



VALIDATION REPORT

“CDM PROJECT FOR FORESTRY RESTORATION IN PRODUCTIVE AND BIOLOGICAL CORRIDORS IN THE EASTERN PLAINS OF COLOMBIA”

REPORT No. 2012- 9450

REVISION No. 01

DET NORSKE VERITAS



VALIDATION REPORT

Date of first issue: 18 December 2012	ConCert Project No.: PRJC-390039-2012-CCS-USA
Approved by: Edwin Aalders	Organisational unit: DNV KEMA Energy & Sustainability Accredited Climate Change Services
Client: Bosques de la Primavera S.A.	Client ref.: Jesus Rivera

DNV CLIMATE CHANGE
SERVICES AS

Veritasveien 1,
1322 HØVIK, Norway
Tel: +47 67 57 99 00
Fax: +47 67 57 99 11
http://www.dnv.com
Org. No: NO 994 774 352 MVA

Summary:

Project Name: CDM Project for Forestry Restoration in Productive and Biological Corridors in the Eastern Plains of Colombia

Country: Colombia

Methodology: AR-AM0004

Version: 04

GHG reducing Measure/Technology: Afforestation/Reforestation

GHG removals estimate: 256 109 tCO₂e per year (average)

Size

Large Scale

Small Scale

Validation Phases:

Desk Review

Follow up interviews

Resolution of outstanding issues

Validation Status

Corrective Actions Requested

Clarifications Requested

Full Approval and submission for registration

Rejected

In summary, it is DNV's opinion that the 15 Corrective Actions Requests (CARs) and 7 Clarifications (CLs) identified for the project activity "CDM Project for Forestry Restoration in Productive and Biological Corridors in the Eastern Plains of Colombia" in Colombia, as described in the PDD, version 02 dated 12 December 2012, are now closed in relation to all relevant UNFCCC requirements for the CDM and all relevant host Party criteria and the baseline and monitoring methodology AR-AM0004, version 04. Hence DNV requests the registration of the project as a CDM project activity.

Report No.: 2012- 9450	Subject Group: Environment	
Report title: "CDM Project for Forestry Restoration in Productive and Biological Corridors in the Eastern Plains of Colombia" in Colombia		
Work carried out by: Pablo Reed, Andres Espejo		
Work verified by: Edwin Aalders		
Date of this revision: 18 December 2012	Rev. No.: 01	Number of pages: 35

Indexing terms

Key words

Climate Change

Kyoto Protocol

Validation

Clean Development Mechanism

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Abbreviations

A/R	Afforestation / Reforestation
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNV	Det Norske Veritas
DNA	Designated National Authority
DOE	Designated Operating Entity
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GIS	Geographic Information Systems
GPS	Global Positioning System
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of approval
LULUCF	Land-Use, Land Use Change, and Forestry
MP	Monitoring Plan
NGO	Non-governmental Organisation
MoC	Modalities of communication
ODA	Official Development Assistance
PDD	Project Design Document
PS	Clean Development Mechanism Project Standard
tCO ₂ e	Tonnes of CO ₂ equivalents
tCER	Temporary Certified Emission Reduction
TARAM	Tool for Afforestation and Reforestation Approved Methodologies (spread sheet based calculation tool)
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Clean Development Mechanism Validation and Verification Standard



1 EXECUTIVE SUMMARY – VALIDATION OPINION

DNV Climate Change Services AS (DNV) has performed the validation of the project activity “CDM Project for Forestry Restoration in Productive and Biological Corridors in the Eastern Plains of Colombia” in Colombia. The validation was performed on the basis of UNFCCC criteria for the Clean Development Mechanism as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the project design documentation and the subsequent follow-up interviews have provided DNV with sufficient evidence to determine the fulfilment of stated criteria.

The host Party is Colombia, which has fulfilled participation criteria and has approved the project and authorized the project participant Bosques de la Primavera S.A. The DNA from Colombia confirmed that the project assists in achieving sustainable development.

The project correctly applies the baseline and monitoring methodology AR-AM0004, version 04 “Reforestation or afforestation of land currently under agricultural use” - Version 04.

The “CDM Project for Forestry Restoration in Productive and Biological Corridors in the Eastern Plains of Colombia” has as its objective to employ the international carbon market as a key incentive for investments in new commercial forest plantations and restoration of natural forests in the remote High Orinoco region of Colombia. The project is based on changing the use of land from extensive cattle ranching to sustainable forest production systems, restoring natural forest cover, and creating a landscape of biological and productive corridors that produce financial, social and environmental services for the region. These include the mitigation of climate change, regulation of water flows, expansion of habitat and conservation of the flora and fauna of the Orinoco region, among others.

As a result, the project results in net anthropogenic GHG removals of CO₂ that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. GHG removals are attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total net anthropogenic GHG removals from the project are estimated to be on the average 256 109tCO₂e per year over the selected 30 year renewable crediting period. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

The monitoring plan provides for the monitoring of the project’s emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design and it is DNV’s opinion that the project participants are able to implement the monitoring plan.



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In summary, it is DNV's opinion that the project activity "CDM Project for Forestry Restoration in Productive and Biological Corridors in the Eastern Plains of Colombia" in Colombia, as described in the PDD, version 02 dated 12 December 2012 meets all relevant UNFCCC requirements for the CDM and correctly applies the baseline and monitoring methodology AR-AM0004, version 04. Hence, DNV requests the registration of the project as a CDM project activity.

Venice and Oslo, 18 December 2012

Andres Espejo
CDM Validator
DNV Venice, Italy

Edwin Aalders
Approver
DNV Climate Change Services AS



INTRODUCTION

Bosques de la Primavera S.A. has commissioned DNV Climate Change Services AS (DNV) to perform a validation of the proposed CDM project activity “CDM Project for Forestry Restoration in Productive and Biological Corridors in the Eastern Plains of Colombia” in Colombia (hereafter called “project”). This report summarises the findings of the validation of the project, performed on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the A/R CDM modalities and procedures, the simplified modalities and procedures for small-scale A/R CDM project activities and the subsequent decisions by the CDM Executive Board.

1.1 Objective

The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of temporal certified emission reductions (tCERs).

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the A/R CDM modalities and procedures as agreed in the Marrakech Accords, the simplified modalities and procedures for small-scale A/R CDM project activities and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology AR-AM0004 (version 04) /21/. The validation was carried out in accordance with the principles and the requirements for validation contained in the Validation and Verification Standard /18/.

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.



2 METHODOLOGY

The validation consisted of the following three phases:

- I document review
- II follow-up actions (e.g. on-site visit and telephone or email interviews)
- III the closing out of validation findings and the issuance of the final validation report and opinion

The following sections outline each step in more detail.

2.1 Document review

The following tables list the documentation that was reviewed during the validation.

2.1.1 Documentation provided by the project participants

- /1/ Bosques de la Primavera S.A.: *CDM-PDD for project activity "CDM Project for Forestry Restoration in Productive and Biological Corridors in the Eastern Plains of Colombia" in Colombia*, Version 02 dated 12 December 2012 submitted for registration and Version 02 dated 12 December 2012 submitted for webhosting and public comment.
- /2/ Bosques de la Primavera S.A.: *GHG removals Calculation Sheet 1 (Excel file)*, Version 1, 18 May 2012.
- /3/ Bosques de la Primavera S.A.: *GHG removals Calculation Sheet 2 TARAM Values (Excel file)*, Version 2, 18 May 2012.
- /4/ Bosques de la Primavera S.A.: *Socialization Act (for stakeholder consultation)*, Version 1, 12 August 2011.
- /5/ Bosques de la Primavera S.A.: *Closing Letter (for stakeholder consultation)*, Version 1, 12 August 2011.
- /6/ Bosques de la Primavera S.A.: *List of Attendees (for stakeholder consultation)*, Version 1, 12 August 2011.
- /7/ Bosques de la Primavera S.A.: *Letter to Mayor summarizing stakeholder responses to project (for stakeholder consultation)*, Version 1, 31 October 2011.
- /8/ Bosques de la Primavera S.A.: *Letter announcing the publication of stakeholder comments to local community and authorities*, Version 1, 31 October 2011.
- /9/ Bosques de la Primavera S.A.: *Community Responses (for stakeholder consultation)*, Version 1, 31 October 2011.
- /10/ Bosques de la Primavera S.A.: *Contract with Environmental Consultant Group CAEMA and Bosques de la Primavera S.A.*, Version 1, October 2008.
- /11/ CAEMA and Carbono y Bosques: *Feasibility Study for the CDM Project*, Version 1, February 2009.
- /12/ Bosques de la Primavera S.A.: *Letter of Request for National Approval*, Version 1, 31 October 2011.
- /13/ Joaquin Vilorio.: *Geografia Economica de la Orinoquia*, Version 1, 2009.
- /14/ CORPORINOQUIA.: *Agenda Ambiental municipal de la Primavera*, Version 1, February 2009.

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- /15/ Coronel Bas Arvelio Ortiz Rebolledo.: *Plan de Desarrollo del Departamento de Vichada*, Version 1, January 2008.
- /16/ Camilo Marin: *Financiacion Forestal: Estimulos y Excenciones*, Version 1, Year 2010.

2.1.2 Letters of approval

- /17/ Ministerio de Ambiente y Desarrollo Sostenible (DNA of Colombia): *Letter of approval* dated 10 May 2012.

2.1.3 Methodologies, tools and other guidance by the CDM Executive Board

- /18/ CDM Executive Board: 'CDM Validation and Verification Standard' (version 02.0)
- /19/ CDM Executive Board: 'CDM Mechanism Project Standard' (version 01.0)
- /20/ CDM Executive Board: *Clean Development Mechanism Project Cycle Procedure*, version 01.0
- /21/ CDM Executive Board: *Baseline and monitoring methodology AR-AM0004*, version 04
- /22/ CDM Executive Board: 'Guidelines on the demonstration and assessment of prior consideration on the CDM', (version 4)
- /23/ CDM Executive Board: 'Guidelines for the objective demonstration and assessment of barriers' (version 01), Annex 13, EB50
- /24/ CDM Executive Board: 'Procedures to demonstrate the eligibility of lands for A/R CDM project activities' (version 1), Annex 18, EB35
- /25/ CDM Executive Board: 'Tool for the Demonstration and Assessment of Additionality in A/R CDM Project Activities' (version 02), Annex 17, EB35
- /26/ CDM Executive Board: 'Tool for testing significance of GHG emissions in A/R CDM project activities' (version 1), EB31
- /27/ CDM Executive Board: 'Tool for the identification of degraded or degrading lands for consideration in implementing CDM A/R project activities' (version 1), Annex 15, EB41
- /28/ CDM Executive Board: 'Estimation of non-CO₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity' (version 04.0.0), Annex 31, EB65
- /29/ CDM Executive Board: 'Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity' (version 1), Annex 15, EB51
- /30/ CDM Executive Board: 'Calculation of the number of sample plots for measurements within A/R CDM project Activities' (version 2.1.0), Annex 15, EB58
- /31/ CDM Executive Board: 'Procedure to determine when accounting of the soil organic carbon pool may be conservatively neglected in CDM A/R project activities' (version 1), Annex 15, EB33
- /32/ CDM Executive Board: 'Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities' (version 01.0.1), Annex 24, EB67
- /33/ CDM Executive Board: 'Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities' (version



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- 01.0.0), Annex 28, EB65
- /34/ CDM Executive Board: ‘Guidelines on application of specified versions of AR CDM methodologies in verification of registered AR CDM project activities’ (version 1), Annex 26, EB63
 - /35/ CDM Executive Board: ‘Guidelines on conditions under which GHG emissions from removal of existing vegetation due to site preparation are insignificant’ (version 1), Annex 21, EB50
 - /36/ CDM Executive Board: ‘Guidelines on conditions under which increase in GHG emissions related to displacement of pre-project grazing activities in A/R CDM project activity is insignificant’ (version 1), Annex 13, EB51
 - /37/ CDM Executive Board: ‘Guidance on conditions under which the change in carbon stocks in existing live woody vegetation are insignificant’ (version 1), Annex 16, EB46
 - /38/ CDM Executive Board: ‘CDM Glossary of Terms’ (version 6)

2.1.4 Documents used by DNV to validate / cross-check the information provided by the project participants

- /39/ Ministerio del Ambiente, Vivienda, y Desarrollo Territorial: *Decreto 2820*, Version 1, 5 August 2010.
- /40/ Ministerio del Ambiente, Vivienda, y Desarrollo Territorial: *Decreto 2820; Ley 1377*, Version 1, 5 August 2010.
- /41/ Ministerio de Agricultura (Ministry of Agriculture): *Ley del Incentivo Forestal 139 – Law on Forestry Incentive 139*, 22 June 1994
- /42/ CORPORINOQUIA: *Resolution 702 on environmental management plans*, year 2007
- /43/ CORPORINOQUIA: *Resolution 11-30 on environmental zonification*, year 2007
- /44/ Gabriel Aponte, del Espectador: *Reforestacion del Vichada: Una Aventura Agroambiental* 18 June 2005.
- /45/ ISRIC: *Global Assessment of Human-induced Soil Degradation (GLASOD)*, year 1990
- /46/ CAEMA: Official letter acknowledging meetings with the Regional Environmental Authority CORPORINOQUIA to present and discuss the CDM project. May, 2010.
- /47/ Bosques de la Primavera: Forestry Establishment Plan Presented to the Ministry of Agriculture and Rural Development in order to access the CIF (Forestry Incentive Certificate), with reference to the CDM, with letter of presentation received by the Ministry. February, 2007.
- /48/ Bosques de La Primavera: *Standard Operating Procedures for Plant Selection and Plant and Tree Monitoring*. 15 March 2012.
- /49/ Bosques de la Primavera: Records (attendance sheet and pictures) of meeting for the Annual Shareholders Ordinary Assembly. Presentations on CDM activities being developed and the steps to follow by the company to apply the CDM. 23 September 2006.
- /50/ Public Instrument, at Notary Public 28 of Bogotá: Official Record of Incorporation of La Primavera S.A. Organization. The social objective in the Certificate includes the role of CDM in the forestry project. May, 2005.
- /51/ Land titles and deeds, Certificates of Tradition (specific to Colombia), and rights of use agreements between land owners and the project participants. “certificates of liberty”,



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- “powers of representation”, and “contracts of participation” accordingly.
- /52/ Banco de Bogota: Letter from Bank indicating a financial barrier to credit access, dated March 8 2012
- /53/ Ministry of Agriculture and Rural Development: Official document which certifies the very low level of commercial forest activity in the department and identifies the investment barrier as a key reason. August, 2012.
- /54/ Municipio de La Primavera: Plan de Desarrollo Municipal 2004-2007. Vichada. 2004.
- /55/ Rippstein et al: *Agroecología y biodiversidad de las sabanas en los Llanos Orientales de Colombia*. Centro Internacional de Agricultura Tropical (CIAT). 302 p. Publicación CIAT, no 322. 2001
- /56/ Romero M., et al: “Ecosistemas de la Cuenca del Orinoco Colombiano”. Alexander von Humboldt Institute for Research on Biological Resources. Bogotá. Colombia. 2004.
- /57/ VON BERTALANFFY, L. 1976. General system theory. George Braziller. New York.
- /58/ CORREA, J. E., H. I. RESTREPO, O. A. SÁENS Y J. C. SÁNCHEZ. 2000. Evaluación de las plantaciones de *Acacia mangium* en áreas degradadas del Bajo Cauca antioqueño Corporación Autónoma Regional del Centro de Antioquia (CORANTIOQUIA) – Universidad Nacional de Colombia Sede Medellín
- /59/ LAGUADO, W.G. 2004. Viabilidad ambiental y financiero de los sistemas silvopastoriles del bajo Cauca Antioqueño como parte del Mecanismo de Desarrollo Limpio. Trabajo de Grado. Universidad Nacional de Colombia, Sede Medellín.
- /60/ RIAÑO, N., C. OSPINA, L. GÓMEZ, J. LÓPEZ, C. URREGO, O. OSORIO, D. BONILLA Y G. TANGARIFE. 2004. Asistencia técnica al desarrollo del sector forestal a nivel nacional. Componente: Determinación de la capacidad de captura de carbono en ocho especies forestales. Informe Final. Corporación Nacional de Fomento Forestal (CONIF) – Centro Nacional de Investigaciones de Café.
- /61/ USDA FOREST SERVICE. 2006b. Washington. *Tectona grandis*
- /62/ VEGA, L. Y GONZÁLEZ, H. 2003. Evaluación del crecimiento de especies forestales de mayor uso comercial en el país establecidas bajo el convenio MADR-CONIF. Análisis a partir de la Red de Parcelas de Crecimiento. Informe Técnico. Corporación Nacional de Fomento Forestal (CONIF).
- /63/ BROWN, S. 1997. Estimating biomass and biomass change of tropical forest. FAO forestry paper 134. FAO. Rome.
- /64/ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC). 2003. Good practice guidance for land use, land – use change and forestry. Institute for global environmental strategies of IPCC, Hayama.
- /65/ Ministerio de Agricultura y Desarrollo Rural. 2004. Renacimiento de la Orinoquia Alta de Colombia: Un Megaproyecto para el Mundo. Folleto divulgativo.
- /66/ Ministerio de Agricultura y Desarrollo Local. Formulación y evaluación integral de proyectos productivos agroforestales para impulsar el desarrollo sostenible de la Orinoquia alta Colombiana para el beneficio del mundo. Informe de avance, 2006.
- /67/ Misión de Observación electoral y Corporación Arco Iris, 2008. Monografía Político Electoral del Departamento de Vichada 1997 a 2007.
- /68/ MADR, 2005 and 2011. Coordinador de Cadenas Productivas Forestales.
- /69/ Municipality of La Primavera. *Land Management Plan*. 28 January 2000.
- /70/ Bosques de la Primavera. *ESRI Shapefile[®] with the exact delimitation of the project boundary*, 18 May 2012.



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- /71/ Bosques de la Primavera: *Results of surveys conducted to adjacent landowners*. 2012. regarding cattle practices.
- /72/ Carbono y Bosques: *Propuesta Metodologica para el Proceso de Socializacion*. 1 June 2010
- /73/ TRUJILLO, *Guía de Reforestación – Acacia mangium*. Editorial El Semillero. Bogotá, Colombia. E. 2007
- /74/ USDA FOREST SERVICE. - *Tectona grandis and Pinus caribaea Morelet* L.f. Washington 2006.
- /75/ Rivera, Jesus: Personal Email communication to DNV regarding MoC. 18 December 2012.

2.2 Follow-up actions

In the period 2 - 6 July 2012, DNV visited the project location, as well as the project offices in Bogota, and performed interviews with project stakeholders. Due to constraints on time and to the difficult terrain and available transport infrastructure of the region, the audit team was able to physically visit 2 of the 6 nucleuses that make up the project. These were chosen with regards to travel feasibility and because they were at different stages of the project cycle at the time of the site visit. However, also at the time of the site visit, the project proponents hired a small airplane which then also allowed the audit team to witness the project area from above. Each of the six nuclei were thus overflown on the last day of the site visit accompanied with a field data recorded connected to a GPS with the project's geo-datasets uploaded; therefore enabling DNV to verify 100% of the project implementation and the accuracy of the completeness of the project description. DNV also flew from the project area to Bogotá which enabled DNV to confirm the baseline scenario and the non-presence of other similar projects in the region. The project proponents, as well as all relevant staff and personnel accompanied the audit team during the days of the site visit.

Ref	Date / Type of interview	Name / Organization	Topics
/76/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Maria Andrea Rivera / Bosques de la Primavera S.A. / Social and Labor Coordinator	• Project management, social and environmental impacts, project monitoring
/77/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Laura Andrea Lozano / Bosques de la Primavera S.A. / Biodiversity and Natural Regeneration Coordinator	• Project management, social and environmental impacts, project monitoring
/78/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Luis Fernando Gomez / Bosques de la Primavera S.A. / Lead Forest Engineer for Project	• Project management, monitoring, SOPs, Staff training.
/79/	02-06 July 2012 <input checked="" type="checkbox"/> On-site	Eugenio Buitrogo / Bosques de la Primavera S.A. / Project	• Project management, monitoring, SOP, Staffing



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	<input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Engineer	
/80/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Jose Antonio Tovar / Bosques de la Primavera S.A. / Operations Supervisor	<ul style="list-style-type: none"> • Project management, monitoring, SOP, Staffing
/81/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Nelson Lozano / Ministry of Agriculture / Forestry Coordinator	<ul style="list-style-type: none"> • Legal Compliance, Additionality, Baseline, etc.
/82/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Diana Carolina / Bosques de la Primavera S.A. / Coordinator for CDM and Environment	<ul style="list-style-type: none"> • Project management, monitoring, SOP, staffing, procurement for CDM status
/83/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Mauricio Campucho / Bosques de la Primavera S.A. / Administrative Coordinator	<ul style="list-style-type: none"> • Project management, monitoring, staffing
/84/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Aluviado Silva/ Comite de Ganadros de Vichada/ Manager	<ul style="list-style-type: none"> • Social and Environmental Impacts
/85/	DD MMM 2012 <input type="checkbox"/> On-site <input type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Jose Leon / Local Commercial Stakeholder	<ul style="list-style-type: none"> • Social and Environmental Impacts
/86/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Angel Mena / Cattle Rancher's Association / President	<ul style="list-style-type: none"> • Social and Environmental Impacts
/87/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Jose Ricaurte Quintero / Reforestadora Guacamayas / Technician	<ul style="list-style-type: none"> • Social and Environmental Impacts, Similar Projects in Area, Available Markets
/88/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office <input type="checkbox"/> Telephone <input type="checkbox"/> E-mail	Maria Angelica Rivera / Bosque de la Primavera S.A. / Administrative and Commercial Supervisor	<ul style="list-style-type: none"> • Project management, monitoring, SOPs, Staff training.
/89/	02-06 July 2012 <input checked="" type="checkbox"/> On-site <input checked="" type="checkbox"/> Face-to-face at office	Jamile Hurtado / Local Municipal Government Rep /	<ul style="list-style-type: none"> • Social and Environmental Impacts



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	<input type="checkbox"/> Telephone	Local Government Office	
	<input type="checkbox"/> E-mail		
/90/	02-06 July 2012	William Laguado Cervantes / Forest Engineer / Carbono y Bosques (consultant group)	<ul style="list-style-type: none"> • Project design, management, calculations, monitoring, SOP, Staffing
	<input checked="" type="checkbox"/> On-site		
	<input checked="" type="checkbox"/> Face-to-face at office		
	<input type="checkbox"/> Telephone		
	<input type="checkbox"/> E-mail		
/91/	02-06 July 2012	Lourdes Rodriguez Pabon / Manager / Corporinoquia (local environmental authority)	<ul style="list-style-type: none"> • Project legal compliance, social and environmental impacts
	<input checked="" type="checkbox"/> On-site		
	<input checked="" type="checkbox"/> Face-to-face at office		
	<input type="checkbox"/> Telephone		
	<input type="checkbox"/> E-mail		
/92/	02-06 July 2012	Beatriz Zapata / Forest Engineer / Carbono y Bosques (consultant group)	<ul style="list-style-type: none"> • Project design, management, calculations, monitoring, SOP, Staffing
	<input checked="" type="checkbox"/> On-site		
	<input checked="" type="checkbox"/> Face-to-face at office		
	<input type="checkbox"/> Telephone		
	<input type="checkbox"/> E-mail		
/93/	02-06 July 2012	Thomas Black Arbelaez / Director / CAEMA (consultant group)	<ul style="list-style-type: none"> • Project design and management
	<input checked="" type="checkbox"/> On-site		
	<input checked="" type="checkbox"/> Face-to-face at office		
	<input type="checkbox"/> Telephone		
	<input type="checkbox"/> E-mail		
/94/	02-06 July 2012	Luis Alonso Salamanca / Counselor / Municipal Govt	<ul style="list-style-type: none"> • Social and Environmental Impacts
	<input checked="" type="checkbox"/> On-site		
	<input checked="" type="checkbox"/> Face-to-face at office		
	<input type="checkbox"/> Telephone		
	<input type="checkbox"/> E-mail		
/95/	02-06 July 2012	Jose Rivera / Project manager / Bosques de la Primavera S.A.	<ul style="list-style-type: none"> • Project Design and Management
	<input checked="" type="checkbox"/> On-site		
	<input checked="" type="checkbox"/> Face-to-face at office		
	<input type="checkbox"/> Telephone		
	<input type="checkbox"/> E-mail		
/96/	06 July 2012	Mario Londona, Diana Barba, Olga Lucia Ospina / Designated National Authority / Colombian ministry of the Environment	<ul style="list-style-type: none"> • DNA Approval, Legal Compliance, Part of Sustainable Development Strategy, Social and Environmental Impacts.
	<input type="checkbox"/> On-site		
	<input checked="" type="checkbox"/> Face-to-face at office		
	<input type="checkbox"/> Telephone		
	<input type="checkbox"/> E-mail		

2.3 Closing out of validation findings

The objective of this phase of the validation was to resolve any issues which needed to be clarified prior to DNV's conclusion on the project's compliance with applicable CDM requirements. In order to ensure transparency, a validation protocol was customised for the project. The protocol shows in a transparent manner the criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.



The validation protocol consists of four tables. The different columns in these tables are described in the figure below. The completed validation protocol for the project activity “CDM Project for Forestry Restoration in Productive and Biological Corridors in the Eastern Plains of Colombia” in Colombia is enclosed in Appendix A to this report.

Table 2 of the validation protocol documents the findings of the desk review of the project design documentation and follow-up interviews with project stakeholders. Any findings raised in Table 2 are listed in Table 3 of the protocol, and changes to the description of the project design as a result of these findings will be addressed in Table 3. Table 2 thus may not reflect all aspects of the project as described in the final PDD submitted for registration.

A corrective action request (CAR) is raised if one of the following occurs:

- (a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- (b) The applicable CDM requirements have not been met;
- (c) There is a risk that emission reductions cannot be monitored or calculated.

A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A forward action request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.

The validation identified fifteen CARs, seven CLs and no FARs. The CARs and CLs were satisfactorily addressed by the project participants by among other revising the PDD (please refer to Table 3 in Appendix A for further details).



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Validation Protocol Table 1: Mandatory Requirements for CDM Project Activities		
Requirement	Reference	Conclusion
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK) or a corrective action request (CAR) if a requirement is not met.

Validation Protocol Table 2: Requirement Checklist				
Checklist question	Reference	Means of verification (MoV)	Assessment by DNV	Draft and/or Final Conclusion
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in different sections, following the logic of the CDM-PDD	Gives reference to documents where the answer to the checklist question or item is found.	Means of verification (MoV) are document review (DR) , interview (I) or any other follow-up actions (e.g., on site visit and telephone or email interviews) and cross-checking (CC) with available information relating to projects or technologies similar to the proposed CDM project activity under validation.	The discussion on how the conclusion is arrived at and the conclusion on the compliance with the checklist question so far.	OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements. A corrective action request (CAR) is raised when project participants have made mistakes, the CDM requirements have not been met or there is a risk that emission reductions cannot be monitored or calculated. A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. A forward action request (FAR) during validation is raised to highlight issues related to project implementation that require review during the first verification of the project activity.

Validation Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Corrective action and/or clarification requests	Ref. to checklist question in table 2	Response by project participants	Validation conclusion
The CARs and/ or CLs raised in Table 2 are repeated here.	Reference to the checklist question number in Table 2 where the CAR or CL is explained.	The responses given by the project participants to address the CARs and/or CLs .	The validation team's assessment and final conclusions of the CARs and/or CLs .

Validation Protocol Table 4: Forward Action Requests		
Forward action request	Ref. to checklist question in table 2	Response by project participants
The FARs raised in Table 2 are repeated here.	Reference to the checklist question number in Table 2 where the FAR is explained.	Response by project participants on how forward action request will be addressed prior to first verification.

Figure 1: Validation protocol tables



2.4 Internal quality control

The validation report underwent a technical review performed by a technical reviewer qualified in accordance with DNV's qualification scheme for CDM validation and verification.

2.5 Validation team

<i>Role</i>	<i>Last Name</i>	<i>First Name</i>	<i>Country</i>	<i>Type of involvement</i>					
				Desk review	Site visit / Interviews	Reporting	Supervision of work	Technical review	TA 14.1 competence
Team leader (Validator)	Espejo	Andres B.	Italy	✓	✓	✓	✓		✓
Assessor Under Training	Reed	Pablo	USA	✓	✓	✓			✓
Technical reviewer	Aalders	Edwin	Norway					✓	✓

The qualification of each individual validation team member is detailed in Appendix B to this report.



3 VALIDATION FINDINGS

The findings of the validation are stated in the following sections. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

The final validation findings relate to the project design as documented and described in the PDD, version 02 dated 12 December 2012 /1/.

3.1 Comments by Parties, stakeholders and NGOs

The PDD, version 1 dated 18 May 2012 /1/, was made publicly available on the CDM website and Parties, stakeholders and NGOs were through the CDM website (<http://cdm.unfccc.int/Projects/Validation/DB/Q6APY67C396D5BCQVCYU1UQTQEATEQ/view.html>) invited to provide comments during a 45 days period from 27 May 2012 to 10 July 2012.

No comments were received from this stakeholder consultation period.

3.2 Approval, authorization and contribution to sustainable development

The project participants are Bosques de la Primavera S.A., of host Party of Colombia. The host Party (Colombia) meet all relevant participation requirements. No Annex I party has been identified.

A letter of approval (LoA) /17/ was issued by DNA of Colombia on 10 May 2012, authorizing Bosques de la Primavera S.A. of host Party as project participant and confirming that the project assists in achieving sustainable development.

The letters of approval were received from the project participants. DNV does not doubt the authenticity of the letters of approval as its authenticity was confirmed during the interview held with the representatives of the Colombian DNA /96/. DNV considers the letters are in accordance with paragraphs 39-42 of the VVS /18/.

3.3 Modalities of communications

DNV has performed due diligence on the Modalities of Communications (MoC) statement submitted by the project participants in accordance with applicable requirements in the VVS as documented in section A.4 of Table 2 in the validation protocol in Appendix A to this report. DNV received the MOC and a confirmation that the information provided is valid and accurate from Jesus Rivera on 18 December 2012 /76/. DNV confirmed that he is a representative of Bosques de la Primavera S.A. and is duly authorized to send the MoC on behalf of the same entity /50/.

3.4 Project design

The proposed project activity is located in the Municipality of La Primavera in the Department of Vichada in the extreme eastern plains of the Colombian High Orinoquia region /1/. The project participant has provided the exact location of the project activity in the PDD and provides an ESRI Shapefile[®] /70/ with the exact delimitation of the project boundary, as required by the 'CDM Mechanism Project Standard' (version 01.0).

The proposed project activity consists on the afforestation and reforestation of 29 018 ha of degraded grasslands where extensive cattle ranching based on regular anthropogenic burning

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is the main management model /11//47/. For of which 25 628 will be devoted to commercial reforestation, 390 ha will be devoted to assisted natural regeneration (ANR) while the remaining 3 000 ha will be devoted as protection of deforested areas for natural regeneration (PNR) /11//47//69/. The accuracy of this description was confirmed during the site visit and through cross-checking with relevant evidence /11//47//69/. DNV confirmed that the project description, as included to the PDD, is sufficiently accurate and complete in order to comply with the requirements of the CDM.

The project participants were able to demonstrate that the land within the planned project boundary is eligible for a proposed A/R project activity through the correct and effective use of the 'Procedures to demonstrate the eligibility of lands for A/R CDM project activities' (version 1). DNV was able to substantiate the claim above by reviewing the project proponents land eligibility analysis, which included the interpretation and then classification of LANDSAT imagery provided for the years 1988 and 2002 /1//90//92/, respectively, as well as through on-site observation and interviews. Within the image interpretation analysis, the project proponents utilized the particular threshold to differentiate between forest and non-forested land specified by the host country's DNA /96/, according to which forests are characterized by: thirty percent (30%) tree crown coverage, areas with extensions of at least one hectare (1 ha) and minimum heights of five meters (5m). As part of the procedures outlined above, DNV is able to validate that the entire land chosen to be placed within the project boundary for the project activity is eligible for the proposed A/R project activity.

The start date of the project activity is that of 2 June 2005 /1/, when first tree of the project was planted, and when Ministry of Agriculture and Rural Development officially began a program to promote the CDM as a means to financially bolster and promote reforestation and afforestation activity in the region /65/66/ . Pictures of this inaugural ceremony, like that of the initial tree planting as well, are present within the PDD. DNV confirmed that the starting date is in accordance with the 'CDM Glossary of Terms' (version 6) as it represents the date of real action of the project.

In accordance to the 'CDM Mechanism Project Standard' (version 01.0) the starting date of the crediting period is 2 June 2005 which is the starting date of the project, i.e. earliest date of real action. The project will apply a 20 year renewal crediting period /1/ in accordance with the 'CDM Mechanism Project Standard' (version 01.0). The project participants have decided to address the issue of non-permanence through the use of tCERs /1/, as required by the 'CDM Mechanism Project Standard' (version 01.0) and in accordance with the A/R M&P.

DNV checked the forest establishment plan /47/ and the GHG removal calculations spread sheets /2//3/ and confirmed that the forest establishment plan and the foreseen verifications have been defined so that a systematic coincidence of verification and peaks in carbon stocks would be avoided. In any case this is not expected as the forest management and monitoring plans were drafted in a way in which distinct planting plots were thus established dynamically, with no preference for species, since they depend upon environmental conditions of the areas incorporated to the project. While such an approach makes estimating the maximum Carbon content peaks difficult to establish, the possibility that these will coincide with monitoring periods is thus highly unlikely.

DNV considers the project description of the project contained in the PDD to be complete and accurate. The PDD also complies with the relevant forms and guidance for completing the PDD.



3.5 Application of selected baseline and monitoring methodology

DNV can attest that compliance of the project with each applicability condition as listed in the chosen baseline and monitoring Methodology AR-AM0004 version 04 /21/ were correctly demonstrated by the project participants. The assessment was carried out for each applicability criterion and included onsite verification and compliance check of local project settings and procedures with the applicability conditions in regards to baseline setting and eligible project measures. This assessment also included the review of secondary sources, which sustain that applicability conditions are complied with. The applicability conditions met by the project proponents were as follows:

Applicability criterion (AR-AM0004 Version 04)	Rationale
Lands to be afforested or reforested are degraded and the lands are still degrading or remain in a low carbon steady state;	This was validated through the use of satellite imagery available within the PDD, as well as through on-site confirmation and interviews. This was further confirmed through degradation map produced by the FAO as part of the Global Assessment of Human-induced Soil Degradation (GLASOD) /45/, in which the region in which it is established the proposed project activity is classified as having medium degradation.
Site preparation does not cause significant longer-term net decreases of soil carbon stocks or increases of non-CO ₂ emissions from soil;	This was validated through on-site confirmation, interviews, and cited literature within the PDD, in particular /48/55/.
Carbon stocks in soil organic carbon, litter and dead wood can be expected to further decrease due to soil erosion and human intervention or increase less in the absence of the project activity, relative to the project scenario;	This was validated through on-site inspection, and interviews, confirming that continuous burning and cattle ranching would further deplete the soil organic carbon pool, while the project activity would increase this pool due to presence of the new tree stands. This practice was further confirmed during the interview held with the representative of the Ministry of Agriculture /81/ who confirmed that periodical burnings is the common practice in the region and that this is leading to a continuous degradation of the carbon pools.
Flooding irrigation is not permitted;	This was validated through on-site inspection, interviews, as well as onsite verifications of the establishment plans listed in the PDD /47/.
Soil drainage and disturbance are insignificant, so that non CO ₂ -greenhouse gas emissions from these types of activities can be neglected;	This was validated through on-site inspection and interviews. /81/. Soil preparation consists on a linear preparation with a subsoiler, following land contours where applicable, which covers less than 10% of the area, hence, non disturbing significantly the soil /31/.
The A/R CDM project activity is implemented on land where there are no other	This was validated through on-site inspection and interviews with relevant personnel. DNV



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on-going or planned A/R activities (no afforestation/reforestation in the baseline).	confirmed during the interview held with the representative of the Ministry of Agriculture /81/.
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The assessment of the project's compliance with the applicability criteria of AR-AM0004 (version 04) are documented in detail in section B.2 of Table 2 in the validation protocol in Appendix A to this report.

3.6 Project boundary

Control of project boundary

The project boundary was assessed in the context of physical site inspection, interviews, and on the secondary evidence received on the design of the project.

The total area of the project is 29 019 hectares, and is a private initiative composed of 6 groups: Organización La Primavera S.A., Bosques de la Orinoquía S.A., Bosques de La Primavera S.A., the María Padres Monfortianos Company, the Reforestadora Guacamayas S.A. and the Reforestadora Los Cambulos S.A.S /1/.

The boundary as defined in the field was found to be consistent with the indications in the PDD as well as the GIS files related to the project. In the field, the boundary delineation was cross-checked by the audit team using a GPS unit. The most relevant documents assessed in order to confirm the project boundary are the following:

- Overview maps of the location of the project area and boundaries are also included to the final PDD /1/.
- Digital boundary files in a Geographic Information System (GIS) /70.
- Field sheets including coordinates obtained from GPS point documenting the assessment of the audit team during the onsite visits.

DNV can thus confirm that the identified boundaries as documented in the PDD and attached documents are adequately defined for the project activity.

Regarding control over the project area, agreements were signed between the land owners and Bosques de la Primavera S.A. for their representation in the CDM component of the project. In addition, DNV also carried out the review of land titles and deeds, certificates of tradition (specific to Colombia), and rights of use agreements /51/ between land owners and the project participant. In total, 6 “certificates of liberty”, 8 “powers of representation”, and all of the “contracts of participation” were examined while on the office portion of the site visit. These contracts govern the land use and the transfer and sale of the carbon credits generated by the project. Thus, control over the project area by the project participant is considered to be fully established, as this was also further verified through physical inspection of the nucleases visited.

Selection of carbon pools

The carbon pools that were selected and considered all fall in line with the applicable methodology. This information is also included accordingly within the PDD.

The selected carbon pools are summarized in the following table:



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Project carbon pool	Accounted for	Rationale
Above-ground biomass	Yes	Accounted as required by the applicable methodology AR-AM0004 (Version 04).
Below-ground biomass	Yes	Accounted as required by the applicable methodology AR-AM0004 (Version 04).
Dead wood	No	Neglected as per the applicable methodology AR-AM0004 (Version 04).
Litter	No	Neglected as per the applicable methodology AR-AM0004 (Version 04).
Soil organic carbon (SOC)	No	Neglected as per the applicable methodology AR-AM0004 (Version 04).

DNV confirmed that the selection of carbon pools complies with the applicable methodology AR-AM0004 (version 04), and that the exclusion of the above carbon pools is justified for the project activity.

System boundaries

The system boundaries would be summarised in the following table:

Source / Sink	GHGs involved	Description
Baseline emissions and removals	CO ₂	<input type="checkbox"/> Demonstrated to be negligible in the proposed project activity as per the applicable methodology AR-AM0004 (Version 04)
Project emissions and removals	CO ₂	<input type="checkbox"/> Accounted as required by the applicable methodology AR-AM0004 (Version 04).
	CH ₄	<input type="checkbox"/> No emissions from burning are applicable as no burning occurs as part of the site preparation or forest management. This was effectively confirmed by DNV during the site visit and through the forest management plan which states clearly that no burning is prescribed as part of the site preparation and silvicultural activities /47/.
	N ₂ O	<input type="checkbox"/> Not applicable as per the applicable methodology AR-AM0004 (Version 04).
Leakage emissions	CO ₂	<input type="checkbox"/> Demonstrated to be negligible in the proposed project activity as per the applicable methodology AR-AM0004 (Version 04)

The identified boundary and selected sources and gases are also justified for the project activity. The validation of the project activity did not reveal other greenhouse gas emissions



occurring within the proposed CDM project activity boundary as a result of the implementation of the proposed project activity which are expected to contribute more than 1% of the overall expected average annual emission reduction, which are not addressed by AR-AM0004 (version 04).

3.7 Baseline scenario identification and description

The approved baseline methodology AR-AM0004 (version 04) /21/ has been correctly applied to identify a complete list of realistic and credible baseline scenarios, and the identified baseline scenario most reasonably represents what would occur in the absence of the proposed CDM project activity.

The baseline approach was developed under 22 (a) of the CDM Modalities and Procedures / HR, which states that the effective variations with carbon pools within the project are the same as those that would have occurred due to land use. The baseline represents the continuation of the economic activities which have taken place historically, exist at present, and are unlikely to change in the absence of the project activity. Extensive cattle ranching, coupled with the regular anthropogenic burning of grasslands, have been the dominant model of land-use for over a century in the region /44/47/65/66/69/96/. As a result of the remoteness, lack of infrastructure and high transportation costs, this system has been the dominant land-use in the area. The combination of natural wildfires during periods of intense drought and the regular, purposeful, anthropogenic grassland burning for cattle grazing, degrade the soil as minerals are lost and porosity is altered. Over-grazing and the lack of fertilization further deteriorate this soil, which is further washed out constantly by heavy rains. According to evidence with the project documentation as well as gathered from interviews on the ground, the practice of grassland burning is carried out twice a year by cattle ranchers to obtain new grass re-sprouts which are then palatable to the cattle and to the ranchers who seek to minimize their expenses. Hence, the baseline scenario of the project activity corresponds to that of pasture lands degraded by extensive cattle ranching and regular anthropogenic burning of grasses, and from the evidence and justifications presented, it is expected to continue in the area in the absence of the project activity.

DNV can attest that all the assumptions and data used by the project participants to justify their choice of baseline scenario are listed in the PDD and/or supporting documents. All documentation relevant for establishing the baseline scenario are also correctly quoted and interpreted in the PDD. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable. Relevant national and/or sectoral policies and circumstances are also considered and listed in the PDD.

3.8 Algorithms and/or formulae used to determine emission reductions

3.8.1 Baseline net GHG removals

The stratification process differentiated only one baseline stratum /1/, which is considered acceptable under the presence and confirmation by the audit team during onsite inspection of



the lack of a rotation cycle of the grazing activity in the project area, as well as widespread homogenous and similar geomorphological conditions throughout, as well as documented in the project proponents' land use and eligibility assessment /1/, the corresponding land management plan /69/, and with interviews with relevant Ministry of the Environment representatives /89/. Besides, according to the economic tradition and social conditions in the region, the baseline represents the continuation of the economic activities which have taken place historically, at present, and are unlikely to change in the absence of the project activity. Therefore, in the applicable project activity, lands to be afforested or reforested are herbaceous dominated degraded lands, subjected to pre-project grazing activity along with a frequent fire regime which is causing further degradation. For this reason, in the baseline scenario of the project:

- a. There is no presence of trees or woody vegetation.
- b. During the crediting period considered, there would not be residual trees or woody vegetation that would start growing.

Therefore, following the provisions of AR-AM0004 (version 04) the net CO₂ removals in the baseline scenario:

$$C_{BSL} = 0 \text{ for all } t^* \leq t_{cp}$$

Where:

C_{BSL} = net GHG removals in baseline scenario; t CO₂-e

t^* = Number of years since starting date of CDM forestry activity; years

t_{cp} = Year when first crediting period ends; year

It is expected that due to the continuing conditions presented by the likelihood of the continuation of the baseline scenario in the absence of the project activity, that the net removals in the baseline scenario would actually be negative due to continuous soil degradation; however, the methodology conservatively assumes that these are equal to zero /21/. Based on this analysis, DNV can conclude that the parameters and equations presented in the PDD and further documentation were crosschecked and compared with the requirements and guidelines of the applied methodology and respective tools /21/ to /38/. The review of the equation included all formulae presented in the PDD and the digital calculation files /1/ to /3/. In summary the calculation of the baseline stocks and GHG removals are considered correct.

3.8.2 Actual net GHG removals

The actual net GHG removals by carbon sinks (C_{ACTUAL}) represents the sum of the changes in the carbon content in the project activity scenario, after deducting non-woody biomass removed to establish the models ($E_{biomassloss}$), minus the increase in GHG emissions due to project implementation (GHG_E) in accordance with Section 7.1 of AR-AM0004 (version 04) /21/.

The actual net GHG removals by sinks within the project scope (C_{ACTUAL}) were determined using equations 13 and 14 of methodology AR-AM0004 (version 04) /21/:



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$$C_{ACTUAL} = \Delta C_{P,LB} - GHG_E$$

Where:

$\Delta C_{P,LB}$ = changes in carbon stored in the living tree biomass compartments in the project activity scenario; t CO₂-e

GHG_E = sum of the increments in GHG emissions within the project scope attributable to the project implementation; t CO₂-e

$$\Delta C_{P,LB} = \Delta C_{P,LB_T} - E_{biomasslos}$$

Where:

$\Delta C_{P,LB_T}$ = sum of changes in the carbon stock of the project scenario

$E_{biomasslos}$ = Decrease in the carbon stock of the living biomass

Therefore, the actual net GHG removals by sinks are expressed as:

$$\Delta C_{P,LB} = \Delta C_{P,LB_T} - E_{biomasslos} - GHG_E$$

Sum of changes in the carbon stock of the project scenario ($\Delta C_{P,LB}$)

Following the provisions of AR-AM0004 (version 04) the sum of changes in carbon stock of the project scenario would be equal to:

$$\Delta C_{P,LB_T} = \sum_{t=1}^{t^*} \sum_{i=1}^{m_{BL}} \sum_{k=1}^{K_p} \Delta C_{P,LB,ikt}$$

$\Delta C_{LB,ikt}$ = change in the annual carbon stock for stratum i , tree stand model k , time t

i = 1, 2, 3, ... m_{BL}

k = 1, 2, 3, ... K tree stand model in the project scenario

t = 1, 2, 3, ... t^* years from the start of the project.

The carbon content stored by the tree species at different ages was estimated via dendrometric information published for each of them in the technical literature. Where applicable, the project proponents applied the von Bertalanffy model /57/ using raw data from the measurement of permanent and consigned monitoring plots from relevant studies in Colombia /58/59/60/61/62/. When the existing data was not sufficient to adjust the model, they used the average annual increases and the carbon asymptotes of each species to adjust the von Bertalanffy model through mathematical approximation. This approximation is accepted by the IPCC Good Practices Guide /64/. From the carbon accumulation curve and by using accepted expansion factors /64/ they were then able to obtain the biomass values and the related volume equations.

Carbon accumulation equations were created for the proposed stand models using information taken from existing scientific literature and giving priority to the information reported for Colombia. Additionally, the adjustment of Bertalanffy type equations was used as a resource employing available information /2//57/.

For each species, a representative volume curve was devised, as well as a total curve of the



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commercial stand model, which was obtained by adding the volumes of each species weighted by the participation of this species with respect to the total project area.

The changes in living biomass carbon stocks were estimated using the stock change method as proposed in the applied methodology AR-AM0004 (version 04). Thus, the equations (9) to (11) are used:

$$C_{ikt} = C_{AB,ijt} + C_{BB,ijt}$$

$$C_{AB,ijt} = A_{ijt} \cdot V_{ijt} \cdot D_j \cdot BEF_{2,j}$$

$$C_{BB,ijt} = C_{AB,ijt} \cdot R_j$$

Where:

C_{ikt}	Carbon stock in living biomass for stratum i , stand model k , time t ; t C
C_{ABijt}	Carbon stock in above-ground biomass for stratum i , species j , at time t ; t C
C_{BBijt}	Carbon stock in below-ground biomass for stratum i , species j , at time t ; t C
V_{ijt}	Average merchantable volume of stratum i , species j , at time t ; m ³ ha ⁻¹
D_j	Basic wood density of species j ; t d.m. m ⁻³ merchantable volume
BEF_{2j}	Biomass expansion factor for conversion of merchantable volume to above-ground tree biomass for species j ; dimensionless
R_j	Root-shoot ratio for species j ; dimensionless

Decrease in the carbon stock of the living biomass ($E_{biomassloss}$)

The DNV audit team was able to verify through onsite inspection and interviews with project personnel that biomass removed as part of site preparation before planting corresponded to that of herbaceous vegetation. In line with the methodology AR-AM0004 (version 04) /21/, the living biomass does not contain the biomass of herbaceous vegetation; therefore, loss of living biomass ($E_{biomassloss}$) was determined to be 0.

Given the conditions in baseline scenario (large savannas where pastures and livestock activity predominate) and those observed by the audit team during onsite inspection, carbon stocks in the living biomass of pre-existing non-tree and tree vegetation were found to be not significant, thus according to the methodology AR-AM0004 (version 04) /21/ (*Treatment of pre-existing vegetation*):

- a. *The carbon stock in the living biomass of pre-existing non-tree and tree vegetation are not significant:*
- *Carbon stock changes in the living biomass of pre-existing non-tree and tree vegetation are not included in the ex ante calculation of actual carbon stock changes, regardless if the pre-existing non-tree and tree vegetation is left standing or is harvested;*

Hence, $E_{biomassloss} = 0$.



Sum sum of the increments in GHG emissions within the project scope attributable to the project implementation (GHG_E)

According to AR-AM0004 (version 04)'s applicability conditions, only emissions from the burning of biomass activities are to be considered. However in the proposed A/R CDM project activity, the audit team was able to confirm through onsite inspection that there will be no biomass burning for site preparation or for forest management. This was further confirmed by DNV through the forest management plan which states clearly that no burning is prescribed as part of the site preparation and silvicultural activities /47/. Therefore, emissions within the project boundary are not to be taken into account; $GHG_E = 0$.

3.8.3 Leakage emissions

In the execution of the project activity, the project proponents claim that there will be no leakage, given the following element considered in AR-AM0004 (version 04), Section II.8:

- A decrease in carbon content, due to displacement of agricultural crops, cattle grazing or fuel-wood collection activities, otherwise referred to as leakage due to activity displacement, or $LK_{ActivityDisplacement}$

Thus, the project participant, in their claim that leakage stemming from project activities would be zero, needed to next justify that no leakage would result from the three activities just mentioned in the above bullet point.

The baseline scenario and the area of influence of the project activity correspond to areas of degraded pasture, under extensive cattle ranching with an average of approximately 0.02 heads per ha /15/. With the implementation of the project activity it is expected that owners will move their cattle towards other areas of their own property, those outside the project boundary, which now have grass cover. This would then correspond to Case 2 of AR-AM0004 (version 04), where the population of animals is higher in the baseline scenario than it would be with the project scenario.

Thus the project proponents were then obliged to determine the amount of displacement of cattle ranching activity. This was done through a series of interviews carried out with the owners or administrators of the adjacent properties to the project area /71/. According to this information gathered, the pre-project animal population from different livestock groups that are grazing in the project area was found to be that of (N_{aBL}) 610 animals /71/. These animals were moved to grazing land areas (EGL) under the control of the project owners that were sub-utilized, and the audit team was able to confirm this through on-site interviews using the tables present in the PDD for this analysis.

The Project proponents next determined the annual animal biomass consumption over the project area (ΔC_{LPA} ; t d.m. yr^{-1}), the maximum annual biomass that EGL areas could produce for animal feeding (ΔC_{Lmax}), and the annual biomass that EGL areas are currently producing for animal feeding ($\Delta C_{Lcurrent}$).



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ΔC_{Lmax} was calculated on the basis of the average value for carrying capacity in the Orinoco plains region (head of cattle per ha). This value oscillates between 0.09 head per ha to 1.56, with an average of 0.39 and is further corroborated by /13/.

On the basis of the results obtained from the analysis summarized above, the project proponents concluded that *EGL* areas were in fact sufficient for feeding the entire population of displaced animals, given that:

$$(\Delta C_{Lmax} - \Delta C_{Lcurrent})_{EGL} \geq \Delta C_{LPA}; \quad \text{e.g. } LK_{conversion} = 0$$

During the site visit through visual inspection and interviews /81/ DNV confirmed that the animal population in the areas to be planted and surrounding areas is well below 0.1 head/ha, and that the existing grasslands do hold very rudimentary animal husbandry systems which does not enable to reach the carrying capacity of the pastoral system.

DNV is able to conclude that the total area where the animal population is expected to be displaced (*EGL*) is sufficient for feeding the entire population of displaced animals, because the annual animal biomass consumption over the project area (ΔC_{LPA}), is lower than maximum annual biomass consumption (ΔC_{Lmax}) minus the current annual biomass consumption ($\Delta C_{Lcurrent}$).

This is further confirmed by the ‘Guidelines on conditions under which increase in GHG emissions related to displacement of pre-project grazing activities in A/R CDM project activity is insignificant’ (version 1):

(b) The total area expected to be displaced is more than 5% of the entire A/R CDM project activity or more than 50 ha, and the n-a ha (where “n” is the area in ha expected to be displaced and “a” is 5% of the total project area or 50 ha) are displaced to:

(ii) Existing grasslands with the carrying capacity that allows for accommodation of the displaced animals during the entire period of displacement;

and,

(d) The total number of animals expected to be displaced is more than 40 LSU, and the n-40 LSU (where: “n” is the total number of animals, expressed in LSU, which are expected to be displaced) are displaced to:

(ii) Existing grasslands with the carrying capacity that allows for accommodation of the displaced animals during the entire period of displacement;

Thus, the increase in GHG emissions due to displacement of pre-project grazing activities attributable to the A/R CDM project activity is insignificant.

On the other hand, to attest the same for fuel-wood collection and agricultural activities, the audit team had to substantiate that these two activities are not carried out in baseline scenario. As was evidenced during onsite inspection and interviews, the low supply of wood within the



eligible area makes it so that the bulk of wood for the owners' domestic uses, such as firewood, is not gathered from project eligible areas, but instead from gallery forests and high shrubs, land covers that are not considered as eligible areas for the project activity.

3.8.4 Net anthropogenic GHG removals

DNV has assessed the calculations carried out for baseline stocks and removals, project emissions, leakage and the expected net anthropogenic GHG removals by sinks by the project participant. These calculations were carried out based on calculation spreadsheets provided for by the project participants /2/3/. The correctness of the same can be confirmed as they were replicated by the audit team using the information available to them.

The calculations of the net anthropogenic GHG removals were carried out with an Excel based tool provided by World Bank called the Tool for Afforestation and Reforestation Approved Methodologies, or TARAM for short. All calculations are in compliance with the applicable methodology AR-AM0004 (Version 04) /21/. The steps of the calculations are fully traceable and adequate for the project conditions.

The values and estimates presented within the PDD /1/ are considered reasonable based on the documentation reviewed, cited literature provided, and the result of the interviews during the onsite visit. It can further be confirmed that the sources used are correctly referenced as well as interpreted in the PDD. All assumptions and data indicated in the PDD and all relevant sources were checked and confirmed /2/3/15/16/49/51/. Detailed information on the verification of parameters used in the equations is presented in the PDD as well as the methodological-based protocol produced for this validation.

Based on the calculations and results presented in the sections above the implementation of the project activity will result in an average *ex-ante* estimation of net anthropogenic GHG removals conservatively calculated to be 256 109 tCO₂e per year for the selected crediting period.

In summary, it is the audit team's opinion that the methodology was correctly applied following all of its requirements. All values in the PDD are considered reasonable in the context of the proposed CDM project activity. Data sources were quoted correctly and the calculation of baseline stocks and removals, project emissions, leakage, and the expected net anthropogenic GHG removals by sinks are considered to have been carried out correctly.

In summary, the DNV audit team can conclude that the calculations for net anthropogenic GHG removals have been carried out correctly.

3.9 Additionality

The additionality of the project was presented in the PDD /1/ using the 'Tool for the Demonstration and Assessment of Additionality in A/R CDM Project Activities' (version 02) /25/ using the barrier analysis. The approach used in the PDD was assessed based on a document review as well as through discussions onsite with the project team, the main project proponents and landowners, as well as with the consultants involved in PDD development. Interviews on this topic were also carried out with stakeholders during the onsite visit. The data, rationale, assumptions, justifications and documentation provided were checked using local knowledge and sectoral expertise. A more detailed analysis of the additionality is



summarized in the sections below. In essence, the project is considered additional as lands are reforested which otherwise would have remained grazing lands.

3.9.1 Prior consideration of CDM

Project start date

The start date of the project activity is that of 2 June 2005, when the first tree of the project was planted, and when Ministry of Agriculture and Rural Development officially began a program to promote the CDM as a means to financially bolster and promote reforestation and afforestation activity in the region /1/. Pictures of this inaugural ceremony, like that of the initial tree planting as well, are present within the PDD /1/. In order to confirm the starting date, the audit team reviewed further documented evidence in the form of press releases of the event /44/ and also interviewed stakeholders that were present at the event /81//89//93/. The audit team reviewed the document, and confirms compliance with the AR-CDM requirements for starting date as defined in the ‘CDM Glossary of Terms’ (version 6) as it represents the earliest date of real action, i.e. the date in which the forest establishment commenced.

Evidence for prior consideration

Since the starting date is before 2 August 2008, notifications to UNFCCC and the host Party’s DNA are not required.

The CDM consideration prior to project start was documented through various sources. As is spelled out in the PDD /1/, in his first term beginning in 2002, President Alvaro Uribe promoted the High Orinoco (from the right bank of the Meta River from Puerto Lopez (Meta) to Puerto Carreño (Vichada) as a pole of economic development through conversion of extensive cattle ranching lands to reforestation, stressing the high employment benefits of forestry and the aptitude of the landscape. The program was entitled the "Rebirth of the Upper Orinoco region of Colombia: A mega-project for the World /65/. That year, the Ministry of Agriculture and Rural Development commissioned a feasibility study to evaluate the CDM as a new incentive for forestry: *"Implementation of CDM in the Renaissance of the High Orinoco Plains of Colombia"* /66/. The high potential for carbon sequestration identified in the study was communicated to potential investors and land owners by the Ministry of Agriculture, and the President visited Vichada several times to promote new investment. The Ministry and its research center CORPOCIA generated and promoted a study entitled *"An Agreement for the Formulation and Integral Evaluation of Agro Forestry Projects for the Sustainable Development of the Upper Orinoco of Colombia for the Benefit of the World"* /66/ that focused on the carbon sequestration capacity of developing forestry in the region, and identified viable species and production models.

Land owners and investors in Primavera Vichada were persuaded by the above mentioned government programs and studies to invest in reforestation with carbon sequestration under CDM. As mentioned earlier, first tree plantings in the project activity took place on 2 June 2005, on the premises of Organización La Primavera S.A., and this new CDM project activity was celebrated with the support and presence of Dr. Roberto Camacho representing the CDM Initiative of the Ministry of Agriculture and Rural Development and the Director General of the Regional Environmental Authority of the Orinoco as evidenced by pictures and videos taken of the event and present in the PDD /1/.

Other evidences to demonstrate the prior consideration are listed below:



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DATE	DESCRIPTION	DOCUMENTATION	REFERENCE IN REPORT
27 May 2005	Official Record of Incorporation of La Primavera S.A. Organization. The social objective in the Certificate includes the role of CDM in the forestry project.	Public Instrument, at Notary Public 28 of Bogotá	/50/

It was thus demonstrated that the project participant was aware of the CDM prior to the project activity start date and that the CDM was seriously considered in the decision to proceed with project.

Real and continuing actions

Reliable evidence from project participants is also presented in the PDD, and this respective evidence was provided to the audit team and also assessed. The evidences provided clearly indicate that continuing efforts and real actions were taken to secure CDM status for the project in parallel with its implementation. DNV can thus confirm that real and continuing actions were undertaken by the project proponents to secure the CDM status of the project activity during the period between the project starting date and when the validation started, as per EB 49 annex 22. The audit team validated this by a review of the following documents, with the specific documents highlighted in red being cross checked by DNV to ensure that that there is less than 2 years of a gap between the documented evidence:

DATE	DESCRIPTION	DOCUMENTATION	REFERENCE IN REPORT
10 May 2012	CDM National Letter of Approval: Ministry of Environment/Designated National Authority (DNA) for Climate Change at the Ministry of Environment (MADS) emits National Letter of Approval for the CDM A/R Project.	MADS official LOA	/17/
31 October 2011	Letter for request of national approval to DNA	Registered correspondence	/12/
1 June 2010	Receipt of technical proposals for the CDM Project stakeholder consultation and project socialization process.	Referenced Proposal	/72/
1 February 2009	CAEMA Regulatory, Economic, and Technical Study for the implementation of the CDM Project to the “CDM PROJECT FOR FORESTRY RESTORATION IN PRODUCTIVE AND BIOLOGICAL CORRIDORS IN THE EASTERN PLAINS OF COLOMBIA” Final	Final Report	/11/



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	Report		
October 2008	October 2008: Contract with environmental consulting group to obtain CDM status	Contract	/10/
February 2007	Forestry Establishment Plan Presented to the Ministry of Agriculture and Rural Development in order to access the CIF (Forestry Incentive Certificate), with reference to the CDM, with letter of presentation received by the Ministry.	Forestry Management Plan & registered correspondence	/47/
23 September 2006	La Primavera S.A. Organization, Annual Shareholders Ordinary Assembly. Presentations on the CDM activities being developed and the steps to follow by the company to apply the CDM.	Record of the Meeting of Shareholders	/49/

Since there were no gaps of more than two years between efforts to secure CDM status, the starting date and the start of validation, sufficient efforts to secure CDM status is deemed to be confirmed.

It is DNV's opinion that the proposed CDM project activity complies with the requirements of the latest version of the guidance on prior consideration of CDM.

3.9.2 Identification of alternatives to the project activity

As explained earlier, the main output of the project is long-term managed reforestation plantations, along with the regeneration and increased protection of existing gallery forests in order to create biological corridors of connectivity; thus contributing to soil conservation, diversification of incomes for local stakeholders and the creation of new jobs for the local populace. Relevant alternatives were identified in the context of the additionality test:

1. Continuation of the existing and historical land use.
2. Implementation of project without being registered as an A/R CDM project activity.
3. Implementation of agricultural production systems.

The presented alternatives include all plausible scenarios taking into account local and sectoral circumstances. Hence the list of alternatives is considered to be complete.

Based on the evidence provided and the discussion held with the project participants during the onsite visit, it is clear that the continuation of the current and historical land use is the most likely with two other, less likely ones, also being considered.



3.9.3 Barrier analysis

The project participants used the barrier analysis in order to demonstrate the additionality of the project. The presented barriers are:

- Barrier due to social conditions
- Technological/Infrastructure barriers

Barrier due to social conditions

The social condition barrier was sustained based on the difficult conditions of public order in the region due to high security risks from illegal armed groups and drug cultivation, as well as by a lack of skilled labor /1/.

As presented in the PDD, violence between armed groups and illicit drug cultivation has been prevalent in the Vichada region since the early 1990s, creating very high risks to investment and all types of alternative projects. The remoteness and high indices of unsatisfied basic needs in the towns (41.94%) and the rural areas (84.4%), have made this territory a haven for cultivation and processing of coca, arms trafficking and the flourishing of illegal armed groups, both from the left and the right /69/. According to additional literature cited by the project proponents, the principal victims of kidnapping and violence have been the national armed forces who are fighting to regain control of the region, cattlemen, farmers and public servants. Kidnapping in this area has been used to finance the illicit groups and to debilitate the state presence in the area /69/. This information was also further corroborated through interviews with a representative from the ministry of the agriculture /81/.

The strong support from the national government institutions promoting and backing CDM forestry in the region has thus been a positive force in reducing the security barrier, because investors and bankers perceive less risk because of this strong support. The government has been responsive to the project owners and has established a military base in the region /81/. Therefore, following Guideline 2 of the 'Guidelines for the objective demonstration and assessment of barriers' (version 01) /23/, the existence of the barrier is confirmed by the fact that the CDM will alleviate the aforementioned barrier.

In contrast, extensive cattle ranching (i.e. alternative land-use scenario) has long coexisted with the violent armed groups and illegal crop cultivation, and although these have been negative forces, they have coexisted for decades, and this has been corroborated to DNV by interviews with local stakeholders /81//84//85//89/ as well as through conversations with Colombia's DNA in Bogota /96/.

The other key social barrier has to do with the shortage of skilled labor in the area for reforestation activities. As described earlier, the main economic activity is based primarily on cattle, fishing and subsistence farming. There is no local supply of labor with experience in forestry, so training is more costly and skilled labor must be paid a higher wage to move them from other regions of the country to this remote region. This was confirmed through interviews with local environmental authorities and third-party stakeholders /84/91/94/.

The application of the CDM imposes rigor and capacity building into the project. The CDM process introduces improved organizational, management, accounting, monitoring and measurement techniques, software, hardware and communication systems, which strengthen the project's skill level. This in effect reduces the skill barrier. DNV was able to confirm the



above statements through interviews with local stakeholders as well as with project personnel /84/88/89/91/94/.

The result of this assessment shows clearly that the barriers presented in the PDD can be considered real. These barriers prevent the project activity from being implemented while it would not prevent at least the baseline of the project. This was confirmed based on the documentation review, interviews and local and sectoral expertise of the assessment team. The latter was i.e. confirmed by the interviewed stakeholders. Taken into account the description of the validation of the barriers presented above, the assessment team can confirm that the barrier is credible and correctly presented to demonstrate the additionality of the project.

Technological/Infrastructure barriers

With regards to technological barriers, DNV was able to validate the information that the project proponents provided within the PDD /1/. Mainly, that Primavera, Vichada, is a remote region, far from the urban and productive centers of the country, with very poor transport infrastructure to connect with domestic or international markets. Financial revenues from carbon sequestration will help investors to offset the risks of investing in the area and alleviate the high costs of accessing distant markets for the future sale of timber and the development of products made of tropical woods. Though the responsibility to build new infrastructure falls on the government and local authorities, the adequate infrastructure is still not yet present, and there is no guarantee that this infrastructure will be realised any time soon unless the company makes its own investment /81/ and put in place the necessary infrastructure. If the government fails to build highways and river transport infrastructure to the region, the transport costs of taking the lumber to market may outweigh its value, and the sale of certificates of emission reduction may end up being the primary source of income to the project. These points were corroborated through onsite inspection and through interviews with local environmental authorities, as well as Colombia's DNA stakeholders conducted by the audit team /91/94/96/.

In order to confirm the existence of the barrier, DNV confirmed that the region of Llanos Orientales, where the project is located, has 5 954 962 ha of potential land for afforestation activities, and only 2 other projects are located in this region /81/91/. Following Guideline 3 of the 'Guidelines for the objective demonstration and assessment of barriers' (version 01) /23/, the existence of the technological barrier would be confirmed by the fact that in the region the mentioned land-use is in fact marginal.

3.9.4 Common practice analysis

The region for the common practice analysis was defined as the geographical region of the Colombian department of Vichada /1/. The audit team reviewed the approach presented in the PDD /1/ and is able to confirm that relevant parameters such as location, ecological conditions, economic situation, and development were taken into account in order to define the region, with a specific emphasis on the lack of transport infrastructure and access to markets. The Vichada region is quite a unique and remote area within Colombia as it can technically be described as a different ecosystem in and of itself, yet is also very different



from the Andean and Amazonian regions of the country. Despite it being one of the largest departments in Colombia, its remoteness, ecological conditions, and being one of the host arenas for recent social conflict, have only allowed for minimal settlement, and less than 3 percent of the Colombian population has settled in the area /81/. The region is only accessible through a 6 hour boat ride from the nearest Andean town, especially during the rainy seasons when the few present networks of low-volume roads are often not transmittable either. Through onsite inspection, DNV was able to verify that the chosen region has also unique characteristics in regards to land and population structure, as well as its remoteness, lack of infrastructure, and high transportation costs, making it an area where it is difficult to develop agriculture and forestry. Therefore, the presented approach can be considered appropriate for the common practice analysis. This approach was confirmed during the interview held with the representative of the Ministry of Agriculture, who confirmed that the department of Vichada has social and natural conditions that make them unique and not comparable with neighboring departments which have better infrastructure and are not so remote /81/. As DNV was able to confirm, this area covers a total of ≈ 6 million ha of degraded grassland with a potential to receive the establishment of afforestation and reforestation projects.

As part of the interview held with the representative of the Ministry of Agriculture /81/, DNV confirmed that in the referred geographical region only presents two afforestation-reforestation projects despite the large potential (≈ 6 million ha):

1. Gaviotas Experimental Station, where $\approx 8\ 000$ ha were established in the early 1970s for the purpose of extraction of resins and turpentine /81/;
2. Pinoquia's experimental stand of ≈ 400 ha /81/.

This project activity differs substantially from those two projects because of its much larger scope (i.e. the proposed project activity covers $\approx 30\ 000$ ha which more than triples the sum of both projects) and the proposed project activity has been established as a commercial plantation, which foresees the production of lumber and wood product production, while the first project above seeks the production of turpentine and resins, and the second is an experimental stand. In addition, the stated objectives for the restoration of natural forest ecosystems on degraded lands using Protected Natural Regeneration and Assisted Natural Regeneration stand models is not replicated anywhere else in the region and are unique activities because they rely on the CDM as their only income source for their execution /81/. In addition, the evidence provided shows that the total reforestation activity in the department of Vichada occupied less than 0.08% (eight hundredths of one percent) of the land use in the department in 2005, with only 8 441 hectares planted of a total of 98 970 square km.

3.9.5 Additionality - Conclusion

In conclusion, DNV believes that the project proponents have sufficiently demonstrated that the project is not a likely baseline scenario and that net anthropogenic GHG removals resulting from the project are additional.

3.10 Monitoring plan

The monitoring plan presented in the PDD complies with all of the relevant requirements of the methodology. The audit team checked all parameters presented in the monitoring plan



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against their requirements within the methodology, and the requirements and parameter list spelled out within the methodology were followed correctly within the PDD. As stated earlier in this report, the monitoring of GHG emissions and leakage are to be excluded due to non-relevance, and the monitoring plan in its entirety was found to be included within the project PDD. DNV also reviewed the sampling design while onsite and found to be in compliance with methodological requirements, as well as with good practice guidelines as defined in other IPCC publications /64/. All of the relevant procedures /47/48/ were reviewed by the audit team during office time on the site visit as well as through interviews with the relevant personnel while at the plantations. This information, along with a physical inspection of the project activities on the ground, allowed the audit team to confirm that the proposed monitoring plan is feasible within the project design. All of the major parameters to be monitored were discussed with the project proponents, as well as the inventory processes, data management, quality assurance and quality control procedures that will be implemented in the context of the project. The project proponents have developed and will also follow Standard Operating Procedures (SOP) /47/48/ rafted towards the specific goal of carbon monitoring in order to ensure the collection of reliable field data and the training of new staff whenever necessary, such as in the case of turnover. DNV can thus conclude that the project personnel will be able to implement the monitoring plan and to report the correct ex-post GHG net anthropogenic removals, which can also then, in turn, be verified. DNV can also attest that the chosen monitoring frequency of the parameters is in line with the methodology (frequency in years). Under consideration of the pre-fixed verification frequency of every 5 years (after first verification) and the defined forest management and harvesting system it is considered that there will be no systematic coincidence of verifications with peaks in carbon stocks.

3.10.1 Parameters determined ex-ante

The following data and parameters are determined ex-ante accordance with AR-AM0004 (Version 04) /21/. The following table lists these parameters and how the audit team was able to validate their values:

- Biomass expansion factor for conversion of stem biomass to above-ground tree biomass for tree species ($BEF_{2,j}$). This parameter is taken directly from the IPCC guidelines /64/, and DNV can attest that the values applied are the correct ones for each species used.
- Carbon fraction of dry matter for species of type j (CF_j). This parameter is taken directly from the IPCC guidelines /64/, and DNV can attest that the values applied are the correct ones for each species used.
- Basic wood density for species j (D_j). This parameter is taken directly out of peer-reviewed and referenced literature. DNV can attest that the values applied are the correct ones for each species used through inspection of mentioned sources:
 - *T. grandis*: 0.55 /73//74/; *A. mangium*: 0.53 /73/; *E. pellita*: 0.48 /62/; *P. caribaea*: 0.55 /74/; Several species (ANR and PNR stand models): 0.58 /73//74//64/
- Root-shoot ratio appropriate for biomass stock, for species j (R_j). This parameter is taken directly from the IPCC guidelines /64/, and DNV can attest that the values applied are the correct ones for each species used.
- Desired Level of Precision (DLP). This parameter is set by the methodology in use and by the project proponent themselves. It is also then further required for the calculation



of the number of plots to be measured in ex-post analysis. DNV can confirm that the value used here is in line with what is stipulated in the methodology.

- Value of the statistic z (normal probability density function) ($Z_{\alpha/2}$). This parameter is measured, according to the confidence level that wants to be reached. DNV can confirm that the project proponents have utilized the value dictated by the methodology.

3.10.2 Parameters monitored ex-post

The following data and parameters will be monitored ex-post in accordance with AR-AM0004 (Version 04) /21/ The following table lists these parameters and how the audit team was able to validate their values and/ or monitoring techniques:

- Total Project Area in ha (A). This parameter is determined through LandSat Satellite images, as well as through field surveys conducted around the A/R activity. For ex-ante purposes, DNV can confirm that the assumed value for this parameter is that of 29 019 ha, and that this value was taken from the image analysis spoken of at length in an earlier section of this report, as well as through the audit teams' onsite inspection of the project boundaries with GPS units.
- Area of Stratum I (A_{ikt}). This parameter is obtained by measuring geographical positions using GPS Input, then the measured positions are entered into a GIS system and the implementation area of each stratum and stand is then calculated. Measurements will be undertaken by project staff. DNV can confirm that the assumed values for this parameter are as follows: Commercial stand model: 25,629 ha; ANR stand model: 390 ha; PNR stand model: 3,000. This was once more corroborated by analysis of the shape file provided by the project /70/ and through on-site inspection with the help of GPS units.
- Diameter at Breast Height for a particular tree (DBH). This parameter is obtained by typically measuring 1.3 m above-ground. Measurements are done for all the trees above some minimum DBH in the permanent sample plots that result from the A/R CDM project activity. Measurements will be undertaken by project staff. In line with the project proponents' stated standard operating procedures /48/, DNV can validate that Persons involving in the field measurements will be fully trained in the field data collection. Field measurements shall be checked by a qualified person to correct any errors in techniques, and that required personnel will ensure that plots have been installed and the measurements have been taken correctly. 10-20% of plots shall be randomly selected and re-measured independently as part of a quality check/assurance measure.
- Height of Tree (H). This parameter is obtained by direct measurements conducted out in the field. As before, per the project proponents' stated operating procedures /48/, field measurements shall be checked by a qualified person to correct any errors in technique and plots will have been checked in order to see that they have been installed and the measurements taken correctly. 10-20% of plots shall be randomly selected and re-measured independently.
- Sample Plot Area (AP). This parameter is set by finding where the central point of the plot is located in the field with the help of a GPS unit. The entry route of the plot must be marked to facilitate its location in later monitoring of the auditing process. Measurements will be undertaken by project staff. As before, to verify that plots have



been installed and the measurements taken correctly. 10-20% of plots shall be randomly selected and re-measured independently.

3.10.3 Management system and quality assurance

As spoken of in the section of this report dealing with the monitoring plan, DNV can attest that all indicators of importance for the controlling and reporting of project performance have in fact been incorporated into the project's monitoring plan. The frequency, responsibility and authority for the registration, monitoring, measurement and reporting of project activities has clearly been developed with a "best practices" management system in mind, which has also set in place effective training measures for new employees or for those instances where there may be sudden staff turnover and the quick training of new employees is quickly needed, as well as with the stipulations spelled out within the methodology being put to use /47/48/69/.

Furthermore, as DNV was able to confirm the project's monitoring plan includes:

- Description of the monitoring equipment and procedures to be followed;
- QA/QC measures applied;
- Sampling provisions;
- Measurement methods and procedures;
- Data management;
- Verification and monitoring results.

3.11 Socio-economic and environmental impacts

DNV is able to conclude that during the implementation of the project activity that all rules, regulations and permits have been complied with. All these requirements and requests from the regional environmental authority, CORPORINOQUIA, have been promptly and completely addressed, and this can be further corroborated by documentation provided by the project participant /46/69/, as well as with interviews conducted with these mentioned authorities /81/89/91/96/. As long as the project has submitted a comprehensive management plan /69/ to the respective authorities, according to Colombian law /43/, then there is no need to also carry out an environmental impact assessment. However, despite the fact that an official EIA is not required by law in Colombia, the project proponents correctly claim and argue that the project activity, since it involves only reforestation of degraded pastures and the conservation of existing forest and the creation of more robust biological corridors, will only bring benefit for the surrounding environment and that no adverse environmental effects will result from the CDM activity. DNV can corroborate this claim with what was observed through on-site inspection.

On the socio-economic side of things, because of the remoteness, lack of roads, and lack of state presence in the region, economic development opportunities for locals are extremely limited. In this context, the introduction of large scale reforestation and forest restoration activities has created an important number of new jobs for numerous people in the area. As the project proponents attest, and which can be further corroborated by interviews with local stakeholders, the project demands numerous goods and services from the local economy and plans to keep doing so for the long term. Because of the large scale of the project, the direct



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and indirect incomes to the local populations are found to be significant, as well as a welcome development. This assessment by the project proponent was further corroborated by the pertinent environmental authorities /81/89/91/, as well as confirmation that a broader, separate impact assessment was not required by law in this instance.

In addition, the audit team can attest through interviews and on-site inspection that the project is and will be working with state officials and other private organizations to bring adequate health facilities to the region /81//86//89//91/. Through interviews with project personnel, DNV was also able to confirm that the project provides professional training for skilled positions that do not exist in the region, while also providing health services, lodging, and food services to its workers on site. In interviews with local environmental and municipal authorities /81/89/91/, it was also corroborated that the project provides an alternative to employment delving in illicit crops or with illegal armed groups. In conclusion, the project activity contributes a great deal to improving the social and economic well-being of the region, and does not generate negative impacts.

DNV could determine that no significant socio-economic or environmental impacts are expected from the project activity and that possible impacts were adequately mitigated.

3.12 Local stakeholder consultation

The stakeholder process was carried out in line with PDD guidance and was found to be documented through evidence on the consultation process /4/5/6/7/8/9/. A series of workshops, meetings and conferences were conducted to collect stakeholder's comments. The main steps followed are described in the PDD. Consultation preparation was carried out by presenting the PDD by posting it by the Mayor's office and the Office of the Public Defender on 28 July 2011. Invitations were then sent to all relevant agencies and to stakeholders throughout the community two weeks prior to the event. The public consultation event was carried out on 12 August 2011, during the Annual Primavera Fair at the fairgrounds, in accordance with the procedures stipulated by resolution 2734 of 29 December 2010 issued by the Ministry of Environment, Housing and Development. The audit team reviewed the respective documentation referenced above in order to validate the inclusion of relevant stakeholders, and using input from local interviews, it is confirmed that the communication method used to invite the stakeholders can be considered appropriate.

DNV considers the local stakeholder consultation carried out adequately.

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APPENDIX A

CDM VALIDATION PROTOCOL

Table 1 Mandatory requirements for Clean Development Mechanism (CDM) project activities

Requirement	Reference	Conclusion
About Parties		
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3.	Kyoto Protocol Art.12.2	OK
2. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC.	Kyoto Protocol Art.12.2.	OK
3. The project shall have the written approval of voluntary participation from the designated national authority of each Party involved.	Kyoto Protocol Art. 12.5a, CDM Modalities and Procedures §40a	OK
4. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof.	Kyoto Protocol Art. 12.2, CDM Modalities and Procedures §40a	OK
5. In case public funding from Parties included in Annex I is used for the project activity, these Parties shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of these Parties.	Decision 17/CP.7, CDM Modalities and Procedures Appendix B, § 2	OK
6. Parties participating in the CDM shall designate a national authority for the CDM.	CDM Modalities and Procedures §29	OK
7. The host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol.	CDM Modalities §30/31a	OK
8. The participating Annex I Party's assigned amount shall have been calculated and recorded.	CDM Modalities and Procedures §31b	OK
9. The participating Annex I Party shall have in place a national system for estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7.	CDM Modalities and Procedures §31b	OK
About additionality		
10. Reduction in GHG emissions shall be additional to any that would occur in the absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those	Kyoto Protocol Art. 12.5c, CDM Modalities and Procedures §43	OK

Requirement	Reference	Conclusion
that would have occurred in the absence of the registered CDM project activity.		
About forecast emission reductions and environmental impacts		
11. The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change.	Kyoto Protocol Art. 12.5b	OK
For large-scale projects only		
12. Documentation on the analysis of the environmental impacts of the project activity, including trans-boundary impacts, shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out.	CDM Modalities and Procedures §37c	OK
About stakeholder involvement		
13. Comments by local stakeholders shall be invited, a summary of these provided and how due account was taken of any comments received.	CDM Modalities and Procedures §37b	OK
14. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available.	CDM Modalities and Procedures §40	OK
Other		
15. The baseline and monitoring methodology shall be previously approved by the CDM Executive Board.	CDM Modalities and Procedures §37e	OK
16. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	CDM Modalities and Procedures §45c,d	OK
17. The baseline methodology shall exclude to earn CERs for decreases in activity levels outside the project activity or due to force majeure.	CDM Modalities and Procedures §47	OK
18. Provisions for monitoring, verification and reporting shall be in accordance with the modalities described in the Marrakech Accords and relevant decisions of the COP/MOP.	CDM Modalities and Procedures §37f	OK

Table 2 Requirements checklist

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
A General description of project activity					
A.1 Title of the project activity (PS § 31, VVS § 62-63)					
A.1.1 Does section A.1 of the PDD include a clearly identifiable project title, version number of the PDD and date of the PDD?	/1/	DR	<input checked="" type="checkbox"/> Clearly identifiable title of the project activity <input checked="" type="checkbox"/> Version number of the PDD is included <input checked="" type="checkbox"/> Date of the PDD is included.		OK
A.1.2 Is the PDD is in accordance with the applicable requirements for completing PDDs?	/1/	DR	<input type="checkbox"/> Yes <i>If no, list where the PDD is not in accordance: Map legends have still not been translated into English.</i>	CAR-1	OK
A.2 Description of the project activity (VVS § 64-69 and VVS § 184 for small-scale A/R project activities, as applicable)					
A.2.1 How was the design of the project assessed?	/1/	DR I	<i>What type is the project?</i> <input checked="" type="checkbox"/> Project in existing facility or utilizing existing equipment(s) <input checked="" type="checkbox"/> Project is either a large scale project or a small scale project with emission reductions exceeding 15 000 tCO ₂ e per year. In this case, a site visit must be performed. <input type="checkbox"/> Project is a bundled small scale project, with each project in the bundle with emission reductions not exceeding 15,000 tCO ₂ e per year. In such case the number of physical site visits may be based on sampling, if the sampling size is		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			<p>appropriately justified through statistical analysis.</p> <p><input type="checkbox"/> The project is an individual small scale project activity with emission reductions not exceeding 15 000 tCO₂e per year. In this case, DOE may not conduct a physical site visit as appropriate.</p> <p><input type="checkbox"/> Greenfield project</p> <p><i>How was the design of the project assessed?</i></p> <p><input checked="" type="checkbox"/> Physical site inspection</p> <p><input type="checkbox"/> Reviewing available designs and feasibility studies</p> <p><i>If a physical site inspection is not undertaken, justify why no site visit was undertaken:</i></p>		
A.2.2 If a greenfield project, describe the physical implementation of the project when the validation was commenced.	/1/	DR	<i>Not Applicable</i>		OK
A.2.3 If physical site visits were performed based on sampling (only applicable for bundled small scale projects, each with emission reductions not exceeding 15 000 tCO ₂ e per year), justify the sampling through a statistical analysis:	/1/	DR	<i>Not Applicable</i>		OK
A.2.4 Is the description of the proposed CDM project activity as contained in the PDD sufficiently covers all relevant elements, is accurate and that it provides the reader with a clear understanding of the nature of the proposed CDM project activity?	/1/	DR	Yes, the project description included in the PDD /1/ sufficiently covers all the relevant elements of the project and provides the reader with a clear understanding of the nature of the CDM activity. However, there are still some inconsistencies within the PDD, such as map legends not in English and discrepancies regarding procedures for tree plantation..	CAR-1	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
A.2.5 Does the project activity involve alteration of existing installations? If so, have the differences between pre-project and post-project activity been clearly described in the PDD?	/1/	DR	Not Applicable		OK
A.2.6 Does the project design engineering reflect current good practices?	/1/	DR	Not Applicable		OK
A.2.7 Would the technology result in a significantly better performance than any commonly used technologies in the host country? Is any transfer of technology from any Annex-I Party involved?	/1/	DR	The proposed project activity considers the use of local technology imported from other regions of Colombia as it is not present locally. DNV confirmed that part of the genetic material is sourced from Costa Rica (i.e. <i>Pinus caribaea</i>), which will result in a better performance than the commonly technologies of the host country.		OK
A.3 Participation and authorization (VVS § 38-52)					
A.3.1 Do all participating Parties fulfil the participation requirements as follows:	/1/	DR			OK
			Colombia (host) Not applicable. Not applicable.		
a) Party has ratified the Kyoto Protocol	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		
b) Party has designated a Designated National Authority	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		
c) The assigned amount has been determined	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		
A.3.2 Do the letters of approval meet the following requirements?	/1/ /17/	DR			OK
			Colombia (host) Not applicable. Not applicable.		
a) LoA confirms that Party has ratified the Kyoto Protocol	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		
b) LoA confirms that participation is voluntary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		
c) The LoA confirms that the project contributes to the sustainable development of the host country?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA NA		
d) The LoA refers to the precise project activity title in the PDD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		
e) The LoA is unconditional with respect to (a) to (d) above	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		
f) The LoA is issued by the respective Party's DNA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
<p>g) The LoA was received directly by the DNA or the PP</p> <p>h) In case of doubt regarding the authenticity of the letter of approval, describe how it was verified that the letter of approval is authentic</p>			<p><input type="checkbox"/> DNA <input checked="" type="checkbox"/> PP <input type="checkbox"/> DNA <input type="checkbox"/> PP <input type="checkbox"/> DNA <input type="checkbox"/> PP</p> <p>No doubt was presented, though authenticity was also confirmed by direct interview with the DNA /96/.</p>		
<p>A.3.3 Have all private/public project participants been authorized by an involved Party?</p>	/1/	DR	<p>All the private/public project participants have been authorized by Colombia's DNA /17/</p>		OK
A.4 Modalities of communications (VVS § 53-61)					
<p>A.4.1 How has the corporate identity of all project participants and focal points included in the MoC, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories, been validated?</p>	/1/	DR	<p><input type="checkbox"/> Directly checking evidence for corporate, personal identity and other relevant documentation;</p> <p><input type="checkbox"/> Notarized documentation;</p> <p><input checked="" type="checkbox"/> Written confirmation from the project participant or the coordinating/managing entity that submits to it the MoC statement that all corporate and personal details, including specimen signatures, are valid and accurate. If this case was selected, DNV has confirmed that:</p> <ul style="list-style-type: none"> <input type="checkbox"/> the MoC statement was received from a project participant with whom DNV has a contractual relationship. <input checked="" type="checkbox"/> the official who submits the MoC statement to the DOE and the official who signed the written confirmation (if a different person) is/are duly authorized to do so on behalf of the respective project participant 		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
A.4.2 Is the the MoC statement has been correctly completed and duly authorized? Check that all three requirements listed in the next column are complied with.	/1/	DR	<input checked="" type="checkbox"/> The latest version of the form F-CDM-MOC has been used; <input checked="" type="checkbox"/> The information required as per the F-CDM-MOC, including its annex 1, is correctly completed; <input checked="" type="checkbox"/> The project participantís authorized signatories signing the F-CDM-MOC correspond to the project participantís authorized signatories included in F-CDM-MOC, annex 1.		OK
A.5 Technical description of the project activity (PS § 31, VVS § 64-69 and PS § 110 & 111, VVS § 170-172 & 173-175 for A/R project activities)					
A.5.1 Is the project’s location clearly defined?	/1/	DR I	The project’s location has been clearly defined as being in the country of Colombia, the department of Vichada, and the municipality of La Primavera. Additional maps and shape files confirm the location of the nucleases that make up the entire project area.		OK
A.5.2 Has the project participant demonstrated the eligibility of land through the application of the ‘Procedures to demonstrate the eligibility of lands for A/R CDM project activities’ (version 1)	/1/	DR I	The project participant has clearly demonstrated the eligibility of lands to be included in the CDM activity by following the mentioned tool and mainly through the use of Landsat imagery provided for in the PDD (1988 and 2002).		OK
A.5.3 Has the project participant demonstrated that the land at the moment the project starts does not contain forest by providing transparent information? The project participant has considered the definition of forest adopted by the host party?	/1/	DR I	The project participant has demonstrated that land at the moment of the project start date did not contain forest with the use of satellite imagery from 1988 and 2001 provided for in the PDD. In addition, the participant has also considered the host party’s definition of forest by		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			including it in the PDD, and citing the UNFCCC website as its source.		
A.5.4 Has the project participant demonstrated that the project is a reforestation or afforestation project activity?	/1/	DR I	Through past satellite imagery, and on site confirmation that the new tree stands do conform to the Designated National Authority's definition of first, it can be confirmed that the project is a reforestation or afforestation project activity.		OK
A.5.5 In order to confirm the eligibility of land, what data sources were assessed and what observations were made during the site visit in order to arrive to a conclusion? Does the evidence show that the entire land within the project boundary is eligible? Give reference to documents considered to arrive at this conclusion.	/1/	DR I	The eligibility of land to be included in the CDM activity was confirmed during the site visit, where clear evidence that the bare land in question to be used for planting trees was never forested before was observed. This was further corroborated by satellite imagery provided for by the project participant in the PDD /1/.		OK
A.5.6 Is the approach to address non-permanence defined in the PDD? What is the approach, tCERs or ICERs?	/1/	DR	Yes, the PDD clearly states that the approach will be through the use of tCERs.		OK
A.6 Public funding of the project activity (CDM Modalities and Procedures Appendix B § 2)					
A.6.1 In case public funding from Parties included in Annex I is used for the project activity, have these Parties provided an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of these Parties?	/1/	DR I	Not Applicable, as the use of public funding from Parties included in Annex I was not used by the project. This was further corroborated through an onsite interview with the Host nation DNA /96/.		OK
B Application of a baseline and monitoring methodology					
B.1 Methodology applied (VVS para 70-133 and VVS § 184 for small-scale A/R project activities, as applicable)					
B.1.1 Does the project apply an approved methodology and the correct and valid version thereof?	/1/	DR	The project applies the correct methodology, that of Afforestation and Reforestation	CL	OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
<i>If during the course of validation the originally applied version of the methodology expires, a CAR shall be raised in Table 3 of the validation protocol. Any new requirements of the revised version of the methodology not yet validated in Table 2 of the validation protocol shall be validated in Table 3 as part of the assessment of the CAR raised.</i>			AR-AM0004: “Reforestation or afforestation of land currently under agricultural use”. It also uses the most recent and valid version of this methodology, that of version 4. A list of tools used was also provided for in the PDD, however, the versions of these tools are still not provided for.		
B.1.2 If applicable, has any specific guidance provided by the CDM EB in respect to the applied methodology been considered?	/1/	NA			
B.2 Applicability of methodology (and tools) (VVS § 73-77) <i>Insert a row for each applicability criteria of the applied methodology (and tools)</i>					
B.2.1 How was it validated that project complies with the following applicability criteria: Lands to be afforested or reforested are degraded and the lands are still degrading or remain in a low carbon steady state?	/1/ /45/	DR I	This was validated through the use of satellite imagery available within the PDD, as well as through on-site confirmation and interviews. This was further confirmed through degradation map produced by the FAO as part of the Global Assessment of Human-induced Soil Degradation (GLASOD) /45/, in which the region in which it is established the proposed project activity is classified as having medium degradation.		OK
B.2.2 How was it validated that project complies with the following applicability criteria: Site preparation does not cause significant longer term net decreases of soil carbon stocks or increases of non-CO2 emissions from soil ?	/1/	DR I	This was validated through on-site confirmation, interviews, and cited literature within the PDD. However, the reference to (Molina et al, 2005) on page 52 of PDD, has still not been provided by the project participant.	CL-2	OK
B.2.3 How was it validated that project complies with the following applicability criteria: Carbon stocks in soil organic carbon, litter and dead wood can be expected to decrease more due to soil erosion and human intervention or increase	/1/	DR I	This was validated through on-site inspection, and interviews, confirming that continuous burning and cattle ranching would further deplete the soil organic carbon pool, while the project		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
less in the absence of the project activity, relative to the project scenario?			activity would increase this pool due to presence of the new tree stands. This practice was further confirmed during the interview held with the representative of the Ministry of Agriculture /81/ who confirmed that periodical burnings is the common practice in the region and that this is leading to a continuous degradation of the carbon pools.		
B.2.4 How was it validated that project complies with the following applicability criteria: Flooding irrigation is not permitted?	/1/	DR I	This was validated through on-site inspection, interviews, as well as an onsite verifications of the establishment plans listed in the PDD.		OK
B.2.5 How was it validated that project complies with the following applicability criteria: Soil drainage and disturbances are insignificant, so that non CO ₂ -greenhouse gas emissions from this type of activities can be neglected?	/1/	DV I	This was validated through on-site inspection and interviews.		OK
B.2.6 How was it validated that project complies with the following applicability criteria: The A/R CDM project activity is implemented on land where there are no other on-going or planned A/R activities (no afforestation/reforestation in the baseline) ?	/1/	DV I	This was validated through on-site inspection and interviews.		OK
B.2.7 Is the selected baseline one of the baseline(s) described in the methodology and this hence confirms the applicability of the methodology?	/1/	DR	The baseline scenario is in fact one of the baselines described in the methodology, that of “degraded lands, either abandoned or subjected to pre-project grazing activity or agricultural crop activity, with vegetation having area, crown cover and tree high values below the thresholds used in the national definition of forest, and the lands are still degrading or remaining in a low carbon steady state.” /2/		OK
B.3 Project boundary (VVS § 82-87 and VVS § 163-172, PS § 102-109 for A/R project activities)					
B.3.1 Has the project participant established full control of	/1/	DR	Yes, this was validated through on-site inspection		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
the total area of land planned for the proposed A/R CDM project activities? If not, have they established control of at least two-thirds of the total area of land planned for the A/R CDM project activities?		I	as well as through the review of land titles and deeds, certificates of tradition (specific to Colombia), and rights of use agreements between land owners and the project participant.		
B.3.2 Does the control include at minimum the exclusive right, defined in a way acceptable under the legal system of the host Party, to perform the A/R activity with the aim of achieving net anthropogenic GHG removals by sinks?	/1/	DR	Yes, this was validated through on-site inspection as well as through the review of land titles and deeds, certificates of tradition (specific to Colombia), and rights of use agreements between land owners and the project participant. In total, 6 “certificates of liberty”, 8 “powers of representation”, and all of the “contracts of participation” were examined while on the site visit.		OK
B.3.3 If a sampling approach was applied (i.e. if the total number of evidence is not less than 10) in order to review documents and interview persons/entities, how many were selected? How was this selection conducted?	/1/	DR	As mentioned above, in total 6 “certificates of liberty”, 8 “powers of representation”, and all of the “contracts of participation” were examined while on the site visit.		OK
B.3.4 If not all sites were assessed and these were selected through sampling, how many sites were assessed and how were these selected?	/1/	DR	Not all sites were assessed and/or visited physically, as this was constrained due to time in the field and office, though the rest of the areas were overflowed with an aircraft for remote inspection.		OK
B.3.5 If the methodology allows the exclusion of certain carbon pools and this option is selected by the project participant, is this exclusion justified? Give reference to documents considered to arrive at this conclusion.	/1/	DR	The methodology only considers the Above-ground and Below-ground carbon pools. No option for exclusion is provided in the methodology.		OK
B.3.6 What are the project’s system boundaries (components and facilities used to mitigate GHGs)? Are they clearly defined and in accordance with the methodology?	/1/	DR	It was shown in Section A.7 that the 6 nuclei are eligible for CDM using the tool (“ <i>Procedures to Demonstrate the Eligibility of Lands for Afforestation and Reforestation CDM Project Activities</i> ”- <i>Version 01</i> ”). Under this procedure, 29 018 ha. are eligible in the 6 forest nuclei, of		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			which 25 628 ha. are to be applied for the commercial model, 390 are planned to establish models of Assisted Natural Regeneration, and 3 000 ha. for Protected Natural Regeneration.		
B.3.7 Which GHG sources and sinks are identified for the project? Does the identified boundary cover all possible sources and sinks linked to the project activity? Give reference to documents considered to arrive at this conclusion.	/1/	DR	Table B.3. on page 53 of the PDD lists as GHG sources those of biomass burning and removal of pre-existing non-tree woody vegetation. Not only does the table not provide justifications/explanations for why these were included or excluded, but from site visit interviews and emissions calculations, it was understood that these sources would be ultimately excluded. Furthermore, the methodology does not include among the GHG sources the “Removal of preexisting non-tree woody vegetation”. This is not a GHG source as such but a decrease in a carbon pool.	CAR-2	OK
B.3.8 Does the project involve other emissions sources not foreseen by the methodologies that may question the applicability of the methodology? Do these sources contribute with more than 1% of the estimated emission reductions of the project?	/1/	DR	No, the project does not.		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
<p>B.4 Baseline scenario determination and description (VVS § 88-95 and PS § 115 for A/R project activities) / Identification of alternatives to the project activity (VVS § 113-116)</p> <p><i>Ensure that the evaluation of all alternatives provided in the PDD and required by the methodology and also possible alternatives/offshoots of alternatives are discussed. Check that all alternatives required to be considered by the methodology are included in the final PDD. If baseline alternatives required to be considered by the methodology are considered not applicable, please assess the justification for this.</i></p>					
B.4.1 Which baseline scenarios have been identified? Is the list of baseline scenarios complete? Does the list include as one of the options that the project activity is undertaken without being registered as a proposed project activity? Does the list contains all plausible alternatives which are viable means of supplying the comparable outputs or services that are to be supplied by the proposed project activity?	/1/	DR	Other, less possible scenarios have been identified, such as crop production in the area, as well as the project activity without the CDM component. It is clear that the baseline arrived at is the most plausible for the area.		OK
B.4.2 How have the other baseline scenarios been eliminated in order to determine the baseline?	/1/	DR	The other scenarios have been effectively been eliminated with sound justification.		OK
B.4.3 What is the baseline scenario?	/1/	DR	The baseline scenario is that of degrading lands, either abandoned or subjected to pre-project grazing activity or agricultural crop activity, with vegetation having area, crown cover and tree high values below the thresholds used in the national definition of forest, and the lands are still degrading or remaining in a low carbon steady state.		OK
B.4.4 Is the determination of the baseline scenario in accordance with the guidance in the methodology?	/1/	DR	The determination of the baseline is in line with the methodology. The applicability of the	CL3	OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			<p>methodology selected (AR-AM0004/Version 04) was evaluated in Section UNFCCC/CCNUCC CDM – Executive Board Page 55 55/121 C.2. The baseline approach was developed under 22 (a) of the CDM Modalities and Procedures /HR, which states that the effective variations with carbon pools within the project are the same as those that would have occurred due to land use. The baseline represents the continuation of the economic activities which have taken place historically, exist at present, and are unlikely to change in the absence of the project activity.</p> <p>However, although the participant state that the baseline scenario contains one stratum, during steps four and five of the steps used to identify the most plausible baseline scenario they then refer to three different strata.</p>		
<p>B.4.5 Has the baseline scenario been determined using conservative assumptions where possible?</p>	/1/	DR	<p>The most plausible baseline scenario was pretty self-explanatory, and the use of conservative assumptions in this determination was not possible.</p>		OK
<p>B.4.6 Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies and circumstances such as historical land use practices? Does the baseline scenario comply with all applicable and enforced legislation?</p>	/1/	DR	<p>The baseline does take into account relevant national and sectoral policies, as well as comply with all applicable and enforced legislation. While there are government impulses to help develop the area, these have not been sufficient. This was validated through interviews with the local environmental authority /96/</p>		OK
<p>B.4.7 Is the baseline scenario determination compatible with the available data and are all literature and sources clearly</p>	/1/	DR	<p>Yes, all applicable literature references have been clearly cited and verified. These include /1/</p>		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
referenced?					
<p>B.4.8 Is the baseline determination adequately documented in the PDD?</p> <ul style="list-style-type: none"> All assumptions and data used by the project participants are listed in the PDD and related document to be submitted for registration. The data are properly referenced. All documentation is relevant as well as correctly quoted and interpreted. Assumptions and data can be deemed reasonable Relevant national and/or sectoral policies and circumstances such as historical land use practices are considered and listed in the PDD. The methodology has been correctly applied to identify what would occurred in the absence of the proposed CDM project activity 	/1/	DR	<p>The baseline determination is adequately documented.</p> <ul style="list-style-type: none"> All assumption and data used have been listed in the PDD and have also been properly referenced, with the exception of the reference to: (Land Management Plan, EOT 2000). The documentation is relevant and correctly quoted and interpreted. Data assumption were found to be reasonable Relevant national and sectoral policies have been identified and included in the PDD The methodology has been correctly applied in this section. 	CL-4	OK
B.5 Additionality determination (VVS § 101-129 and PS § 120 for A/R project activities)					
B.5.1 What approach/tool does the project use to assess additionality? Is this in line with the methodology?	/1/	DR	The evaluation and demonstration of additionality of the Project Activity was conducted using the "Tool for the Demonstration and Assessment of Additionality in A / R CDM Project Activities "Version 02. This is in line with the methodology in use.		OK
B.5.2 Have the regulatory requirements correctly been taken into account to evaluate the project activity and the alternatives?	/1/	DR	The regulatory requirements have all been correctly taken into account.		OK
B.5.3 Is sufficient evidence provided to support the relevance of the arguments made?	/1/	DR	No, please see below.		
B.5.4 What is the project additionality mainly based on	/1/	DR	The project additionality is mainly based through		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
(Investment analysis or barrier analysis)?			a barrier analysis.		
Prior consideration of CDM (VVS § 105-112)					
B.5.5 Is the project start date before 2 August 2008 or on/after 2 August 2008?	/1/	DR	<input type="checkbox"/> On or after 2 August 2008; <input checked="" type="checkbox"/> Before 2 August 2008; <i>Refer to C.1.1 for the validation of project start date.</i>		OK
Continuous efforts to secure CDM status (only to be completed if starting date is before 2 August 2008)					
B.5.6 What initiatives were taken by the project participants from the starting date of the project activity to the start of validation in parallel with the physical implementation of the project activity?	/1/	DR	The project has been planting trees and operating since 2005, while continuing to incorporate more lands under its auspice.	CAR-3	OK
B.5.7 When did the construction of the project activity start?	/1/	DR	The first tree was planted was 2 June 2005. This is corroborated by pictures within the PDD /1/ as well as with a video shown to the auditors during the site visit. /1/		OK
B.5.8 Does the timeline of the project confirm that continuous actions in parallel with the implementation were taken to secure CDM status?	/1/	DR	There is not a clear timeline present which can showcase that the project has continuously taken steps to secure CDM status.	CAR-3	OK
Barrier analysis (VVS § 124-127)					
B.5.9 Are the barriers identified complimentary to a potential investment analysis? Does the barrier have a clear impact on the financial returns so that it can be assessed in an investment analysis? Each barrier is discussed separately.	/1/	DR	The barriers identified are comparable to a potential investment analysis and are also corroborated by pertinent literature /1/.		Ok
B.5.10 How were the <u>investment barriers</u> assessed to be real? Are the investment barriers substantiated by a source independent of the project participants?	/1/	DR	Investment barriers were assessed to be real, and this was confirmed with interviews with local municipal and environmental authorities, as well as with the host country's DNA, and through cited literature. However, this must also be corroborated through a letter from an appropriate financial institution.	CAR-4	OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
B.5.11 How does CDM alleviate the investment barriers?	/1/	DR	Helps overcome infrastructure barrier and lack of investment capital.	CAR-5	OK
B.5.12 Is the project activity prevented by the investment barriers and at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/1/	DR	Yes.	CAR-6	OK
B.5.13 How were the <u>technological barriers</u> assessed to be real? Are the technological barriers substantiated by a source independent of the project participants?	/1/	DR	The technological barriers were assessed to be real as the lack of infrastructure and transportation networks near that project site was evidence by on-site inspection. These were also substantiated by independent sources /1/		OK
B.5.14 How does CDM alleviate the technological barriers?	/1/	DR	Compensates for lack of infrastructure and training.	CAR-7	OK
B.5.15 Is the project activity prevented by the technological barriers and at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/1/	DR	Yes.	CAR-8	OK
B.5.16 How were the <u>other barriers</u> assessed to be real? Are the other barriers substantiated by a source independent of the project participants?	/1/	DR	Other barriers included were those of high security risks from illegal armed groups and drug cultivation, as well as a lack of skilled labor.		OK
B.5.17 How does CDM alleviate the other barriers?	/1/	DR	Provides compensation for lack of infrastructure, as well as needed training.	CAR-9	OK
B.5.18 Is the project activity prevented by the other barriers and at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/1/	DR	This was shown.	CAR-10	OK
Common practice analysis (VVS § 128-130)					
B.5.19 What is the geographical scope of the common practice analysis? Is this justified?	/1/	DR	Department of Vichada.	CAR-11	OK
B.5.20 What is the scope of regulatory/investment environment and size for the common practice analysis and how has this been justified?	/1/	DR	Department of Vichada projects and available funding /81/	CAR-11	OK
B.5.21 What is the data source(s) used for the common practice analysis?	/1/	DR	Cited Literature included now in report.	CAR-11	OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
B.5.22 How many similar non-CDM-projects exist in the region within the scope?	/1/	DR		CAR I	OK
B.5.23 How were possible essential distinctions between the project activity and similar activities assessed?	/1/	DR	Through stakeholder interviews as well as discussions with the DNA.	CAR I	OK
B.5.24 What is the conclusion of the common practice analysis?	/1/	DR	Carried out correctly.	CAR I	OK
Conclusion					
B.5.25 What is the conclusion with regard to the additionality of the project activity?	/1/	DR	The conclusion here is that the project is additional, but this will remain to be seen until sections of these analysis are carried out properly.		OK
B.6 Algorithms and/or formulae used to determine emission reductions (VVS § 96-100, and VVS § 176-178)					
Data and parameters that are available at validation and that are not monitored					
B.6.1 How was the insert parameter available at validation verified?	/1/	DR	All parameters were checked and corroborated by cited literature now included in report.	CAR I	OK
B.6.2 How was the insert parameter available at validation verified?	/1/	DR	All parameters were checked and corroborated by cited literature now included in report.	CAR I	OK
B.6.3 How was the insert parameter available at validation verified?	/1/	DR	All parameters were checked and corroborated by cited literature now included in report.	CAR I	OK
B.6.4 How was the insert parameter available at validation verified?	/1/	DR	All parameters were checked and corroborated by cited literature now included in report.	CAR I	OK
Baseline net GHG removals					
B.6.5 Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/1/	DR	Yes, the calculations documented were complete and carried out in a transparent matter. /1/.		OK
B.6.6 Have conservative assumptions been used when calculating the baseline net GHG removals?	/1/	DR	Conservative assumptions have been used when calculating GHG removals /1/.		OK
B.6.7 Are uncertainties in the net GHG removals estimates properly addressed?	/1/	DR	Uncertainties in certain areas were addressed by allocating conservative, IPCC recommended		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			factors and values /1/.		
Actual net GHG removals					
B.6.8 Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/1/	DR	The calculations to be used have been taken directly from the methodology in question. However, the PDD shows that for the calculation for $E_{\text{biomassloss}}$, the project proponents have used the biomass content of grasses. However, grasses are not woody non-tree biomass. This is now been fixed.	CAR 13	OK
B.6.9 Have conservative assumptions been used when calculating the actual net GHG removals?	/1/	DR	Conservative assumptions have been used when calculating actual GHG removals /1/.		Ok
B.6.10 Are uncertainties in the actual net GHG removals estimates properly addressed?	/1/	DR	Uncertainties in certain areas were addressed by allocating conservative, IPCC recommended factors and values /1/.		Ok
Leakage					
B.6.11 Are the leakage calculations documented according to the approved methodology and in a complete and transparent manner?	/1/	DR	Yes.	CAR 14	OK
B.6.12 Have conservative assumptions been used when calculating the leakage emissions?	/1/	DR	Yes.	CAR 14	OK
B.6.13 Are uncertainties in the leakage emission estimates properly addressed?	/1/	DR	Yes.	CAR 14	OK
GHG removals					
B.6.14 Algorithms and/or formulae used to determine emission reductions: <ul style="list-style-type: none"> All assumptions and data used by the project participants are listed in the PDD and related document submitted for registration. The data are properly referenced All documentation is correctly quoted and interpreted. All values used can be deemed reasonable in the context of 	/1/	DR	<i>Please refer to the above CARs and CLs</i>		

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
<p>the project activity</p> <ul style="list-style-type: none"> The methodology has been correctly applied to calculate the net anthropogenic GHG removals and this can be replicated by the data provided in the PDD and supporting files to be submitted for registration. It has been ensured that a systematic coincidence of verification and peaks in carbon stocks would be avoided. 					
B.7 Monitoring plan (VVS § 131-133, PS § 121-126, PS § 132, PS § 135)					
Data and parameters monitored					
B.7.1 Do the means of monitoring described in the plan comply with the requirements of the methodology?	/1/	DR	The means of monitoring in the plan comply directly with the methodology in question.		OK
B.7.2 Does the monitoring plan contains all necessary parameters, and are they clearly described?	/1/	DR	All parameters to be monitored have been included in the PDD, however, conclusions as to what sources of data to be used have oftentimes not been arrived at yet, but instead have been given choices. This has now been fixed.	CAR 15	OK
B.7.3 In case parameters are measured, is the measurement equipment described? Describe each relevant parameter.	/1/	DR	See observation above	CAR 15	OK
B.7.4 In case parameters are measured, is the measurement accuracy addressed and deemed appropriate? Describe each relevant parameter.	/1/	DR	See observation above	CAR 15	OK
B.7.5 In case parameters are measured, are the requirements for maintenance and calibration of measurement equipment described and deemed appropriate? Describe each relevant parameter.	/1/	DR	Not Applicable		OK
B.7.6 Is the monitoring frequency adequate for all monitoring parameters? Describe each parameter.	/1/	DR	See observation above	CAR 15	OK
B.7.7 Is the recording frequency adequate for all monitoring parameters? Describe each parameter.	/1/	DR	See observation above	CAR 15	OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
Forest establishment and management					
B.7.8 How has it been assessed that the project participant shall plan management activities, including harvesting cycles and verifications such that a systematic coincidence of verification and peaks in carbon stocks would be avoided?	/1/	DR	Included in the PDD, and in accordance to According to paragraph 12 of Appendix B under decision 19/CP.9, monitoring must not be performed during the maximum Carbon peaks of the distinct plots; the project participants has thus clearly stated that this will be avoided. Even more, the distinct monitoring plots are and will be established dynamically, with no preference for species since they largely depend upon the soil and environmental conditions of the areas incorporated to the project. Thus, the maximum carbon content peaks would already be difficult to establish and would thus make it even more unlikely that they will coincide with monitoring periods.		OK
B.7.9 The monitoring plan includes provisions for the monitoring of the forest establishment and management? Is this in compliance with the applicable methodology?	/1/	DR	The plan included in the PDD provides clear provisions for the monitoring of forest establishment and management along the exact lines as those prescribed by the methodology.		OK
B.7.10 The monitoring plan includes provisions for the monitoring of the geographical coordinates of the project boundary? These includes a description on how these are determined and recorded?	/1/	DR	For this activity, the participant will have suitable technical personnel define the parcel boundaries planted using GPS units. They further claim that these procedures will be standardized and the appropriate protocols will be followed, during all the different monitoring periods.		OK
Ability of project participants to implement monitoring plan					
B.7.11 How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	/1/	DR	This has been assessed through on-site inspections of the eligible lands for the project, as well as through on-site interviews with staff personnel and other local authorities.		OK
B.7.12 Are Standard Operating Procedures (SOPs) implemented for data monitoring? Is this in compliance with	/1/	DR	SOP procedures are clearly lined out within the project PDD, in the monitoring plan section.		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
the applicable methodology? Are this adequate?			These were found to be perfectly in line with the methodology employed, and in fact, stem from it.		
B.7.13 Are quality control (QC) and quality assurance (QA) procedures implemented for data monitoring? Are these in compliance with the applicable methodology? Are these adequate?	/1/	DR	Quality control and assurance measures for the monitoring of actual net GHG removals have been clearly spelled out within the monitoring plan portion of the PDD, and these were also confirmed through on-site interviews.		OK
B.7.14 Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	/1/	DR		CL-5	OK
Leakage management					
B.7.15 Are procedures for the periodic review of implementation of activities and measures to minimize leakage specified? Are these adequate?		DR	The procedures were found to be adequate and are now also referenced within the PDD and report.		OK
Monitoring of sustainable development indicators/ environmental impacts / socio-economic impacts					
B.7.16 Is the monitoring of sustainable development indicators/ environmental impacts / socio-economic impacts warranted by legislation in the host country?	/1/	DR	Monitoring of sustainable development indicators is not warranted by the Colombian law. This was confirmed through direct interviews with the host country DNA. This is applicable when the DNA requires it to be monitored.		OK
B.7.17 Does the monitoring plan provide for the collection and archiving of relevant data concerning environmental, social and economic impacts?	/1/	DR	Monitoring of sustainable development indicators is not warranted by the Colombian law. This was confirmed through direct interviews with the host country DNA.		OK
B.7.18 Are the sustainable development indicators in line with stated national priorities in the host country?	/1/	DR	Monitoring of sustainable development indicators is not warranted by the Colombian law. This was confirmed through direct interviews with the host country DNA.		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
C Duration of the project activity / crediting period					
Start date of project activity (VVS § 106 & 112, PS § 57, PS § 61-62, PS § 127 - 128)					
C.1.1 How has the starting date of the project activity been determined? What are the dates of the first contracts for the project activity? When was the first construction activity?	/1/	DR	The starting date of the project activity was June 2, 2005. This was the date when the first tree was planted. The PDD has pictures to corroborate this, as well as a video of the opening remarks made by government authorities in attendance.		OK
C.1.2 Is the start date, the type (renewable/fixed) and the length of the crediting period clearly defined and reasonable?	/1/	DR	These are clearly defined and reasonable within the PDD.		OK
D Environmental impacts (VVS § 179-183, PS § 129 - 132)					
D.1.1 Are there any host country requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved? Does the approval contain any conditions that need monitoring?	/1/	DR I	No EIA is required by the host country environmental regulations as confirmed through the interview held with the representative of the regional environmental entity /91/ and the representative of the Ministry of Agriculture /81/. The only environmental requirements are related to regulations established by the regional environmental entity CORPORINOQUIA to the riparian areas through the regulations 702/2007 /42/ and 11-30/2011 /43/. The former establishes the need to have in place an environment management plan and the latter refers to the need of zonification of these riparian areas in order to assign uses /42//43/. The commercial plantations do not require any environmental clearance or plan as evidence by the Forestry Law 139/94 /41/ which recognises the net environmental benefits		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
D.1.2 Does the project comply with environmental legislation in the host country?	/1/	DR I	of forests. Yes, DNV confirmed that the project complies with all the applicable legislation through the interviews held with the representative of the regional environmental entity /91/ and the representative of the Ministry of Agriculture /81/.		OK
D.1.3 Will the project create any adverse environmental effects?	/1/	DR I	DNV determined that no adverse environmental impacts are expected to extend from this project activity through onsite inspection.		OK
D.1.4 Have identified environmental impacts been addressed in the project design? Are remedial measures to address these significant impacts provided?	/1/	DR I	DNV determined that no adverse environmental impacts are expected to extend from this project activity through onsite inspection.		OK
E Socio-economic impacts (VVS § 179-183, PS § 133 - 135)					
E.1.1 Are there any host country requirements for a Socio-economic impact assessment (SEIA), and if yes, is an SEIA approved? Does the approval contain any conditions that need monitoring?	/1/	DR	No SEIA is required by the host country environmental regulations as confirmed through the interview held with the representative of the regional environmental entity /91/ and the representative of the Ministry of Agriculture /81/. The only environmental requirements are related to regulations established by the regional environmental entity CORPORINOQUIA to the riparian areas through the regulations 702/2007 /42/ and 11-30/2011 /43/. The former establishes the need to have in place an environment management plan and the latter refers to the need of zonification of these riparian areas in order to assign uses /42//43/. The commercial plantations do not require any environmental clearance or plan as evidence by the Forestry Law 139/94 /41/ which recognises the net socio-economic benefits		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			of forests.		
E.1.2 Has the SEIA been approved by the host Party?			Please refer to above.		OK
E.1.3 Will the project create any adverse socio-economic effects?			DNV found no adverse socio-economic impacts are expected to extend from this project activity and verified this through on-site inspection and interviews.		OK
E.1.4 Have identified socio-economic impacts been addressed in the project design? Are remedial measures to address these significant impacts provided?			DNV found no adverse socio-economic impacts are expected to extend from this project activity and verified this through on-site inspection and interviews.		OK
F Local stakeholder consultation (VVS § 138-140)					
F.1.1 Have relevant stakeholders been consulted?	/1/	DR	They have. This was confirmed through on-site interviews and with additional evidence provide for by the participant /1/.		OK
F.1.2 Have appropriate media been used to invite comments by local stakeholders?	/1/	DR	Appropriate media for the project area was used to conduct the consultations /1/.		OK
F.1.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/1/	DR	Apart from the land management plan required from the host country officials, there is no additional stakeholder consultation process required, though one was carried out. /1/.		OK
F.1.4 Is a summary of the stakeholder comments received provided?	/1/	DR	Yes. /1/.		OK
F.1.5 Has due account been taken of any stakeholder comments received?	/1/	DR	Due account of stakeholder comments has been undertaken, as evidenced within the results of the consultation /1/ and their mention in the project PDD.		OK

Table 3 Resolution of corrective action requests and clarification requests

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>CAR 1</p> <p><u>Requirement</u> Point 20, b in the Clean Development Mechanism Validation and Verification Standard, version 02.0 notes that for the validation of CDM activities, the project participant must ensure the completeness and accuracy of the claims, including the conservativeness of the assumptions made in the project design document (PDD).</p> <p><u>Evidence and failure</u> DNV has found that several sections of the PDD are still not in accordance with the applicable requirements for completing PDDs. Examples include information that should be provided in English (map legends), as well as inaccurate descriptions and/or discrepancies with actual on-the-ground procedures regarding project areas in tables, field preparation, fertilization, and planting.</p>	<p>A.1.2 A.2.4</p>	<p>Participants have translated all required terms to English.</p> <p>Participants have corrected all descriptions and/or discrepancies with actual on-the-ground procedures regarding project areas in tables, field preparation, fertilization, and planting.</p> <p>In several sections is included descriptions, clarification and complements for the purpose of ensure the completeness and accuracy of the claims</p>	<p>DNV has reviewed the updated PDD and can confirm that now all of the sections of the document conform to the applicable requirements needed for completing PDDs. Information that was still listed in Spanish has now been translated and adjusted accordingly; and descriptions and or inaccuracies within the descriptions of actual, on-the-ground procedures regarding project areas in tables, field preparation, fertilization, and planting, have been modified to conform to what was witnessed during on-site inspection.</p> <p>CAR 1 is closed.</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>CAR 2</p> <p><u>Requirement</u></p> <p>Point 76 in the Clean Development Mechanism Validation and Verification Standard, version 02.0 notes that for the validation of CDM activities, The DOE shall confirm that all main GHG emission sources, the physical delineation of the proposed CDM project activity and other relevant project and baseline emission sources covered in the methodology are included within the project boundary for the purpose of calculating project and baseline emissions for the proposed CDM project activity meets the requirements of the selected baseline methodology.” Furthermore, point 78 also states that, “If the methodology allows project participants to choose whether a source or gas is to be included within the project boundary, the DOE shall determine whether the project participants have justified that choice. The DOE shall confirm that the justification provided is reasonable, based on assessment of supporting documentation.”</p> <p><u>Evidence and failure</u></p>	<p>B.3.7</p>	<p>PDD has been modified to include the correct sources and gasses, p. 54, Section B.3</p> <p>PDD has been modified to exclude from GHG sources, the “Removal of preexisting non-tree woody vegetation”. This is not a GHG source as such but a decrease in a carbon pool.</p> <p>a. Only aboveground and belowground biomass is considered, since these are the major carbon pools subjected to the project activity. Although, carbon stocks in litter, dead wood and soil, can be expected to further decrease due continued cattle ranching, or increase less in the absence of the project activity, relative to the project scenario (section B.2), these pools present many practical problems for measuring in the field and</p>	<p>DNV has reviewed the pertinent sections of the modified PDD (B.2-B.3) to confirm that the project proponents now list the appropriate carbon pools and GHG sources in accordance to the applied methodology, along with their proper justification. However, a) In the justification for the inclusion of the carbon pools, the rationale provided for is that the methodology, and not the project proponent’s explanation of why a certain carbon pool is included or excluded.</p> <p>b) Even though the project proponents now explicitly claim that no biomass burning will occur for site preparation or for forest management (which was corroborated through onsite inspection), table B.3 still states that sources of CH₄ stemming from the burning of biomass will be considered within the project’s carbon accounting.</p> <p>Upon review of the most recent response by the project proponents regarding this finding, the audit team can conclude that the reasoning provided for as to why litter, dead</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>DNV has identified that in, table B.3 on page 53 of the PDD, which lists the GHG sources to be included or excluded in the project accounting, that the justifications and/or explanations have not been provided for in this table. In addition, certain sources were included when it was determined during filed verification and interviews that these would in fact be excluded. Finally, the methodology does not include among the GHG sources the “Removal of preexisting non-tree woody vegetation”. This is not a GHG source as such but a decrease in a carbon pool.</p>		<p>associated uncertainties about rates of transfer between them, or emissions to the atmosphere. Therefore, not account these pools is a conservative approach.</p> <p>b. Table B.3 was corrected; i.e. CH₄ emissions is not considered</p>	<p>wood, and soil related emissions have been excluded are deemed sufficient. What is more, the audit team can also conclude that the exclusion of the same sources can in fact be deemed conservative in this respect, as the evidence provided for during onsite inspection and with project stakeholders would also suggest that carbon stocks attributed to these pools would in fact be expected to increase less in the absence of the project activity.</p> <p>CAR 2 is now closed.</p>
<p>CAR 3</p> <p><u>Requirement</u></p> <p>Point A in section 106 of the Clean Development Mechanism Validation and Verification Standard, version 02.0 notes that for the validation of CDM activities, the project participant must show that there is less than 2 years of a gap between the documented evidence the DOE shall conclude that continuing and real actions were taken to secure CDM status for the project activity.</p>	<p>B.5.3 B.5.6 B.5.8</p>	<p>Table with documented history of all CDM activities since 2005 is included in the PDD in section B.6. Supporting documents placed in drop box for reference and review.</p>	<p>DNV has reviewed the modified PDD and this newly added table, along with its newly proportioned evidence, to confirm that the project proponents have in fact taken continuous and real actions to secure CDM status of their project activity with no gap of more than two years in between documented evidence. This new evidence is now also listed and referenced within the validation report. Documents used as evidence for this continuous action are as follows:</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p><u>Evidence and failure</u> DNV sees no objective evidence within the PDD to conclude that there is in fact less than 2 years of a gap between documented evidence of real actions that were taken to secure CDM status for the project activity.</p>			<p>10 May 2012: Letter of approval from Colombian DNA /17/</p> <p>31 October 2011: Letter for request of national approval to DNA /12/</p> <p>10 May 2012: Official letter acknowledging meetings with the Regional Environmental Authority CORPORINOQUIA to present and discuss the CDM project. /50/</p> <p>February 2009: Feasibility Study for the CDM project /11/</p> <p>October 2008: Contract with environmental consulting group to obtain CDM status /10/</p> <p>February 2007: Forestry Establishment Plan Presented to the Ministry of Agriculture and Rural Development in order to access the CIF (Forestry Incentive Certificate), with reference to the CDM, with letter of presentation received by the Ministry. /51/</p> <p>September 2006: Records (attendance</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
			<p>sheet and pictures) of meeting for the Annual Shareholders Ordinary Assembly. Presentations on CDM activities being developed and the steps to follow by the company to apply the CDM. /52/.</p> <p>10 May 2005: Official Record of Incorporation of La Primavera S.A. Organization. The social objective in the Certificate includes the role of CDM in the forestry project. /53/.</p> <p>CAR is closed.</p>
<p>CAR 4</p> <p><u>Requirement</u></p> <p>According to the ‘Guidelines for the objective demonstration and assessment of barriers’ (version 01), the project participant shall provide a letter from an independent financial institution that can substantiate the investment barrier.</p> <p><u>Evidence and failure</u></p> <p>DNV sees no objective evidence that the investment barrier is substantiated by a financial institution independent of the</p>	<p>B.5.10</p>	<p>Participants have removed the investment barrier. The other barriers remain and should be sufficient to demonstrate additionality.</p>	<p>DNV has reviewed the aforementioned two new pieces of evidence and considers them as sufficient proof from an independent financial institution corroborating the reasons behind investment barriers for the project. /54/ /55/ However, according to the referenced guidelines « it should be demonstrated that the loan approval (or other significant financing decision(s)) by the lender takes explicitly the CDM registration into account.». In other words, it is not enough to demonstrate that the project proponents could not obtain</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
project participants.			<p>financing, but that this was linked to the CDM.</p> <p>Taking into account the latest response by the project proponents, their decision to eliminate their description of their investment barrier is found to be satisfactory by the audit team, as the other barriers described have already been deemed robust and adequate, and together, they have already been found to be sufficient in order for the project to successfully pass the CDM additionality tool being employed for this project.</p> <p>CAR is closed.</p>
<p>CAR 5</p> <p><u>Requirement</u></p> <p>According to the “Combined tool to identify the baseline scenario and demonstrate additionality in AR CDM project activities’ (version 1), the following is required under Sub-step 3a. Identify barriers that would prevent the implementation of type of the proposed project activity: “The identified barriers are only sufficient grounds for</p>	B.5.11	Section 3.A., “Investment barriers”, has been modified to include how the CDM has alleviated the investment barrier.	<p>DNV has reviewed the modified pertinent section of the PDD (3.A), and can now confirm that it contains relevant statements as to how the obtainment of CDM status would help alleviate some of the previously mentioned investment barriers.</p> <p>CAR is closed.</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>demonstration of additionality if they would prevent potential project participants from carrying out the proposed project activity if it was not expected to be registered as an A/R CDM project activity”.</p> <p><u>Evidence and failure</u> Within the PDD section describing the investment barriers to demonstrate additionality (page 60-61), DNV sees no statement to demonstrate how obtaining CDM status would help alleviate the described investment barriers.</p>			
<p>CAR 6</p> <p><u>Requirement</u></p> <p>According to the “Combined tool to identify the baseline scenario and demonstrate additionality in AR CDM project activities’ (version 1), the following is required under Sub-step 3 b. <u>Show that the identified barriers would not prevent the implementation of at least one of the alternative land use scenarios</u> (except the proposed project activity): “If the identified barriers also affect other land use scenarios, explain how they are</p>	<p>B.5.12</p>	<p>Final paragraphs of the section entitled “Investment Barriers” have been modified to show how identified barriers would not prevent the implementation of at least one of the alternative land use scenarios (cattle ranching).</p>	<p>DNV has reviewed the modified pertinent section of the PDD (3.A), and can now confirm that it now contains explanations and relevant evidence /56/ outlining how identified barriers would not prevent the implementation of at least one of the alternative land use scenarios (cattle ranching).</p> <p>CAR is closed.</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>affected less strongly than they affect the proposed A/R CDM project activity. In other words, explain how the identified barriers are not preventing the implementation of at least one of the alternative land use scenarios. Any land use scenario that would be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration. At least one viable land use scenario shall be identified.</p> <p><u>Evidence and failure</u></p> <p>Within the PDD section describing the investment barriers to demonstrate additionality (page 60-61), DNV sees no statement to demonstrate that the identified barriers would not prevent the implementation of at least one of the alternative land use scenarios (except the proposed project activity).</p>			
<p>CAR 7</p> <p><u>Requirement</u></p> <p>According to the “Combined tool to identify the baseline scenario and demonstrate additionality in AR CDM</p>	<p>B.5.14</p>	<p>Section B.6., sub section “Infrastructure Barriers” has been modified to address this CAR.</p>	<p>Upon review of the pertinent section of the revised PDD (section B.6), the project proponents can now claim that they have presented sufficient evidence to demonstrate how obtaining CDM status would help</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>project activities’ (version 1), the following is required under Sub-step 3a. Identify barriers that would prevent the implementation of type of the proposed project activity: “The identified barriers are only sufficient grounds for demonstration of additionality if they would prevent potential project participants from carrying out the proposed project activity if it was not expected to be registered as an A/R CDM project activity”.</p> <p><u>Evidence and failure</u> Within the PDD section describing the technological barriers to demonstrate additionality (page 61-62), <u>DNV sees no statement to demonstrate how obtaining CDM status would help alleviate the described investment barriers.</u></p>			<p>alleviate the described investment barriers mentioned within this portion of the tool to demonstrate additionality by showing that only with the revenue obtained from the carbon credits and from the push spearheaded by the national government for low-carbon development in the area, can this barrier been relieved; meaning that only with the added revenue from credit sales and from government sponsored initiatives is the risk reduced enough for people to attempt such reforestation projects within this region of Colombia.</p> <p>CAR is closed.</p>
<p>CAR 8</p> <p><u>Requirement</u></p> <p>According to the “Combined tool to identify the baseline scenario and demonstrate additionality in AR CDM project activities’ (version 1), the following is required under Sub-step 3 b.</p>	B.5.15	<p>Technological barriers are infrastructure barriers in this case.</p> <p>Section B.6., sub section “Infrastructure Barriers” has been modified to address this CAR.</p>	<p>Upon review of the pertinent section of the revised PDD (section B.6), DNV can now claim that the project proponents now demonstrate how technological barriers (in this particular case, infrastructure barriers) would not prevent the implementation of at least one of the alternative land</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>Show that the identified barriers would not prevent the implementation of at least one of the alternative land use scenarios (except the proposed project activity): “If the identified barriers also affect other land use scenarios, explain how they are affected less strongly than they affect the proposed A/R CDM project activity. In other words, explain how the identified barriers are not preventing the implementation of at least one of the alternative land use scenarios. Any land use scenario that would be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration. At least one viable land use scenario shall be identified.</p> <p><u>Evidence and failure</u></p> <p>Within the PDD section describing the technological barriers to demonstrate additionality (page 61-62), DNV sees no statement to demonstrate that the identified barriers would not prevent the implementation of at least one of the alternative land use scenarios (except the proposed project activity).</p>			<p>use scenarios (except the proposed project activity). This was done by demonstrating how the lack of infrastructure in the area has done little to dissuade or prevent the continuing practice of cattle farming in the area. This was further corroborated through on-site inspection as well as with interviews conducted during the site visit.</p> <p>CAR is closed.</p>
<p>CAR 9</p>	<p>B.5.17</p>	<p>Section entitled “Barriers due to social</p>	

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p><u>Requirement</u></p> <p>According to the “Combined tool to identify the baseline scenario and demonstrate additionality in AR CDM project activities’ (version 1), the following is required under Sub-step 3a.: Identify barriers that would prevent the implementation of type of the proposed project activity: “The identified barriers are only sufficient grounds for demonstration of additionality if they would prevent potential project participants from carrying out the proposed project activity if it was not expected to be registered as an A/R CDM project activity”.</p> <p><u>Evidence and failure</u></p> <p>Within the PDD section describing the barriers due to social conditions to demonstrate additionality (page 61), DNV sees no statement to demonstrate how obtaining CDM status would help alleviate the described investment barriers.</p>		<p>conditions”, has been modified to include how the CDM has helped to alleviate this barrier.</p>	<p>Upon review of the pertinent section of the revised PDD (section B.6), DNV can now claim that the project proponents have in fact presented statements and corroboration as to how obtaining CDM status would help alleviate some of the social barriers identified in the area. They have done so in two ways, first describing how obtaining CDM status and the push from government authorities to impulse other, similar projects in the region, have contributed to the increased security of the area, with now much less political and social conflict in the region which would allow the CDM to continue. As evidenced during onsite inspection and through interviews with local stakeholders, despite the violence of the past two decades, cattle farming was able to continue as the main economic activity in the area, despite earlier security concerns. The other means by which the proponents now show how obtaining CDM status would alleviate some of the barriers due to social conditions, is by promoting the notion that only through the added</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
			<p>revenue from carbon, can projects be able and willing to invest in the training of staff and local stakeholders on reforestation activities as well as general project management activities in order to carry out a project of this magnitude. Without this extra incentive, it would be very difficult to obtain the kind of needed and trained staff necessary to carry out such a reforestation endeavor.</p> <p>CAR is closed.</p>
<p>CAR 10</p> <p><u>Requirement</u></p> <p>According to the “Combined tool to identify the baseline scenario and demonstrate additionality in AR CDM project activities’ (version 1), the following is required under Sub-step 3 b. Show that the identified barriers would not prevent the implementation of at least one of the alternative land use scenarios (except the proposed project activity): “If the identified barriers also affect other land use scenarios, explain how they are affected less strongly than they affect the</p>	<p>B.5.18</p>	<p>Extensive cattle ranching is not limited by the social barriers that limit the project activity. While traditional cattle ranching requires one person for the management of 100 ha, forestry activities require one person to manage 10 ha (Organización La Primavera S.A. 2006). Social conditions are adequate for extensive cattle ranching: watching over and herding of cattle is done by any local worker, regardless of level of education and training. In contrast, commercial forestry requires a team of trained foresters for genetic and phytosanitary management of the</p>	<p>Upon review of the modified section of the PDD, DNV can now verify that the project proponents have presented a valid case as to why the described social barriers would not affect one of the alternative land use scenarios, in this case, that of cattle ranching. As now described within the PDD, a lack of skilled labor did and will not prevent cattle from being ranched in the area, as this activity really requires minimal man power as well as skilled labor. Furthermore, the presence of social violence and conflict in the area over the past couple decades has done little to</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>proposed A/R CDM project activity. In other words, explain how the identified barriers are not preventing the implementation of at least one of the alternative land use scenarios. Any land use scenario that would be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration. At least one viable land use scenario shall be identified.</p> <p><u>Evidence and failure</u></p> <p>Within the PDD section describing the barriers due to social conditions to demonstrate additionality (page 60-61), DNV sees no statement to demonstrate that the identified barriers would not prevent the implementation of at least one of the alternative land use scenarios (except the proposed project activity).</p>		<p>nurseries and plantations, skilled workers to harvest and process the lumber, and administrators and managers to run the business. Section B.6., sub section “Lack of skilled labor” has been modified to address this CAR.</p>	<p>displace or discontinue the practice of cattle ranching in the region. This was also corroborated through onsite inspection and site visit interviews.</p> <p>CAR is closed.</p>
<p>CAR 11</p> <p><u>Requirement</u></p> <p>Point 124, regarding the Common Practice Analysis, within the Clean Development Mechanism Validation and Verification Standard, version 02.0, notes</p>	<p>B.5.19-24.</p>	<p>Common practice: This section has been modified to support a regional geographical scope.</p> <p>The PDD has been modified to introduce data from the Ministry of Agriculture and Rural Development that shows that commercial</p>	<p>Upon reviewing the pertinent sections of the modified PDD, DNV can now confirm that the section of the PDD concerning the common practice analysis portion in demonstrating the project’s additionality now includes the following:</p> <ol style="list-style-type: none"> 1. An assessment of whether the

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>that for the validation of CDM activities, the DOE shall use official sources and its local and sectoral expertise to:</p> <ul style="list-style-type: none"> (a) Assess whether the geographical scope (e.g. the defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type. For certain technologies the relevant region for assessment will be local and for others it may be transnational/global. If a region other than the entire host country is chosen, the DOE shall assess the explanation why this region is more appropriate; (b) Determine to what extent similar and operational projects (e.g. using similar technology or practice), other than CDM project activities,¹⁵ have been undertaken in the defined region; (c) Assess, if similar and operational projects, other than CDM project activities, are already widely observed and commonly carried 		<p>reforestation is very rare in the region. The document states that less than less than 0.08% (eight hundredths of one percent) of the land use in the department in 2005 was dedicated to commercial forestry.</p> <p>With the text and evidence provided, It can be concluded that reforestation activities were not widely observed and commonly carried out in the defined region.</p> <p>file: CERTMINAGR Commercial Reforestation statistics</p>	<p>geographical scope of the common practice analysis is appropriate. The decided upon geographical scope of the analysis was that of the Vichada region, which is the appropriate scope as the region is characterized by similar features (remoteness, lack of infrastructure, etc.) which would affect other similar reforestation/afforestation activities.</p> <ul style="list-style-type: none"> 2. A determination of to what extent similar and operational projects have been undertaken in the defined region. These include other reforestation initiatives that have commenced or are beginning in the region, which differ from the project activities in question, mainly due to scope and size, as well as natural regeneration and other activities characteristic of the CDM project in question. <ul style="list-style-type: none"> • An assessment if similar and

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>out. in the defined region, whether there are essential distinctions between the proposed CDM project activity and the other similar activities.</p> <p><u>Evidence and failure</u></p> <p>DNV sees no objective evidence within the common practice analysis portion of the PDD (pages 65-66) to show that:</p> <ul style="list-style-type: none"> • An assessment of whether the geographical scope of the common practice analysis is appropriate. • A determination of to what extent similar and operational projects have been undertaken in the defined region. • An assessment if similar and operational projects, other than CDM project activities, are already widely observed and commonly carried out. 			<p>operational projects, other than CDM project activities, are already widely observed and commonly carried out. The proponents have clearly shown that these types of reforestation projects are by and large not a common practice in the region.</p> <p>CAR is closed.</p>
<p>CAR 12</p> <p><u>Requirement</u></p>	<p>B.6.1-4</p>	<p>Section B.7.2 has been modified to include information for the scenario related to the project activity, as well as the default values applied. The data</p>	<p>Upon review of the pertinent section of the now modified PDD, DNV can assert that the data and parameters to be fixed ex ante listed on pages 78-81</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>Point 91, regarding the Algorithms and/or formulae used to determine emission reductions, within the Clean Development Mechanism Validation and Verification Standard, version 02.0, notes that for the validation of CDM activities, the DOE shall determine whether the steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s).</p> <p><u>Evidence and failure</u></p> <p>DNV has identified that the data and parameters to be fixed ex ante, listed on pages 69 and 70 of PDD do not comply with the requirements of the selected methodology.</p>		<p>and parameters to be fixed ex ante, listed on pages 78-81 of PDD now comply with the requirements of the Guidelines for completing the project design document form for afforestation and reforestation CDM Project Activities/ Version 01.1</p> <ol style="list-style-type: none"> a. Parameters that have been calculated or default values specified in the selected methodology were excluded from B.7.2. b. Parameters concerning leakage emission were excluded from B.7.2. c. Parameters defined ex-ante and used ex-post were included in section B.7.2 d. Tables were corrected and now are fully complied with the information and the source of ex-ante values. 	<p>now comply with the requirements of the Guidelines for completing the project design document form for afforestation and reforestation CDM Project Activities/ Version 01.1, as well as the respective methodology.</p> <ol style="list-style-type: none"> a) According to the “Guidelines for completing the project design document for AR (CDM-AR-PDD)” (Version 01.1) as part of section B.7.2 the “data that are calculated with equations provided in the selected methodology(ies) or default values specified in the selected methodology(ies) should not be included in the compilation”. DNV confirmed that there are some parameters that have been calculated and that should not be there, i.e. CBSL, GHG emissions, LKActivityDisplacement, b) As part of Section B.7.1 it has been substantiated that leakage emission are negligible. However, the project participant has included in section B.7.2 parameters fixed ex-ante which are not applicable.

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
			<p>c) There are parameters which would be defined ex-ante and used ex-post which have not been included in section B.7.2:</p> <ul style="list-style-type: none"> • DLP: Required for the calculation of the number of plots ex-post • Za/2: Required for the calculation of the number of plots ex-post • Dj: Required for ex-post net actual GHG removal calculation. • BEFj: Required for ex-post net actual GHG removal calculation. • CFj: Required for ex-post net actual GHG removal calculation. • Rj: Required for ex-post net actual GHG removal calculation. <p>d) The project participant shall note that the tables should be fully compiled with the information (e.g. values of basic density per species, etc.) and the source of ex-ante values shall be defined (e.g. IPCC 2006 Table x for species X, etc. not “See TARAM”)</p> <p>The audit team has revised the most recent set of information sent by the project proponents, as well as the revised, pertinent sections of the</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
			<p>PDD, and can now verify that the data and parameters to be fixed ex ante listed on pages 78-81 now comply with the requirements of the Guidelines for completing the project design document form for afforestation and reforestation CDM Project Activities/ Version 01.1, as well as the respective methodology.</p> <p>CAR is now closed.</p>
<p>CAR 13</p> <p><u>Requirement</u></p> <p>Point 91, regarding the Algorithms and/or formulae used to determine emission reductions, within the Clean Development Mechanism Validation and Verification Standard, version 02.0, notes that for the validation of CDM activities, the DOE shall determine whether the steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s).</p>	<p>B.6.8</p>	<p>The calculations and Sections B.7.1, B.7.4 have been modified to exclude the biomass content of grasses.</p>	<p>DNV, through its review of the pertinent modified portions of the revised PDD (sections B.7.1, B.7.4) and the most recent version of the project proponent’s GHG removals calculations /2/ /3/, can now confirm that the project proponents have rectified the calculation procedures and are no longer employing the erroneous biomass content of grasses originally included in their calculations.</p> <p>CAR is closed.</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p><u>Evidence and failure</u></p> <p>DNV has identified that the PDD shows that for the calculation for $E_{\text{biomassloss}}$, the project proponents have used the biomass content of grasses. However, grasses are not woody non-tree biomass.</p>			
<p>CAR 14</p> <p><u>Requirement</u></p> <p>Point 91, regarding the Algorithms and/or formulae used to determine emission reductions, within the Clean Development Mechanism Validation and Verification Standard, version 02.0, notes that for the validation of CDM activities, the DOE shall determine whether the steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s).</p> <p><u>Evidence and failure</u></p> <p>DNV has identified that the steps taken</p>	<p>B.6.11-13</p>	<p>The ex-ante estimation of leakage has been modified to be in conformance with the applied methodology. We have added additional information regarding the populations of cattle pre existing in the Project boundary before the implementation of the project activity.</p> <p>Supporting Documentation: Surveys (Encuestas Propietarios) Romero M., Galindo G., Otero J., Armenteras, D. 2004. From “Ecosistemas de la Cuenca del Orinoco Colombiano”. Alexander von Humboldt Institute for Research on Biological Resources. Bogotá. Colombia. 189p.</p> <p>1. EB 51, Annex 13 was applied;</p>	<p>From DNV’s review of the pertinent section dealing with the Ex-Ante estimation of leakage for the project, it can now be stated that the project proponents now correctly identify the steps taken in their analysis to arrive to the conclusion that the project will have no leakage. This was done through the following:</p> <p>Since pre-project grazing activities existed, it was necessary to estimate the pre-project animal population from different livestock groups in the project area. This was done by gathering information from a new source, now referenced within this validation report and within the PDD /58/.</p> <p>Furthermore, since project conditions qualified this as a “Case 2” of AR-</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>within the PDD to determine the ex-ante estimation of leakage (page 68) are not in conformance with the applied methodology.</p>		<p>the project conditions met the next options from the guideline:</p> <p>(b) The total area expected to be displaced is more than 5% of the entire A/R CDM project activity or more than 50 ha, and the n-a ha (where “n” is the area in ha expected to be displaced and “a” is 5% of the total project area or 50 ha) are displaced to:</p> <p>(ii) Existing grasslands with the carrying capacity that allows for accommodation of the displaced animals during the entire period of displacement;</p> <p>and,</p> <p>(d) The total number of animals expected to be displaced is more than 40 LSU, and the n-40 LSU (where: “n” is the total number of animals, expressed in LSU, which are expected to be displaced) are displaced to:</p> <p>(ii) Existing grasslands with the carrying capacity that allows for accommodation of the displaced animals during the entire period of displacement.</p>	<p>AM0004/Version 04, where the population of animals is higher in the baseline scenario than it is in the project activity scenario, the displacement of cattle ranching activity was determined by carrying out a series of interviews with local land and cattle holders. Annual animal biomass consumption was also determined for the project area, along with maximum annual biomass that EGL areas can produce for feed, and annual biomass that EGL areas are currently producing for animal feeding.</p> <p>These values, along with others (such as the average value for carrying capacity in the Orinoco plains (head of cattle per ha) were then used to determine that EGL areas are sufficient for feeding the entire population of displaced animals. Furthermore, it was then noted that fuel-wood collection and agricultural activities are not carried out within baseline scenario. As a result of the low supply of wood in the area, the bulk of wood for the owners’ domestic uses such as firewood is not</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
		<p>Given the conditions in baseline scenario (large savannas where pastures and livestock activity predominate) carbon stocks in the living biomass of pre-existing non-tree and tree vegetation are not significant, then according to the methodology ARAM004, Version 04 (Treatment of pre-existing vegetation):</p> <p>b. The carbon stock in the living biomass of pre-existing non-tree and tree vegetation are not significant:</p> <ul style="list-style-type: none"> - Carbon stock changes in the living biomass of pre-existing non-tree and tree vegetation are not included in the ex ante calculation of actual carbon stock changes, regardless if the pre-existing non-tree and tree vegetation is left standing or is harvested; 	<p>gathered in eligible areas. In the region, the wood comes from the gallery forests and high shrubs, and these land uses are not considered as eligible areas for the project.</p> <p>However, there are two remaining issues that need to be addressed before finalizing this CAR.</p> <p>The first is that according to the methodology utilized, leakage can in fact be monitored (i.e. as the Na in EGL could vary). DNV kindly requests that the project proponents demonstrate why in this instance leakage can be neglected, through the use of an appropriate tool, such as EB51 Annex 13.</p> <p>The second issue is with regards to PDD Section B.7.1, where the project proponents still lack a discussion explaining how “the treatment of the existing vegetation” (c.f. page 11 of the MED) has been considered in the estimation of changes in living biomass.” Even if the result will be that this is considered negligible, the project proponents must discuss this</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
			<p>as it is also important to be clear in future verifications that the initial carbon stocks are zero.</p> <ol style="list-style-type: none"> 1. Upon review of the most recent information submitted by the project proponents in dealing with this observation, and its inclusion of the same within the section of the PDD dealing with the ex-ante estimation of leakage, DNV can now verify that the project proponents have correctly employed the appropriate CDM tool (EB 51 Annex 13) in order to determine that leakage due to activity displacement (in this case, the displacement of cattle) can be neglected. This was proven by the project proponents being able to show that the project meets two of the conditions that allow it to claim that the increase in GHG emissions due to displacement of pre-project grazing activities attributable to the A/R CDM project activity is

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
			<p>insignificant.</p> <p>2. Likewise, DNV can now verify that the explanation now present within section B.7.1 of the PDD dealing with the discussion as to how “the treatment of the existing vegetation” (c.f. page 11 of the MED) has been considered in the estimation of changes in living biomass” and thus how the carbon stock in the living biomass of pre-existing non-tree and tree vegetation have been deemed to be not significant, is appropriate, and in line with the methodology employed.</p> <p>CAR is now closed.</p>
<p>CAR 15</p> <p><u>Requirement</u></p> <p>Point 91, regarding the Algorithms and/or formulae used to determine emission reductions, within the Clean Development Mechanism Validation and Verification Standard, version 02.0, notes that for the validation of CDM activities,</p>	<p>B.7.1-7</p>	<p>The list of parameters to be monitored in Section B.8.1 (pages 74-80) of PDD now comply with the requirements of the Guidelines for Completing the Project Design Document form for Afforestation and Reforestation CDM Project Activities/ Version 01.1</p>	<p>Through a revision of the pertinent section (B.8.1) of the modified PDD, DNV can now confirm that the project proponents have listed all of the parameters required for monitoring according to the CDM standard as well as the employed methodology. These now also include their justification for their selection, descriptions of the measurement</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>the DOE shall determine whether the steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s).</p> <p><u>Evidence and failure</u></p> <p>DNV has identified that within the list of parameters to be monitored (pages 71-79 of the PDD), the selection between options for equations and/or parameters for most of these has still not been taken, thereby also lacking a description of the measurement equipment to be used to measure them, their accuracy, their monitoring frequency, etc.</p>		<p>a) Tables in section B.7.2 were corrected: Parameters that should be defined ex-ante were allocated in this section (e.g. BEF, D, R_j,...)</p> <p>b) Tables in section B.8.1. were corrected: Parameters that have not been obtained through field measurement have been excluded (i.e. T, t2 and t1).</p> <p>c) The parameter A_i in Section B.8.1. was replaced by A_{ikt}, required to be monitored in order to estimate the actual net GHG removals.</p>	<p>equipment/technique to be employed, their accuracy, as well as their monitoring frequency.</p> <p>DNV checked the PDD and found the following issues:</p> <p>a) Parameters that should be defined ex-ante have been defined in section B.8.1 (e.g. BEF, D, R_j,...)</p> <p>b) Parameters that have not been obtained through field measurement have been included in section V.8.1 (i.e. T, t2 and t1)</p> <p>c) The parameter A_{ikt} is required to be monitored in order to estimate the actual net GHG removals. This parameter or at least an indication that this is equal to A_i in the context of the project activity is missing.</p> <p>Upon review of the latest information and updated version of the project PDD sent by the project proponents, DNV can now verify that the project proponents have listed all of the parameters required for monitoring according to the CDM standard as well as the employed methodology. In addition, the way information is</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
			<p>presented about each of the parameters in question is now also in accordance to the CDM standard and the applied methodology.</p> <p>CAR is closed.</p>
<p>CL 1</p> <p><u>Evidence</u></p> <p>The project PDD includes a list of all the tools employed in the development of the project and document. However, the list of tools employed does not list what versions of these tools were used.</p> <p><u>Clarification</u></p> <p>DNV seeks clarification as to the contents of this list as it is still not certain to determine what versions of the CDM tools were used.</p>	B.1.1	The list of methodological tools used, in section B.1., has been corrected.	<p>DNV can now confirm that the list of the methodological tools in section B.1 of the revised PDD now correctly include the updated and appropriately employed versions of the CDM tools that were employed in the design of the project.</p> <p>CL is closed.</p>
<p>CL 2</p> <p><u>Evidence</u></p>	B.2.2	Section B.2. The reference to Molina et al has been removed and replaced with a more adequate source: Rippstein et al 2001. CIAT, 2001.	DNV has reviewed the most recent evidence provided in replacement of the original evidence requested for in the clarification, and can confirm that

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>On Page 52 of the PDD, in the section describing the applicability of the project to the methodology employed, the project participant utilizes reference to (Molina et al, 2005).</p> <p><u>Clarification</u> DNV seeks clarification as to the contents of this cited literature as it has yet to be provided to the auditor.</p>		<p>Agroecología y biodiversidad de las sabanas en los Llanos Orientales de Colombia. Rippstein G, Escobar, G y Mota F. Editores. Centro Internacional de Agricultura Tropical (CIAT). 302 p. Publicación CIAT, no 322.</p>	<p>this is an apt and more appropriate evidence in support of the project proponent’s claims in describing the applicability of the methodology as well as the description of the baseline. This new evidence has also been included and referenced within this validation report. /57/</p> <p>CL is closed.</p>
<p>CL 3</p> <p><u>Evidence</u> In describing steps four and five of the approach carried out to identify the most plausible baseline scenario on page 56 of the PDD, the project participant identifies three different baseline strata where earlier in this section it is mentioned that there is to be only one stratum for the baseline scenario.</p> <p><u>Clarification</u> DNV seeks clarification as to the reason</p>	<p>B.4.4</p>	<p>Relevant sections (B.4) have been modified to refer to the single strata for the baseline scenario.</p>	<p>DNV can confirm that the modified pertinent sections of the PDD (B.4.) are now in line with the original description of strata identified earlier in the description of the baseline scenario.</p> <p>CL is closed.</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
for this discrepancy.			
<p>CL 4</p> <p><u>Evidence</u> At various points throughout the PDD (pages: 3, 20, 51, 54, 57, 60, 66) reference is made to the following literature source: (Land Management Plan, EOT 2000).</p> <p><u>Clarification</u> DNV seeks clarification as to the contents of this cited literature as it has yet to be identified/provided for in the materials gathered for evidence during the site visit.</p>	B.4.8	The Land Use Plan (EOT) for the municipality of Primavera from 2000 has been supplied as the supporting documentation. This study is composed of 5 sections which is supplied in the drop box.	<p>DNV can confirm that it has received and reviewed the originally missing referenced literature. The same has now been included and referenced within this validation report /56/</p> <p>CL is closed.</p>
<p>CL 5</p> <p><u>Evidence</u> In paragraph 56 of the Clean Development Mechanism Project Standard, version 01.0, it is required that all monitored data used for verification and issuance be kept for two years after the end of the crediting period or the last</p>	B.7.14	Section B.8.3. has been modified to include assurance that all monitored data used for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later.	DNV has reviewed the modified PDD and can now confirm that a statement to the effect that all monitored data used for verification and issuance will be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later, is now present in the project design. This was further corroborated through

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
<p>issuance of CERs, for this project activity, whichever occurs later.</p> <p><u>Clarification</u> DNV seeks clarification to this issue, as this requirement was mentioned during on-site inspection, but was never included in the PDD.</p>			<p>onsite inspection and interviews with project personnel.</p> <p>CL is closed</p>
<p>CL 6</p> <p><u>Evidence</u> In section A.9. of the PDD: Public funding of project activity, the project participant claims that there has been no public funding for the project activity.</p> <p><u>Clarification</u> DNV seeks clarification as to the validity of this statement as it was confirmed through on-site interviews that the project did receive a small fund from the ministry of agriculture to kick start the reforestation project. DNV also seeks clarification and evidence as to whether this funding stemmed from foreign development assistance funds.</p>	<p>NA</p>	<p>Ministry of Agriculture documentation on CIF: Link http://www.minagricultura.gov.co/02componentes/06com_03d_cif.aspx</p> <p>Appendix 2, Affirmation regarding public funding, includes the references to the small government incentive (CIF) to plant forests that has been used by the project.</p> <p>Section A.9. has been modified to include the same reference as Appendix 2.</p> <p>We include certification from the Director of Forestry, Ministry of Agriculture and Rural Development, confirming that the Colombian Government has never used ODA to</p>	<p>DNV has reviewed the modified pertinent section of the PDD (A.9.) to confirm that the small government incentive received to proceed with the project is now recognized and referenced within the project documentation. Furthermore, with the new evidence that has now been provided, DNV can also verify that this small portion of public funding does not stem from official Development Assistance and instead is paid for by the ministry and national budget of the government of Colombia. /55/</p> <p>CL is closed.</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation conclusion
		finance the CIF; that it has always funded by been national budget. File: CERTMINAGR	
<p>CL 7</p> <p><u>Evidence</u> The sections and text within the portion of the PDD describing the technology to be employed by the proposed A/R CDM project activity (pages 32-34) do not coincide with procedures that were observed during on-site inspection and/or with what was corroborated by interviews with project personnel.</p> <p><u>Clarification</u> DNV seeks clarification as to the reason for this discrepancy.</p>	<p>NA</p>	<p>The reason for this discrepancy is that throughout the experience obtained during the first years of the plantations, the technical knowledge of the professionals and technical staff has evolved with reference to the species and the specific conditions of the region. This has permitted the adjustment of the work processes and optimization of resources that improve the development of the plantations.</p> <p>The description of technology to be employed by the proposed A/R CDM project activity was modified in Section A.4 (pages 33-37), according to the procedures carry out currently.</p>	<p>Through its review of the pertinent sections of the now modified PDD dealing with the description of the technology to be employed by the proposed A/R CDM project activity, DNV can now confirm that the new descriptions are line with what was witnessed through on-site inspection and relevant interviews with project personnel and staff.</p> <p>CL is closed.</p>

Table 4 Forward action requests

Forward action request	Reference to Table 2	Response by project participants
Not applicable.		No FARs have been issued for this Validation

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APPENDIX B

CURRICULA VITAE OF THE VALIDATION TEAM MEMBERS

Andres Espejo - Holds a 6 year Bachelor/Master Degree in "Ingeniería de Montes" (Natural Resource Engineering) by the Polytechnic University of Madrid (Spain) . Having an overall experience of 7 years. Prior to joining DNV having 5 years experience in biomass generation, natural resource management, and generation with other renewables, covering the management of forestry operations, management of grasslands and pasturelands, procurement of timber and biomass, management of forest states, pre-feasibility studies for renewable generation projects, etc.

He has experience of 2 years in validation and verification of numerous CDM projects. His qualification, industrial experience and experience in CDM demonstrate him sufficient sectoral competence in Energy Generation from renewable energy sources (Technical Area 1.2), Agriculture (Technical Area 15.1) and Forestry (Technical Area 14.1).

Furthermore, his involvement in the development of various business plans demonstrate him sufficient financial expertise.

Pablo Reed – Mr. Reed holds a B.S. in Forest and Ecological Engineering as well as a minor in Latin American Studies from the University of Washington in Seattle. He has also recently completed a Masters of Environmental Management degree at the Yale School of Forestry & Environmental Studies. Prior to his return to grad school and arrival at DNV, he spent the preceding six years of his life working with conservation and development projects in various countries in Latin America. He served as country director for a joint USAID/Idaho State University community conservation project in the Alta Verapaz region of Guatemala and also spent time in Panama working as an environmental and GIS consultant. His most recently worked for the Peace Corps in Ecuador, where he served as program manager for the posts' natural resource conservation program. While at Yale, his program of studies centered on social and political ecology as well as natural resource management policy. His research and subsequent thesis centered on the development of REDD (Reducing Emissions from Deforestation and Degradation) policy frameworks, especially as they pertain to the inclusion of communal Indigenous territories and lands (Ecuador, summer 2010). Mr. Reed joined DNV in their San Francisco office in August, serving as a consultant to lead forestry sector initiatives within the offices' climate change division.

Edwin Aalders - Mr Aalders has nearly 20 years of experience as an assessor in Environmental Auditing and accreditation and started his career in SGS in 1992 where he quickly became involved in the development of new environmental certification & control services. In 2004 he became the Director of the International Emission Trading Association (IETA) which he held till 2009. In addition to his role as Director in IETA he held between November 2007 and October 2008 the role of Acting CEO for the Voluntary Carbon Standard Association (VCSa). In 2009 Mr Aalders became a Partner with IDEACarbon before joining DNV as Approver / Responsible Service Line - CDM at the Climate Change and Sustainable Development Department in 2011. Throughout his career he lived and worked throughout the developing and developed countries and been involved in developing new environmental markets. Mr Aalders is an elected member of roster of experts for the Methodology Expert

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of the CDM & JI, in sits on the AFOLU Steering Committee of the Verified Carbon Standard Association (VCSa) and Advisory Board of the Pacific Carbon Trust.

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