctly on the basis of the approved monitoring methodology "*AR-ACM0001 version 03 of 29/03/2009: Afforestation and reforestation of degraded land*" and the monitoring plan contained in the registered and revised PDD. The monitoring period starts before 31/12/2012 and the specific approach for A/R project was applied to the calculation of GHG removals by sinks.

Hence RINA is able to certify that the emission reductions for the project during the monitoring period 01/07/2008 to 30/08/2018 amount to 43,776 tCO<sub>2</sub>e.

## CDM-VCR-FORM

## Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation Verification Standard
CER(s)	Certified Emission Reduction(s)
CL	Clarification Request
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
DBH	Diameter at breast height
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
ERs	Emission Reduction(s)
FAR	Forward Action Request
GIS	Geographic Information System
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MR	Monitoring Report
NA	Not Applicable
PDD	Project Design Document
PE	Project emission
PP(s)	Project Participant(s)
PRC	Post registration change
QA/QC	Quality Assurance / Quality Control
RINA	RINA Services Spa
SS	Sectoral Scope
TA	Technical Area
TBD	To Be Defined
UNFCCC	United Nations Framework Convention on Climate Change

## CDM-VCR-FORM

## Appendix 2. Competence of team members and technical reviewers



### CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:  
We declare that Mr/Mrs/Ms:

Rita VALOROSO

è qualificato come:  
is qualified as:

CDM -TEC, -VAL, -VER, -TL  
TECHNICAL REVIEWER, REG-EXP<sup>2</sup>

per le seguenti aree tecniche:  
for the following technical areas:

1.2, 3.1, 13.1, 14.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Renewables	1
3.1	Energy demand	3
13.1	Solid Waste and waste water	13
14.1	Afforestation and reforestation	14

In accordo alle istruzioni dell'Unità Certification Innovation & Sustainability.  
In accordance with the instructions of the Unit Certification Innovation & Sustainability.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	18-01-2010	-
13	14-11-2019	Update qualification with "Sampling and surveys for CDM PAs and PoAs"

Il Resp. CEINS  
Head of CEINS

#### 1 Legend:

VAL:	Validator	CDM: Clean Development Mechanism
VER:	Verifier	VCS: Verified Carbon Standard
TEC:	Technical Expert	GS: Gold Standard
TL:	Team Leader	SCS: SocialCarbon Standard
FIN-EXP:	Financial Expert	JI: Joint Implementation
DET:	Determiner	

#### 2

Iran, Pakistan, Qatar; Cameroon, Congo, Ethiopia, Ghana, Madagascar, Mozambique, Niger, Nigeria, Tunisia, Uganda, South Africa, Egypt, Brazil; Albania, Bosnia-Herzegovina, Georgia, Macedonia.

RINA Services S.p.A. è accreditata da UNFCCC, quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM, da VCSA per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, per condurre la Validazione e la Verifica di Progetti GS, da Ecologica Institute per condurre la Validazione e la Verifica di rapporti SCS.

RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports.

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Page 1 of 1

## CDM-VCR-FORM



**CERTIFICATO DI QUALIFICA**  
**QUALIFICATION CERTIFICATE**

Si attesta che il sig./sig.ra:  
We declare that Mr/Mrs/Ms:

Daria MASO

è qualificato come<sup>1</sup>:  
is qualified as:

TEC

per le seguenti aree tecniche:  
for the following technical areas:

14.1, 15.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
14.1	Afforestation and reforestation	14
15.1	Agriculture	15

in accordo alle istruzioni dell'unità Certificazione, Innovazione e Sostenibilità.  
in accordance with the instructions of the Certification, Innovation & Sustainability Unit.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	29/09/2017	First Issue
1	22/01/2020	Update qualification in TA 15.1

Il Resp. CEINS  
Head of CEINS

<sup>1</sup> Legend:

VAL: Validator  
VER: Verifier  
TEC: Technical Expert  
TL: Team Leader  
FIN-EXP: Financial Expert  
DET: Determiner

CDM: Clean Development Mechanism  
VCS: Verified Carbon Standard  
GS4GG: Gold Standard For Global Goals  
SCS: SodaCarbon Standard  
JI: Joint Implementation

RINA Services S.p.A. è accreditato da UNFCCC, quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM, da VCSA per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, per condurre la Validazione e la Verifica di Progetti GS, da Ecologica Institute per condurre la Validazione e la Verifica di rapporti SCS

RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS4GG Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports

GHG\_QUAL\_CERT\_EN(07-2018)

Page 1 of 1

## CDM-VCR-FORM


**CERTIFICATO DI QUALIFICA**  
**QUALIFICATION CERTIFICATE**

Si attesta che il sig./sig.ra:  
We declare that Mr/Mrs/Ms:

**Rakha MENON**

è qualificato come<sup>1</sup>:  
Is qualified as:

**CDM-TEC, -VAL, -VER, -TL  
ITRP, REG-EXP<sup>2</sup>**

per le seguenti aree tecniche:  
for the following technical areas:

**1.2, 2.1, 13.1, 13.2, 14.1**

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Renewables	1
2.1	Electricity Distribution	2
13.1	Solid Waste and wastewater	13
13.2	Manure	13
14.1	Afforestation and reforestation	14

In accordo alle istruzioni dell'Unità Certification Innovation & Sustainability.  
In accordance with the instructions of the Certification Innovation & Sustainability Unit.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	06-03-2008	-
13	14-11-2019	Update qualification with "Sampling and surveys for CDM PAs and PoAs"

Il Resp. CEINS  
Head of CEINS

<sup>1</sup> Legend:

VAL: Validator  
VER: Verifier  
TEC: Technical Expert  
TL: Team Leader  
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DET: Determiner

CDM: Clean Development Mechanism  
VCS: Verified Carbon Standard  
GS: Gold Standard  
SCS: SocialCarbon Standard  
JI: Joint Implementation

<sup>2</sup> India, Indonesia, Malaysia, Myanmar, Vietnam, Cambodia, Laos, Sri Lanka, Nepal, China, Philippines, Thailand, Iran, Congo

RINA Services S.p.A. è accreditato da UNFCCC, quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM, da VCSA per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, per condurre la Validazione e la Verifica di Progetti GS, da Ecologic Institute per condurre la Validazione e la Verifica di rapporti SCS

RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS Projects and by the Ecologic Institute, to carry out Validation and Verification of SCS Reports

GHQ\_QUAL\_CERT\_EN\_07\_18

Page 1 of 1

## CDM-VCR-FORM

## Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	NOVACEL SPRL	Monitoring Report: Ibi Batéké degraded savannah afforestation project for fuel-wood production (Democratic Republic of Congo)	Version 1.0 of 12/09/2018 Version 1.2 of 01/07/2019 Version 1.3 of 09/12/2019 Version 1.4 of 04/06/2020	PP
2	NOVACEL SPRL	Emission reductions spreadsheet calculation: Fichier_synthèse_Removals_PCI_Août2018_En.xlsx  GHG-cal-Fiche de synthèse_Inv_Déc2018-Version finale-cor.xlsx  IbiBateke_GHG-cal-Summary Sheet_Inv_Dec2019_combined.xlsx	21/10/2018  17/05/2019  09/12/2019	PP
3	NOVACEL SPRL	Carbon registry: FOR MAK-01 Cubage par placette A_Août2018-version finale.xls FOR MAK-01 Cubage par placette B_Août2018 version finale.xls	21/09/2018	PP
4	NOVACEL SPRL	Quality Manual	Version 1.0 of 11/2009	PP
5	NOVACEL SPRL	Internal procedure: FI CQSS-02 Marquage des placettes pour la biomasse existante (Plot marking for the existing biomass)	Version 1.0 of 11/03/2010	PP
6	CDM Executive Board	AR-ACM0001 Afforestation and reforestation of degraded land	Version 03	Others
7	CDM Executive Board	Methodological tool Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities	Version 03.0.0 of 23/11/2012	Others
8	CDM Executive Board	A/R Methodological Tool Calculation of the number of sample plots for measurements within A/R CDM project activities	Version 02.1.0 of 26/11/2010	Others
9	CDM Executive Board	Guidelines on accounting of specified types of changes in A/R CDM project activities from the description in registered project design documents.	EB63 Annex 27 Version 01.0 of 29/09/2011	Others
10	CDM Executive Board	Monitoring report form for CDM project activity (CDM-MR-FORM)	Version 06.0 of 07/06/2017 Version 07.0 of 31/05/2019	Others
11	CDM Executive Board	CDM project standard for project	Version 01.0 of	Others

## CDM-VCR-FORM

	Board	activities	03/03/2017 (version available at the time of verification commencement) Version 02.0 of 29/11/2018 (latest version available at the time of verification ending)	
12	CDM Executive Board	Sampling and surveys for CDM project activities and programme of activities.	Version 07.0 of 04/05/2017	Others
13	CDM Executive Board	A/R Methodological tool Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities.	Version 01.0.0 of 25/11/2011	Others
14	CDM Executive Board	CDM validation and verification standard for project activities.	Version 02.0 of 29/11/2018 (latest version available at the time of verification ending)	Others
15	Web site	Sample size calculator <a href="http://www.calculator.net/sample-size-calculator.html">http://www.calculator.net/sample-size-calculator.html</a>	English language – website visited on 28/03/2018.	Others
16	NOVACEL SPRL	Internal procedure: FI CQSS-06 Etalonnage d'un ruban pour la mesure del longuerus (Calibration of tape for the height measurement)	Version 1.0	PP
17	NOVACEL SPRL	Internal procedure: FI CQSS Etalonnage de la balance digitale (Calibration of the digital weight).	Version 1.0	PP
18	NOVACEL SPRL	Internal procedure: CQSS-06 Mesure de la biomasse aerienne (Biomass measurement)	Version 1.0	PP
19	NOVACEL SPRL	Internal procedure: CQSS-07 Etalonnage des équipements de monitoring (Calibration of monitoring equipment)	Version 1.0	PP
20	NOVACEL SPRL	Composition of the field teams who carried out the forestry inventory	02/11/2018	PP
21	OREADE-BRECHE	Environmental impact assessment	/	PP
22	NOVACEL SPRL	Internal procedure: FI CQSS-10 Fixation au sol d'un point georéférence (Ground fixing of a georeference point)	Version 1.0	PP
23	NOVACEL SPRL	Internal procedure: FI CQSS-03 Mesure d'un arbre pour la biomasse existante (Tree measurement)	Version 1.0	PP
24	NOVACEL SPRL	Internal procedure: FI CQSS-08 Relevé des coordonnées géographiques (Geographic coordinates determination)	Version 1.0	PP
25	NOVACEL SPRL	Plot map Carte des Placettes S (16) 2012-09-07 final.xlsx	24/07/2018	PP

## CDM-VCR-FORM

26	NOVACEL SPRL	Species planted per plot Essences dans les blocs - v8	24/07/2018	PP
27	DEMOCRATIC REPUBLIC OF CONGO	Land concession	Prot. 2491/161/2008 of 07/08/2008	PP
28	NOVACEL SPRL	Field data sheet monitoring carried out 08/2018		PP
30	NOVACEL SPRL	Sample plot calculation sample_plots_230718_final.xls	23/07/2018	PP
31	NOVACEL SPRL	PDD Ibi Batéké degraded savannah afforestation project for fuel-wood production (Democratic Republic of Congo)	Version 2 of 21/02/2018 Version 2.4 of 28/04/2020	Others
32	ERNST&YOUNG et Associés	Validation Report	01/12/2010	Others
33	FOREST ECOLOGY AND MANAGEMENT	Age-related equations for above and below-ground biomass	2004	PP
34	NOVACEL SPRL	Number of feet per hectare Nombre de pieds par hectare2018.xlsx	08/07/2019	PP
35	SALVA TERRA	Biodiversity programme report (Carbonisation et commercialisation du makala produit à partir des plantations commerciales du Puits de carbone agroforestier d'Ibi Batéké en périphérie de Kinshasa, République Démocratique du Congo)	12/2014	PP
36	F. BERNHARD- REVERSAT; D. DIANGANA; M. TSATSA	Source for allometric equation (Biomass, minéralomasse et productivité en plantation d'acacia mangium)	1993	PP
37	CDM Executive Board	AR-TOOL 14 methodological tool: estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities.	Version 03.0.0 of 23/11/2012	Other
38	CDM Executive Board	Guidelines on application of specified versions of A/R CDM methodologies in verification of registered A/R CDM project activities	Version 01.1 of 20/07/2012.	

## CDM-VCR-FORM

## Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. Remaining FAR from validation and/or previous verifications

<b>FAR ID</b>	01	<b>Section no.</b>	E.2	<b>Date:</b> 28/11/2019
<b>Description of FAR</b>				
<i>The project proponent shall take into account the new project area in the sampling design and stratification (experimental area).</i>				
<b>Project participant response</b>				<b>Date:</b> 08/07/2019
The total project area was 4,129.70 ha already excluding the experimental area;				
<b>Documentation provided by project participant</b>				
NA				
<b>DOE assessment</b>				<b>Date:</b> 07/08/2019
According with the registered PDD version 2.4 of 28/04/2020 /31/ the total project area was 4,129.70 ha already excluding the experimental area; therefore it is confirmed that the experimental area is not included in the sampling and in re-stratification				

Table 2. CL from this verification

<b>CL ID</b>	1	<b>Section no.</b>	E.2	<b>Date:</b> 28/11/2018
<b>Description of CL</b>				
<i>The PP is requested clarify in the monitoring report the exclusion of the experimental area from the sampling design and re-stratification.</i>				
<b>Project participant response</b>				<b>Date:</b> 08/07/2019
<p>According to the PDD submitted for validation the project area was 4,226.53 ha. As part of the validation process, the experimental area was excluded and the project area is now 4,129.70 ha. The project area has not changed since validation and it remains 4,129.70 ha. All the sampling plan and GHG estimates were done according to this updated project area.</p> <p>This was changed in the PDD and it is mentioned in section B1 the monitoring report.</p> <p>Moreover, the A/R CDM methodology (AR-ACM0001 ver.3) was only applied to the wooded part taking into account the current state of lbi carbon sink plantations and vegetation cover stratification through the interpretation of the high-level satellite image resolution. For this purpose, the methodology used proposed stratified inventories (specific to each stratum recognizable in the field) of which only the wooded part of each sub-block must be mapped and inventoried, the rest being considered with zero carbon stock conservatively. In this inventory, only cultivated areas (plantations) were favored. Assisted Natural Regeneration (RNA) was not considered, it will be taken during the next verification. The parameters that must be taken into account on this wooded part are: the circumference at 1.30m high (measure only trees with a circumference of <math>\geq 9</math>cm, using a calibrated metric tape); The total height of the tree (to be estimated with a bamboo); and the number of branches per foot.</p>				
<b>Documentation provided by project participant</b>				

## CDM-VCR-FORM

Inventory Methodology Monitoring D3 pages 68-69			
	Name of the attached file	References	The link
(a)	Ibi Monitoring report version 1.1 2019	Section B1	
(b)	PCI Pre-Inventory methodology	Pages 1-2	
<b>DOE assessment</b>			<b>Date:</b> 07/08/2019
<p>The monitoring report version 1.2 of 01/07/2019 is updated accordingly. According with the registered PDD version 2.4 of 28/04/2020 the total project area was 4,129.70 ha already excluding the experimental area; therefore it is confirmed that the experimental area is not included in the sampling and in re-stratification. CL is closed.</p>			

<b>CL ID</b>	2	<b>Section no.</b>	E.6.2	<b>Date:</b> 28/11/2018
<b>Description of CL</b>				
<p>(a) <i>The excel sheet with the monitoring of the survival rate is not readable.</i></p> <p>(b) <i>Clarification is requested on how the parameter is calculated and from where the <math>C_{tree, i, t}</math> is sourced.</i></p> <p>(c) <i>The PP is requested to explain how the sample plot area is calculated for arriving to 0.0324 ha considering the planted project area and the number of plots.</i></p>				
<b>Project participant response</b>				<b>Date:</b> 08/07/2019

## CDM-VCR-FORM

(a) the file was checked and should be now readable

(b)  $C_{tree,i,t}$  is calculated in accordance with the equation presented in section B.6.3 a) of the PDD for stratum  $i$ , at time  $t$ , in  $t$  C

$$C_{tree,j,sp,t} = \sum_{j=1}^{S_{FS}} \sum_{l=1}^{N_{j,i,sp,t}} (C_{AB\_tree,j,j,i,sp,t} + C_{BB\_tree,j,j,i,sp,t})$$

The following equations were used to calculate  $C_{AB}$  and  $C_{BB}$  depending on species:

**Acacia mangium:**

$$AGB = 3.57 \times 10^{-4} \times (DBH \times \pi)^3 + 19.2 + 2.69 \times 10^{-5} \times (DBH \times \pi)^3 + 0.25$$

$$BGB = 0.159 \times AGB$$

**Acacia auriculiformis:**

$$AGB = 4.16 \times 10^{-4} \times (DBH \times \pi)^3 + 11.22 + 2.02 \times 10^{-5} \times (DBH \times \pi)^3 + 2.36$$

$$BGB = 0.132 \times AGB$$

**Eucalyptus sp.:**

$$AGB = 2.08 + (150.9 + 0.28 \text{ age}) \times (DBH^2 \times H \times 10^{-4})^{(0.87 + 0.0012 \text{ age})}$$

**Pinus sp.:**

$$AGB = \exp [-1.170 + 2.119 \ln(DBH)]$$

**Other species:**

$$AGB = \exp [-2.134 + 2.530 \ln(DBH)]$$

For the species without equations for  $C_{BB}$ , in accordance with section B.6.3 of the PDD the following factor  $R$  were used (from IPCC, 2003):

Eucalyptus sp.: 0.30

Pinus sp. : 0.25

Other species : 0.29

c) The project designed square sampling plots of 250 m<sup>2</sup>. However, field tests have shown that measuring 36 tree locations on 250 m<sup>2</sup> might increase artificially the tree density above its nominal 1111 tree/ha value. Therefore, the plot size has been increased to remain conservative to 12m x 27m = 324m<sup>2</sup> with the same number of trees.

**Documentation provided by project participant**

	Name of the attached file	References
(a)	Enquête sur le taux de survie/nombre de pieds par hectare2018	Table, Excel sheet
(b)	PDD ibi Bateke version finale	PDF page 47 equation (8)
(c)	Ibi Monitoring report 2019	page 85 title Size of permanent sample plots

**DOE assessment**

**Date:** 07/08/2019

- a) The excel sheet is provided /35/
  - b) The carbon stock in trees in stratum is correctly calculated according the formula in the registered/revised PDD; the same is done to calculate the carbon stock in below-ground and above-ground biomass.
  - c) The plot size is revised increasing from 250 m<sup>2</sup> to 324 m<sup>2</sup> considering the same number of trees. The post registration change is considered as minor change in accordance with para 4 of Guidelines on accounting of specified types of changes in A/R CDM project activities.
- CL is closed.

## CDM-VCR-FORM

Table 3. CAR from this verification

<b>CAR ID</b>	1	<b>Section no.</b>	E.1	<b>Date:</b> 28/11/2018
<b>Description of CAR</b>				
<p><i>According the instructions for completing the form, take into account that:</i></p> <p>(a) <i>International standard for numbers shall be used;</i></p> <p>(b) <i>PRC shall be mentioned only in case of submission along with the request of issuance</i></p> <p>(c) <i>List of PPs (cover page and section A.3) is not consistent with the data available in the UNFCCC project view page.</i></p>				
<b>Project participant response</b>				<b>Date:</b> 08/07/2019
<p>a) Corrections were made within the monitoring report to match with international standard for numbers</p> <p>b) PRCs mentioned and already approved were removed from the monitoring report.</p> <p>c) According to the instructions for completing the form, consider the following:  Democratic Republic of Congo: MUSHIETE &amp; COMPANY SARL  Spain: International Bank for Reconstruction and Development (BIRD) as a BioCarbon Fund customer (BioCF)  Ireland: Government of Ireland, Department of Communications, Climate Action and the Environment</p>				
<b>Documentation provided by project participant</b>				
	Name of the attached file	References	The link	
(a)	Ibi Monitoring report version 1.2 2019			
<b>DOE assessment</b>				<b>Date:</b> 07/08/2019
<p>The monitoring report version 1.2 of 01/07/2019 is updated accordingly.  CAR is closed.</p>				

<b>CAR ID</b>	2	<b>Section no.</b>	E.3 – E.6.2	<b>Date:</b> 28/11/2018
<b>Description of CAR</b>				
<p><i>The MR does not contains details about the re-planting plan and the planting plan for the area not yet planted but included in the project area. The changes in year-wise areas planted shall be reported.</i></p>				
<b>Project participant response</b>				<b>Date:</b> 08/07/2019
<p>To reach the 4,129.70 hectares planned under the project it is planned to plant each year 600 hectares each year from 2019 to 2022 and 369 hectares in 2023 as is well detailed in the table of the revised PDD in section A.6 and monitoring report in section B.1.</p>				
<b>Documentation provided by project participant</b>				
	Name of the attached file	References	Link	
(a)	PDD Bateke revised version	PDD section A.6		
(b)	Monitoring report	Monitoring report section B.1		
<b>DOE assessment</b>				<b>Date:</b> 07/08/2019
<p>The monitoring report version 1.2 of 01/07/2019 and the revised PDD version 2.4 of 28/04/2020 are updated accordingly. The plating &amp; harvest monitoring schedule expects planting activities from 2019 to 2022 to the reach the project area planned at the time of project validation/registration.  CAR is closed.</p>				

## CDM-VCR-FORM

<b>CAR ID</b>	3	<b>Section no.</b>	E.6.1	<b>Date:</b> 28/11/2018
<b>Description of CAR</b>				
<i>The root ratio of Acacia stated in the MR is not consistent with the data stated in the PDD.</i>				
<b>Project participant response</b>				<b>Date:</b> 08/07/2019
<p>Data were corrected in monitoring and taken into account in carbon calculations.</p> <p>The root shoot ratio are in accordance with the PDD:</p> <p>Acacia mangium : 0.159</p> <p>Acacia auriculiformis : 0.132</p>				
<b>Documentation provided by project participant</b>				
	Name of the attached file	References	Link	
(a)	Ibi Monitoring report 2019	Section D.1		
<b>DOE assessment</b>				<b>Date:</b> 07/08/2019
<p>The monitoring report version 1.2 of 01/07/2019 is updated accordingly. The root shoot ratio in the MR and in the calculation is in accordance with data in the registered/revised PDD.</p> <p>CAR is closed.</p>				

<b>CAR ID</b>	4	<b>Section no.</b>	E.6.2	<b>Date:</b> 28/11/2018
<b>Description of CAR</b>				
<p>(a) <i>Evidences on how the total area slashed before planting was determined shall be provided.</i></p> <p>(b) <i>Evidences of the annual monitoring of the proportion of soil disturbance of stratum shall be provided.</i></p> <p>(c) <i>The total harvested area is not reported in section D.2 of the monitoring report.</i></p> <p>(d) <i>The total area of sample plots in stratum stated in the MR is not consistent with the area considered in the sample plots spreadsheet.</i></p> <p>(e) <i>The total number of sample plots stated in the MR is not consistent with the GHG removal calculation.</i></p> <p>(f) <i>The expected maximum number of sample plots in stratum is not consistent with the total number stated in parameter N.</i></p> <p>(g) <i>The allometric equation used taken from a third party source is not in compliance with the methodology requirements. In particular the source used states that the data are calculated based on a sample of tree of 8 while the methodology requires a data set of at least 30 sample trees.</i></p> <p>(h) <i>The formula used to calculate the below-ground biomass for Acacia Mangium is that expected for Acacia Auriculiformis.</i></p> <p>(i) <i>According the applied methodology and the registered PDD, the monitoring frequency is established every 5 years from the project establishment. The implementation of the project started on 2008. From 2008 until 2018 two monitoring activities shall be available. Between the first (2012) and the second (2018) the interval is more than 5 years. The PP is requested to clarify any impact on the GHG removals calculation.</i></p>				
<b>Project participant response</b>				<b>Date:</b> 08/07/2019

## CDM-VCR-FORM

(a) The table of project activities follow up was included in the monitoring report. This table was elaborated through the QA/QC of the project, in particular the instructions CQSS-08 (Relevé des coordonnées géographiques), 09 (Encodage des activités sur les parcelles), and 10 (Suivi de l'implémentation du Puits de Carbone). The table mentions all kinds of activities implemented within project boundaries and the area concerned. Moreover, the area harvested in the PCI from 2015 to 2018 is ( $\pm$ ) 411.28 hectares of wood (calculated, not measured), and the total volume cut is 49 353.6 m<sup>3</sup> because the average was 120 m<sup>3</sup> / hectare (see leaflet no. 2 of the file Exploitation des parcelles 2018 and the report of Salva Terra / GIZ 2014);

(b) As for the item above, the table of project actions included in the monitoring report mentions all soil disturbance actions within project area. As stated in section B.1 of the monitoring report, the area concerned is 1,361.76 ha.

(c) As presented in the new table Planting & harvest monitoring and schedule included in the monitoring report in section B.1, the total harvested area since project start was 423.78 ha.

(d) The total area in stratum was corrected in the MR to be consistent with the area considered in the sample plot spreadsheet.

(e) The total area of sample plots stated in the MR is below the number of sample plots used for GHG removal calculation because the sampling was recalculated after a first inventory. Indeed, the first inventory was not satisfying, and a re-stratification was carried on. After re-stratification and re-calculation of the number of sample plots, the number of sample plots for stratum 3 (Pinus) was not enough but the number of sample plots required for stratum 1 (Acacia) was below the number of sample plots required at first stratification. Therefore, some sample plots were added for stratum 3 and the sample plots of stratum 1 were kept from first stratification to get more accurate results.

(f) The number of sample plots for each stratum was corrected in the MR

(g) The methodology states that "Whenever available, use allometric equations that are species-specific or group of species-specific, provided the equations have been derived using a wide range of diameters and heights, based on datasets that comprise at least 20 trees. Otherwise, default equations from IPCC literature, national inventory reports or published peer-reviewed studies may be used". Therefore, in accordance with the methodology the equations of Bernard-Reversat were used as planned in the PDD. Indeed, the equation, although it was elaborated with 8 samples, comes from a published peer-reviewed study as authorized by the methodology and as it was validated at project registration.

(h) The formula was changed in excel spreadsheet in order to use correct R (0.159) for Acacia mangium.

(i) The applicable methodology AR-ACM0001 Version 3 does not prescribe a monitoring frequency. According to the registered PDD: "To avoid the coincidence with peaks in carbon stocks, the first monitoring (for above-ground and belowground biomass) and verification is expected to be conducted in the year 2011, with a subsequent monitoring (for above-ground and belowground biomass) and verification interval of 5 years, i.e., in 2016, 2021, 2026, 2031 and 2036 respectively". Although the PP expected to conduct the initial monitoring and verification in 2011, this was delayed to 2018. Subsequent monitoring and verifications will occur in a five year interval. This is in accordance to para. 32 of the A/R M&P that states: "The initial verification and certification of an afforestation or reforestation project activity under the CDM may be undertaken at a time selected by the project participants. Thereafter, verification and certification shall be carried out every five years until the end of the crediting period." The current monitoring report that is subject to verification is the initial verification, so any previous monitoring events cannot be considered as "official" in the context of the CDM. The five year rule would apply from this initial monitoring and verification onwards.

## Documentation provided by project participant

	Name of the attached file	References	Link
(a)	15-01-2009 RDC GIZ Carbonisation	PDF	
(b)	Ibi Monitoring report 2019		

## DOE assessment

Date: 07/08/2019

**CDM-VCR-FORM**

- a) The monitoring report version 1.2 of 01/07/2019 is updated including the follow up activities carried out according the internal procedures /22/ /24/.
- b) The monitoring report version 1.2 of 01/07/2019 is updated including the follow up activities carried out according the internal procedures /22/ /24/. It results that slashed area from biomass was 1,711.30 ha but the soil disturbance through ploughing was on 1,361.76 ha.
- c) The monitoring report version 1.2 of 01/07/2019 is updated including the planting & harvest monitoring and schedule. It results that from the project start the total area harvested is 423.78 ha.
- d) The monitoring report version 1.2 of 01/07/2019 is updated accordingly and in line with the sample plot spreadsheet /30/.
- e) Conservative approach to obtain a more accurate results is adopted by the PP.
- f) The monitoring report version 1.2 of 01/07/2019 is updated accordingly and in line with the sample plot spreadsheet /30/.
- g) A peer-reviewed study /36/ is adopted where the equation is elaborated based on 8 samples. The approach is in compliance with the methodology requirements.
- h) The spreadsheet calculation /2/ is updated accordingly.
- i) The PP declares that the 5 years between the monitoring period will be respected from this verification process onward.

CAR is closed.

<b>CAR ID</b>	5	<b>Section no.</b>	E.8.4	<b>Date:</b> 28/11/2018
<b>Description of CAR</b>				
<i>Emission reductions calculation shall be updated according the errors found during the cross-check with the field sheets and the forest inventory, as detailed in Section D.4 of the verification report.</i>				
<b>Project participant response</b>				<b>Date:</b> 08/07/2019
The corrections were made after the field corrected measurements on the trees identified in section D2. The calculation of the carbon was redone after a re-entry of the data. The correct number will be reported on the monitoring report.				
<b>Documentation provided by project participant</b>				

**CDM-VCR-FORM**

Excel For Mak A, For Mak B and biomass synthesis			
	Name of the attached file	References	Link
(a)	FOR MAK-01 Cubage par placette A_Août2018	EXCEL file spreadsheets : biomass Measures by plot	
(b)	FOR MAK-01 Cubage par placette B_Août2018	EXCEL file spreadsheets : biomass Measures by plot	
(c)	Fiche de synthèse_Inv_Déc2018	3 Excel files: Summary Sheet, Biomass by plot and stratification	
<b>DOE assessment</b>			<b>Date:</b> 07/08/2019
The spreadsheet calculation /2/ is updated accordingly. The actual GHG removals account to 43,883 tCO <sub>2</sub> e. CAR is closed.			

**Table 4. FAR from this verification**

<b>FAR ID</b>	xx	<b>Section No.</b>		<b>Date:</b> DD/MM/YYYY
<b>Description of FAR</b>				
<b>Project participant response</b>				<b>Date:</b> DD/MM/YYYY
<b>Documentation provided by project participant</b>				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY

**CDM-VCR-FORM**

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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN);</li> <li>• Make structural and editorial improvements.</li> </ul>
02.1	11 January 2018	Editorial revision to correct the numbering of appendices in the instructions.
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: project activities, verifying and certifying		