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# Validation Report

**ONF International - ONFI**

## VALIDATION OF THE CDM-PROJECT: COMMERCIAL REFORESTATION ON LANDS DEDICATED TO EXTENSIVE CATTLE GRAZING ACTIVITIES IN THE REGION OF MAGDALENA BAJO SECO

REPORT NO. 1539392

**24 May 2011**

TÜV SÜD Industrie Service GmbH
Carbon Management Service
Westendstr. 199 - 80686 Munich – GERMANY

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| Report No. | Date of first issue | Revision No. | Revision Date | Certificate No. |
|---|---|---|---|---|
| 1539392 | 17 Feb 2011 | 3 | 24 May2011 | - |

**Subject:** Validation of a CDM Project

| **Accredited TÜV SÜD Unit:** | **TÜV SÜD Contract Partner:** |
|---|---|
| TÜV SÜD Industrie Service GmbH<br>Certification Body "climate and energy"<br>Westendstr. 199<br>80686 Munich, Germany | TÜV SÜD Industrie Service GmbH<br>Carbon Management Service<br>Westendstr. 199<br>80686 Munich<br>Germany |
| **Project Participant:**<br>ONF International (ONFI) | **Project Site(s):**<br>Department of Magdalena in the Caribbean Region of Colombia.<br>The PDD includes information on geographic boundary and in line with EB guidance on this matter, digital boundary files are provided jointly with this report (in shapefile format). |

**Project Title:** Commercial reforestation on lands dedicated to extensive cattle grazing activities in the region of Magdalena Bajo Seco

| | | | |
|---|---|---|---|
| **Applied Methodology / Version:** | AR-AM0004 / Version 04 | **Scope:** | 14 |
| | | **Technical Area(s):** | 14.1 |

| **First PDD Version:** | | **Final PDD version:** | |
|---|---|---|---|
| Date of issuance: | 10 Jun 2010 | Date of issuance: | 28 April 2011 |
| Version No.: | 05 | Version No.: | 07 |
| Starting Date of GSP | 25 Aug 2010 | | |

**Estimated net anthropogenic GHG removal:** 988, 978 t $CO_2$-e
(after the 30 year crediting period = 32,965 t $CO_2$-e annual average GHG removal)

| **Assessment Team Leader:** | **Technical Reviewers** |
|---|---|
| Sebastian Hetsch | Karin Wagner, Martin Opitz |
| **Assessment Team Members:** | **Certification Body responsible:** |
| Juan Chang | Thomas Kleiser |

**Summary of the Validation Opinion:**

☒ The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD is recommending the project for registration by the CDM Executive Board if letters of approval of all Parties involved will be available before the expiring date of the applied methodology(ies) or the applied methodology version respectively.

☐ The review of the project design documentation and the subsequent follow-up interviews did not provide TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. Hence TÜV SÜD will not recommend the project for registration by the CDM Executive Board and will inform the project participants and the CDM Executive Board on this decision.

## Abbreviations

| | |
|---|---|
| **AR-ACM** | Approved Consolidated Methodology for Afforestation and Reforestation |
| **AR-AM** | Approved Methodology for Afforestation and Reforestation |
| **AR-AMS** | Approved Methodology Small Scale for Afforestation and Reforestation |
| **CAR** | Corrective Action Request |
| **CDM** | Clean Development Mechanism |
| **CDM-EB** | CDM Executive Board |
| **CMP** | Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol |
| **CR / CL** | Clarification Request |
| **DNA** | Designated National Authority |
| **DOE** | Designated Operational Entity |
| **EF** | Emission Factor |
| **EIA / EA** | Environmental Impact Assessment / Environmental Assessment |
| **ER** | Emission Reduction |
| **FAR** | Forward Action Request |
| **FSC** | Forest Stewardship Council |
| **GHG** | Greenhouse Gas(es) |
| **GIS** | Geographic Information System |
| **GPG** | Good Practice Guidance |
| **GPS** | Global Positioning System |
| **IPCC** | Intergovernmental Panel on Climate Change |
| **IRL** | Information Reference List |
| **IRR** | Internal Rate of Return |
| **KP** | Kyoto Protocol |
| **LULUCF** | Land-Use, Land-Use Change and Forestry |
| **MP** | Monitoring Plan |
| **NGO** | Non Governmental Organisation |
| **PDD** | Project Design Document |
| **PP** | Project Participant |
| **tCER** | temporary Certified Emission Reduction |
| **TARAM** | Tool for Afforestation and Reforestation Approved Methodologies (spreadsheet based calculation tool) |
| **TÜV SÜD** | TÜV SÜD Industrie Service GmbH |
| **UNFCCC** | United Nations Framework Convention on Climate Change |
| **VVM** | Validation and Verification Manual |

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# INTRODUCTION

## 1.1 Objective

The validation objective is an independent assessment by a Third Party, a Designated Operational Entity (DOE) of a proposed project activity against all defined criteria set forth by the registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and results in a conclusion by the executing DOE whether or not a project activity is valid and should be submitted for registration to the CDM Executive Board (CDM-EB). The ultimate decision on the registration of a proposed project activity rests with the CDM-EB and the Parties involved.

The project activity covered by this validation report was submitted under the following project title: “Commercial reforestation on lands dedicated to extensive cattle grazing activities in the region of Magdalena Bajo Seco”.

## 1.2 Scope

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of CDM project activities the scope is set by:

- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Decisions and specific guidance by the EB published under http://cdm.unfccc.int
- Guidelines for Completing the Project Design Document (CDM-AR-PDD), and the Proposed New Baseline and Monitoring Methodology (CDM-AR-NM)
- Baselines and monitoring methodologies (including GHG inventories)
- Management systems and auditing methods
- Environmental issues relevant to the applicable sectoral scope
- Applicable environmental, social impacts, and aspects of CDM project activity
- Sector specific technologies and their applications
- Current technical and operational knowledge of the specific sectoral scope and information on best practice

The validation is not meant to provide any consulting towards the project participant (PP). However, stated requests for clarifications, corrective actions, and/or forward actions may provide input for improvement of the project design.

Once TÜV SÜD receives the PDD, it is made publicly available at the UNFCCC webpage and at TÜV SÜD’s webpage to start a 45 day global stakeholder consultation process (GSP). In special circumstances, such as when a project design changes, the GSP may need to be repeated. Information on the PDDs is presented on page 1 of this report.

The purpose of a validation is to demonstrate compliance or non-compliance of the project with all stated and valid CDM requirements. Additionally, the purpose of validation is to enable the registration of CDM projects, which is only a part of the total CDM project cycle.

# 2 METHODOLOGY

The project assessment applies standard auditing techniques to assess the correctness of the information provided by the project participants. The assessment is based on the "Clean Development Mechanism Validation and Verification Manual" version 1.02. The work starts with the appointment of the team covering the technical scope(s), technical area(s) and relevant host country experience for evaluating the CDM project activity. Once the project is made available for the stakeholder consultation process, members of the team carry out the desk review, follow-up actions, resolution of issues identified, and finally preparation of the validation report. The prepared validation report and other supporting documents then undergo an internal quality control by the CB "climate and energy" before submission to the CDM-EB.

In order to ensure transparency, assumptions are clear and explicitly stated; the background material is clearly referenced. TÜV SÜD developed methodology-specific checklists and protocol customised for the project. The protocol shows, in a transparent manner, criteria (requirements), the discussion of each criterion by the assessment team, and the results from validating the identified criteria.

The validation protocol serves the following purposes:

- To organize the details and provision of clarifications on the requirements of which a CDM project is expected to meet
- To elucidate how a particular requirement has been validated as well as to document the results of the validation and any adjustments made to the project design document.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below.

**Validation Protocol Table 1: Conformity of Project activity and PDD**

| **Checklist Topic / Question** | **Reference** | **Comments** | **Draft Concl (PDD in GSP)** | **Final Concl (Final PDD)** |
|---|---|---|---|---|
| *The checklist is organised in sections following the arrangement of the applied PDD version. Each section is then subdivided. The lowest level constitutes a checklist question / criterion.* | *Gives reference to documents where the answer to the checklist question or item is found in case the comment refers to documents other than the PDD.* | *The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is used to explain the conclusions reached. In some cases sub-checklist are applied indicating yes/no decisions on the compliance with the stated criterion. Any* ***Request*** *has to be substantiated within this column* | *Conclusions are presented based on the assessment of the first PDD version. This is either acceptable based on evidence provided (☑),* ***or a Corrective Action Request (CAR)*** *due to non-compliance with the checklist question (See below).* ***Clarification Request (CR)*** *is used when the validation team identified a need for further clarification.* ***Forward Action Request (FAR)*** *to highlight issues related to project implementation that requires review during the first verification.* | *Conclusions are presented in the same manner based on the assessment of the final PDD version and further documents including assumptions presented in the documentation.* |

**Validation Protocol Table 2: Compilation and Resolutions of CARs, CRs and FARs**

| Draft report clarifications and corrective action requests by validation team | Ref. to Table 1 | Summary of responses | Conclusion |
|---|---|---|---|
| *Corrective Action, Clarification or Forward Action Requests.* | *Reference to the checklist question number in Table 1* | *Summary of the discussion and revision of project documentation together with the validation team's responses* | *Final conclusion. This is acceptable based on evidence provided (☑) or unresolved CAR/CR/FAR* |

In case of a denial of the project activity more detailed information on this decision will be presented in Table 3. Table 3 is also used for listing of any Forward Action Request.

**Validation Protocol Table 3: Unresolved Corrective Action, Clarification Requests, Forward Action Requests**

| Clarifications Request, Corrective Action Request, Forward Action Request | Id. of CAR / CR / FAR | Explanation of the Conclusion for Denial, or Background of Forward Action Request |
|---|---|---|
| *Referenced request if final conclusions from table 2 resulted in a denial.* | *Identifier of the Request.* | *Detailed explanation of why the project is considered non-compliant with a criterion and a clear reference to the criterion* |

The completed validation protocol is enclosed in Annex 1 to this report.

## 2.1 Appointment of the Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment, TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body "climate and energy".

The composition of an assessment team has to be approved by the Certification Body (CB) to assure that the required skills are covered by the team. The CB TÜV SÜD operates the following qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL);
- Validator (V);
- Validator Trainee (T);
- Technical Experts (TE).

It is required that the sectoral scope(s) and the technical area(s) linked to the methodology and project have to be covered by the assessment team. For this particular project the assessment team members are presented in the table below. The respective appointment certificates are attached to this report as annex 3.

**Assessment Team:**

| Name | Qualification | Coverage of scope | Coverage of technical area | Coverage of financial aspect | Host country experience |
|---|---|---|---|---|---|
| **Sebastian Hetsch** | **ATL** | ☑ | ☑ **(14.1)** | ☑ | |
| Juan Chang | V | ☑ | ☑ (14.1) | | ☑ |

Technical Reviewer:

- Karin Wagner (Technical Reviewer)
- Martin Opitz (support for coverage of respective TA)

## 2.2 Review of Documents

The PDD for the GSP was submitted by the PP to the DOE in August 2010. This PDD version and additional background documents related to the project design and baseline were reviewed to verify the correctness, credibility, and interpretation of the presented information. As a further step of the validation process, information provided by the PP was cross-checked with information from other sources (if available). A complete list of all documents and proofs reviewed is attached as Annex 2 to this report.

## 2.3 Follow-up Interviews

On 27 September - 02 October 2010, TÜV SÜD performed interviews with project stakeholders and physical site inspection to confirm relevant information, and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in this context.

**Persons Interviewed:**

| Name | Organisation |
|---|---|
| Jean Guénolé Cornet | ONF International |
| Natalia González | ONF Andina |
| Beatriz Zapata | Consultant Carbono y Bosques |
| Juan Carlos Rubiano | Consultant Carbono y Bosques |
| Andrés Sierra | Consultant Carbono y Bosques |
| Luis Carlos Morales | FINAGRO |
| Paulino Galindo Yustres | CORMAGDALENA |
| José Muñoz | Land owner Finca San José |
| Guendis Pallares Barrios | Forest employee Finca La Gloria |
| Patricia Pallares Barrios | Forest employee Finca La Gloria |
| Ana Livia Herrera | Forest employee Finca La Gloria |
| Luciluz Becerra | Forest employee Finca La Gloria |
| Hermes Pacheco | Land owner Finca El Pensamiento |
| Victor Cuadros | Land owner Finca El Desvio |
| Gabriel Escobar | Land owner Finca El Rosario |
| Ana Cecilia Vega | Land owner Finca La Ceiba |

| | |
|---|---|
| José Gómez | Land owner Finca Los Alcazares |
| Yolanda Acosta | Land owner Finca Las Llaves |

## 2.4 Cross-check

During the validation process the team made reference to available information related to similar projects or technologies as the CDM project activity. The documentation was also reviewed against the approved methodology applied to confirm the appropriateness of formulae and correctness of calculations.

## 2.5 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to resolve the requests for corrective actions, clarifications, and any other outstanding issues which need to be clarified for TÜV SÜD`s conclusion on the project design. The CARs and CRs raised by TÜV SÜD are resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the validation process the concerns raised and responses that were given are documented in more detail in the validation protocol in Annex 1.

The final PDD version submitted in April 2011 served as the basis for the final assessment presented. Changes are not considered to be significant with respect to the qualification of the project as a CDM project based on the two main objectives of the CDM: an achievement of reduction of anthropogenic GHG emissions and a contribution to sustainable development.

## 2.6 Internal Quality Control

Internal quality control is the final step of the validation process and is conducted by the CB “climate and energy” who checks the final documentation, which includes the validation report and annexes. The completion of the quality control indicates that each report submitted has been approved either by the head of the CB or the deputy (a veto person is used if necessary). In projects where either the Head of the CB or his/her deputy is part of the assessment team, the approval is given by the one not serving on the project team.

After confirmation of the PP the validation opinion and relevant documents are submitted to the EB through the UNFCCC web-platform.

# 3 SUMMARY

The assessment work and the main results are described below in accordance with the VVM reporting requirements. The reference documents indicated in this section and Annex 1 are listed in the Information Reference List (IRL) in Annex 2.

## 3.1 Approval

The project participant is ONF International (ONFI). The host Party Colombia meets the requirements to participate in the CDM.

The DNA of Colombia issued a LoA (IRL 45) on 01 March 2011 authorizing ONF International as a project participant. TÜV SÜD received this letter from the project participant further cross checked with the DNA of Colombia via e-mail communication to confirm the authenticity of the provided letter (IRL 46).

The letter was issued by the respective Party's DNA: the "Ministry of Environment, Housing and Territorial Development" of Colombia

TÜV SÜD confirms that this letter refers to the precise proposed CDM project activity title in line with the title in the PDD "Commercial reforestation on lands dedicated to extensive cattle grazing activities in the region of Magdalena Bajo Seco".

Both letters also indicate that each participating Party is a Party to the Kyoto Protocol, and that the participation in the "Commercial reforestation on lands dedicated to extensive cattle grazing activities in the region of Magdalena Bajo Seco" project is voluntary. The LoA also confirms that the proposed CDM project activity contributes to the sustainable development of Colombia (host country).

Based on the information given in these letters, TÜV SÜD considers the approval as unconditional with respect to these items. TÜV SÜD considers that the requirements of VVM (§§ 45-48) are met.

The LoA does not refer to a specific version of the PDD or validation report. The corresponding references included in the LoA, PDD and validation report are consistent.

## 3.2 Participation

The participant of the project activity was approved by Colombia, which is confirmed with the issued LoA. The means of validation used are the same as described in section 3.1, specifically in regard to the approval process of the project activity.

## 3.3 Project design document

The PDD complies with the relevant form and guidance provided by UNFCCC. Version 04 of the AR-CDM PDD template was used, which is still accepted for registration. TÜV SÜD considers that the correct guidelines for the completion of the PDD were followed. Relevant information was provided by the participants in the applicable PDD sections. Completeness was assessed through the checklist included in Annex 1 of this report.

## 3.4 Project description

The following description of the project as per PDD was verified during the on-site audit:

The project activity consists of reforestation of 4373 ha of lands dedicated to extensive cattle grazing with exotic species such as *Gmelina arborea, Tectona grandis,* and *Eucalyptus tereticornis,* as well as native species such as *Bombacopsis quinata* and *Tabebuia rosea* in order to facilitate, among others, the production of wood for the forest industry as an alternative land use to the grazing activity.

The project area is located on the lands belonging to farmers from the Department of Magdalena in the Caribbean Region of Colombia

The project is carried out by CORMAGDALENA, FINAGRO the landowners and A.W. FABER CASTELL & T.H. REFORESTATION S.A.S according to each phase of the project implementation. The carbon component of the project is carried out by ONFI who also represents all the other participants in the CDM component of the project as documented in the corresponding agreements provided to the audit team (IRL 18, 28).

In order to address the non-permanence of AR-CDM projects, the PPs opted for tCERs over a 30 fixed crediting period.

The region shows a pronounced tendency to desertification with high temperatures of 27.9°C in average and low mean annual rainfall of 1300 mm, this situation in combination with the high evapotranspiration generates high water deficit during the dry season (IRL 4, 5, 6, 7). In the baseline setting the areas are grazing lands covered mostly with grass species and standing trees in temporary fallows which are part of the rotation system practiced for grazing, witnessing extensive grazing as most common land use.

Among the objectives of the project the reduction of the pressure on natural forest by providing source supply for the forest industry and the diversification of incomes for small-scale farmers while generating new employment opportunities.

The information presented in the PDD on the technical design is consistent with the actual planning and implementation of the project activity as confirmed by:

- Review of data and information (see Annex 2), which was verified with other sources if available.
- An on-site visit was performed and relevant stakeholder and personnel with knowledge of the project were interviewed. If doubts arose, further investigations and additional interviews were conducted
- Finally, information related to similar projects or technologies as the CDM project activity were used (if available) to confirm the accuracy and completeness of the project description.

In conclusion, TÜV SÜD confirms that the project description, as included to the PDD, is sufficiently accurate and complete in order to comply with the requirements of the CDM.

## 3.5 Baseline and monitoring methodology

### 3.5.1 Applicability of the selected methodology

Compliance with each applicability condition as listed in the chosen baseline and monitoring methodology AR-AM0004 version 04 was demonstrated. The assessment was carried out for each applicability criterion and included, among others, the compliance check of the local project setting with the applicability conditions in regard 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 following documents confirmed the applicability conditions:

- Bai, D et al. 2008. Global assessment of land degradation and improvement. Identification by remote sensing. Report 2008/01, ISRIC – World Soil Information, Wageningen. (IRL 19)
- FAO, 2005. National Soil Degradation Maps (IRL 20).
- ISRIC, 1990. Global Assessment of Human-induced Soil Degradation (IRL 21).
- IDEAM, 2001.Lands affected by the desertification. (Tierras afectadas por la desertificación. Instituto de Hidrología, Meteorología y Estudios Ambientales), Bogotá. (IRL 22).

Following the requirements of the methodology, the following tools and procedures were correctly applied:

- Procedures to demonstrate the eligibility of lands for afforestation and reforestation CDM project activities, Version 01.
- Guidance on the application of the definition of project boundary to A/R CDM project activities, Version 01.
- Guidance on accounting GHG Emissions in A/R CDM Project Activities (paragraph 35 in the report of the EB 42 meeting).
- Tool for the demonstration and assessment of additionality in A/R CDM project activities, Version 02.
- Guidance on conditions under which the change in carbon stocks in existing live woody vegetation are insignificant, Version 01 (EB46, Annex 16).
- Calculation of the number of sample plots for measurements within A/R CDM project activities, Version 02.
- Guidelines on conservative choice and application of default data in estimation of the Net Anthropogenic GHG Removals by Sinks. Version 02. (EB 50, Annex 23).
- Guidelines for objective demonstration and assessment of barriers (EB 50 Annex 13)

The methodology-specific protocol, included in Annex 1, documents the assessment process. The results of the compliance check as well as relevant evidence are detailed in the protocol and the information reference list.

TÜV SÜD confirms that the chosen baseline and monitoring methodology is applicable to the project activity. Emission sources, which are not addressed by the applied methodology, and are expected to contribute more than 1% of the overall expected average annual emission reductions, were not identified.

### 3.5.2 Project boundary, pools and eligibility

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 project area covers 4373 ha; it consists of 376 parcels, distributed over the department of Magdalena The boundary as defined in the field was found to be consistent with the indications in the PDD (IRL 3). In the field, the boundary delineation was cross-checked by the audit team with GPS.

The most relevant documents assessed in order to confirm the project boundary are the following:

- ONFI, 2010. Land use and land cover change maps. Summary document. (IRL 29)
- Overview maps of the location of the project area and boundaries are also included to the final PDD (IRL 47).
- Digital boundary files in a Geographic Information System (GIS) (IRL 48)
- Field sheets including coordinates obtained from GPS point documenting the assessment of the audit team during the onsite visits (IRL 49)

The boundaries were validated during the validation process using standard audit techniques, details of all observations are presented in the Annex 1. TÜV SÜD confirms 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 ONFI for their representation in the CDM component of the project (IRL 50). 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 PP is considered to be fully established.

The **carbon pools** and the relevant emissions sources and gases (compare sections on removals and emissions below) were selected and considered in line with the applicable methodology and this information is included accordingly in the PDD (IRL 2).

In regard to **eligibility of lands**, the project area fully complies with the requirements of the most recent eligibility procedure as defined by the EB. Among others, the assessment of the compliance was based on the following evidence:

- Historical land use assessment based on 1989 LANDSAT satellite (IRL 3).
- Field sheets including coordinates obtained from GPS point documenting the assessment of the audit team during the onsite visits (IRL 49)
- Overview maps of the location of the project area and boundaries are also included to the final PDD (IRL 2)

Vegetation at the time of the project start was assessed and found to be below the forest threshold (according to the DNA definition). It was assessed that the vegetation prior to project start would not have surpassed this threshold at maturity without the project activity (IRL 49). This assessment was reviewed by the audit team through a number of randomly selected parcels of land, which were visited. Based on these samples it was confirmed that no forest was on the project area before project start.

No forest had been on the project area on 31 December 1989, as documented historical land use assessment based on the interpretation of the 1989 LANDSAT images (RL 3). The document was reviewed by the audit team. Eligibility was also verified during interviews with local stakeholders on site, who confirmed that no forest had been on the project area since 1989 (IRL 1).

### 3.5.3 Baseline identification

The PDD identifies the baseline scenario as “Continuation of the existing and historical land use leading to further land degradation”.

The information presented in the PDD was validated by a document review, the on-site visit of the project area (IRL 1, 49) and finally by cross-checking the information presented with similar

relevant projects and literature. The sources referenced in the PDD were quoted correctly. The information was verified against credible sources, such as:

- Lenne, 2004. Programa de tecnificación de la ganadería dentro del proyecto de reforestación de CORMAGDALENA en el núcleo Bajo Magdalena. ONFI-CORMAGDALENA 2005 (IRL 14)
- Aldana, C. (2004): Sector forestal Colombiano; fuente de vida, trabajo y bienestar. Serie de documentación no. 50. Corporación nacional de Investigación y Fomento Forestal (CONIF), Bogotá. (IRL 30)
- ONFI, 2010. Land use and land cover change maps. Summary document.(IRL 29)

Field visits and interviews sustained the chosen baseline approach as per CDM Modalities and Procedures: *Existing or historical, as applicable, changes in carbon stock in the carbon pools within the project boundary*. In the case of this project, the historic land use of the project area prior to project start would also be the likely future land use in absence of the project.

TÜV SÜD confirms that no reasonable alternative baseline scenario was excluded in the analysis of baseline scenarios. Based on the validated assumptions, TÜV SÜD considers that the identified baseline scenario is reasonable. Taking the definition of the baseline scenario into account, TÜV SÜD confirms that all relevant CDM requirements, including relevant national and sectoral policies and circumstances, were identified correctly. A verifiable description of the baseline scenario was included in the PDD.

In regard to item 87 of VVM, TÜV SÜD confirms the following statements:

1. All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
2. All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
3. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence, and can be deemed reasonable;
4. Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD;
5. The approved baseline methodology was correctly applied to identify the most reasonable baseline scenario, and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

### 3.5.4 Algorithm and/or formulae used to determine emission reductions

TÜV SÜD assessed the calculations of baseline stocks and removals, project emissions, leakage and the expected net anthropogenic GHG removals by sinks. Corresponding calculations were carried out based on calculation spreadsheets (IRL 51). Correctness of calculations can be confirmed as they were replicated by the audit team using the information provided.

The values and estimates presented in the PDD are considered reasonable based on the documentation reviewed, further references and the result of the interviews during the onsite visit.

Based on the information reviewed it can also be confirmed that the sources used are correctly quoted and interpreted in the PDD. All assumptions and data indicated in the PDD and all relevant sources were checked and confirmed (IRL 24, 33, 34, 35, 36, 37, 38). Detailed information on the verification of parameters used in the equations are presented in Annex 1.

In essence, the methodology was correctly applied following the requirements. All values in the PDD are considered reasonable in the context of the proposed CDM project activity. Data

sources are quoted correctly. Hence, the calculation of baseline stocks and removals, project emissions, leakage and the expected net anthropogenic GHG removals by sinks are considered correct.

### 3.5.5 Baseline stocks and greenhouse gas removals by sinks

The stratification process differentiated three baseline strata, which is considered acceptable under the rotation cycle of the grazing activity of the project area as documented through the land use and eligibility assessment.

Baseline stocks were estimated and considered for all relevant types of vegetation. Considering the guidance from the Annex 16, of EB 46, on conditions under which the change in carbon stocks in existing live woody vegetation are insignificant, it was demonstrated that growth conditions are already, or are expected to become within 10 years (e.g., due to on-going land degradation), such that biomass in existing woody vegetation is expected to become static or to decline. This condition was demonstrated based on the interpretation of LANDSAT images from 1994 and 2002 evidencing the land cover change in the project area during this period to increased area of clean pastures and decreased area of fallows due to the grazing activities. Therefore, baseline carbon stocks are set zero. Good practice in regard to forest inventory was followed in the context of the baseline assessment.

The parameters and equations presented in the PDD and further documentation were cross-checked and compared with the requirements and guidelines of the applied methodology and respective tools. The review of the equation included all formulae presented in the PDD and the digital calculation files.

In summary the calculation of the baseline stocks and GHG removals are considered correct.

### 3.5.6 Project emissions

The methodology considers emissions from biomass burn. These sources were discussed in the PDD and respectively in the audit process. Respective data and calculations were reviewed by the DOE.

Biomass burning as potential source according to the methodology was considered by the participant; however it was not found to be relevant as no burning for site preparation is foreseen in this project activity, which was sustained during the field visits of the audit team. Furthermore, in line with the design of this project, no biomass burning for site preparation will occur, which is considered credible. It is however underlined that the potential impact of unintended fires will be monitored via monitoring of potential natural impacts as covered by the section of boundary monitoring. Emissions from biomass loss are considered and discounted from the calculations following the methodology requirements. The parameters used for the estimation of emissions from biomass loss were taken from IPCC (IRL 34) and from the inventory of existing trees as presented in the Annex 3 of the PDD (IRL 2).

### 3.5.7 Leakage

The leakage sources according to the chosen methodology are GHGs emissions from displacement of pre-project grazing, cropland displacement and fuelwood collection activities.

Leakage due to conversion of land to grazing land was estimated to be zero, as grazing animals can be displaced to existing grazing lands, which still have sufficient grazing capacity to maintain these additional cattle (IRL 14, 39, 40). Respective monitoring will be carried out by the PP.

According to the evidence provided (IRL 14) the average in the project area is 0.64 animal units/ha. According to the historical records (IRL 39) the same average was documented since 1995 to 2002. Another published study (IRL 40) indicates the current carrying capacity in the region between 1 to 1.37 animal units/ha (dry and rainy season) thus the land is currently underused. The land available after the reforestation activity is approximately 60% of the total area of the land owners which would be able to hold the existing animals. Furthermore it was demonstrated that an improvement of the current grazing management, the carrying capacity can increase up to 2.2 to 2.8 (IRL 40) Therefore, the total existing grazing land area outside the project boundary that is under the control of the project participants (EGL) is enough to receive the displaced animal populations, thus leakage due to displacement of grazing is set to zero in accordance to the applied methodology.

Regarding leakage due to conversion of land to cropland, it was evidenced during the onsite visit that cropland displacement will not occur as a consequence of the project activity since it is not practiced in the region. The interviews with land owners and field observations clearly demonstrated that there is no agriculture under the baseline scenario, thus no leakage is expected from this source.

The estimation of leakage due to fuelwood collection was estimated based on official statistical records (IRL 57) of the Ministry of Mines and Energy of Colombia) and population records from 2005 following the methodology requirements. The estimation of fuelwood consumption resulted in less than 2% of actual net GHG removal by sinks, thus can be set zero following the guidance from EB 22, Annex 15 as indicated in the methodology. Leakage due to fencing is not considered relevant any longer by CDM EB decision.

### 3.5.8 Net anthropogenic greenhouse gas removals by sinks

The estimates on the expected anthropogenic removals which are likely to be achieved by the envisioned reforestations under the project scenario are based on published volume equations (IRL 27, 33, 34). Values for Biomass Expansion Factors, Root-to-Shoot ratios, Wood Density were taken from published sources (IRL 35, 36, 37, 38, 52); for Carbon Fraction the IPCC default value of 0.5 was applied. The sources were reviewed and confirmed during the onsite visit and are consistent with data from international database such as IPCC GPG LULUCF (IRL 34).

Over the crediting period of 30 years, total net anthropogenic removals of 988, 978 t $CO_2$-e are expected. The calculations of the net anthropogenic GHG removals were carried out with an Excel based tool provided by World Bank (TARAM) (IRL 51). All calculations are in compliance with the applied AR-CDM methodology. The steps of the calculations are fully traceable and adequate for the project conditions (IRL 51).

In summary, the calculations for net anthropogenic GHG removals are considered correct.

## 3.6 Additionality

The additionality of the project was presented in the PDD using following approach: Additionality tool for AR-CDM (version 02) using the barrier analysis.

The approach used in the PDD was assessed based on a document review, where following relevant documents were reviewed:

- Cazaux, 2003. Restrictions and motivations of farmers to the reforestation project. (Restricciones y motivaciones de los ganaderos frente al proyecto de reforestación

comercial de CORMAGDALENA. ONF INTERNATIONAL, Santa Fé de Bogotá, Colombia) (IRL 15)
- Aldana, 2004. The forestry Sector in Colombia. (Sector forestal Colombiano; fuente de vida, trabajo y bienestar. Serie de documentación no. 50. Corporación Nacional de Investigación y Fomento Forest (CONIF), Bogotá). (IRL 30)
- Orozco, 1999. The forest policies in Colombia. (Las Políticas forestes en Colombia. Análisis de procesos de formulación, contenidos y resultados globales. Santa Fe de Bogotá. D.C. Colombia). (IRL 31)
- Acosta, 2004. Tendencies and perspectives of the forest sector in Latin America. Colombia National Report. (Estudio de tendencias y perspectivas del sector forestal en America Latina Documento de Trabajo. Informe Nacional Colombia. Corporacion Nacional de Investigacion y Fomento Forestal (CONIF) y FAO. (IRL 55)

Furthermore, the additionality analysis was discussed onsite with the project team of CORMAGDALENA, FINAGRO the landowners and A.W. Faber Castell & T.H. Reforestation S.A.S, and ONFI as project participant, as well as with the consultants involved in PDD development (IRL 1). Interviews on this topic were also carried out with stakeholders during the onsite visit (IRL 1, 19). The data, rationale, assumptions, justifications and documentation provided were checked using local knowledge and sectoral and financial expertise. The information provided by the PP was further cross-checked by:

- FAO, 2011. State of the World's Forest (IRL 53),

Based on the aforementioned approach, TÜV SÜD confirms that the documentation provided is appropriate for this project. Further analysis of the additionality is summarized in the sections below (3.6.1 – 3.6.4).

In essence, the project is considered additional as lands are reforested which otherwise would have remained grazing lands - among others due to unavailability of functional structures for such reforestation activities.

### 3.6.1 Start date and prior consideration of the CDM

The project started on 2 August 2000. The starting date of the project activity is determined by the signature date of the Agreement for Cooperation between the land owner Stephen Tschampel and CONIF for the first plantation (IRL 18). In order to confirm the starting date the assessment team reviewed this document and interviewed the land owner. The audit team reviewed the document, and confirms compliance with the AR-CDM requirements for starting date as defined in the Glossary of CDM terms and VVM.

The CDM consideration prior to project start was documented through the Special Cooperation Agreement N° 000036/99 between CORMAGDALENA and CONIF (IRL 28) dated 3 September 1999. The second clause of the agreement explicitly indicates the consideration of the reforestation as a $CO_2$ sink and the potential to offer this service to the international community. Under the umbrella of this agreement, the first planting started as indicated above in August 2000, and a more detailed study conducted by SGS Agrocontrol was conducted in October 2000 (IRL 54) to analyze the requirements and conditions for the implementation of the project as a carbon sequestration project (IRL 54), which further demonstrates the consideration of carbon financing of the project since the early stage. The audit team reviewed the documents and confirms that CDM was a decisive factor in the decision to proceed with the project.

Reliable evidence from project participants is presented in the PDD and respective evidence was provided to the audit team and assessed. The evidences provided indicate that continuing

and real actions were taken to secure CDM status for the project in parallel with its implementation.

TÜV SÜD confirms that real and continuing actions taken was taken by the PP 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:

| Date | Activity by the Project Participant | Reference | Audit team conclusion |
|---|---|---|---|
| 02 Aug 2000 | Start of project activity | Agreement with land owner (IRL 18) | Document reviewed by TÜV SÜD and found in compliance with the AR-CDM requirements for starting date as defined in the Glossary of CDM terms and VVM. |
| 2001<br>2002<br>2003 | Starting of the plantations under the agreement signed between CORMAGDALENA and CONIF which considers the participation in the CDM mechanism to offer to the international community environmental services of $CO_2$ sink from plantations and obtain incomes from the forest carbon's sale, as well as support in the project design's to be certified as $CO_2$ sink project and development of research plots to the calculation of the carbon stock in the plantations.<br>Agreements were signed between CORMAGDALENA and CONIF in 2001, 2003 and 2003 including the objective for carbon sequestration (Special Cooperation Agreement N°. 000047/01 – 03). | IRL 61, 62, 63 | The corresponding agreements were provided as evidence (IRL 61, 62, 63). These agreements clearly indicate the intention to participate in the CDM. |
| 2003 – Aug 2004 | Elaboration of the project feasibility study "Clean Development Mechanism" (CDM) associated to reforestation program in the Magdalena Bajo region in lands dedicated to extensive cattle grazing activities (grasslands). | IRL 64 | The audit team reviewed the document and concluded that it sustains real and ongoing action to secure the CDM status.<br>The final report was issued in August 2004. |
| 05 Jun 2003 | ONFI, FINAGRO, FEDEGAN and CORMAGDALENA, signed an agreement of technical cooperation aimed at defining the modalities of partnership between the forestry projects CORMAGDALENA and FINAGRO. | IRL 65 | The future cooperation for the project implementation based on the expected revenues of the CDM was defined in the agreement provided as evidence (IRL 65).<br>The audit team reviewed the document and concluded that it sustains real and ongoing action to secure the CDM status. |
| 02 Mar 2004 | FINAGRO and CORMAGDALENA, signed the agreement "Project management contract for reforestation in the departments of Cesar and Magdalena". | IRL 66 | The agreement takes future CER revenues into account and it provides the funds for the plantations phase 2004 – 2006.<br>The audit team reviewed the docu- |

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|---|---|---|---|
| | | | ment The audit team reviewed the document and concluded that it sustains real and ongoing action to secure the CDM status. |
| 2004 | The elaboration of the Project Idea Note (PIN) by ONFI, was conducted in April 2004 for obtaining the Letter of No Objection from the Ministry of the Environment. | IRL 67 | A letter sent to the Ministry of the Environment of Colombia and corresponding reply from the Ministry was provided as evidence (IRL 67). This letter requests the approval from the Ministry for the project implementation as a CDM project.<br>The audit team reviewed the document and concluded that they sustain real and ongoing action to secure the CDM status. |
| 2005 - 2006 | Development of the feasibility study of the "CDM component of the Forestry Project in Strategic Ecological Areas of Colombia", which included the business plan formulation and the PDD elaboration. | IRL 42 | The audit team reviewed the document and concluded that they sustain real and ongoing action to secure the CDM status. |
| May 2006 | A methodology (ARNM0030) was elaborated for the project and submitted on 16 Sep 2006 to UNFCCC. The respective AR-CDM PDD was finalized in May 2006 | IRL 72 | The audit team reviewed the respective documents as available online. The documents clearly sustain ongoing action to secure the CDM status.<br>The methodology was finally not approved by the CDM Executive Board (EB report 28, paragraph 28 (c)) |
| 2006 - 2007 | ONFI conducted the search of new investors to continue financing the carbon component of the Project in: i) adjust of the base line and monitoring methodology, ii) final version of the PDD formulation, iii) validation and registration and iv) carbon monitoring.<br>In 2006, the Colombian partners of project activity (by this time: CORMAGDALENA, FINAGRO and the landowners) started a negotiation with CARBON POSITIVE and signed a work agreement for 2006 and 2007. The agreement contained funds for the development of the technical program of the livestock associated to the project and for the elaboration and approval of a baseline and monitoring methodology<br>However in late 2007, CARBON POSITIVE decided to quit the project. | IRL 69 | The agreement contained funds for the development of the technical program of the livestock associated to the project and for the elaboration and approval of a baseline and monitoring methodology (IRL 69).<br>The intention to continue with the implementation of the project as a CDM project is documented. |
| 2008 – on going | After CARBON POSITIVE withdrawal, a new international investor was approached to extend the existing area of | IRL 70 | According to the evidence provided (IRL 70) the new company was created in under the framework of |

| | | | |
|---|---|---|---|
| | reforestation in the same municipalities and get the project registered under the CDM. This investor is Faber Castell, a German company specialized in high quality pencils making.<br>In October 2008, a meeting took place in the head office of Faber Castell in Nuremberg, Germany with ONFI to promote the project, in particular regarding its carbon credit potential.<br>In July 2009, Faber Castell founded with one of the major private land owner (Stefan Tschampel) a Colombian company called A.W. Faber Castell & T.H. Reforestation S.A.S. | | the project, specifically for obtaining incomes from the sale of carbon of plantations through the CDM.<br>The audit team reviewed the document and concluded that they sustain real and ongoing action to secure the CDM status. |
| 2009 - 2010 | ONFI decided to assume the financing of the carbon component of the project activity.<br>During 2009 and 2010 contracts were signed, through which the Colombian partners of the project activity (CORMAGDALENA, FINAGRO, A.W. FABER CASTELL & T.H. REFORESTATION S.A.S and landowners) authorized ONFI to represent them and act on their behalf regarding all aspects related to the CDM component of the project activity. | IRL 50 | This contract stipulates that ONFI is responsible for the funding, implementation and follow up of all the aspects of the project related to CDM (finalization of the project perimeter, planning and redaction of the PDD, validation, registration, monitoring and commercialization of tCERs). In return, ONFI will receive a given proportion of the tCERs emitted for the proposed A/R CDM project activity (IRL 50).<br>The audit team reviewed the document and concluded that they sustain real and ongoing action to secure the CDM status. |
| June 2010 | In June 2010 the PDD was finalized.<br>TÜVS SÜD was contracted for the validation in August 2010. | IRL 1, 71 | TÜV SÜD received the PDD, which evidence action to secure the CDM status. |
| Mar 2011 | DNA issued the LoA | IRL 45 | TÜV SÜD received the LoA action to secure the CDM status. |

The audit team reviewed the respective documents, based on which TÜV SÜD can confirm that real and continuous actions were under taken to secure the CDM status of the project in line with the VVM paragraph 102 (b). Further, as per EB 49 annex 22, TÜV SÜD concludes that continuing and real actions were taken to secure CDM status for the project activity, as there is less than 2 years of a gap between the documented evidence.

The audit team further confirms that the proposed CDM project activity complies with the requirements of the latest version of the guidance on prior consideration of CDM, as the project start date is before 02 August 2008.

In essence all requirements regarding early CDM consideration as per VVM and respective guidance are met.

### 3.6.2 Identifications of alternatives

The output of the project is long-term managed reforestations, contributing to soil conservation, diversification of incomes for small scale farmers and new jobs generation.

Relevant alternatives (baseline scenario) were identified in the context of the additionality test: (i) Continuation of the existing and historical land use (ii) implementation of project without being registered as an A/R CDM project activity and (iii) palm oil culture.

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 scenario in the absence of the project activity.

### 3.6.3 Barrier analysis

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

- Institutional barrier
- Technological barrier
- Barrier related to local tradition
- Barrier due to prevailing practices
- Barrier due to social conditions
- Lack of organization

The assessment team checked first if any barrier has a clear direct impact on the financial returns of the project activity which can be expressed with reasonable certainty in monetary terms. The final PDD does include only barriers without such impact on the financial returns.

The **institutional barrier** was sustained with published data showing the lack of enforcement of land-use related legislation (IRL 32). As clearly shown in the PDD (table 19), there are several laws and incentives to promote reforestation in Colombia, however these did not result in an increase of reforested area in Colombia (see also section 3.6.4) mainly because of inexistent structures for involving land owners, financial institutions and technical knowledge to promote reforestation instead of the traditional land use as grazing lands. Under the expectation of the incomes perceived through the carbon financing, a new institutional scheme was designed for the implementation of the proposed project. This barrier was assessed against the following published data available to third parties:

- Aldana, 2004. The forestry Sector in Colombia. (Sector forestal Colombiano; fuente de vida, trabajo y bienestar. Serie de documentación no. 50. Corporación Nacional de Investigación y Fomento Forest (CONIF), Bogotá). (IRL 30)
- Rivera y Moreno, 2002. Perception of the forestry sector in Colombia. (Perspectivas del Sector Forestal en Colombia. Contraloría Delegada para el Sector Agropecuario, Dirección de Estudios Sectoriales.) (IRL 32)

The **technological barrier** was discussed considering the lack of knowledge and appropriate machinery plus the lack of training of the local farmers for conducting forestry activities as documented in the evidence provided (IRL 55). In the specific case of the proposed project activity, this barrier was overcome with the participation of CONIF, a private entity dedicated to

generate information and provide technology for the forest sector, under the agreement with CORMAGDALENA following the consideration of the carbon financing for income generation. This barrier was assessed against documents such as:

- Acosta, 2004. Tendencies and perspectives of the forest sector in Latin America. Colombia National Report. (Estudio de tendencias y perspectivas del sector forestal en America Latina Documento de Trabajo. Informe Nacional Colombia. Corporacion Nacional de Investigacion y Fomento Forestal (CONIF) y FAO. (IRL 55)

The **barriers related to local tradition and prevailing practices** were sustained with published documents such as:

- Cazaux, 2003. Restrictions and motivations of the farmers regarding the forestry project of CORMAGDALENA and ONFI. (Restricciones y motivaciones de los ganaderos frente al proyecto de reforestación comercial de CORMAGDALENA. ONF INTERNATIONAL, Santa Fé de Bogotá, Colombia) (IRL 15).

The evidence provided and the field visit allowed the audit team to verify that there were not similar activities conducted in the same region where the proposed project is implemented showing characteristics of “first of its kind” involving farmers in large scale reforestations.

The **social condition barrier** was sustained based on the difficult conditions of public order in the region due to the FARCs (revolutionary armed groups) causing social disturbance in the region and in Colombia in general. The implementation of the proposed project allows people to return to their lands after a long process of peace recovery (IRL 15).
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 and credible and correctly presented to demonstrate the additionality of the project.

### 3.6.4 Common practice analysis

The region for the common practice analysis was defined as the geographical area of subregion Colombian Caribbean savannas. The assessment team reviewed the approach presented in the PDD and can confirm that relevant parameters such as location, ecological conditions, economical situation, and development were taken into account in order to define the region (IRL 6, 7). The chosen region has unique characteristics in regard to forest structure, population structure and ethnic minorities. Therefore, the presented approach can be considered appropriate for the common practice analysis.

The evidence provided shows a total reforested area of 14,500 hectares in the last 20 years, all of them conducted by private companies until the year 2000 when these reforestation rate stopped because of the economical crisis of the end of the 90’s (IRL 56). Furthermore, this information was cross checked with FAO statistics indicating a negative rate of change in forest cover in Colombia (IRL 53) and a very limited reforestation activity far below the targets defined with the support of the reforestation incentive (IRL 55).

Therefore, it can be confirmed that the proposed CDM activity is not a common practice in the defined region, while considering the specific project design.

## 3.7 Monitoring plan

The monitoring plan presented in the PDD complies with the requirement of the methodology. The assessment team checked all parameters presented in the monitoring plan against the requirements of the methodology. For the monitoring of carbon stock changes the requirements and parameter list as per methodology were followed. Monitoring of GHG emissions and leakage was excluded due to non-relevance (see section 3.5.6).

The monitoring plan was included to the project documentation. The boundary and forest management monitoring was defined specifically for the project context. The sampling design was reviewed onsite and found to be in compliance with methodological requirements, and good practice as defined e.g. in the IPCC GPG LULUCF (IRL 34).

The procedures were reviewed by the assessment team on paper and through interviews with the relevant personnel (IRL 1); this information together with a physical inspection allows the assessment team to confirm that the proposed monitoring plan is feasible within the project design.

The major parameters to be monitored were discussed with the PPs, 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 PPs developed Standard Operating Procedures (SOP) towards carbon monitoring in order to ensure the collection of reliable field data (IRL 10).

TÜV SÜD concludes that the PP will be able to implement the monitoring plan to report ex-post GHG net anthropogenic removals, which can also be verified.

The chosen monitoring frequency of the parameters is in line with the methodology (frequency in years). It is considered that there is no systematic coincidence of verifications with peaks in carbon stocks since no harvesting operations are foreseen within the crediting period.

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.

## 3.8 Sustainable development

The LoA of the Host Country Colombia clearly presents a statement that the project contributes to the sustainable development of the Host Party.

## 3.9 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. A series of workshops, meetings and conferences were conducted to collect stakeholder's comments. The main steps followed are described in the PDD. The consultation to land owners started in 2000 with the assessment of the land. Interviews with land owners during the onsite visit confirmed that there was a socialization of the project before starting the plantation activity (IRL 44).

The assessment team reviewed the documentation in order to validate the inclusion of relevant stakeholders and using the local expertise it is confirmed that the communication method used to invite the stakeholders can be considered appropriate.

The summary of comments presented in the PDD was cross-checked with the documentation of the stakeholder consultation (IRL 44) and confirmed with interviews with stakeholders of the community by the audit team during the onsite visit, and it is found to be complete.

The relevant comments presented by the local stakeholders were taken into due account by the PP, the same was cross check with the information obtained during the interviews.

Hence the local stakeholder consultation was adequately performed according to the CDM requirements.

## 3.10 Environmental and socio-economic impacts

The PP undertook an analysis of environmental and socio-economic impacts according to the requirements of the guidelines for PDD completion. The assessment team carried out a document review of the information presented.

An environmental impact study assessment was conducted as a part of the study (IRL 41). Discussion and evidence on impacts on water quantity was included to the PDD. According to the published research (58, 59, 60) the forestry plantation would impact the water quantity, on the other hand, the tree cover would prevent soil erosion, thus the possible negative impact is compensated with the crown cover of the trees.

Impacts on biodiversity are discussed and sustained with evidence. The continuation of prevailing practices would lead to the destruction of the habitat found in fallows for several species, thus a major impact is expected under the baseline scenario than under the project scenario. Information on fire risks, pests and diseases is included to the PDD as well as measures to prevent such risks.

In essence, the audit team concluded that no significant negative environmental and social impacts are expected. This conclusion was also sustained by the results of the field visit of the audit team as well as positive comments on the project by the consulted stakeholders.

# 4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project documents on the UNFCCC website and invited comments by affected Parties, stakeholders, and non-governmental organisations during a 45 day period.

All key information gathered is presented in the table bellow

**GSP Comments**

| | |
|---|---|
| **webpage:**<br>http://cdm.unfccc.int/Projects/Validation/DB/BYA6Z6FK077YCPTPRSO9N8U240YORN/view.html | |
| **Starting date of the global stakeholder consultation process:**<br>25 Aug 2010 | |
| **Comment submitted by:**<br>No comments received. | **Issues raised:**<br>None |
| **Response by TÜV SÜD:**<br>- | |

# 5 VALIDATION OPINION

TÜV SÜD performed a validation of the following proposed CDM project activity “Commercial reforestation on lands dedicated to extensive cattle grazing activities in the region of Magdalena Bajo Seco”.

Standard auditing techniques have been used for the validation of the project. A methodology-specific protocol for the project has been prepared to conduct the audit in a transparent and comprehensive manner.

The review of the project design documentation, subsequent follow-up interviews, and further verification of references have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the protocol. In the opinion of TÜV SÜD, the project meets all relevant UNFCCC requirements for the CDM if the underlying assumptions do not change. TÜV SÜD recommends the project for registration by the CDM Executive Board.

An analysis, as provided by the applied methodology, demonstrates that the proposed project activity is not a likely baseline scenario. GHG removals attributable to the project are additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of GHG removals as specified within the final PDD version.

The validation is based on the information made available to TÜV SÜD, as well as the engagement conditions detailed in this report. The validation has been performed following the VVM requirements. The single purpose of this report is its use during the registration process as part of the CDM project cycle.

Munich, 24 May 2011

Thomas Kleiser
Certification Body “climate and energy”
TÜV SÜD Industrie Service GmbH

Munich, 24 May 2011

Sebastian Hetsch
Assessment Team Leader
TÜV SÜD Industrie Service GmbH

Industrie Service

# Annex 1: Validation Protocol

## Table 1 Requirement Checklist

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|
| **A. General Description of the Project Activity** | | | | |
| A.1 Title of the project activity | | | | |
| Does the used project title clearly enable to identify the unique CDM activity? | 2 | Yes, the project is clearly identifiable. | ☑ | ☑ |
| Are there any indication concerning the revision number and the date of the revision? | 2 | Yes, version number and date is consistent. Initial version has been version 05, dated 10 of June 2010. | ☑ | ☑ |
| A.2 Description of the project activity | | | | |
| Has the project been described in terms of purpose, how the project is undertaken, and the project proponent's view of the project's contribution to sustainable development? | 2, 4, 5, 6, 7 | The PDD includes indications on the objective (increase of carbon stocks and supply of wood) as well as the purpose and general procedures how the project is carried out.<br>Furthermore, the expected contribution on sustainable development is based on:<br>- The reforestation of lands dedicated to extensive cattle grazing activities;<br>- Reduction of pressure on the exploitation of natural forest;<br>- Contribution to reduction of the risk for desertification;<br>- Contribution to preservation of biodiversity and improvement of the hydrological cycle;<br>- Contribution to climate change mitigation;<br>- Demonstration of the technical and financial viability of reforestation activities;<br>- Diversification of incomes for small-scale farmers<br>- Substantial creation of jobs for the establishment and maintenance of forest plantations;<br>- Transfer of technical knowledge and capacity building at the local level<br>- Contribution to equilibrate the wood sector balance at the national level. | **CAR** | ☑ |

Ref. = Reference as included to Information Reference List; MoV = Means of verification (Document Review: DR; Interview: IV; Field visit: FV)

Industrie Service

<table>
<tr><th>CHECKLIST QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>Draft Concl</th><th>Final Concl</th></tr>
<tr><td></td><td></td><td><u>The roles were properly described during the audit:</u><br>The project was developed in three phases in which there were different level of participation between the project participants. Besides the land owners, the institutions involved are: The first phase was conducted by CORMAGDALENA and ONFI, the second phase involved also FINAGRO and in the third phase participates only A.W. FABER CASTELL & T.H. REFORESTATION S.A.S and ONFI.<br><br><u>Corrective Action Request No.1.</u><br>Provide information on the number of land owners involved in the proposed project activity.</td><td></td><td></td></tr>
<tr><td>A.3 Project participants</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Have the Parties and project participants participating in the project been listed in the table as required?</td><td>2</td><td>The Host Party is the Republic of Colombia but is not indicated in the corresponding table. The Colombian institutions involved have authorized ONFI to represent them in all aspects related to the CDM component.<br><br><u>Corrective Action Request No.2.</u><br>Indicate Colombia as the Host Party involved and indicate if the party involved wishes to be considered as Project Participant.</td><td>CAR</td><td>☑</td></tr>
<tr><td>Have all involved Parties provided a valid and complete letter of approval and have all private/public project participants been authorized by an involved Party?</td><td>2, 45</td><td>LoA was issued by the DNA of Colombia on 01 March 2011.</td><td>☑</td><td>☑</td></tr>
<tr><td>Do all participating Parties fulfil the participation requirements as follows:<br>- Ratification of the Kyoto Protocol<br>- Designated a National Authority<br>- Host Party DNA communicated minimum values for forest definition</td><td>2</td><td>Yes, all criteria a complied with.<br>For forest definition see<br>http://cdm.unfccc.int/DNA/ARDNA.html?CID=49
<table>
<tr><th>single minimum tree crown cover value between 10 and 30 per cent</th><th>A single minimum land area value between 0,05 and 1 hectare</th><th>A single minimum tree height value between 2 and 5 metres</th></tr>
<tr><td>30</td><td>1</td><td>5</td></tr>
</table></td><td>☑</td><td>☑</td></tr>
<tr><td>A.4 Description of location and boundaries of the A/R CDM project activity</td><td></td><td></td><td></td><td></td></tr>
<tr><td>A.4.1 Has the location of the project including Host Party,</td><td>2, 47,</td><td>The information on project location in regard to City/town/community has</td><td>☑</td><td>☑</td></tr>
</table>

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|
| Region/State/Province and City/town/community been defined? | 48 | been provided in the PDD. | | |
| A.4.2 Has an appropriately detailed geographic delineation of the project boundary including a unique identifier been included? | 2, 3, 47, 48, 49 | Digital shape files (GIS) from the different project areas were provided to the audit team. The digital information includes a unique identifier for each discrete parcel of land.<br><br>**Corrective Action Request No.3.**<br>- The project boundary remains to be delineated according to the area under control and the yet to be included. The current includes more than 1/3 of the area not yet under control allowed by EB 44.<br>- The project boundary shall include only eligible areas. During the on-site visit a patch of forest was found in a parcel of land not yet under control.<br>- Provide the shapefiles to the audit team after the correction on the project boundary. | **CAR** | ☑ |
| A.5 Technical description of the A/R CDM project activity | | | | |
| A.5.1 Has a description of the present environmental conditions of the project area (including climate, hydrology, soils, ecosystems and land use) been included? | 2, 4, 5, 6, 7 | Climate, hydrology, soils and ecosystem are described in the PDD.<br>The land conditions before project start was mainly grassland and agricultural land. Some single trees and some natural forest patches (“rastrojos”) are found within the landscape.<br>According to IGAC 1997, pastures represent more than 70% of the total area, and crops only 3%”.<br><br>**Corrective Action Request No.4.**<br>Provide information on potential impacts to forest plantations due to fire risk. | **CAR** | ☑ |
| A.5.2 Have any rare or endangered species been defined as present? | 2, 4 | A general description indicates the assumption that no endangered species are found in the project area and that typical flora is not threatened due to the extent of the Caribbean Savannah ecosystem. The current description is based on a logical assumption but this needs to be sustained with robust evidence.<br><br>**Corrective Action Request No.5.**<br>Provide a description and evidence on the assessment followed to reach | **CAR** | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
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| | | to the conclusion that no endangered are found within the project area. | | |
| A.5.3 Have the species and varieties to be grown been adequately described? | 2, 8, 9 | The species to *be planted* are *Bombacopsis quinata, Tabebuia rosea, Gmelina arborea, Tectona grandis* and *Eucalyptus tereticornis.*<br>The description of the species to be grown is based on the CONIF document. This is composed for several technical papers per species reviewed onsite. | ☑ | ☑ |
| A.5.4 Has the technology to be employed (including environmentally safe and sustainable/renewable technologies) been adequately described? | 2, 10 | Plant production is described in PDD as well as briefly the reproduction and planting process and productivity management, harvesting, pest control and fire control.<br>The management plan is a conceptual framework of the establishment of the plantations, it also contains the schedule and planting density per species.<br>The assessment of soil disturbance is discussed under the applicability criteria. | ☑ | ☑ |
| A.5.5 Has the know-how with specifications of whether it will be transferred to host Parties been adequately described? | 2 | A know-how transfer to host party is not foreseen. Further transfer of know-how to workers and employers is planned by training.<br><br>**Clarification Request No. 1.**<br>Clarify in the PDD that a know-how transfer to host party is not foreseen. | **CR** | ☑ |
| A.5.6 Has the proposed measures to be implemented to minimize potential leakage been adequately described? | 2 | Measures to minimize potential leakage include the displacement of the cattle to other pasture lands available from the same owners of the land.<br>**Corrective Action Request No.6.**<br>Provide information on proposed measures to be implemented to minimize potential leakage including fuelwood collection. | **CAR** | ☑ |
| A.6 Legal title to the land, land tenure and rights to issued tCERs/lCERs | | | | |
| Have details of the legal title to the land, land tenure and rights to issued tCERs/lCERs been described? | 2, 11 | The land is owned by private owners. It is indicated that the land under control of the project participants is at least 2/3 of the total area of the project.<br>There was a consideration to include 400 ha under intention letters but this is not yet under control, thus the total extent of the area not yet under control would be less than the potential initially foreseen.<br>The complete documentation was available to the auditors, An scanned database with copies of the contracts between the involved participants | ☑ | ☑ |

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| | | was provided (Annex 6) | | |
| A.7 Assessment of the eligibility of lands | | | | |
| Has the latest version of the AR eligibility tool been applied? | 2 | Clear reference to the latest versions of the eligibility procedure (EB 35, Annex 18) has been included to the PDD. | ☑ | ☑ |
| Is adequate evidence provided which demonstrates that<br>a) the land in the project boundary is not forest at project start<br>b) the activity is an afforestation or reforestation by indicating historic land use (reforestation: unstocked by Dec. 1989; afforestation: unstocked >50 y) | 2, 3, 12, 13, 14, 15, 16 | The land assessment has been assessed by satellite images and site visits. The process and results have been summarized adequately in the PDD.<br>The proposed project is a reforestation activity.<br>The land eligibility was discussed with the GIS specialist Juan Carlos Rubiano from ONF Andina. A report with the main steps followed was provided to the audit team.<br>The satellite imagery was reviewed onsite and further confirmed through Google Earth and field visits.<br>LANDSAT TM from 1989 and 2000 were used to demonstrate the eligibility criteria. This analysis was further confirmed with assessments conducted in 2004 and 2010 in order to exclude area below the minimum criteria of forest definition. *See also CAR in section A.4 regarding land eligibility*<br>**Clarification Request No. 2.**<br>Clarify if the land is temporary unstocked | **CR** | ☑ |
| Has the assessment of the eligibility of the land been adequately described? | 2 | The process and results have been summarized adequately in the PDD. | ☑ | ☑ |
| A.8 Approach for addressing non-permanence | | | | |
| Has the approach to address non-permanence been specified (tCER, lCER)? | 2 | tCER approach has been chosen by the project participants. | ☑ | ☑ |
| A.9 Estimated amount of net anthropogenic GHG removals by sinks | | | | |
| Has the table on estimated net anthropogenic removals over the chosen crediting period been completed? | 2 | The table in section A.9 has been completed and is consistent with indications in remaining PDD as well as corresponding net removal estimates.<br>**Corrective Action Request No.7.**<br>- The table has to be updated after reviewing the calculations (regarding the project area and open CARs in section C.7 and D.1 and D.2) | **CAR** | ☑ |

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| | | - Include indication that the verification period does not coincide with the peaks in carbon sequestration. | | |
| A.10 Public Funding | | | | |
| Is indication on public funding (from Annex I countries) included to the PDD? | 2, 17 | ONF International is a private company run without public funding. The funds from ONFI are from their own activities as a private company.<br>The evidence provided is the Inscription in the Commercial Registry and Societies which states the private origin of ONFI. Thus there is no public funding involved from France. | ☑ | ☑ |
| **B. Duration of the Project Activity / Crediting Period** | | | | |
| B.1 Starting date of the project and the crediting period | | | | |
| Does the starting date reflect the date of implementation (or when real action began that resulted in changes to the actual net removals) and has it been adequately justified? | 2, 18 | 02 Aug 2000 is the starting date of the project activity when the planting activity started.<br>The evidence provided is a contract between the land owner Stefan Tschampel and CONIF for the cooperation in establishing the plantation. The date is August 02 2000.<br><br>**Corrective Action Request No.8.**<br>The starting date shall be in line with the evidence provided. | **CAR** | ☑ |
| B.2 Expected operational lifetime | | | | |
| Has the expected operational lifetime been defined? | 2 | **Corrective Action Request No.9.**<br>Ensure consistency in the PDD on the expected operational lifetime (30 or 35 years?). Indicate months as well. | **CAR** | ☑ |
| B.3 Choice of crediting period | | | | |
| Is the project fixed or renewable and does it has an appropriate crediting period length defined (in years and months)? | 2 | The project has chosen to use a fixed crediting period. The fixed crediting period selected by the project is 30 years. | ☑ | ☑ |
| **C. Application of Baseline and Monitoring Methodology** | | | | |
| C.1 Title and reference of approved methodology | | | | |
| Has the approved methodology and any other methodologies or tools used been properly referenced (including version no.)? | 2 | The methodology used is “Reforestation or afforestation of land currently under agricultural use” Reference of the methodology: AR-AM0004 / Version 04.<br>**Corrective Action Request No.10.**<br>Provide information on tools which have been used for the PDD. | **CAR** | ☑ |
| Has the most current version of the methodology been used | 2 | Yes, the most current versions have been applied. | ☑ | ☑ |

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| (consider also PDD formats, eligibility tool, AR add. tool)? | | | | |
| C.2 Assessment and justification of selected methodology | | | | |
| Does the project use the baseline approach from paragraph 22 of the CDM A/R modalities and procedures: Existing or historical, as applicable, changes in carbon stocks in the carbon pools within the project boundary"? | 2, 4 | The approach 22 (a) was considered and sustained with the discussion in sections C.5 and C.6 | ☑ | ☑ |
| Is the selected project activity an afforestation or reforestation of degraded land, which is subject to further degradation or remains in a low carbon steady state, through assisted natural regeneration, tree planting, or control of pre-project grazing and fuel wood collection activities (including in-site charcoal production)? | 2 | The proposed project activity is a reforestation activity. | ☑ | ☑ |
| The project activity can lead to a shift of pre-project activities outside the project boundary, e.g. a displacement of grazing and fuelwood collection activities, including charcoal production; | 2 | The project is developed on areas dedicated to grazing cattle, thus the project activity can lead to displacement of grazing. | ☑ | ☑ |
| **Conditions of applicability** | | | | |
| Lands to be afforested or reforested are severely degraded and the lands are still degrading or remain in a low carbon steady state; | 2, 7, 18, 19, 20, 21, 22, 23 | According to the reference cited in the PDD, the region where the project is located is degraded lands. Local references also indicate the degraded condition of the land.<br>The condition of degradation is sustained basically with:<br>- Vargas y Gomez, 2003. La desertificacion en Colombia y el cambio global<br>- IDEAM, 2001.Tierras afectadas por la desertificacion.IGAC, 1997. Regiones Naturales<br>The document Vargas y Gomez, 2003, includes a map of the level of desertification in the Magdalena department and a clear definition that involves the degradation into the desertification analysis. | ☑ | ☑ |
| Site preparation does not cause significant longer term net decreases of soil carbon stocks or increases of non-$CO_2$ emissions from soil; | 2 | Site preparation involves sub-soiling which is expected to generate minimum impact to the soil.<br>According to the management plan, the maximum impact of the site preparation would be 10% of the project area. The impact of the site preparation was estimated considering a 2.5 meter distance between planting lines and 30cm deep. | ☑ | ☑ |

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<table>
<tr><th>CHECKLIST QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>Draft Concl</th><th>Final Concl</th></tr>
<tr><td>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 less in the absence of the project activity, relative to the project scenario;</td><td>2, 24, 25, 26</td><td>The land is expected to further degradation due to pre-project prevailing practices. The soil organic matter and deadwood is expected to decrease more or increase less in the absence of the project activity<br>According to the evidence provided (Paul, et al 2002 – IRL 25) the carbon in soil is expected to decrease at the beginning of the plantation but it will increase under a forest plantation of long term rotation (20-50y)<br>Other published (Silver, 2000- IRL 26) discusses the increase of soil in carbon during the first 20 years of the plantation.</td><td>☑</td><td>☑</td></tr>
<tr><td>Flooding irrigation is not permitted;</td><td>2, 10</td><td>There is no flooding irrigation contemplated in the project activity.</td><td>☑</td><td>☑</td></tr>
<tr><td>Soil drainage and disturbance are insignificant, so that non $CO_2$-greenhouse gas emissions from this type of activities can be neglected;</td><td>2, 10</td><td>Site preparation is expected not to cause significant disturbance. Soil drainage is not foreseen.</td><td>☑</td><td>☑</td></tr>
<tr><td>The AR CDM project activity is implemented on land where there are no other on-going or planned AR activities.</td><td>2, 27, 28</td><td>Several barriers avoid similar activities to be conducted in the project area. The land owners dedicate their lands exclusively to cattle grazing. There are no other similar experiences in the region as evidenced during the onsite visit.<br>Further discussion and evidence is provided in section C.6.</td><td>☑</td><td>☑</td></tr>
<tr><td>C.3 Assessment of the selected carbon pools and emission sources</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Has an assessment of the appropriateness of choice of carbon pools and emission sources selected to the project activity been included to the PDD?</td><td>2</td><td>Above and below ground biomass are considered as defined per methodology.</td><td>☑</td><td>☑</td></tr>
<tr><td>Are the carbon pools considered in the project activity in line with the requirements of the methodology?
<table>
<tr><th>Carbon pools</th><th>Selected</th></tr>
<tr><td>Above ground</td><td>Yes</td></tr>
<tr><td>Below ground</td><td>Yes</td></tr>
<tr><td>Dead wood</td><td>No</td></tr>
<tr><td>Litter</td><td>No</td></tr>
<tr><td>Soil organic carbon</td><td>No</td></tr>
</table></td><td>2</td><td>The pools considered are in line with the requirements of the methodology.</td><td>☑</td><td>☑</td></tr>
<tr><td>Are the emission sources considered in the project activity in line with the requirements of the methodology?
<table>
<tr><th>Sources</th><th>Gas</th><th>Included / excluded</th><th>Justification / Explanation</th></tr>
<tr><td>Burning</td><td>$CO_2$</td><td>No</td><td>However, carbon stock decreases</td></tr>
</table></td><td>2</td><td>Emissions are properly considered in the project activity in line with the methodology requirements</td><td>☑</td><td>☑</td></tr>
</table>

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| of bio-mass / / / due to burning are accounted as a carbon stock change<br>/ $CH_4$ / Yes / Non-CO2 gas emitted from biomass burning<br>/ $N_2O$ / No / Potential emission is negligibly small | | | | |
| C.4 Description of ex ante stratification | | | | |
| Is a stratification carried out in case the project activity area is not homogeneous? | 2 | The project area is not homogeneous. The stratification followed the methodology requirements. | ☑ | ☑ |
| If yes, is the stratification for baseline net GHG removals by sinks according to area of major (baseline) vegetation types? | 2 | For the baseline stratifications, the major vegetation types were identified using satellite imagery, and three strata were identified (clean pastures, pastures with fallows and fallows in early stage of succession) | ☑ | ☑ |
| Is the ex-ante stratification for net GHG removals by sink carried out based on the project planning / management plan? | 2, 10 | For actual ex-ante net GHG removals by sinks, the project planting/management plan is considered. | ☑ | ☑ |
| Are the results of the final stratification included to the PDD? | 2 | The final ex-ante stratification is presented in a table showing the stand models and the baseline strata. | ☑ | ☑ |
| C.5 Identification of baseline scenario | | | | |
| C.5.1 Description of the application of the procedure to identify the most plausible baseline scenario | | | | |
| *Step 1: Compliance with applicability criteria and baseline approach 22 (a)* | 2 | Description provided in section C.2 demonstrates compliance with applicability criteria and baseline approach 22 (a) | ☑ | ☑ |
| *Step 2: Definition of project boundary* | 2 | The project boundary was defined using the latest version of the tool: "Procedures to define the eligibility of lands for afforestation and reforestation project activities"<br>**See CAR above in section A.4** | **CAR** | ☑ |
| Step 3 | 2 | | | |
| a) Analysis of historic and land use / cover change in the context of socioeconomic conditions and identification of key factors that influence land use change over the relevant timeframe (acc. AR definitions, using e.g. multi-temporal images, field studies, interviews, other sources) | 2, 14, | The historical land use is describes as continued deforestation and degradation due to social and political instability as well as pressure from grazing activity increase. | ☑ | ☑ |
| b) Demonstration that historic and current land use / cover change has lead to a progressive degradation (e.g. vegetation or soil), including decrease or steady state of carbon | 2, 29 | An assessment of land use change based on satellite imagery interpretation was conducted in order to demonstrate the historic land use change. | ☑ | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
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| stocks, using verifiable indicators that are sustained by further evidence. | | The assessment on land use change has been analyzed based on satellite imagery from 1984 and 2002 which demonstrates the change from several land use categories. It clearly demonstrates the increase in pasturelands and the reduction of the class forest to other classes like pastures or shrublands. | | |
| c) Brief description of national, sectoral, local land use policies or regulations adapted before 11. Nov. 2001, that may impact and land use / cover change and demonstrate that they do not impact the project area significantly. (if they do, baseline can not be degraded land / extended applicability criteria) | 2, 30, 31 | National sector policies support the planned project activity by the National Plan for Forestry Development (PNDF).<br>The state implemented the CIF (Forestry Incentive Certificate) which contributes by direct cash new commercial forestry plantation activities.<br><br>**Clarification Request No. 3.**<br>Provide evidence and sustain whether the CIF might impact the project area under the baseline scenario. | **CR** | ☑ |
| d) Identification of alternative land uses (including public or private activities) that are not in contradiction with regulations or policies, using appropriate sources.<br>(if the land use is likely to change, then this methodology is not applicable / extended applicability criteria) | 2, 13, 29 | The following alternative land uses were identified:<br>- Continuation of current land use (grazing)<br>- Establishment of palm oil plantations<br>- Reforestation activities not under the CDM.<br>The matrix land use discussed in Step 3 b above demonstrates the scenario of current land use.<br>**Clarification Request No. 4.**<br>Provide evidence on the scenario of establishment of palm oil plantations | **CR** | ☑ |
| e) Is it demonstrated that the land use / cover in the boundary would not change and /or is likely to lead to further degradation, e.g. by assessing attractiveness / benefits to locals, stakeholder consultations, and barriers for alternative land uses.<br>(if the land use is likely to change, then this methodology is not applicable / extended applicability criteria) | 2, 13, 30 | The historic land use is the most likely to prevail due to barriers to implement reforestation or extent the area of palm oil plantations.<br><br>The evidence provided indicates the preferences and constraints to the land use change other than the continuation of current practice. | ☑ | ☑ |
| Step 4 | | | | |
| Has the actual stratification of land areas within the project boundary occurred considering the indications of final ex-ante stratification? | 2 | No information is provided in the PDD to cover this requirement.<br><br>**Corrective Action Request No.11.**<br>Provide information on the Step 4 as required by the methodology: Strat- | **CAR** | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
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| | | ify the A/R CDM project area as explained in Section II.3 of the methodology. | | |
| Step 5 | | | | |
| Has the baseline scenario for each stratum been determined? And has an analysis of the possibility of self encroachment of trees been carried out using appropriate (field) methods. | 2 | No information is provided in the PDD to cover this requirement.<br>**Corrective Action Request No.12.**<br>Provide information on the Step 5 as required by the methodology: Determine the baseline land-use/land-cover scenario for each stratum and analyse the possibility of self-encroachment of trees. | **CAR** | ☑ |
| C.5.2 Is the description of the baseline scenario applying to each stratum reasonable? | 2 | The baseline scenario identified for each stratum, is the continuation of degradation through grazing activities. A description is provided | ☑ | ☑ |
| C.6 Assessment and demonstration of additionality | | | | |
| **Additionality (tool) Vers.2** | | | | |
| ***Step 0. Preliminary screening*** | | | | |
| If the project participants claim that the afforestation or reforestation CDM project activity has a starting date after 31 December 1999 but before the date of its registration:<br>a) Has evidence been provided that the starting date of the A/R CDM project activity was after 31 December 1999,<br>b) and that the incentive from the planned sale of GHG emission allowances was seriously considered in the decision to proceed with the project activity (documentation that was available to third parties at, or prior to, the start of the project activity). | 2, 18, 28 | It is indicated in the PDD that the project started on 25 July 2000 with first plantations, however the evidence provided demonstrates that the project activity started on 2 August 2000.<br>The incentive from the planned sale of the CDM was considered at the time of the Agreement between CORMAGDALENA and CONIF was signed in 1999. The Agreement was signed on 03 Set 1999.<br><br>**Corrective Action Request No.13.**<br>- Ensure consistency on the description on starting date. The evidence provided indicates that the project activity started on 2 August 2000.<br>- Provide evidence that the incentive from the planned sale of GHG was a critical factor of decision to start the project activity. | **CAR** | ☑ |
| | 2 | | | |
| ***Step 1. Realistic and Credible Alternatives to the A/R project activity consistent with the current laws and regulations*** | | | | |
| Have realistic and credible land-use alternative(s) [currently existing or that existed some time since 31 Dec. 1989] been identified (sub-step 1a), at least including:<br>• Continuation of the pre-project land use | 2 | The assessment of alternative land use scenarios was presented in section C.5.1 above. | ☑ | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
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| • AR of the land within the project boundary performed without being registered as the A/R CDM project activity<br>If applicable,<br>• forestation of at least a part of the land within the project boundary of the proposed A/R CDM project at a rate resulting from<br>o legal requirements;<br>o or extrapolation of observed forestation activities in the geographical area with similar socioeconomic and ecological conditions to the proposed A/R CDM project activity occurring in a period since 31 December 1989, as selected by the PP. | | | | |
| Are the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements (sub-step 1b)? If that is not the case, an alternative can only be considered if applicable legal or regulatory requirements are systematically not enforced or the non-compliance with those requirements is widespread, i.e. prevalent on at least 30% of the area of the smallest administrative unit that encompasses the project area; | 2 | All alternatives (same as defined baseline scenarios) are considered to be in line with legal requirements.<br><br>There is no legal obligation for private land owners to conduct reforestation activities. | ☑ | ☑ |
| Is the project scenario not the only remaining alternative? | 2 | No, the project scenario is not the only remaining scenario. Besides the project scenario, extensive cattle raising activity and palm oil plantations are the other remaining alternatives. | ☑ | ☑ |
| ***Step 2: Investment analysis*** | n/a | n/a | n/a | n/a |
| ***Step 3: Barrier Analysis*** | | | | |
| In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the implementation of this type of proposed project activity; and do not prevent the implementation of at least one of the alternative land use scenarios. | 2, 15, 30, 32, 33 | A list of barriers is developed and included to the PDD.<br>The identified barriers are:<br>• Investment barrier, including lack of attractiveness for investors and lack of access to credit financing<br>• Technological barrier (no forestry experience of farmers, lack of infrastructure)<br>• Institutional barrier (not clear legislation, not clear roles of insititutions)<br>• Prevailing practice (no other similar activitites conducted in the | **CAR** | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
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| | | region when the project started)<br>• Ecologcal conditions<br>• Social conditions<br>• Organization of local communities<br>• Land tenure and ownership<br>The project was initially financed by CORMAGDALENA and FINAGRO. The CIF (Forestry Incentive Certificate) was used for this purpose<br>The Institutional barriers: although there are several mechanisms established in Colombia the development of the forestry activity remained in the very low stage.<br>The technological barrier is demonstrated based on published references. The lack of knowledge and appropriate machinery plus the lack of training are documented. In the specific case of the proposed project activity, this barrier was overcome with the participation of CIF under the agreement with CORMAGDALENA in the context of the proposed project activity.<br>The barrier due to prevailing practice was demonstrated based on the historical land use in grazing.<br>The social condition was sustained based on the difficult conditions of public order in the region FARC causing social disturbance. The implementation of the proposed project allows people to return to their lands.<br>The land owners are not associated under any kind of organization neither represented by any institution.<br>**Corrective Action Request No.14.**<br>Provide evidence for the ecological barrier, as well as the "Land tenure and ownership" barrier, or exclude the barrier. | | |
| In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers? | 2 | **Clarification Request No. 5.**<br>- Investment barrier: Provide evidence on the limitations from CORMAGDALENA, FINANGRO and A.W. FABER CASTELL & T.H. REFORESTATION S.A.S for the financing of the project.<br>- Institutional barrier: Provide evidence sustaining that the CDM incentive was crucial to overcome the barrier. | CR | ☑ |
| In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alterna- | 2 | The barriers do not apply to the (current baseline) scenario: continuation | ☑ | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
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| tives is not prevented by the identified barriers? | | of grazing. | | |
| ***Step 4. Common practice analysis*** | | | | |
| Is the project activity common practice in the region?<br>Has a common practice analysis been carried out in line with the requirement of the CDM and are there essential distinctions between them. Are there fundamental and verifiable changes in circumstances when compared to other projects (e.g. explain why the proposed CDM AR project cannot use e.g. political benefits granted in other projects) | 2 | There have been previous reforestations in the region. These were developed by private companies covering around 14,000ha since 1981.<br><br>**Corrective Action Request No.15.**<br>Define the region under which the analysis of common practice was conducted.<br>**Clarification Request No. 6.**<br>- Provide evidence on common practice in the Region (i.e. statistics of reforestation activities in the region).<br>- Provide evidence on the statement related to the different conditions under which the previous reforestations were conducted in the region | **CAR CR** | ☑ |
| C.7 Estimation of the ex ante baseline net GHG removals | | | | |
| Have the ex ante baseline removal calculations been provided in the table, do they correspond to the chosen crediting period and use the approach provided in the selected approved methodology? | 2, 51 | Estimations have been provided in the table. See discussion below regarding pre-existing trees. | ☑ | ☑ |
| Is the baseline net GHG removal set zero where<br>a. no growing trees or woody perennials exist and<br>b. where no trees / perennials are expected to grow, or<br>c. where no trees / perennials will reach the forest threshold due to ongoing slash and burn<br>(formula 1) | 2, 4, 51 | The baseline net GHG removals are set zero based on the considerations provided by the "Guidance on conditions under which the change in carbon stocks in existing live woody vegetation are insignificant" (EB46, Annex 16). In order to apply the EB 46 Annex 16, a study made by Gonzalez & Rodriguez (2009) estimated the number of trees in the region of the project area between 0.5 and 3 trees/ha which is below the maximum of 4 trees/ha allowed by the EB 46 Annex 16, thus the baseline removals can be neglected.<br>However during the onsite visit, it was found that there can be uo to 10 trees/ha<br><br>**Corrective Action Request No.16.**<br>- For sake of completeness, make clear that the conditions under which the methodology neglects the baseline GHG removals are set zero are not met.<br>- Pre-existing vegetation remains to be considered otherwise demon- | **CAR** | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
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| | | strate that the results from Gonzalez & Rodriguez (2009) indicating 0.5 and 3 trees/ha are applicable to the proposed project area. | | |
| Where these conditions are not applicable, is the baseline net GHG removal considered for above and below ground biomass? (formula 2) | 2, 4 | See above. The baseline net GHG removals are set zero.<br>The baseline study is sustained with the Thesis of Dufour 2005, who conducted a research on the quantification<br><br>**Clarification Request No. 7.**<br>Clarify how it is ensured that the baseline study conducted in 2009 represents the situation at the time the project started in 2000. | **CR** | ☑ |
| For estimation of GHG removals due to growth in baseline strata, is the formula included to the PDD and correctly applied? (formula 3) | 2 | See CAR above | **CAR** | ☑ |
| For those strata with few growing trees, is $\Delta C_{B,ikt}$ (sum of the changes in living biomass carbon stocks in the baseline, above- and below-ground; tonnes $CO_2$-e,) estimated using one of following two methods (increment data vs. stock data):<br>• Method 1: Carbon gain-loss method<br>• Method 2: stock change method | 2 | See CAR above | **CAR** | ☑ |
| Has the corresponding formula been applied correctly, are used values in line with onsite conditions and are they clearly sustained / referenced?<br>(formulae 4 ff) | 2 | See CAR above | **CAR** | ☑ |
| In regard to Dj (wood density), BEF1,j (biomass expansion factor for conversion of increment), BEF2,j (biomass expansion factor for conversion of volume), CFj (carbon fraction for species) and Rj (root to shot ratio):<br>Have values been chosen with priority from higher to lower order as follows:<br>a) Existing local and species specific.<br>b) National and species specific (e.g. from national GHG inventory).<br>c) Species specific from neighboring countries with similar conditions. Sometimes c) might be | 2 | See CAR above | **CAR** | ☑ |

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| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|
| preferable to b); this case shall be substantiated in the PDD.<br>d) Globally species specific (e.g. GPG-LULUCF).<br>*If none of the above is applicable data of "similar species" values can be used following this order.* | | | | |
| If data from global or national databases has been used, have values been confirmed trough local data from literature or inventory? | 2 | See CAR above | **CAR** | ☑ |
| C.8 Completion of the baseline study | | | | |
| Have the date of completion and the name of the person (or entity) determining the baseline been specified? | 2 | Company and name of persons have been included to the PDD. | ☑ | ☑ |
| **D. Estimation of ex ante Actual Net Removals, Leakage and Net Anthropogenic Removals** | | | | |
| D.1 Estimation of ex ante actual net removals | | | | |
| Are the calculations of ex ante actual net removals for the crediting period consistent with the approach in the selected methodology and adequately defined? | 2, 27, 33, 34, 35, 26, 37, 38, 51 | After presentation of generic formula for calculation of ex-ante actual net removals aggregated results of calculations are included to PDD.<br>The corresponding requirements of the methodology have been considered. Excel spreadsheets were provided with calculations.<br>Key values like D, BEF, RS, and CF have been included to the PDD.<br>The volume was estimated using volume equations from published data:<br>*Gmelina arborea*: CIRAD-Foret, 2003<br>*Tectona grandis*: Tabares, 2002<br>*B. quinata:* CIRAD-Foret, 2003<br>*T. rosea:* Tabares, 2002<br>*E. tereticornis:* Tabares, 2002<br><br>**Clarification Request No. 8.**<br>- Clarify the wood density for eucalyptus (not match with evidence)<br>- Clarify the wood density for Tectona (not match with evidence). | **CR** | ☑ |
| *Estimation of actual changes in living biomass carbon stocks in the project scenario (section II.7.1)* | | | | |
| Has the formula for the calculation of actual changes in living biomass stocks been applied correctly? | 2, 27, 33, 34, 35, 26, 37, 38, | The main formula for the estimation on the actual removals included to PDD. | ☑ | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|
| | 51 | | | |
| a) Treatment of pre-existing non-tree and tree vegetation:<br>Is it estimated pre-existing carbon stock in living biomass significant (>2% of actual net removals)?<br>If yes, are follow up calculations carried out accordingly?<br>(Compare. section 7.1.) | 2, 27, 33, 34, 35, 26, 37, 38, 51 | A baseline assessment of pre-existing trees was conducted in 2005.<br><br>**Clarification Request No. 9.**<br>Clarify how is it ensured that the study conducted in 2005 on pre-existing carbon stock in living biomass represents the conditions at the time the project started in 2000. This should be further analysed after considering the baseline trees. | **CR** | ☑ |
| b) Treatment of trees<br>Is the formula provided by the methodology (for baseline estimates) applied correctly, while taking into account the following differences:<br>• Harvesting and mortality are taken into account<br>• Baseline strata differ<br>• Stand models differ<br>Is the calculation carried out according to A) the carbon gain-loss or B) the stock change method, and is all input data clearly sustained and referenced?<br>(formulae 16-22 of methodology) | 2, 27, 33, 34, 35, 26, 37, 38, 51 | The stock change method is applied, Input data is clearly referenced., The corresponding data is monitored for ex-post calculations.<br><br>**Corrective Action Request No.17.**<br>The mortality must be considered in the calculations | **CAR** | ☑ |
| *Estimation of GHGe (section II.7.2)* | 2, 51 | | | |
| Is the increase of GHGemissions ($GHG_E$) estimated according to methodology implications and is sustained and references input data used? | 2, 51 | Increase of GHG emissions are taken into account. According to the methodology, the increase of GHG emissions as a result of the implementation of the proposed AR CDM project is equal to emissions from biomass burning for site preparation. | ☑ | ☑ |
| Estimation of $E_{BiomassBurn}$ (GHG emissions from biomass burning):<br>Is slash and burn as part of site preparation applied and if yes, have emissions been estimated adequately and in line with the methodology requirements? Is sufficient evidence provided on input values? | 2, 51 | The site preparation does not involve biomass burning as confirmed on-site. The pre-existing vegetation is removes and left behind next to the land to be planted. | ☑ | ☑ |
| Has all data been provided relevant for ex-ante estimation? Has data provision been cross-checked with section II.11 of AR-AM0004 | 2, 51 | Data has been provided. See monitoring section. | ☑ | ☑ |
| D.2 Estimation of ex ante leakage | | | | |

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| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|
| Are the calculations of ex ante leakage for the crediting period consistent with the approach in the selected methodology and adequately defined? | 2, 51 | Table with leakage calculation has been included to the PDD and formulae properly referenced. | ☑ | ☑ |
| Estimation of $LK_{ActivityDisplacement}$ - Carbon stock decreases caused by displacement of pre-project agricultural activities, grazing and fuelwood collection: | | | | |
| Have the emissions from $LK_{ActivityDisplacement}$ been estimated adequately and in line with the methodology requirements and has sufficient evidence provided on input values for the following calculations?<br>- Leakage due to conversion of lands with a) conversion of grazing and b) conversion of cropland<br>- Leakage due to displacement of fuelwood collection) | 2, 14, 39, 40 | Leakage due to displacement of grazing was considered.<br>According to the evidence provided (Lenne, 2004) the average in the project area is 0,64 animal units/ha. According to the historical records (Sierra, 2010) the same average was documented since 1995 to 2002.<br>The study from Cuesta s.f indicates the current carrying capacity in the region is between 1 to 1.37 animal units/ha (dry and rainy season) thus the land is currently underused.<br><br>Based on published data (Lenne, 2004) the land available after the reforestation activity is approximately 50% of the total area of the land owners which would be able to hold the existing animals . Furthermore it was demonstrated that an improvement of the current grazing management, the carrying capacity can increase up to 2,2 to 2.8 (Cuesta, sf).<br><br>It was evidenced during the onsite visit that cropland displacement will not occur as a consequence of the project activity since it is not practiced in the region. The interviews with land owners and field observations clearly demonstrated that there is no agriculture under the baseline scenario, thus no leakage is expected from this source.<br><br>**Corrective Action Request No.18.**<br>Fuelwood collection was found to be practiced in the project scenario, thus needs to be estimated and sustained with evidence. | **CAR** | ☑ |
| Has all relevant data for leakage estimation been collected and archived? (section III.8) | 2 | See section E.5 below. | ☑ | ☑ |
| **E. Monitoring Plan** | | | | |
| E.1 Monitoring of the project implementation | | | | |
| E.1.1 Has data to be collected for monitoring of forest estab- | 2 | Monitoring procedure of forest establishment and management and data | ☑ | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|
| lishment and management been listed adequately? (AR-AM0004, section III, 1.1; section III, 1.2) | | to be monitored was included to the PDD. | | |
| In the collection of data for the monitoring of the project boundary, forest establishment or of forest management, do any measurements not follow typical forest mensuration practices and if so have they been adequately described? | 2 | Tables with parameters to monitor the project boundary, forest establishment and forest management have been included.<br>Measures follow typical forest mensuration. | ☑ | ☑ |
| E.2 Sampling design and stratification | | | | |
| AR-AM0004 Section III.2 | | | | |
| Have the conditions for ex-post strata update (within in GIS data base) been included to the PDD / Monitoring Plan? (section III.2.1) | 2 | Project participants plan to develop an *ex-post* stratification of the planted area at the time of the first verification event, and subsequently prior to proceeding<br>verification events.<br>Conditions under which ex-post strata must be updated include year of planting, tree species, forest management activities/stand development, site index and catastrophic events such as disease outbreak and fire. | ☑ | ☑ |
| Is the sampling framework, including sample size, plot size, plot shape, and plot location specified in the PDD? (section III.2.2) | 2 | Circular shaped permanent sample plots of 500 $m^2$ are foreseen. | ☑ | ☑ |
| Is the sample size / no. of permanent plots and their allocation among strata calculated according to methodology requirements? (formulae 57-62) | 2 | The procedure followed for determining the sample size / no. of permanent plots and their allocation among strata was calculated according to methodology. A table with the distribution of sample plots among each strata is presented in the PDD.<br>The text indicates a total number of 86 samples plots while the table 38 indicates 84. The calculation files used for the estimation of number of sample plots were discussed onsite. The input value used for determining the Standard Deviation had no evidence.<br><br>**Corrective Action Request No.19.**<br>- Ensure consistency in the text and tables regarding the number of sample plots.<br>- Provide evidence on the calculation of sample plots and the corresponding input parameters (see consistency with TARAM regarding Standard Deviation) | **CAR** | ☑ |
| Does the PDD/Monitoring plan include in line with the meth- | 2 | Permanent sample plots will be located with a random start. The moni- | ☑ | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|
| odology indications on<br>- plot localizing,<br>- monitoring frequency<br>- indications on measurements and estimation of carbon stock changes over time in plots? *(omission of baseline trees and non tree biomass)*<br>- monitoring of GHGe by sources increased as a result of the project activity? | | toring frequency is defined at each verification event avoiding coincidences with peaks in carbon stocks as demonstrated in the graph presented in section A.9 of the PDD and in the calculations. | | |
| E.3 Monitoring of the baseline net removals | | | | |
| Is monitoring of the baseline net removals required by the selected methodology? If yes,<br>▪ has the application of the procedure for selection of sample plots been adequately defined and has all data to be collected or used been listed?<br>▪ has the application of the procedure for selection of sample plots been adequately defined and has all data to be collected or used been listed? | 2 | Monitoring of baseline net removals is not required. | ☑ | ☑ |
| If required, are the data variables 2.3.01-06 included in the monitoring plan in order to estimate baseline net GHG removals by sink? | 2 | N/A | ☑ | ☑ |
| E.4 Monitoring of the actual net removals | | | | |
| Has the data to be collected in order to monitor the changes in carbon stock resulting from the project been adequately defined?<br>(AR-AM0004 , section III.5 and table in III.6) Are data variable for actual net GHG removals by sink (2.1.01 – 2.1.94) included in the Monitoring Plan? | 2 | Data and variables for monitoring the changes in carbon stock resulting from the project are included to the PDD. | ☑ | ☑ |
| Has the data to be collected in order to monitor the GHG emissions that are increased as a result of the project activity within the project boundary been adequately defined?<br>For estimation of biomass burn (slash and burn), data variable 2.1.32 - 41 are required. | 2 | Emissions from biomass burn from site preparation are also included. | ☑ | ☑ |
| Are the procedures for measurements in the monitoring of the changes in carbon stocks or the monitoring of GHG | 2 | See CAR above in section E.4 | ☑ | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|
| emissions increased in the project clearly defined and do they follow typical forest mensuration practices? | | | | |
| E.5 Leakage | | | | |
| E.5.1 If monitoring of leakage is required by the selected methodology has this been stated and has the data and information that will be collected to monitor leakage been adequately defined? | 2 | Leakage monitoring is required by the methodology AR-AM004 vers 4 and indicated in the PDD as required. | ☑ | ☑ |
| Are data variable 3.1.01 – 3.1.65 included in the Monitoring Plan? | | Data and variables are properly listed in line with the methodology. | ☑ | ☑ |
| Are the procedures for measurements for the monitoring of leakage clearly defined and do they follow typical forest mensuration practices? | 2 | Procedures for measurement follow typical forest mensuration practices. | ☑ | ☑ |
| E.5.2 Have procedures for the periodic review of the implementation of activities and measures to minimize leakage been adequately defined? | 2 | See CR in section D.2 (potentially requires to be defined) | **CAR** | ☑ |
| E.6 QA/QC procedures undertaken for data monitored | | | | |
| Have the SOPs and quality control/quality assurance (QA/QC) procedures applied been adequately described according to the methodology requirements?<br>(AR-AM0004, section III, 11.2) | 2, 10 | SOP and QA/QC are described. These indicate the procedures to be followed and uncertainty level. | ☑ | ☑ |
| Have QA/QC procedures been defined appropriately and are explanations of procedures (including their absence) reasonable? | 2, 10 | A table with QA/QC procedures was included to the PDD.<br>The Monitoring Plan provided (Annex 4) provides indication on the QA/QC procedures. The current document was prepared in the context of the validation process. | ☑ | ☑ |
| In regard to uncertainties, has the assessment followed guidance provided by IPCC 2000 and GPG-LULUCF (compare Tier 1 / Tier 2 of GPG)?<br>Does the assessment include all relevant calculations (ex-ante, monitoring) and coefficients used? | 2 | No information regarding uncertainties assessment is included to the PDD.<br>**Corrective Action Request No.20.**<br>Include information regarding uncertainties assessment as requested by the PDD guidelines section E.6 | **CAR** | ☑ |
| Have Standard Operating Procedures been defined for each step of the field measurements (e.g according to BEF or allometric equations method)?<br>Do they include field team training, test plots, re-check of | 2, 10 | Procedures are described in section E.1.2 in the PDD | ☑ | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|
| plots, documentations of steps through time, training of new personnel? (section III.11.2.1) | | | | |
| Have procedures for field data verification been defined and do they comply with methodology requirements (10-20% of randomly selected plots, error <5 % accepted, overall measurement error shall be defined) (section III 11.2.2) | 2, 10 | Procedures are described in section E.1.2 in the PDD. Requirements from the methodology are not indicated<br>**Corrective Action Request No.21.**<br>Include the methodology requirements to the procedures indicated in section III 11.2.2 | **CAR** | ☑ |
| Are procedures defined for Verification of data entry and analysis in line with methodology requirements?<br>(section III 11.2.3) | 2, 10 | Procedures for Verification of data entry and analysis are described in section E.1.2 in the PDD. These follow the methodology requirements | ☑ | ☑ |
| Are procedures defined for data maintenance and archiving in line with monitoring requirements?<br>(section III 11.2.4) | 2, 10 | Procedures for data maintenance and archiving are described in section E.1.2 in the PDD. These follow the methodology requirements. | ☑ | ☑ |
| E.7 Operational and management structure of project operator | | | | |
| Has the operational and management structure that the project operator will implement in order to monitor actual removals and leakage by the project been adequately defined? | 2 | The operational and management structure for the monitoring has been included to the PDD. A brief description of the main activities has also been included as required. | ☑ | ☑ |
| E.8 Person applying monitoring plan | | | | |
| Has the person or entity applying the monitoring plan been named, are they listed as a project participant and has contact information been provided? | 2 | ONF International – ONF Andina is indicated as the entity applying the monitoring plan | ☑ | ☑ |
| **F. Environmental Impacts of the Project** | | | | |
| F.1 Documentation of analysis of environmental impacts | | | | |
| Has an analysis of the environmental impacts including impacts on biodiversity and natural ecosystems and impacts outside the project boundary been adequately documented? | 2, 41, 42 | Within the project frame the following study was conducted: “Estudio de factibilidad del proyecto forest en areas ecologicas estrategicas” (Feasibility analysis of the forest project in strategic ecological areas), including an analysis of the environmental impact on the establishment of the forest plantations.<br>**Corrective Action Request No.22.**<br>The matrix for the evaluation of the environmental impacts shall be translated to English. | **CAR** | ☑ |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|
| Does the analysis include (where applicable) adequate information on hydrology and soils, and risk of fires, pests and diseases? | 2, 41, 42 | The matrix included to the PDD is a summary of the results from the study: "Consorcio ONFI – Ecoforest, 2006a. Estudio de factibilidad del proyecto forest en Areas Ecologicas estrategicas". It includes information on soils, water, flora and fauna and socioeconomic conditions<br>**Corrective Action Request No.23.**<br>- Provide information and justify with evidence on the impacts on water quantity not indicated in the matrix.<br>- Discussion on the impacts on biodiversity in fallows.<br>- Provide information on risk of fires, pests and diseases. | **CAR** | ☑ |
| F.2 Significant negative impacts | | | | |
| If any negative impact is considered significant by the project participants or the host Party, has a statement that the project participants have undertaken an environmental impact assessment in accordance with the procedures required by the host Party (including conclusions and references to supporting information) been provided? | 2, 41, 42 | According to the study described in section F.1, the negative impacts are considered not significant. According to a recently published law Art. 4, 5 1377-2010 there is no legal requirement for the implementation of EIA in forestry plantation.<br>**Clarification Request No. 10.**<br>Provide evidence that there is no a legal requirement to conduct an environmental impact assessment. | **CR** | ☑ |
| F.3 Remedial measures to address impacts | | | | |
| Has a description of the planned monitoring and remedial measures to address significant environmental impacts been adequately defined? | 2, 41, 42 | See CAR above<br>**Clarification Request No. 11.**<br>Provide evidence on the conclusion that the negative environmental impacts are not significant | **CR** | ☑ |
| **G. Socio-economic Impacts of the Project** | | | | |
| G.1 Documentation of analysis of socio-economic impacts | | | | |
| Has an analysis of the socio-economic impacts including impacts outside the project boundary been adequately documented? | 2, 42, 43 | The section of the PDD describes the additional activities of the project in field of socio-economic development.<br>The following evidence was provided:<br>Consorcio ONFI – Ecoforest, 2006b. Estudio de factibilidad del proyecto forest en Areas Ecologicas<br>estrategicas: Plan de negocios para la expansion del nucleo forest de CORMAGDALENA. Pag 64 - 67 | ☑ | ☑ |
| Does the analysis adequately include (where applicable) information on local communities, indigenous people, land tenure, local employment, food production, cultural and reli- | 2, 42, 43 | No information was found on the socio-economic conditions. | **CAR** | ☑ |

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| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
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| gious sites and access to fuelwood and other forest products? | | **Corrective Action Request No.24.**<br>Provide information on the local communities (particularly on the land owners), indigenous people, land tenure, food production, cultural and religious sites and access to fuelwood and other forest products | | |
| G.2 Significant negative impacts | | | | |
| If any negative impact is considered significant by the project participants or the host Party, has a statement that the project participants have undertaken a socio-economic impact assessment in accordance with the procedures required by the host Party (including conclusions and references to supporting information) been provided? | 2, 41, 42, 43 | No negative socio-economic impacts have been mentioned the PDD. | ☑ | ☑ |
| G.3 Remedial measures to address impacts | | | | |
| Has an adequate description of the planned monitoring and remedial measures to address significant socio-economic impacts been provided? | 2, 41, 42, 43 | See above CAR in section G.1 | **CAR** | ☑ |
| **H. Stakeholder Comments** | | | | |
| H.1 Description of how stakeholder comments have been invited and compiled | | | | |
| Has a description of how stakeholder comments have been invited and compiled been provided and has it been undertaken in an open and transparent manner that facilitates comments being received and has the project been described in a manner that allows local stakeholders to understand the project? | 2, 44 | A series of workshops, meetings and conferences were conducted to collect stakeholders comments. The main steps followed are described in the PDD.<br>The consultation to land owners started in 2000 with the assessment of the land. Interviews with land owners confirmed that there was a socialization of the project before starting the plantation activity. | ☑ | ☑ |
| H.2 Comments received | | | | |
| Have stakeholders who made comments been identified and has a summary of the comments been provided? | 2, 44 | A brief summary has been included to the PDD regarding institutional issues, social issues and technological concerns. | ☑ | ☑ |
| H.3 Report on due account | | | | |
| Has an explanation on how due account has been taken regarding the received comments from stakeholders been provided? | 2, 44 | Explanation on how the comments were considered is included to the PDD.<br>The contracts signed with the land owners clearly specify the obligations from the parties involved in the project activity in which the carbon rights are also clarified. | ☑ | ☑ |
| **Annexes** | | | | |

| CHECKLIST QUESTION | Ref. | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|
| Annex 1 Contact information on project participants | | | | |
| Is contact information on participants of the project complete? | 2 | Contact information is given and included to the PDD.<br>The information is considered complete. | ☑ | ☑ |
| Annex 2 Public funding | | | | |
| Has information been provided from Parties listed in Annex 1 on sources of public funding for the project which affirms that funding does not result in a diversion of official development assistance and is separate from and not counted towards the financial obligations of those Parties? | 2 | Clarified, No public funding involved. | ☑ | ☑ |
| Annex 3 Baseline information | | | | |
| Has information additional to that required in Section C or in the approved methodology been provided (or stated as not required)? | 2 | A separated annex was provided but no additional information was included than the presented in the PDD.<br>See CARs in section C.7 | **CAR** | ☑ |
| Annex 4 Monitoring plan | | | | |
| Has the monitoring plan been included as annex 4 and does it allow for all the requirements listed under paragraph 25 of the Modalities and procedures for A/R project activities under the CDM? | 2 | A monitoring plan was provided to the audit team as a separated annex. Information included includes SOPs on forest mensuration. | ☑ | ☑ |

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## Table 2: CDM responses to CAR and CR

| Draft report clarifications and corrective action requests by validation team | Ref. to table 1 | Summary of project owner response | Validation team conclusion |
|---|---|---|---|
| **Corrective Action Request No.1.**<br>Provide information on the number of land owners involved in the proposed project activity. | A.2 | Project Participant 19/11/10<br>In **section A.2, Table 1**, information on the number of land owners involved in the proposed project activity is provided.<br>Audit Team 17/12/10<br>Information on land owners involved in the proposed project activity was included as requested. A total of 74 land owners participate during the three plantation phases of the proposed project activity. | ☑ |
| **Corrective Action Request No.2.**<br>Indicate Colombia as the Host Party involved and indicate if the party involved wishes to be considered as Project Participant. | A.3 | Project Participant 19/11/10<br>In **section A.3, Table 2**, Indicate that Colombia as the Host Party involved and indicate that the party involved doesn´t wish to be considered as Project Participant.<br>Audit Team 17/12/10<br>Colombia is indicated in Table 2 of the PDD. There a no project participants from the Host Party neither wishes to be considered as a Project Participant. | ☑ |
| **Corrective Action Request No.3.**<br>- The project boundary remains to be delineated according to the area under control and the yet to be included. The current includes more than 1/3 of the area not yet under control allowed by EB 44.<br>- The project boundary shall include only eligible areas. During the onsite is it a patch of forest was found in a parcel of land not yet under control.<br>- Provide the shapefiles to the audit team after the correction on the project boundary. | A.4 | Project Participant 19/11/10<br>**Section A.4.2.**<br>The total area of the project is 4,373 ha.<br>2/3 of the total area is 2,915 ha<br>1/3 of the total area is 1,457 ha<br>The current area under control is 3.235 ha and the area not yet under control, but included in the PDD is 1,137 ha. The project boundary includes only eligible areas. The patches of forest were removed from the land database and eligible areas. The shapefiles were updated after the correction on the project boundary (Base de datos SIG Proyecto).<br>Audit Team 17/12/10<br>The project boundary was delineated including only the areas under control and no more than 1/3 of the area not yet under control. | ☑ |

| | | | |
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| | | A complete database of shapefiles of the project was submitted jointly with the evidences. | |
| **Corrective Action Request No.4.**<br>Provide information on potential impacts to forest plantations due to fire risk. | A.5 | Project Participant 19/11/10<br>The potential impacts on forest plantations due to fire risk is provided in **Section A.5.1.**<br>Audit Team 17/12/10<br>Information on potential impacts due to forest plantations was provided. A reference to "IDEAM – CONIF, 2009 En proceso de publicación. Mapa nacional de zonificación de riesgo a incendios de la cobertura vegetal" was provided. According to this, the risks due to fire in the region where the project is located is low to very low in the surroundings of the Magdalena River and high to very high in other areas. Mitigation activities foreseen include education as well as firewall and other fire prevention strategies. | ☑ |
| **Corrective Action Request No.5.**<br>Provide a description and evidence on the assessment followed to reach to the conclusion that no endangered species are found within the project area. | A.5 | Project Participant 19/11/10<br>**Section A.5.2**. Information of flora and fauna species presented (**Table 3, 4 and 5**), corresponds to a general bibliographic review available to the region where the project is located. Generally, these species are associated with a forest or groups of trees and marshes. Those types of land covers are not specifically included in the project boundaries<br>Audit Team 17/12/10<br>The assessment of endangered species within the project area is based on literature review available for the project area. The identified species are found in the relict of forest patches excluded from the project boundary. | ☑ |
| **Clarification Request No. 1.**<br>Clarify in the PDD that a know-how transfer to host party is not foreseen. | A.5 | Project Participant 19/11/10<br>**Section A.5.5.** The know-how transfer to host party is not foreseen.<br>Audit Team 17/12/10<br>It is clarified in the PDD that a know-how transfer to host party is not foreseen as requested. | ☑ |
| **Corrective Action Request No.6.**<br>Provide information on proposed measures to be implemented to minimize potential leakage including fuelwood collection. | A.5 | Project Participant 19/11/10<br>**Section A.5.6.**<br>Grazing activities: The Project foresees to promote the adequate technology in order to maximize the cattle potential in the region, and then to minimize potential leakage due to displacement of pre-project grazing activities.<br>Fuel wood collections activities: the vegetable waste from thinning, clean, | ☑ |

| | | | |
|---|---|---|---|
| | | and harvesting of trees would be use for fuel consumption. Beside, alternative leakage mitigation is the implementation of efficient wood stoves in order to a better use of wastes, and by this, the requirements of biomass for cooking will decrease instead of the traditional stoves systems.<br>Audit Team 17/12/10<br>Information on proposed measures to be implemented to minimize potential leakage were included to the PDD as requested. These include promotion of more efficient cattle management and potential implementation of efficient cookstoves. | |
| **Clarification Request No. 2.**<br>Clarify if the land is temporary unstocked. | A.7 | Project Participant 19/11/10<br>**Section A.7.** The land included within the project boundary was not temporarily unstocked.<br>Audit Team 17/12/10<br>It is clearly indicated in the PDD as of December 31st 1989 and on the A/R project activity start date, the land included within the project was not temporarily unstocked, as a consequence of the human intervention, such as harvesting or natural causes. Request closed | ☑ |
| **Corrective Action Request No.7.**<br>- The table has to be updated after reviewing the calculations (regarding the project area and open CARs in section C.7 and D.1 and D.2)<br>- Include indication that the verification period does not coincide with the peaks in carbon sequestration. | A.9 | Project Participant 19/11/10<br>**Section A.9. Table 11**: Summary of results obtained in sections C.7., D.1., and D.2., was updated.<br>The verification period does not coincide with the peaks in carbon sequestration, like it's showed in **Figure 11.**<br>Audit Team 17/12/10<br>The table in section A.9 was updated after reviewing the calculations as requested.<br>Figure 11 included to the PDD clearly indicates that the verification period does not coincide with the peaks in carbon sequestration. | ☑ |
| **Corrective Action Request No.8.**<br>The starting date shall be in line with the evidence provided. | B.1 | Project Participant 19/11/10<br>**Section B.1**.<br>August 2, 2000 is the starting date of the project activity. This date corresponds to the Cooperation Contract signature date of first plantation establishment, under the project activities (CONIF, 2000. Convenio Especial de Cooperación para la ejecución de un Proyecto de transferencia y de adopción de tecnología de reforestación bajo la modalidad protectora - | ☑ |

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| | | productora en los municipios ribereños del Río Magdalena del 2 de agosto de 2000).<br>Audit Team 17/12/10<br>The staring date was modified according to the evidence provided, which corresponds to the signature date of the Agreement for Cooperation with CONIF for the first plantation. | |
| **Corrective Action Request No.9.**<br>Ensure consistency in the PDD on the expected operational lifetime (30 or 35 years?). Indicate 0 months as well. | B.2 | Project Participant 19/11/10<br>**Section B.2.** The expected operational lifetime of the project is a fixed crediting period of 30 years, 0 month.<br>Audit Team 17/12/10<br>The expected operational lifetime of the project was defined to 30 years , 0 month. | ☑ |
| **Corrective Action Request No.10.**<br>Provide information on tools which have been used for the PDD. | C.1 | Project Participant 19/11/10<br>**Section C.1.** Tools and guidelines used for the PDD are provided.<br>Audit Team 17/12/10<br>The tools used for the PDD are properly listed as requested by the PDD guidelines. | ☑ |
| **Clarification Request No. 3.**<br>Provide evidence and sustain whether the CIF might impact the project area under the baseline scenario**.** | C.5.1 | Project Participant 19/11/10<br>**Section C.5.1.** the CIF hasn't impacted the project area under the baseline scenario. After the creation of this incentive only around 6.000 ha has been established in the department of Magdalena (IDEAM, 2009. En proceso de publicación. Estadísticas de plantaciones forestes productivas o comerciales periodo 1975 – 2007. Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM), Bogotá.)<br>Audit Team 17/12/10<br>Based on the historic records of the implementation of the CIF, the rate of reforestation during the period of 1995 to 2007 was only 468 ha/year which does not impact the project area under the baseline scenario. However the proposed project activity used this incentive in the first phase 2000-2003 and 2009. | ☑ |
| **Clarification Request No. 4.**<br>Provide evidence on the scenario of establishment of palm oil plantations | C.5.1 | Project Participant 19/11/10<br>**Section C.5.1.** The Department of Magdalena is third in more number of hectares in Colombia in establishing this crop (Fedepalma, 2010. http://www.fedepalma.org/palma.htm and Banco de la República. 2002. | ☑ |

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| | | Centro de Estudios Económicos Regionales. Palma Africana en la costa Caribe: un semillero de empresas solidarias).<br>However, the conditions of the soil and the problem of insufficient water resources that prevails in the current project area do not provide suitable development of the palm oil activity. In general, project area is located in areas of soils strongly restricted for the crop of the species.<br>Audit Team 17/12/10<br>The scenario of establishment of oil palm plantations was considered among the options, however, as it was demonstrated based on the reference Banco de la República. 2002, the soils in the project area are not suitable for this kind of crop. | |
| **Corrective Action Request No.11.**<br>Provide information on the Step 4 as required by the methodology: Stratify the A/R CDM project area as explained in Section II.3 of the methodology. | C.5.1 | Project Participant 19/11/10<br>**Section C.5.1. Step 4:** The ex-ante baseline stratification of the A/R CDM project area is provided<br>Audit Team 17/12/10<br>Information on ex ante stratification was included following the methodology requirements. For baseline stratification, major vegetation types were considered, for ex-ante, the management plan was taken into consideration. The request is closed. | ☑ |
| **Corrective Action Request No.12.**<br>Provide information on the Step 5 as required by the methodology: Determine the baseline land-use/land-cover scenario for each stratum and analyse the possibility of self-encroachment of trees. | C.5.1 | Project Participant 19/11/10<br>**Section C.5.1. Step 5:** The baseline land-use/land-cover scenario for each stratum and the analysis of the possibility of self-encroachment of trees are provided.<br>Audit Team 17/12/10<br>The baseline land-use/land-cover scenario for each stratum was determined. Three baseline strata were identified: Cleans pastures, pastures with fallows and fallows. | ☑ |
| **Corrective Action Request No.13.**<br>- Ensure consistency on the description on starting date. The evidence provided indicates that the project activity started on 2 August 2000.<br>- Provide evidence that the incentive from the planned sale of CERs was a critical factor of decision to start the project activity. | C.6 | Project Participant 19/11/10<br>**Section C.6., Step 0.** The project has started on August 2, 2000. The analysis of the contracts established with landowners for the implementation of the project activities shows that the first contract was signed on August 2, 2000<br>**Section C.5, Step 0.** The evidence that the incentive from the planned sale of CERs was a critical factor of decision for all partners to start the project | ☑ |

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| | | activity is provided in Table 23 and in its three paragraphs following<br>Audit Team 17/12/10<br>The staring date of the proposed project activity was on 2 August 2000 as indicated in section B of the PDD and sustained with corresponding evidence.<br>As it was demonstrated in Table 23 of the PDD and the evidence reviewed onsite, the incentive from the carbon financing was considered for the proposed project activity. Among others, the following documents include statements on the carbon financing consideration:<br>- CORMAGDALENA, 1999. Convenio especial de cooperación N° 000036/99.<br>- CORMAGDALENA, 2000a. Resumen Ficha BPIN Convenio especial de cooperación N° 000058/00<br>- SGS AGROCONTROL, 2000. Carbon Offset Verification. Pre–assessment report. | |
| **Corrective Action Request No.14.**<br>Provide evidence for the ecological barrier, as well as the "Land tenure and ownership" barrier, or exclude the barrier. | C.6 | Project Participant 19/11/10<br>**Section C.6., Step 3.** The ecological barrier was removed<br>**Section C.6., Step 3.** The barrier of land tenure and ownership was removed<br>Audit Team 17/12/10<br>The ecological barrier and land tenure and ownership barrier were removed due to the lack of evidence to sustain these barriers. | ☑ |
| **Clarification Request No. 5.**<br>- Investment barrier: Provide evidence on the limitations from CORMAGDALENA, FINANGRO and A.W. FABER CASTELL & T.H. REFORESTATION S.A.S for the financing of the project.<br>- Institutional barrier: Provide evidence sustaining that the CDM incentive was crucial to overcome the barrier. | C.6 | Project Participant 19/11/10<br>**Section C.6., Step 3.** The investment barrier was removed, therefore are not provide evidence on the limitations from CORMAGDALENA, FINANGRO and A.W. FABER CASTELL & T.H. REFORESTATION S.A.S for the financing of the project.<br>**Section C.6., Step 3.** Institutional barrier. The project proposal based on the expectation of obtain incomes from the forest carbon's sale, allowed the design and the consolidation of an institutional structure in the framework of the project proposal (see section A.2). This structure was turned into a platform to overcome the existing institutional barrier through: gather and coordinate the owners of the 3 means of production essential for a successful commercial reforestation; develop the project through concepts of forest nucleus and economy of scale; generate goods and services plantations to | ☑ |

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| | | be distributed between each partner according to his contribution. And finally, with all of that, share and reduce the level of risk and the uncertainty of the forest activity.<br>Audit Team 17/12/10<br>The investment barrier was removed. The institutional barrier was further sustained. It is clear that the proposed project activity is the result of overcoming this barrier since there was no previous institutional neither organizational framework under which land owners, private sector and financial institution gather together for the establishment of forestry plantation with the incentive of selling the sequestered carbon. | |
| **Corrective Action Request No.15.**<br>Define the region under which the analysis of common practice was conducted. | C.6 | Project Participant 19/11/10<br>**Section C.6., Step 4.** The analysis of common practice was conducted for the sub-region Colombian Caribbean savannas (see section A.2)<br>Audit Team 17/12/10<br>The region defined for the common practice was defined for the sub-region Colombian Caribbean savannas, which is considered adequate due to the same biophysical and socio-economic conditions as the project area. | ☑ |
| **Clarification Request No. 6.**<br>- Provide evidence on common practice in the Region (i.e. statistics of reforestation activities in the region).<br>- Provide evidence on the statement related to the different conditions under which the previous reforestations were conducted in the region. | C.6 | Project Participant 19/11/10<br>**Section C.6., Step 4.** The evidence on common practice in the region are provides through the commercial forest plantation statistics from Colombia<br>**Section C.6., Step 4.** The bibliography evidence on the statement related to the different conditions under which the previous reforestations were conducted in the region is provides<br>Audit Team 17/12/10<br>Statistics from published data were provided to the audit team as requested. The other reforestation activities conducted in the same region were implemented by private companies only until the end of the 90's. After that these reforestation companies went in crisis and now are applying for carbon financing too. | ☑ |
| **Corrective Action Request No.16.**<br>- For sake of completeness, make clear that the conditions under which the methodology neglects the baseline GHG removals are set zero are not met.<br>- Pre-existing vegetation remains to be considered otherwise demonstrate that the results from Gonzalez & | C.7 | Project Participant 19/11/10<br>**Section C.7.**<br>The conditions under which the methodology neglects the baseline GHG removals are set zero are not met, because there are some scattered trees in the baseline scenarios. | ☑ |

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| Rodriguez (2009) indicating 0.5 and 3 trees/ha are applicable to the proposed project area. | | Pre-existing woody and no woody vegetation is considered for the estimations of biomass loss in section D.2. However, according procedures described in EB 46 Annex 16, (Guidance on conditions under which the change in carbon stocks in existing live woody vegetation are insignificant), it was determined that the change in carbon stocks in baseline are insignificant and therefore shall be accounted for as zero. The condition (iii): *Growth conditions are already, or are expected to become within 10 years (e.g., due to on-going land degradation), such that biomass in existing woody vegetation is expected to become static or to decline,* is met by the project.<br>The carbon stock of scattered trees is estimated using the stock change method (Method 2), proposed in the AR-AM0004/Version 04. To get biomass estimations of scattered trees, default global values to tropical regions from IPCC (2003) were used, because local specific information was unavailable.<br>Audit Team 17/12/10<br>A new assessment of trees was conducted and the carbon stock of scattered trees was estimated and discounted from calculations. | |
| **Clarification Request No. 7.**<br>Clarify how is it ensured that the baseline study conducted in 2009 represents the situation at the time the project started in 2000. | C.7 | Project Participant 19/11/10<br>**Section C.7.**<br>Dufour (2005) evaluated the carbon stock of the land cover found in the project area according to Corine Land Cover (CLC) classification adapted for Colombia. Between covers evaluated, it could be found: Clean pastures, pastures with shrubs and fallows. Now, considering that one of the patterns used for the Assessment of the eligibility of the project areas (Section A.7) was the CLC classification (and each vegetal compounds of these land covers), values from Dufour presented in 2005, are applicable to the baseline strata of the project correspondingly to the year its start (year 2000). That is, accordingly CLC definitions, baseline sceneries identified in the eligibility analysis correspond to the Dufour´s land covers surveys in the area for the project.<br>Audit Team 17/12/10<br>The study conducted by Dufour in 2005 was based on the same baseline stratification conducted at the time the projected start. Therefore it is considered adequate for baseline GHG removals calculation. | ☑ |
| **Clarification Request No. 8.** | D.1 | Project Participant 19/11/10 | ☑ |

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| - Clarify the wood density for eucalyptus (not match with evidence)<br>- Clarify the wood density for Tectona (not match with evidence). | | **Section D.1., Table 30**<br>Wood density for eucalyptus: 0.54 (Rao, R. V. S. Shashikala, P. Sreevani, V. Kothiyal, C. R. Sarma, P. Lal. 2002. Within tree variation in anatomical properties of some clones of *Eucalyptus tereticornis* Sm. Wood Science and Technology 36 (2002) 271–284.)<br>Wood density for tectona: 0.55 (Weaver, Peter L. 1993. *Tectona grandis* L.f. Teak. SO-ITF-SM-64. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 18 p.)<br>Audit Team 17/12/10<br>The value of wood density for Eucalyptus and tectona were clarified with the evidence provided. The audit team considered the values applied to be in compliance with the requirements as defined in the applied methodology. Request closed. | |
| **Clarification Request No. 9.**<br>Clarify how it is ensured that the study conducted in 2005 on pre-existing carbon stock in living biomass represents the conditions at the time the project started in 2000. This should be further analysed after considering the baseline trees. | D.1 | Project Participant 19/11/10<br>**Section D.1**. Dufour (2005) evaluated the carbon stock of the land cover in the project area according to Corine Land Cover (CLC) classification adapted for Colombia. Considering that, one of the patterns used for the Assessment of the eligibility of the project areas was the CLC classification, values from Dufour, presented in 2005, are applicable to the baseline strata correspondingly to the year its start (year 2000). That is true too for the baseline study of scattered trees conducted in 2010 (ONFA y C&B, 2010. Inventario de Árboles dispersos en los escenarios de línea base) in potential project areas (areas not yet under control). The CLC classification and the dynamic land use, ensured that these studies represent the conditions at the time the project started in 2000.<br>Audit Team 17/12/10<br>The second baseline study conducted by ONFA y C&B, 2010 was used for the estimation of pre-existing carbon stock in living biomass which also matches with the results of Dufour 2005, which was based on the same baseline stratification conducted at the time the projected start. Therefore it is considered adequate for baseline GHG removals calculation.. | ☑ |
| **Corrective Action Request No.17.**<br>The mortality must be considered in the calculations following the methodology requirements | D.1 | Project Participant 19/11/10<br>**Section D.1.** A percentage of mortality (5%) caused by disturbance is considered in the calculations<br>Audit Team 17/12/10 | ☑ |

<table>
<tr><td></td><td></td><td>Following the methodology requirements, a 5% of mortality caused by disturbance was considered in the calculations. This percentage is considered conservative for ex ante estimations.</td><td></td></tr>
<tr><td><u>Corrective Action Request No.18.</u><br>Fuelwood collection was found to be practiced in the project scenario, thus needs to be estimated and sustained with evidence.</td><td>D.2</td><td><u>Project Participant 19/11/10</u><br>Section D.2. The net anthropogenic removals by sinks for the project are 988,978 $tCO_2$. The possible leakages due the displacement of fuelwood are estimated in 4,236 $tCO_2$. However, this value is less that 2% of net anthropogenic removals by sinks (19,779 $tCO_2$). Therefore, leakages due the displacement of fuelwood consumption is zero.<br><u>Audit Team 17/12/10</u><br>The estimation of leakage due to fuelwood collection was estimated based on official statistical records (Unit of Mining Planning and Energy (UMPE, 2007) of the Ministry of Mines and Energy of Colombia) and population records from 2005. The estimation of fuelwood consumption resulted in less than 2% of actual net GHG removal by sinks, thus can be set zero following the guidance from EB 22, Annex 15 as indicated in the methodology.</td><td>☑</td></tr>
<tr><td><u>Corrective Action Request No.19.</u><br>- Ensure consistency in the text and tables regarding the number of sample plots.<br>- Provide evidence on the calculation of sample plots and the corresponding input parameters (see consistency with TARAM regarding Standard Deviation).</td><td>E.2</td><td><u>Project Participant 19/11/10</u><br>Section E.2.<br>The final total plots number is 68.<br>The mean value obtained from the volume estimations by each stand model (SM1 and SM2). These estimations are based on the models developed by Tabares (2002) and CIRAD (2003), and are the same used in the TARAM, for the estimations ex ante net anthropogenic removals by sink.
<table>
<tr><th>Strata</th><th>Size plots (ha)</th><th>Area(ha)</th><th>Reference value (Vol. m3 year 5).</th><th>Standard deviation (% of the expected value)</th><th>Total plots for each stratum</th></tr>
<tr><td>SM1_ Pastures whit fallows</td><td>0.05</td><td>1,818</td><td>92.91</td><td>59,71</td><td>30</td></tr>
<tr><td>SM1_Clean pastures</td><td>0.05</td><td>1,492</td><td>92.95</td><td>59,71</td><td>24</td></tr>
<tr><td>SM1_Fallows</td><td>0.05</td><td>352</td><td>95.49</td><td>59,71</td><td>6</td></tr>
<tr><td>SM2_Pastures whit fallows</td><td>0.05</td><td>242</td><td>67.87</td><td>44,17</td><td>3</td></tr>
<tr><td>SM2_ Clean</td><td>0.05</td><td>218</td><td>72.13</td><td>44,17</td><td>3</td></tr>
</table></td><td>☑</td></tr>
</table>

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| | | pastures<br>SM2_ Fallows 0.05 252 63.41 44,17 3<br>***Total*** ***4.372,97*** ***68***<br><br>Audit Team 17/12/10<br>- The text in page 122 and the table indicates are now consistent regarding the number of sample plots.<br>- Evidence on the calculation of sample plots was provided to the audit team. | |
| **Corrective Action Request No.20.**<br>Include information regarding uncertainties assessment as requested by the PDD guidelines section E.6 | E.6 | Project Participant 19/11/10<br>**Section E.6.**<br>The uncertainties are associated to the lack of methodology rigor's at the moment to realize removal/emission assessments, errors to equation adjustment, statistic methods application, and natural variability, among others. Following the methodological procedure and according to the GPG, the possible sources of uncertainty should be identified, characterized and valuated.<br>According to GPG, the sources of errors and their uncertainty grade depend on value's sources. Therefore, uncertainties from Tier 1 are related with values established by default (this are frequent use, when there is no available information from the specific project area). Uncertainties from Tier 2, which are characterized to a lower uncertainty valuation, given that come from for a real estimations made by the project.<br>The Project proposal, will concentrate efforts in mitigating at a greater degree, the eight most important sources of error identified by the IPCC and characterized in the GPG (2006), these are:<br>*1- Lack of exhaustively*<br>*2- Adjusted model type*<br>*3- Lack of data*<br>*4- Lack of collect information's representation*<br>*5- Statistical sampling random error*<br>*6- Measuring error*<br>*7- Reports generation or erroneous classification*<br>*8- Missing information's*<br>The quality control processes are trying to achieve decrease the uncertainty grade, which one is calculated with equation 5,2,1 y 5,2,2 (same as section | ☑ |

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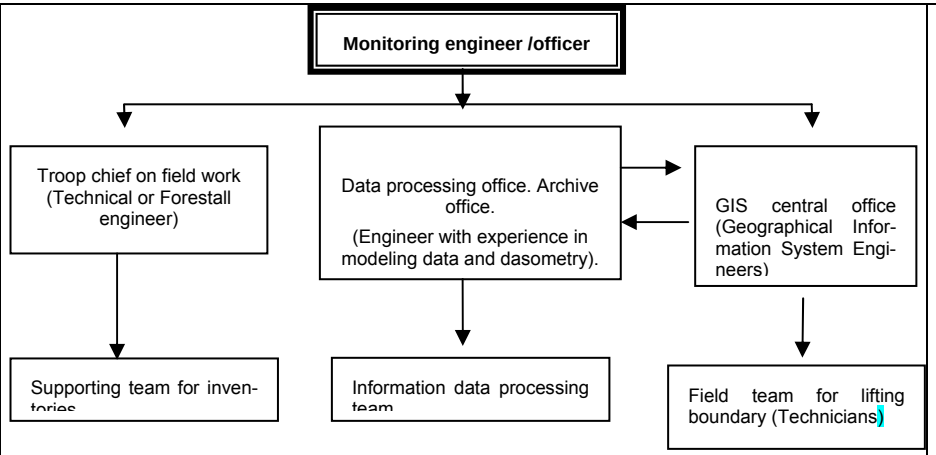
| | | 6.2) from GPG (2000), based on a uncertainty estimation Tier 1.<br>Some default values established by the IPCC, has their uncertainty estimations, which are used when it is impossibility to count on these parameters valuation inside the project.<br>• Above-ground volume increment of existing woody vegetation: 50%;<br>• Above-ground biomass increment of existing woody vegetation: 50%;<br>• Above-ground biomass of existing woody vegetation: 50%;<br>• *BEFs* of existing woody vegetation based on biomass stocks: -40% below the mean to +100% above;<br>• *BEFs* of existing woody vegetation based on increment in biomass stocks: 10%;<br>• Root:shoot ratios for use in estimation of below-ground biomass: 35% for both trees and shrubs.<br>The previous approximations intrinsically have other parameters that generate uncertainty, like: DAP, height, wood density and the carbon content, which likewise will be measured by the project in order to decrease its uncertainty grade or in the opposite case (for values of difficult measurement), the updated values from IPCC will be used.<br>Audit Team 17/12/10<br>Information regarding uncertainties assessment was included to the PDD. The guidance provided by the IPCC GPG 2000 is followed in order to mitigate the major sources of uncertainties. | |
| **Corrective Action Request No.21.**<br>**Include the methodology requirements to the procedures indicated in section III 11.2.2 of the methodology** | E.6 | Project Participant 19/11/10<br>**Section E.2.**<br>For verification of the proper procedures in making field data, will follow the processes defined in the methodology. | ☑ |




Proposed hierarchical framework: Responsibilities in quality control of information project's.

**Identification of measurement errors**

This audit procedure consists of carrying out a subsequent verification of the data obtained from the forest inventory or monitoring, and shall have the following characteristics and steps:

- ✓ It shall be performed by different personnel from that carrying out the inventory, which shall be characterized by a wide experience in forest inventory procedures and
- ✓ Between 10 and 20% of the total plots of land established in the forest inventory shall be included.
- ✓ The instruments used must have similar characteristics to those used in the initial inventory.
- ✓ The measurement procedures shall be adjusted according to the steps established in the measurement protocol with which the personnel was trained:

  - Location of the plots

  - Survey of the plots

- Measurement of chest height diameters (chd) and total heights.

- ✓ Compare the information obtained with the original information gathered by the forest inventory crews.
- ✓ Error identification. This is done by comparing both pieces of information (original and audit inventory) in a paired manner.
- ✓ Should any errors be identified, these will be corrected and recorded, expressed as a percentage of all plots remedied, in order to obtain an estimate of the measurement error. According to Pearson *et al* (2005), the estimate error is given by:

$$Measurement\ error\% = \frac{Biomass_{Before\ corrections} - Biomass_{after\ corrections}}{Biomass_{after\ corrections}} \times 100$$

The permissible error must not exceed 5%. Otherwise, the remediation of all plots of land must be carried out.

Data transcription is a determinant factor in the quality of information from field, so this should be developed by qualified and trained staff.

They will be in charge of typing all information to digital spreadsheets, and then, this information will be given to the responsible people for the analysis and modelling.

In order to detect errors in the transcription of data into the spreadsheets, a different person from the one in charge of initially entering the data, shall enter between 10 and 15% of the field forms into an additional spreadsheet. The results of both calculations (original and audit) are compared to detect errors. Any error observed shall be corrected in the original file.

Estimate of the data entry error:

$$Measurement\ error(\%) = \frac{Number\ of\ errors\ checked\ sample}{Total\ number\ checked} \times 100$$

Audit Team 17/12/10

As required by the methodology (section III 11.2.2) , additional quality con-

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| | | trol (QC) and quality assurance (QA) procedures undertaken for data monitored not included in section E.1.3 were included as requested. | |
| **Corrective Action Request No.22.**<br>The matrix for the evaluation of the environmental impacts shall be translated to English. | F.1 | Project Participant 19/11/10<br>Section F.1. Table 48. The matrix for the evaluation has been translated to English.<br>Audit Team 17/12/10<br>As requested, the matrix for the evaluation of the environmental impacts was translated to English. | ☑ |
| **Corrective Action Request No.23.**<br>- Provide information and justify with evidence on the impacts on water quantity not indicated in the matrix.<br>- Discussion on the impacts on biodiversity in fallows.<br>- Provide information on risk of fires, pests and diseases. | F.1 | Project Participant 19/11/10<br>**Section F.1.**<br>Impacts on water: The analysis about impacts on water quantity is provided. Although, there are few studies carried out in order to identify water yields and the decreasing behaviour by land use change from pastures to reforestation and much less in arid areas, some studies highlight the importance of hedges for erosion control, which is generated during the rainy season in areas without vegetation or herbaceous vegetation. Beside it's showed the importance for soil protection in regions with arid to semi-arid lands, and more in those where they are subjected to high-impact activities on the ground, like cattle.<br>Impacts on biodiversity in fallows: It is evident that fallow areas have a specific biodiversity; that is associated to the microclimate and environmental conditions existing in this coverage. However, periodic cutting and burning activities, which are part of the common agricultural practices of the region of the project activity, generate a subsequent establishment of an unproductive weed or grazing land regeneration (Waterloo, M.J. 2002).<br>Also this is confirmed by the tendency of land use, showing that in the region, the areas of clean pastures, degraded lands and mosaic tend to increase, whereas the areas that eventually could start a sucessional process (pastures with fallows and fallows) have a tendency to decrease (see Section C.5.1).<br>Sicard and Palacios (2005) conclude that the general effect of the reforestation processes results to be positive for biodiversity as a whole, when they are executed in damaged areas or in course of degradation, like is the case of the project proposal.<br>The information of risk of fires, pests and diseases on forest plantations is | ☑ |

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| | | provided<br>Audit Team 17/12/10<br>Discussion on evidence about impacts on water quantity was included to the PDD. According to the published research (Waterloo, M.J. 2002; Pérez, C. 2007; Malagnoux, M. E.H. Sène y N. Atzmon. 2007.) the forestry plantation would impact the water quantity, on the other hand, the tree cover would prevent soil erosion.<br>Impacts on biodiversity are discussed and sustained with evidence. The continuation of prevailing practices would lead to the destruction of the habitat found in fallows for several species, thus a major impact is expected under the baseline scenario than under the project scenario.<br>Information on fire risks, pests and diseases is included to the PDD as well as measures to prevent such risks.<br>All requires information is provided, request closed. | |
| **Clarification Request No. 10.**<br>Provide evidence that there is no a legal requirement to conduct an environmental impact assessment. | F.2 | Project Participant 19/11/10<br>**Section F.2.**<br>The present regulations of the Colombia Republic do not require environmental impact studies or environmental license for reforestation projects (Decreto 2820 de 2010). The timber harvesting, mobilization and construction of forest roads not requires authorization by the environmental authority (Ley 1377 de 2010)<br>Audit Team 17/12/10<br>The Decree 2820 of 2010 of the Ministry of the Environment of Colombia was provided as evidence for sustaining that there is no specific requirement to conduct an environmental impact assessment for reforestation activities in Colombia. | ☑ |
| **Clarification Request No. 11.**<br>Provide evidence on the conclusion that the negative environmental impacts are not significant | F.3 | Project Participant 19/11/10<br>**Section F.3.**<br>The environmental impact of the Project activity is globally positive, since it improves the environmental and socioeconomic conditions in the project area, owing to change in land use. Even the Colombian State, with in the CIF (Law 139/1994), recognize the positive reforestation externalities, meanwhile the environmental and social benefits generated would be appropriated by the whole population.<br>Audit Team 17/12/10 | ☑ |

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| | | As indicated above, according to the Decree 2820 of 2010 of the Ministry of the Environment of Colombia, there is no specific requirement for environmental impact assessment for reforestation activities in Colombia. The positive impacts of reforestation activities are recognized under the Law 139/1994 provided as evidence. | |
| **Corrective Action Request No.24.**<br>Provide information on the local communities (particularly on the land owners), indigenous people, land tenure, food production, cultural and religious sites and access to fuelwood and other forest products | G.1 | Project Participant 19/11/10<br>**Section G.1.**<br>Section G.1. Information on the local communities, indigenous people, land tenure, food production, cultural and religious sites and access to fuelwood are provided.<br>Audit Team 17/12/10<br>Information on the local communities and socioeconomic characteristics of the region was included as requested. The population involved in the proposed project activity are mostly farmers dedicated to agriculture and livestock activities. A letter issued by the Ministry of the Interior of Colombia confirms that there are neither indigenous people nor Africa descent people within the project area. | ☑ |

## Table 3 : Unresolved CAR / CR / FAR

| Clarifications Request, Corrective Action Request, Forward Action Request | Id. of CAR / CR / FAR | Explanation of the Conclusion for Denial, or Background of Forward Action Request |
|---|---|---|
| *NA* | | |

## Annex 2: Information Reference List

<table>
<tr><th>Ref. No.</th><th>Author/Editor/ Issuer</th><th>Title/Type of Document. Publication place</th><th>Date</th><th>Additional Information</th></tr>
<tr><td>1.</td><td>ONFI</td><td>CDM Project Design Document (PDD): Commercial reforestation on lands dedicated to extensive cattle grazing activities in the region of Magdalena Bajo Seco</td><td></td><td>GSP and Final PDD</td></tr>
<tr><td>2.</td><td></td><td>Persons interviewed during the on-site audits (Name, Institution, Position)
<table>
<tr><th>Name</th><th>Organisation</th></tr>
<tr><td>Jean Guénolé Cornet</td><td>ONF International</td></tr>
<tr><td>Natalia González</td><td>ONF Andina</td></tr>
<tr><td>Beatriz Zapata</td><td>Consultant Carbono y Bosques</td></tr>
<tr><td>Juan Carlos Rubiano</td><td>Consultant Carbono y Bosques</td></tr>
<tr><td>Andrés Sierra</td><td>Consultant Carbono y Bosques</td></tr>
<tr><td>Luis Carlos Morales</td><td>FINAGRO</td></tr>
<tr><td>Paulino Galindo Yustres</td><td>CORMAGDALENA</td></tr>
<tr><td>José Muñoz</td><td>Land owner Finca San José</td></tr>
<tr><td>Guendis Pallares Barrios</td><td>Forest employee Finca La Gloria</td></tr>
<tr><td>Patricia Pallares Barrios</td><td>Forest employee Finca La Gloria</td></tr>
<tr><td>Ana Livia Herrera</td><td>Forest employee Finca La Gloria</td></tr>
<tr><td>Luciluz Becerra</td><td>Forest employee Finca La Gloria</td></tr>
<tr><td>Hermes Pacheco</td><td>Land owner Finca El Pensamiento</td></tr>
<tr><td>Victor Cuadros</td><td>Land owner Finca El Desvio</td></tr>
<tr><td>Gabriel Escobar</td><td>Land owner Finca El Rosario</td></tr>
<tr><td>Ana Cecilia Vega</td><td>Land owner Finca La Ceiba</td></tr>
<tr><td>José Gómez</td><td>Land owner Finca Los Alcazares</td></tr>
<tr><td>Yolanda Acosta</td><td>Land owner Finca Las Llaves</td></tr>
</table></td><td></td><td></td></tr>
<tr><td>3.</td><td>ONFAndina</td><td>Eligibility assessment report based on LANDSAT satellites</td><td>28/09/10</td><td>Eligibility</td></tr>
<tr><td>4.</td><td>Dufour.</td><td>Baseline assessment - Reboisement Commercial dans la Région du Magdalena Bajo, Co-</td><td>2005</td><td></td></tr>
</table>

| Ref. No. | Author/Editor/ Issuer | Title/Type of Document. Publication place | Date | Additional Information |
|---|---|---|---|---|
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| 6. | IGAC | Soils analysis - Estudio general de suelos de los municipios de Ariguani, Chivolo, Pedraza, Plato y Tenerife (Departamento del Magdalena). Instituto Geográfico Agustín Codazzi. Santa Fé de Bogota, Colombia. | 1989 | Applicability |
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| 9. | CONIF | Guide of forestry species - Guía Forestal para Eucalipto (Eucalyptus tereticornis). Bogotá | 2003 | |
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|---|---|---|---|---|
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| Ref. No. | Author/Editor/ Issuer | Title/Type of Document. Publication place | Date | Additional Information |
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| 70. | AWFC | Certificado de existencia y representación legal A.W. FABER CASTELL & T.H. REFORESTATION S.A.S | 2009 | |
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| Ref. No. | Author/Editor/ Issuer | Title/Type of Document. Publication place | Date | Additional Information |
|---|---|---|---|---|
| | | http://cdm.unfccc.int/methodologies/ARmethodologies/pnm/byref/ARNM0030 | 2006 | |

# Annex 3: Appointment Certificates

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

# CERTIFICATE OF APPOINTMENT

TÜV SÜD Industrie Service

Mr Hetsch, Sebastian, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

| Qualification applicable to | | | | | | |
|---|---|---|---|---|---|---|
| **Standard** | CDM | JI | GS | VCS | VER | Other |
| **Date** | 23.03.11 | | | | | |

| Qualification as | | | | | | |
|---|---|---|---|---|---|---|
| **Status** | Trainee | Validator | Verifier | Team Leader | Technical Reviewer | Technical Expert |
| **Date** | | 23.03.11 | 23.03.11 | 23.03.11 | | |

| Other qualification | | | | | |
|---|---|---|---|---|---|
| **Country Expertise** | | | | | |
| **Region** | 1 | 2 | 3 | 4 | 5 |
| **Date** | 23.03.11 | | | | |
| **Financial Expertise** | | | | | |
| **Date** | 23.03.11 | | | | |

| Qualification in technical areas | |
|---|---|
| **Technical Area** | **Date** |
| 14.1_Forestry | 23.03.11 |
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This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.
In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.
Your Certificate has the internal reference No. CMS-Z-0006/00.

| Date | Signature |
|---|---|
| 23.03.11 | Thomas Klein |
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ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

# CERTIFICATE OF APPOINTMENT

TÜV SÜD Industrie Service

Mr Chang Olivas, Juan, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

| Qualification applicable to | | | | | | |
|---|---|---|---|---|---|---|
| **Standard** | CDM | JI | GS | VCS | VER | Other |
| **Date** | 29.03.11 | | | | | |

| Qualification as | | | | | | |
|---|---|---|---|---|---|---|
| **Status** | Trainee | Validator | Verifier | Team Leader | Technical Reviewer | Technical Expert |
| **Date** | | 29.03.11 | 29.03.11 | | | |

| Other qualification | | | | | |
|---|---|---|---|---|---|
| **Country Expertise** | | | | | |
| **Region** | 1 | 2 | 3 | 4 | 5 |
| **Date** | 29.03.11 | 29.03.11 | | | |
| **Financial Expertise** | | | | | |
| **Date** | | | | | |

| Qualification in technical areas | |
|---|---|
| **Technical Area** | **Date** |
| 14.1_Forestry | 29.03.11 |
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This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.
In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.
Your Certificate has the internal reference No. CMS-Z-0030/00.

| Date | Signature |
|---|---|
| 29.03.11 | |
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# CERTIFICATE OF APPOINTMENT

TÜV SÜD Industrie Service

Ms Wagner, Karin, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

| Qualification applicable to | | | | | | |
|---|---|---|---|---|---|---|
| **Standard** | CDM | JI | GS | VCS | VER | Other |
| **Date** | 23.03.11 | | | | | |

| Qualification as | | | | | | |
|---|---|---|---|---|---|---|
| **Status** | Trainee | Validator | Verifier | Team Leader | Technical Reviewer | Technical Expert |
| **Date** | | 23.03.11 | 23.03.11 | 23.03.11 | 23.03.11 | |

| Other qualification | | | | | |
|---|---|---|---|---|---|
| **Country Expertise** | | | | | |
| **Region** | 1 | 2 | 3 | 4 | 5 |
| **Date** | 23.03.11 | | | | |
| **Financial Expertise** | | | | | |
| **Date** | 23.03.11 | | | | |

| Qualification in technical areas | |
|---|---|
| **Technical Area** | **Date** |
| 1.2_Energy generation from renewable energy source | 23.03.11 |
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This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.
In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.
Your Certificate has the internal reference No. CMS-Z-0015/00.

| Date | Signature |
|---|---|
| 23.03.11 | Thomas Illsinger |
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# CERTIFICATE OF APPOINTMENT

TÜV SÜD Industrie Service

Mr. Opitz, Martin, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

| Qualification applicable to | | | | | | |
|---|---|---|---|---|---|---|
| **Standard** | CDM | JI | GS | VCS | VER | Other |
| **Date** | 20.05.11 | | | | | |

| Qualification as | | | | | | |
|---|---|---|---|---|---|---|
| **Status** | Trainee | Validator | Verifier | Team Leader | Technical Reviewer | Technical Expert |
| **Date** | | | | | | 20.05.11 |

| Other qualification | | | | | |
|---|---|---|---|---|---|
| **Country Expertise** | | | | | |
| **Region** | 1 | 2 | 3 | 4 | 5 |
| **Date** | 20.05.11 | | | | |
| **Financial Expertise** | | | | | |
| **Date** | | | | | |

| Qualification in technical areas | |
|---|---|
| **Technical Area** | **Date** |
| 14.1_Forestry | 20.05.11 |
| | |
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| | |

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.
In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.
Your Certificate has the internal reference No. CMS-Z-0059/00.

| Date | Signature |
|---|---|
| 20.05.11 | Thomas Klein |
| | |
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