VALIDATION REPORT

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Document Prepared By TÜV Rheinland do Brasil Ltda. (On behalf of TÜV Rheinland (China) Ltd.)

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Summary:

TÜV Rheinland Brazil Ltda. has performed a validation of the project activity "Ecomapuá Amazon REDD Project" in Brazil to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. The validation was performed on the basis of VCSA requirements for the VCS project, as well as criteria given to provide for consistent project operations, monitoring and

reporting.

The project activity Ecomapuá Amazon REDD Project represents a Reducing Emissions project from Deforestation and Degradation (REDD) through Avoided Unplanned Deforestation (AUD), in an area of 86,269.84 ha, located in 5 farms in Marajó Island, State of Pará , in northern Brazil. The present REDD project, through conservation measures, will avoid the predicted 4,253.14 ha of deforestation, equating to around 2,745,350 tCO_2e in Emissions Reductions over the 30 year project lifetime, not including Reductions for the project's efficiency, non-permanence risk buffer and displacement leakage factor.

This project is in accordance with the Approved VCS Methodology, "Methodology for Avoided Unplanned Deforestation (VM0015)", Version 1.1, December 3rd, 2012. The validation was made to a reasonable level of assurance also applying the requirements outlined in VCS - Agriculture, Forestry and Other Land Use (AFOLU) V3 (v.3.3). This validation process includes the assessment of VCS PD Version 2 and all relevant information and supporting evidences acquired during the validation. The first output of the validation process is a list of Clarifications, Corrective Actions Requests and Forward Actions Requests (CL, CAR and FAR).

The validation team has come to the conclusion that based on the on-site assessment and all available documentation the GHG assertion is made in accordance with the requirements of the VCS programme, is materially correct and fairly represents the GHG emissions data and information without material discrepancies.

Abbreviations

AFOLU	Agriculture, Forestry and Other Land Use
AUD	Avoided Unplanned Deforestation
CAR	Corrective Action Request
CL	Clarification Request
CO_2	Carbon Dioxide
CO_2e	Carbon dioxide equivalent
GHG	Greenhouse Gas
I	Interview
IPCC	Intergovernmental Panel on Climate Change
PA	Project Area
PD	Project Description
PP	Project Proponent
NTFPs	Non-Timber Forest Products
LKB	Leakage Belt
REDD	Reduced Emissions from Deforestation and Degradation
RR	Reference Region
VCS	Verified Carbon Standard
VCUs	Voluntary Carbon Units

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1   INTRODUCTION

This report summarizes the findings of the validation of the Ecomapuá Amazon REDD Project in Marajó Island, performed on the basis of VCS criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1   Objective

The validation serves as project design verification and is a requirement of all projects. The validation is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan, and the project's compliance with relevant VCS criteria which are validated in order to confirm that the project design, as documented, is reasonable, and meets the stated requirements and identified criteria.

The purpose of the Validation Report is to confirm that the Ecomapuá Amazon REDD Project and all related project documentation are in accordance with all rules and requirements of the VCS Standard v3.3, VCS AFOLU v3.3, the applied GHG methodology "Methodology for Avoided Unplanned Deforestation (VM0015)", version 1.1 and its associated tools.

1.2   Scope and Criteria

The criteria for validation are the rules and requirements of the VCS Standard v.3.3 and VCS AFOLU v3.3, in particular the principles articulated in section 2.4 of the VCS Standard v3.3. The VCS-PD applies the approved VCS methodology "Methodology for Avoided Unplanned Deforestation (VM0015)", Version 1.1. Also, the VCS Non-Permanence Risk and VT0001 "Tool for the demonstration and assessment of additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities" v3 are additional criteria for the project.

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

1.3   Level of assurance

The Validation Statement is made to a reasonable assurance level and a materiality threshold of 5% is applied for identification of material omissions for projects, as required by VCS v3.3 paragraph 5.3.1 item 4.

In order to comply with the requirements of VCS v3.3 the validation shall be carried out selecting data and evidence to provide a reasonable level of assurance as stated in the VCS v3.3 paragraph 5.3.1 item 1. In general, it shall be adhered to the procedures as defined in ISO 14064-3.

1.4   Summary Description of the Project

The Ecomapuá Amazon REDD Project is situated on Marajó Island in Pará state in the far northern of Brazil, which is the lower Amazon Basin. The areas belonging to Ecomapuá Ltda. are located

in the Furos de Breves micro-region, in the western part of Marajó Island, and fall into three municipalities: Breves, Curralinho and São Sebastião da Boa Vista. The project area is divided into five properties (farms): Bom Jesus, Brasileiro, Lago do Jacaré, São Domingos and Vila Amélia (Figure 1).
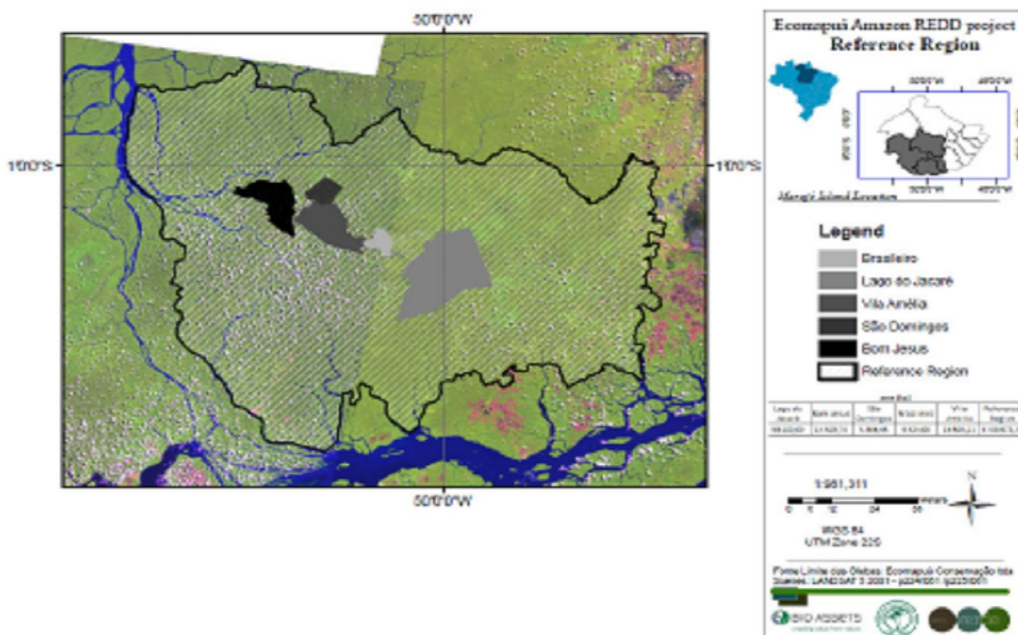

Figure 1. Location of the Ecomapuá REDD Project

The main objective of the Ecomapuá REDD project is the conservation of 86,269.84 ha of forest (riparian dense tropical rainforest) area within the five Ecomapuá properties. This will be achieved through avoidance of unplanned deforestation, the ex-ante estimate for avoided deforestation over the 30 year project lifetime being 4,253.14 ha. The avoided emissions due to the Ecomapuá Amazon REDD AUD Project are expected to be 1,432,278 tCO_2e across the project crediting period (01/01/2003 – 31/12/2032), including buffer (RF), leakage (DLF) and project efficiency (EI) reductions.

Through of conservation activities, this AUD Project (Ecomapuá REDD project) estimated an average annual of 47,743 VCUs over the 30 year project lifetime.

2   VALIDATION PROCESS

2.1   Method and Criteria

The overall validation, from Contract Review to Validation Report & Opinion, was conducted by using TÜV Rheinland´s internal procedures. Mainly, in order to ensure transparency, a validation protocol was customized for the project. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

i)   It organizes, details and clarifies the requirements of a VCS project is expected to meet;

ii)   It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

Table 1: Validation Schedule

Validation Process	Date
Contract award for validation	05/02/2013
Receipt of Draft VCS PD	22/01/2013
Desk Review Findings	23/01/2013 – 4/02/2013
On-site assessment	05/02/2013 – 08/02/2013
Validation Protocol	1st round: 13/02/2013 – 19/02/2013
	2nd round: 22/02/2013 – 26/02/2013
Draft Validation Report	01/03/2013 - 04/03/2013
Internal Technical Review	04/03/2013 – 06/03/2013
Final Validation Report	06/03/2013

The validation process begins when the PPs submit the VCS PD to the validation team along with additional supporting information, in particular spreadsheet for the calculation of the estimated emission reductions. The validation team then reviews the documents and submits the desk review findings to the PPs. During the on-site visit, the validation team meets with the project company in the project site. The validation team confirms that the actual project conforms to the VCS PD V2, where also were collected supporting documents. Following the site visit a validation protocol is shared with the PPs, which contained the list of all Corrective Action Requests (CARs) and Clarification Requests (CLs). In this validation process no Forward Action Requests (FAR) were raised.

The CAR/CLs are then closed after receipt of additional supporting evidences and after PPs made necessary amendments to the VCS PD. Once all CARs/CLs are closed, the validation team drafts the validation report, which is issued, after successfully going through an Internal Technical Review.

2.2   Document Review

The VCS Project Description submitted by Sustainable Carbon – Projetos Ambientais Ltda (who is a project participant, also acting as carbon consultant for this project) and additional background documents related to the project design and baseline, i.e., VCS Project Description Template, Approved VCS methodology, Clarifications on Validation Requirements, scientific literature and country Law were reviewed.

To address TÜV Rheinland´s corrective action request and clarification requests, Sustainable Carbon – Projetos Ambientais Ltda revised the Project Description and the last version (v.2) /2/ was resubmitted to the validation team on 22/02/2013. After further clarifications all corrective action requests and clarification requests were closed on 22/02/2013. All documents were reviewed under the requirements of the related VCS Methodologies, tools and VCS v3.3 rules.

The documents as indicated in Table 2 have been reviewed during the validation process and are referenced along the validation report.

Table 2: Document Review.

/ N° / Document	Comment
Documentation provided by the project participants	
/1/ VCS Project Description, Ecomapuá version 7.6 (V1).	VCS Project Description of Ecomapuá Project.
/2/ VCS Project Description, Ecomapuá v2.	VCS Project Description of Ecomapuá Project version 2.
/3/ Tabelas Ecomapua 4.8.	Tables with calculations of project emissions and deforestation.
/4/ Tabelas Ecomapua v2.	Tables with calculations of project emissions and deforestation.
/5/ Definição da Área do Projeto.	Document detailing the limits of the project areas and areas of Ecomapuá Ltda.
/6/ Coordinates Project Area and Leakeage belt.	Table held by the Agencia Verde, with UTM coordinates marking the perimeter of the project area and Leakage belt.
/7/ Documentos de Registros das Terras.	Documents of legal possession of the land of farms Ecomapuá Ltda. Such as Bom Jesus, Alligator Lake, St. Dominic, Amelia Village-Loubato and Santa Isabel.
/8/ Contrato Social Santana-Ecomapuá.	Social contract between Madeira Santana and Ecomapuá Conservação Ltda.
/9/ Definição de Estoque de Carbono.	Document with the technical specification of the values of biomass and carbon stocks for forest type used in the project.
/10/ Caracterização da Vegetação e Uso do Solo das Terras Pertencentes à Empresa Ecomapuá.	Document characterization of the types of vegetation and land use in the areas of Conservation Ecomapuá Ltda.
/11/ VCS Non-Permanence Risk Report Ecomapuá Amazon REDD Project v2	Document of Non-Permanence Risk of Ecomapuá Amazon REDD Project.
Standards, methodologies, and other guidance by the VCSA	
/12/ VCS Standard, version 3.3	VCS documents used for validation.
/13/ VCS Programme Guideline Version 3.3	
/14/ VCS: VM0015 Methodology for	

Avoided Unplanned Deforestation v1.1	
/15/ VCS AFOLU Requirements v3.3	
/16/ VCS Validation and Verification Manual v3.0	
/17/ VCS Guidance for Standardized Methods v3.2	
/18/ VCS AFOLU Non-Permanence Risk Tool v3.2	
/19/ VT0001 "Tool for the demonstration and assessment of additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities" v3	
/20/ VCS Project Description Template v3	
/21/ VCS Additionality Tool	
Documentation used to validate / cross-check the information provided by the project participants and other supportive documents	
/22/ Dinâmica e desenvolvimento da agricultura familiar caso Vila Amélia Breves-PA	Dissertation, Federal University of Pará, published by José Antônio Herrera in 2003.
/23/ Densidade de Madeira e Alometria de Árvores em Florestas do 'Arco do Desmatamento': Implicações para Biomassa e Emissão de Carbono a Partir de Mudanças de Uso da Terra na Amazônia Brasileira.	Doctoral thesis of National Institute for Research in the Amazon (INPA in Portuguese), published by Euler Melo Nogueira in 2008.
/24/ Comunidades Agroextrativistas do Rio Mapuá – Breves/Pa - Diagnóstico Socio-Econômico.	Research project covenant UFPA / FADESP / Cooperatives NOVA AMAFRUTAS.
/25/ Simulação do Crescimento das Áreas Antropizadas Utilizando Cadeia de Markov e Autômata Celular em Ambiente SIG.	Scientific paper, Federal University of Paraná, published by Gabriel Henrique Pereira de Almeida and Prof. Dr. Cortese Sony Caneparo.
/26/ Cadeias de Markov. (http://pt.wikipedia.org/wiki/Cadeias_de_Markov)	Information available on the internet (wikipedia source).
/27/ Florestas Nativas de Produção Brasileiras - Relatório Técnico. Serviço Florestal Brasileiro.	Technical report, published by the Brazilian Forest Service and National Institute for Research in the Amazon in 2011.

2.3   Interviews

The personnel who have been interviewed and/or provided additional information to the presented documentation are identified below:

- Marcelo Haddad (technical manager) and David Swalow (technical assistance) of Sustainable Carbon - Projetos Ambientais Ltda.: They gave support in all related matters to the Ecomapuá REDD Project documentation, calculation of deforestation and emission reduction, installation, functioning, etc.

- Lap Tak Chan (owner) of Ecomapuá Conservação Ltda: He gave support in all related matters to the areas of Ecomapuá REDD Project.

Stakeholders and farmers: They provided available information about the project area, region characteristics, type of drivers of deforestation, etc.

Community:

- Aluisio Farias Martins (representative of Bom Jesus farm).

- Pedro Ferreira Lobato (representative of Santo Amaro farm).

- Maria do Carmo (Counselor of Amorama Association - RESEX Mapuá).

- Benedito Lials Lusina (President of Amorama Association - RESEX Mapuá).

Public institutions:

- Sidiclei B. Miranda (Secretary for Environment of Breves municipality - SEMMA).

- Geraldo da S. Pouteja (Representative of the Municipal Environment Secretary of Breves municipality - SEMMA).

- Victor César Lopes Borges (Representative of the State Environment Secretary of Pará - SEMA).

- Pedro L. Cardoso (representative of the Secretary of Agriculture of Breves municipality - SEMAGRI).

- Flavio Bentes Filho (Alderman of the city of Breves).

Private companies:

- César de Souza Pinheiro (Nativa Florestal Company).

2.4   Site Inspections

The site inspection was carried out between 05/02/2013 and 08/02/2013, and the participants are presented in the Table 3.

Table 3: Participants in site visit.

Role	Full name	Affiliation
Auditor	Renzo Solari	TÜV Rheinland do Brasil Ltda.
Project Developer, Project Participant and Project idealizer	Marcelo Haddad	Sustainable Carbon – Projetos Ambientais Ltda.
Responsible for Ecomapuá Conservação Ltda.	Lap Tak Chan	Ecomapuá Conservação Ltda.

The onsite visit was performed in order to understand and evaluate the region of reference and project areas. This visit also coincided with the clarification meeting with stakeholders.

Thus, it was possible to assess the condition of the forest areas of the project and the socioeconomic dynamics of the reference region, where there is still a high logging. In this case, Breves was the city visited, which is the most important city of the region of reference, mainly for its local economy.

At Bom Jesus farm, it was verified that there is a forest nursery in operation to provide native species with commercial value, especially for the production of fruits that will benefit the sustainable development activities of the local population (Figure 2). Thus, local populations will increase income opportunities for sustainable activities, thus reducing deforestation actions and therefore forest conservation and reduction of carbon emissions.

Figure 2. Forest Nursery at Bom Jesus farm.

2.5 Resolution of Any Material Discrepancy

The validation protocol has been added as Annex A to this report. The validation protocol was prepared following the site visit during which all issues identified during the desk review were discussed.

All CAR/CLs have been resolved by PPs via provision of additional supporting evidence and appropriate changes to the VCS PD v2.

3   VALIDATION FINDINGS

3.1   Project Design

This project activity aims to avoid the unplanned deforestation (AUD), and the primary objective of Ecomapuá Amazon REDD AUD Project is conservation of 86,269.84 ha within a private property on Marajó island, owned by Ecomapuá Conservação Ltda. The project activity is under sectoral scope 14 (Agriculture, Forestry, Land Use). In accordance with V-C-S requirements, stipulated in Approved VCS Methodology VM0015, version 1.1.

The project area comprehensively belongs to Ecomapuá Ltda., and is divided into five properties (farms): Bom Jesus, Brasileiro, Lago do Jacaré, São Domingos and Vila Amélia.

This REDD AUD project will avoid a predicted 4,253.14 ha of deforestation. The avoided emissions due to the Ecomapuá Amazon REDD AUD Project are expected to be 1,432,278 tCO$_2$e across the project over the 30 year project lifetime (crediting period - 01/01/2003 – 31/12/2032), including buffer (RF), leakage (DLF) and project efficiency (EI). With this, it is expected annual average a reduction of 47.742,6. Therefore, the project is considered to scale "Project".

The proponents for this project are Ecomapuá Conservação Ltda as Project Proponent and Sustainable Carbon – Projetos Ambientais Ltda. as Project developer, Project participant and Project conceiver.

In Brazil, there is no normative legal scope of federal governing REDD activities. Moreover, the law applicable to this case is the Forest Code, which states that 80% of farms located in the Amazon biome must have a Legal Reserve (RL), and a permanent preservation area. According to information provided by the bidders, the areas of REDD Project Ecomapuá meet these regulations. However, this legislation has not been fully realized in the country due to lack of government oversight, which brings a significant loss of forest cover and deforestation threats, which can be observed in the region reference of the Ecompuá REDD Project.

Regarding the rights to use, the company Ecomapuá Conservação Ltda is owner of the five properties making up the Ecomapuá Amazon REDD Project, however, the right use is defined. This project has not been registered, and is not seeking registration under any other GHG Programs. The project area has not created any other form of environmental credit. This project has not been registered in any other credited activity, and no VCUs have been assigned to the project area so far and does not intend to generate any other form of GHG-related environmental credit for GHG emission reductions or removals claimed under this VCS project.

The leakage management plan and maps of the leakage management area are located in section 1.9, Project Location, of the VCS-PD v2.

3.2 Application of Methodology

3.2.1 Title and Reference

The project has applied VCS methodology "Methodology for Avoided Unplanned Deforestation (VM0015)", version 1.1 /14/.

3.2.2 Applicability

In line with the methodology VM0015 v1.1, the validation team verified the applicability of methodology as follows conditions:

The methodology has no geographic restrictions and is globally applicable under the following conditions:

Table 4: Conditions to applicability.

Conditions	Justification
a) Baseline activities may include planned or unplanned logging for timber, fuel-wood collection, charcoal production, agricultural and grazing activities as long as the category is unplanned deforestation according to the most recent VCS AFOLU requirements.	The activities of the baseline in RR and PA are unplanned deforestation. The primary land uses in the baseline scenario consists of three overlapping activities: clearing for timber collection (logging), extraction of palm-heart and clearing of plantation land (agricultural activities).
b) Project activities may include one or a combination of the eligible categories defined in the description of the scope of the methodology (table 1 and figure 2).	The project activity is defined as "Avoided Deforestation without Logging" or Protection without logging, fuel wood collection or charcoal production (Category A of Table 1 on the Methodology VM0015 v1.1 /14/).
c) The project area can include different types of forest, such as, but not limited to, old-growth forest, degraded forest, secondary forests, planted forests and agro-forestry systems meeting the definition of "forest".	The project area includes Forest (Old-growth forest). In this case, the project area contains 100% of riparian dense tropical rainforest.
d) At project commencement, the project area shall include only land qualifying as "forest" for a minimum of 10 years prior to the project start date.	The project area contains forest. Despite that the VCS PD only has record of satellite images from 1993 (9 years before the start date of the project and not 10 years as required by the methodology), the validation team recognizes that it is not possible to have in that area any vegetation other than forest 10 year before due to the characteristics of the project area.
e) The project area can include forested wetlands (such as bottomland forests, floodplain forests, mangrove forests) as long as they do not grow on peat. Peat shall be defined as organic soils with at	The project area have only mineral soil types, as they are in the entirety of Marajó Island, as described in the VCS-PD v2 /2/. Therefore, none of the project area grows on peat.

least 65% organic matter and a minimum thickness of 50 cm. If the project area includes a forested wetlands growing on peat (e.g. peat swamp forests), this methodology is not applicable.

3.2.3 *Project Boundary*

The project area is composed of five properties in Marajó Island and the properties are located in the municipalities of Breves, Curralinho and São Sebastião da Boa Vista. These properties (farms) are: Bom Jesus, Brasileiro, Lago Jacaré, São Domingos and Vila Amelia.The properties sum to 98,421.46ha and the project area comes to 86,269.84 ha of forest (figure 3).
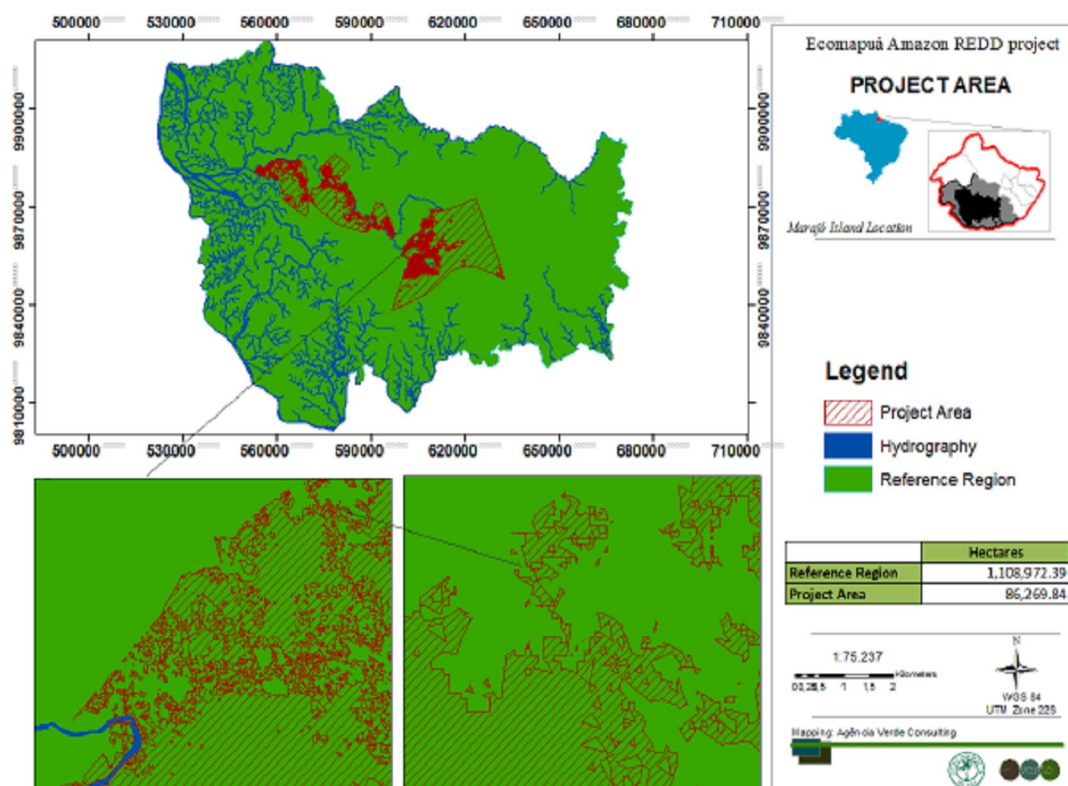
Figure 3. Project Area

The leakage belt is formed of an area primarily to the north-west of the project, and also adjoining the Fazenda Lago do Jacaré to the other properties. The area of the LKB is 119,037.32 ha of forest (Figure 4). For this REDD project, the leakage belt corresponds to the area most likely to be used for timber extraction after its prohibition within the project area. In accordance with section 1.1.3 of the methodology, the leakage belt was defined by means of opportunity cost analysis.

The RR sums to 1,108,972.39 ha and is distributed among 7 municipalities. This corresponds to about 10 times the size of the project area, and the methodology recommends between 5 and 7 times the size of the project area for areas greater than 100,000 hectares.
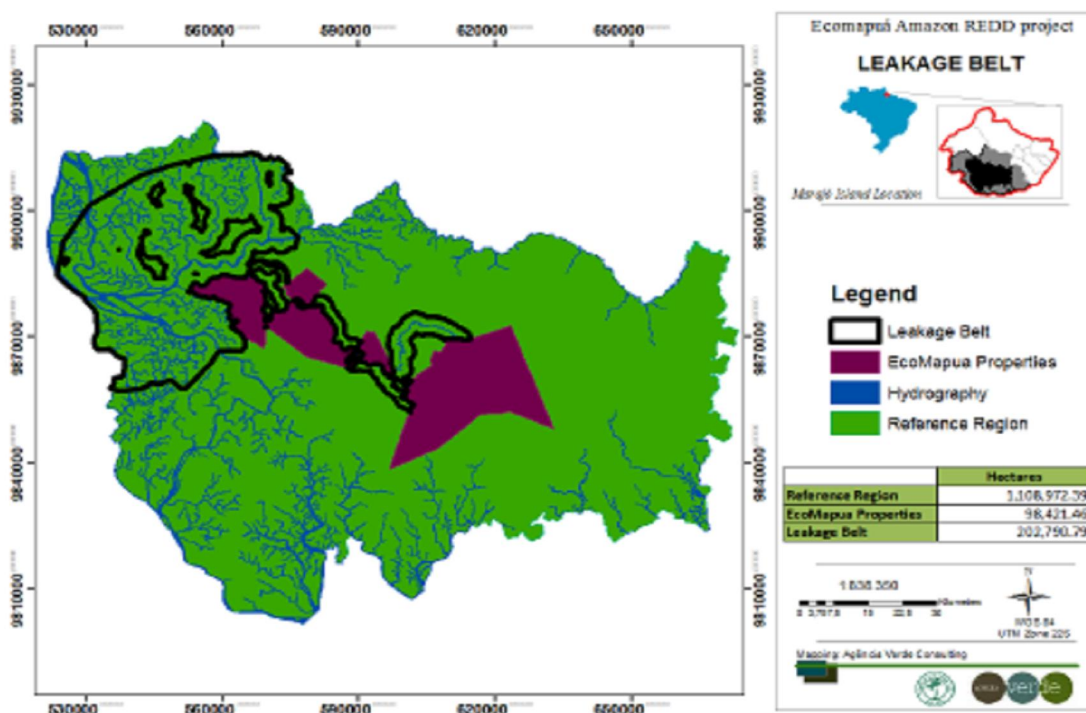
Figure 4 – Leakage belt of the Ecomapuá Amazon REDD project

Also, the project is applying the following project boundary:

Table 5: Project boundary.

Pool	Gas	Included or Excluded in project	Justification
Above-ground	CO$_2$	Included	Stock change in this pool is significant. Non-Tree was excluded because not have existence of perennial crops as final class.
Below-ground		Included	Stock change in this pool is significant. In accordance with the Methodology, 10% of the carbon stock in the below-

			ground pool of the initial "forest" class is discounted per year in a ten year interval.
Dead wood		Excluded	Not significant.
Harvested wood products		Excluded	Not significant.
Litter		Excluded	Not measured according to VCS Program.
Soil organic carbon		Excluded	Recommended when forests are converted to cropland. Not to be measured in conversions to pasture grasses and perennial crop according to VCS Program.

Others emission GHG sources like Biomass burning and Livestock were excluded because the increase of these sources is not predicted to occur in the project scenario compared to the baseline case.

TUV Rheinland considers the selected project boundaries to be conservative and appropriate to the project activity.

3.2.4 Baseline Scenario

In accordance with the methodology (VM0015) Version 1.1 /14/, the project proponent has identified the different agents for deforestation, which can be classified into three groups.

- Timber harvesting, both legal and illegal;
- Extraction of palm-heart;
- Deforestation for subsistence agriculture land;

In VCS PD v2 it was correctly analyzed the patterns of deforestation in the project area, as these agents of deforestation are not considered separately, but as being spatially overlapping and forming a single deforestation dynamic. The historical pattern of colonization in the area and available field studies show that the resident families practicing agricultural, commercial timber harvest, and extractive activities are mainly responsible for deforestation in the area. In this case, the baseline scenario involves three spatially overlapping activities: firstly, extraction of commercially valuable tree species by resident families, frequently beyond levels permitted by Brazilian law, for sale to timber companies. This is accompanied by palm-heart extraction, which is both for commercial ends and for consumption or trade in kind by the harvesters themselves. The former two activities may not result in conversion of forest to non-forest, however they are integral parts of the deforestation process. Finally, slash-and-burn deforestation of the area above for subsistence agriculture, and the planting of crops.

In addition, the PPs performed an analysis of correlation between the rate of population growth and the rate of deforestation in the region, which gave a result of a significant correlation between these two variables.

Regarding future deforestation, projections were made to distribute in space and time deforestation in RR, LKB and PA. For this, we adopted the approach b ("Time Function") to create the baseline. In which regression was used in a GIS environment (ie software IDRISI Selva), and the model of best fit was found to be the non-linear logit logistical regression. As a result, shown in VCS-PD v2 / 2 /, were created deforestation maps required by the methodology (V00015), and thus can properly projection the deforestation in the project region.

Under the scenario described in baseline VCS PD v2 /2/, where the forest land is expected to be converted to non-forest land by the agents of deforestation acting, the project falls into the AFOLU-REDD category, specifically: Avoided Unplanned Deforestation (AUD).

The baseline scenario provided in section 2.4 of VCS PD v2 /2/ is realistic and credible for the region, verified through interviews and also by gathering official information in Brazil about dynamics of deforestation in Amazon.

Therefore, it is the Validation Team's opinion that the baseline scenario is determined according to the methodology and is reasonable.

3.2.5   Additionality

The VCS Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities (VT0001) Version 3.0 was applied to demonstrate the additionality of the project activity.

STEP 1. Identification of alternative land use scenarios to the AFOLU project activity

Sub-step 1a. Identify credible alternative land use scenarios to the proposed VCS AFOLU project activity

As already stated in section 3.2.4 of this report, all three alternatives (continuation of the common practice of the region – Timber harvesting, extraction of palm-heart and small scale subsistence agriculture activities) are realistic and credible for the region, verified as per interviews and available literature.

Sub-step 1b. Consistency of credible land use scenarios with enforced mandatory applicable laws and regulations

The three plausible alternative land use scenarios (stated in the PD) to the VCS AFOLU activity are in compliance with mandatory legislation and regulations taking into account their enforcement.

Sub-step 1c. Selection of the baseline scenario:

In the Amazon region and in the project region the dynamic of land use is well-known. Therefore, for this project the most plausible baseline scenario is commercial logging beyond the limits of Brazilian law, followed by slash-and-burn subsistence agriculture, planting manioc and corn.

STEP 2. Investment Analysis

Sub-step 2a. Determine appropriate analysis method

Sub-step 2b. Simple Cost Analysis

The PPs justified that the Ecomapuá Amazon REDD project does not generate any financial or economic benefits other than VCS related income. For that, the simple cost analysis (Option I) was determined as the appropriate analysis method. There is no for-profit sale of NTFPs, timber or any other product involved in the project activity

STEP 4. Common Practice Analysis

The project proponents demonstrated that no project or activities similar to those proposed by the REDD+ project have been implemented previously or are currently underway in the region. This is, the practice of conservation of privately-owned forest areas on Marajó Island, as well as Pará state as a whole, is extremely rare. As noted in VCS-PD v2 /14/, the dominant practices in the area include timber harvesting, extraction of palm heart, and subsistence agriculture, which compose the deforestation dynamics

There are others REDD projects located in the State of Pará, however they all have the essential distinction that none of them are located within privately-owned areas, which are located in Indigenous Reserves. Therefore, they cannot be considered similar activities. Also, exist the RainTrust REDD+ project, which is a privately-owned forest conservation area, but it cannot be considered in the present common practice analysis because it is a registered V-C-S AFOLU project, which is to be excluded in accordance with the V-C-S Additionality Tool.

As a result of the above, the validation team concludes that the additionality proof has been conducted by the PP in a correct way following the rules of the VCS Additionality AFOLU Tool (VT0001) version 3 /19/, and that the project can be deemed as additional.

3.2.6 Quantification of GHG Emission Reductions and Removals

3.2.6.1 Quantification of Baseline Emissions

The baseline emissions are calculated as the carbon emission from the total deforestation in the PA, RR and LKB that would be released in the absence of the project activity. In section 3 of the VCS-PD v2 /2/ emission reductions are calculated in accordance with equations bellow:

$$\Delta CBSLPAt = \Delta CabBSLPAicl, t + \Delta CbbBSLPAicl, t$$

Where,

$\Delta CBSLPAt$ Total baseline carbon stock changes in the project area at year t; tCO_2e

$\Delta CabBSLPAicl, t$ Total baseline carbon stock change for the above-ground biomass pool in the project area for initial forest class at year t; tCO_2e

$\Delta CbbBSLPAicl, t$ Total baseline carbon stock change for the below-ground biomass pool in the project area for initial forest class at year t; tCO_2e

$$\Delta CabBSLPAicl, t = ABSLPAicl, t \times \Delta Cabicl$$

Where,

$\Delta CabBSLPAicl, t$	Total baseline carbon stock change for the above-ground biomass pool in the project area for initial forest class at year t; tCO_2e
$ABSLPAicl, t$	Area of initial forest class *icl* deforested at time *t* within the project area in the baseline case; ha
$\Delta Cabicl$	Average carbon stock change factor per hectare in the above-ground biomass carbon pool of initial forest class *icl*; tCO_2e ha^{-1}

$$\Delta CbbBSLPAicl, t = ABSLPAicl, t \times \Delta Cbbicl$$

Where,

$\Delta CbbBSLPAicl, t$	Total baseline carbon stock change for the below-ground biomass pool in the project area for initial forest class at year t; tCO_2e
$ABSLPAicl, t$	Area of initial forest class *icl* deforested at time *t* within the project area in the baseline case; ha
$\Delta Cbbicl$	Average carbon stock change factor per hectare in the below-ground biomass carbon pool of category *icl*; tCO_2e ha^{-1}

This project adopted as stock biomass above and below ground, which complies with the values described by Nogueira (2008) for this type of forest. This fulfills the stipulated in the methodology (V00015), which indicates that it can be used estimates of carbon stocks derived from local studies and scientific literature available. The calculation of biomass for carbon emissions was successfully achieved by PPs.

Also, change factors were applied to the initial baseline case and post-deforestation classes in above-ground and below-ground biomass. In this case, it was applied carbon stock change factor for initial forest classes (icl) in below-ground carbon stocks (Method 1). This factor was defined as 10% per year for ten years. For the above-ground carbon stocks it was applied the factor of 100%, this is all above-ground carbon stock emitted at year of the deforestation.

3.2.6.2 Quantification of Project Emissions

For the proposed project activity, project emissions from deforestation are considered in the project area. To allow *ex ante* projections, a conservative assumption was made about the effectiveness of the proposed project activities in order to define the Effectiveness Index (*EI*). The estimated value of *EI* is used to multiply the baseline projections by the factor (1 - *EI*) and the result was considered to be the *ex ante* estimated emissions from unplanned deforestation in the project case. Hence, simplifying equation 16 of Methodology V00015.The project emissions are calculated as follow:

$$\Delta CUDdPAt = \Delta CBSLPAt \times (1 - EI)$$

Where:

$\Delta CUDdPAt$	Total *ex ante* actual carbon stock change due to unavoided unplanned deforestation at year t in the project area; tCO_2e
$\Delta CBSLPAt$	Total baseline carbon stock change in the project area at year t; tCO_2e
EI	*Ex ante* estimated Effectiveness Index; %
t	1, 2, 3 ... T, a year of the proposed project crediting period; dimensionless

$$\Delta CPSPAt = (\Delta CPAdPAt + \Delta CUDdPAt) - \Delta CPAiPAt$$

Where,

$\Delta CPSPAt$	Sum of *ex ante* estimated actual carbon stock changes in the project area at year t; tCO_2e
$\Delta CPAdPAt$	Total decrease in carbon stock due to all planned activities at year t in the project area; tCO_2e
$\Delta CUDdPAt$	Total *ex ante* actual carbon stock change due to unavoided unplanned deforestation at year t in the project area; tCO_2e
$\Delta CPAiPAt$	Total increase in carbon stock due to all planned activities at year t in the project area; tCO_2e

In this REDD project the calculation of the effectiveness index was based on the estimated deforestation activity due to the resident families in the baseline case (1993 – 2001) compared to that in the project case (2003 – 2032). It was employed a reduction factor owing to the environmental education activities carried out in the project case. These activities currently involve 38 families (38% of total project), which, with the expansion of the social project, was expected to evolve as follows: 1st baseline period: 38% of families benefitted; 2nd baseline period: 63% of families benefitted and 3rd baseline period: 88% of families benefitted.

Thus, was applied these reduction factors, and the EI, were calculated as follows:

$$EI = \frac{\text{Average annual deforestation in project case (ha)}}{\text{Average annual deforestation in baseline case (ha)}}$$

3.2.6.3 Quantification of leakage

The ex ante activity displacement leakage was calculated based on the anticipated combined effectiveness of the proposed leakage prevention measures and project activities. This was done by multiplying the estimated baseline carbon stock changes for the project area by a "Displacement Leakage Factor" (*DLF*) representing the percent of deforestation expected to be displaced outside the project boundary. It is calculated as follows:

$$\Delta CADLKt = \Delta CBSLPAt \times DLF$$

Where,

$\Delta CADLKt$	Total decrease in carbon stocks due to displaced deforestation at year t; tCO_2e
DLF	Displacement leakage factor; %

According to the planned interventions, the projected carbon stocks were estimated in the leakage management areas under the baseline case and project scenario. The displacement leakage factor was based on the following assumptions:

- The activity likely to be involved in leakage was timber extraction, as the other activities – palm heart and subsistence agriculture deforestation – are unlikely to travel significant distances.

- The proportion of commercial timber per hectare: based on 40 m³/ha of estimated commercial timber within the project area of a total wood volume of 472.08 m³/ha in the region (= 8.47%).

To create the project scenario leakage, reduction factors were applied to baseline leakage levels, taking into account environmental education programs implemented by the project. Thus the DLF was calculated using the equation as follow:

$$DLF = \frac{\text{Project scenario leakage (ha)}}{\text{Total deforestation within the project area (ha)}}$$

3.2.6.4 Summary of GHG emission reductions or removals

According to VCS: VM0015 Methodology for Avoided Unplanned Deforestation v1.1, the emission reductions are the baseline and leakage emissions subtracting project emissions and is calculated as follows:

$$\Delta REDDt = (\Delta CBSLPAt + EBBBSLPAt) - (\Delta CPSPAt + EBBPSPAt) - (\Delta CLKt + ELKt)$$

Where:

$\Delta REDDt$	*Ex ante* estimated net anthropogenic greenhouse gas emission reduction attributable to the AUD project activity at year t; tCO_2e
$\Delta CBSLPAt$	Sum of baseline carbon stock changes in the project area at year t; tCO_2e
$EBBBSLPAt$	Sum of baseline emissions from biomass burning in the project area at year t; tCO_2e
$\Delta CPSPAt$	Sum of *ex ante* estimated actual carbon stock changes in the project area at year t; tCO_2e
	Note: If $\Delta CPSPAt$ represents a net increase in carbon stocks, a negative sign before the absolute value of $\Delta CPSPAt$ shall be used. If $\Delta CPSPAt$ represents a net decrease, the positive sign shall be used.
$EBBPSPAt$	Sum of (*ex ante* estimated) actual emissions from biomass burning in the project area at year t; tCO_2e
$\Delta CLKt$	Sum of *ex ante* estimated leakage net carbon stock changes at year t; tCO_2e
	Note: If the cumulative sum of $\Delta CLKt$ within a fixed baseline period is > 0, $\Delta CLKt$ shall be set to zero.
$ELKt$	Sum of *ex ante* estimated leakage emissions at year t; tCO_2e
t	1, 2, 3 … T, a year of the proposed project crediting period; dimensionless.

Regarding the number of Verified Carbon Units (VCUs) to be generated through the proposed AUD project activity per year were calculated as follows:

$$VCUt = \Delta REDDt - VBCt$$

$$VBCt = (\Delta CBSLPAt - \Delta CPSPAt) \times RFt$$

Where:

$VCUt$	Number of Verified Carbon Units that can be traded at time t; t CO_2-e
$\Delta REDDt$	*Ex ante* estimated net anthropogenic greenhouse gas emission reduction attributable to the AUD project activity at year t; tCO_2e
$VBCt$	Number of Buffer Credits deposited in the VCS Buffer at time t; t CO_2-e
$\Delta CBSLPAt$	Sum of baseline carbon stock changes in the project area at year t; tCO_2e
$\Delta CPSPAt$	Sum of *ex ante* estimated actual carbon stock changes in the project area at year t; tCO_2-e ha^{-1}
RFt	Risk factor used to calculate VCS buffer credits; %
t	1, 2, 3 ... T, a year of the proposed project crediting period; dimensionless.

In the Ecomapuá REDD project the RFt was estimated using the most recent version of the *VCS-approved AFOLU Non-Permanence Risk Tool* and the resulting value of RFt was 34%.

The summary of emission reductions are described in the table below:

Table 6: Estimated baseline emissions, project emissions and emission reductions for the crediting period.

Year	Estimated Baseline Emissions (tCO$_2$e)	Estimated Project Emissions (tCO$_2$e)	Estimated leakage emission within the leakage belt (tCO$_2$e)	Estimated net GHG emission reductions (tCO$_2$e)	Ex ante VCUs tradable (tCO2e)
2003	78,862	14,075	2,449	62,338	41,143
2004	72,130	12,873	2,240	57,017	37,631
2005	54,072	9,650	1,679	42,743	28,210
2006	91,544	16,338	2,842	72,363	47,759
2007	88,941	15,874	2,762	70,306	46,401
2008	93,632	16,711	2,907	74,014	48,849
2009	91,042	16,249	2,827	71,967	47,497
2010	91,026	16,246	2,826	71,954	47,489
2011	73,202	13,065	2,273	57,864	38,190
2012	118,642	21,174	3,684	93,784	61,897
2013	101,890	18,185	3,164	80,542	53,157
2014	83,236	14,855	2,584	65,796	43,425

Year	Estimated Baseline Emissions (tCO$_2$e)	Estimated Project Emissions (tCO$_2$e)	Estimated leakage emission within the leakage belt (tCO$_2$e)	Estimated net GHG emission reductions (tCO$_2$e)	Ex ante VCUs tradable (tCO2e)
2015	9,351	1,669	290	7,392	4,878
2016	106,247	18,962	3,299	83,986	55,430
2017	77,168	13,772	2,396	60,999	40,259
2018	37,982	6,779	1,179	30,024	19,815
2019	310,008	55,328	9,625	245,055	161,736
2020	17,207	3,071	534	13,602	8,977
2021	160,488	28,643	4,983	126,862	83,729
2022	70,753	12,628	2,197	55,929	36,913
2023	91,619	16,352	2,845	72,423	47,799
2024	114,367	20,411	3,551	90,405	59,666
2025	142,646	25,459	4,429	112,758	74,420
2026	12,855	2,294	399	10,162	6,706
2027	154,427	27,561	4,795	122,071	80,567
2028	85,690	15,293	2,661	67,736	44,706
2029	64,828	11,570	2,013	51,245	33,821
2030	98,282	17,541	3,052	77,690	51,275
2031	142,477	25,428	4,424	112,625	74,332
2032	10,736	1,916	333	8,487	5,601
Total	**2,745,350**	**489,972**	**85,240**	**2,170,138**	**1,432,278**

3.2.6.5 Uncertainties associated with the calculation of emissions
The uncertainties regarding the estimated emissions reductions are not described in VCS PD v2 /2/.

3.2.7   *Methodology Deviations*

The PPs informed that the creation of Table 10 (VM0015 v1.1) was judged not to be necessary as the data utilized to formulate the deforestation scenarios included the area history. Specifically, the procedure did not employ detailed information to develop the scenarios. For example, the presence of communities was not employed as a specific variable to create the factor map, however it was embedded in the deforested area variable and was considered for creation of the scenarios. In this sense, the absence of data relating to certain variables, such as the location of communities, roads and other factors, precluded the possibility of filling out Table 10 and creation of the risk map, the latter being based on the deforestation history.

In this case the validation team agrees with the justification of PPs about not being able to employ some variables independently to create a risk map.

3.2.8   Monitoring Plan

The monitoring plan is described in details in sections 4.1 to 4.3 of VCS PD v2, where the parameters available at the time of validation, the parameters that will be monitored, recording frequency and QA/QC procedures are deemed reasonable and appropriate.

3.2.8.1 Data and parameters available at validation

The parameters available at the time of validation are the following: Default value of carbon fraction in biomass (CF), Average biomass stock per hectare in the aboveground biomass pool of initial forest class (ab), Average biomass stock per hectare in the belowground biomass pool of initial forest class (bb), Ex ante estimated effectiveness index (EI), Displacement Leakage Factor (DLF), Annual carbon stock changes in leakage management areas in the baseline case at year t ($\Delta CBSLLKt$) and Sum of (or total) baseline non-CO2 emissions from forest fire at year t in the project area (EBBBSLPAt). These values are in accordance with the methodology V00015 v1.1, and could be updated according to the future measures in the baseline scenario. The values of $\Delta CBSLLKt$ and EBBBSLPAt were applied as zero. Other values were obtained from IPCC and scientific literature from Brazil.

3.2.8.2 Data and parameters monitored

The parameters monitored are described in section 4.2 of VCS PD v2 /2/. These are the following: Annual area within the Project Area affected by catastrophic events at year t (ACPAt), Annual area of deforestation within the leakage belt at year t (ABSLLKt), Annual area of deforestation in the project area at year t (ABSLPAt), Total decrease in carbon stocks due to displaced deforestation at year t ($\Delta CADLKt$), Total decrease in carbon stock due to all planned activities at year t in the project area ($\Delta CPAdPAt$), Total increase in carbon stock due to all planned activities at year t in the project area ($\Delta CPAiPAt$), Total annual carbon stock change in leakage management areas in the project case ($\Delta CPSLKt$), Total actual carbon stock change due to unavoided unplanned deforestation at year t in the project area ($\Delta CUDdPAt$), Sum of (or total) actual non-CO2 emissions from forest fire at year t in the project area (EBBPSPAt), Emissions from grazing animals in leakage management areas at year t (EgLKt), Total ex ante increase in GHG emissions due to displaced forest fires at year t (EADLKt) and Risk factor used to calculate VCS buffer credits (RFt). These parameters are in accordance with the methodology V00015 v1.1.

The values of $\Delta CPAdPAt$, $\Delta CPAiPAt$, $\Delta CPSLKt$, EBBPSPAt, EgLKt and EADLKt were applied as zero and will be subject to monitoring, when significant. Others values were obtained from remote sensing data and GIS and documents and literature. The RFt was also obtained from VCS Non-Permanence Risk Report (v3.1)_Ecomapuá Amazon REDD Project. The values can be deemed an accurate and conservative.

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3.2.8.3 Applicability and eligibility of monitoring equipment and procedures

This monitoring plan has been developed according to the VCS Methodology VM0015, version 1.1. A map showing Cumulative Areas Credited within the project area shall be updated and presented to VCS verifiers at each verification event.

The current baseline is valid for 10 years and will be reassessed every 10 years, and it will be validated at the same time as the subsequent verification. Information on agents, drivers and underlying causes of deforestation in the reference region will be collected at the end of each fixed baseline period.

Furthermore, the location of the projected baseline deforestation will be reassessed using the adjusted projections for annual areas of baseline deforestation and spatial data.

Regarding to monitoring deforestation and project emissions, the forest cover changes due to unplanned deforestation will be monitored through periodic assessment of classified satellite images covering the project area. The emissions from deforestation are estimated by multiplying the detected area of forest loss by the average forest carbon stock per unit area. The project boundary, as set out in the PD, will serve as the initial "forest cover benchmark map" against which changes in forest cover will be assessed over the interval of the monitoring period.

The carbon stock losses within the project area by natural disturbance and catastrophic events will be subject to monitoring and accounting, when significant, and will be estimated as soon as possible after the natural event, e.g. uncontrolled forest fires (non-CO_2 emissions) and other catastrophic events.

From the main way, the project activity will be monitored by continuous monitoring activities using remote sensing techniques. Additionally, field studies will also be used. The land-use monitoring will be carried out with remote sensing methods, using images generated by INPE (PRODES) and LANDSAT 5, which will be subject to digital processing to perform the interpretation and classification of the land cover classes studied. The frequency of monitoring / recording will be annually for the main parameters mentioned by PPs.

The management of the monitoring plan will be held by Sustainable Carbon – Projetos Ambientais Ltda, Agencia Verde and Ecomapuá Conservação Ltda, which means they will be responsible for emission reductions calculations, the monitoring plan, elaboration of the monitoring report for the verification processes, QA/QC procedures and data storage. To ensure consistency and quality of results, spatial analysys carrying out the image processing, interpretation, and change detection procedures will strictly adhere to the steps detailed in the Methodology.

4   ENVIRONMENTAL IMPACT

With the implementation of the project activity (Ecompuá REDD Project), it is expected to have positive effects locally and regionally. This forest conservation, combined with environmental education activities to the community are described by project proponents in VCS PD.

Among the major positive environmental effects are the reduction of carbon emissions and biodiversity conservation. It is important to note that the Brazilian Government Ministry for the environment (MMA - Ministério do Meio Ambiente) included the Marajó Island in its 2003 survey of Brazil's 900 priority areas for conservation. The entire island is classed within the ministry's highest priority category: "extremely high". Thus, the conservation of this private land located inside the Marajó Island is in accordance with the Brazilian Government proposal for conservation

No adverse effects were identified in the environmental and social. The community will be incorporated into the project, and is an important part of the implementation of this project activity.

5   COMMENTS BY STAKEHOLDERS

The validation team attended the meeting to present the Ecompauá REDD Project to stakeholders. This meeting was held on February 7, 2013, at the office in the municipal environment secretary in Breves municipality, State of Pará, Brazil.

As of the date of this validation, were not delivered any written comment from stakeholders. Only were the comments made by stakeholders at the meeting. Most stakeholders were informed of the project activity by information provided at the meeting.

6   VALIDATION CONCLUSION

The validation team of TÜV Rheinland has performed a Validation for the Ecomapuá Amazon REDD Project in Brazil on the basis of VCS Version 3, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the project design documentation and the subsequent follow-up interviews have provided TÜV Rheinland with sufficient evidence to determine the fulfillment of stated criteria. The project correctly applies the methodology "VCS:VM0015 Methodology for Avoided Unplanned Deforestation" v1.1

The validation team concluded that the Ecomapuá Amazon REDD Project is established as described in the VCS PD (v. 2) /2/ (dated 22 February 2013) and meets all relevant requirements of the above-defined criteria. TÜV Rheinland therefore issues a positive Validation opinion.

The estimated Emission Reductions during the crediting period (01/01/2003 – 31/12/2032) by the Ecomapuá Amazon REDD AUD Project are expected to be 1,432,278 tCO2e over the 30 year project lifetime.

7   APPENDIX A – VALIDATION PROTOCOL

Table 1: Validation requirements
(VCS Project Description, Ecomapuá version 7.6 (docx file); Tabelas Ecomapua 4.8 (xlsx file); Definição da Area do Projeto (docx file); Coordinates Project Area and Leakeage belt ((xlsx file); Documentos de Registros das Terras (11 pdf files); Definição de Estoque de Carbono (docx file); VM0015 Methodology for Avoided Unplanned Deforestation v1.1 (pdf file); VCS Non-Permanence Risk Report_Ecomapuá Amazon REDD Project_v1 (pdf file); AFOLU Requirements v3.3_0 (pdf file); VCS Validation and Verification Manual v3.0 (pdf file); VCS Guidance for Standardized Methods v3.2 (pdf file); Dinamica e desenvolvimento da agricultura familiar caso Vila Amélia Breves-PA (pdf file); Densidade de Madeira e Alometria de Árvores em Florestas do 'Arco do Desmatamento': Implicações para Biomassa e Emissão de Carbono a Partir de Mudanças de Uso da Terra na Amazônia Brasileira (pdf file); Comunidades Agroextrativistas do Rio Mapuá – Breves/Pa - Diagnóstico Socio-Econômico (pdf file); Caracterização da Vegetação e Uso do Solo das Terras Pertencentes a Empresa Ecomapuá (pdf file).

Checklist question	Ref.	MoV[1]	Findings, comments, references, data sources	Draft conclusion	Final conclusion
1. VCS Project Description Document					
1.1. Is the VCS PD presented for validation based on the latest template available at the VCS website?	/1/ /20/	DR	Yes, the VCS PD presented is based on the lasted template available at VCS website Ref: VCS Project Description Template v3.1		**OK**
1.2. Has the VCS PD been established in accordance with the VCS requirements for completing VCS PD issued by the VCS Association?	/1/	DR	Yes, the VCS PD has been established in accordance.		**OK**
2. Project Description					
2.1. Does the VCS PD contain a description, which provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation?	/1/	DR	Yes, the section 1.1 of the VCS PD provide a overview about the forestry resource in the region of Marajó Island and the project area.		**OK**
2.2. In the case of REDD project activity, is the project design described sufficiently by means of specifications, drawings and manuals?	/1/	DR	Yes, the PD and the others documents are sufficient to described it.		**OK**

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[1] MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.

2.3.	Does the project activity reflect current good practices, uses state of the art technology or would the technology result in a significantly better performance, than any commonly used technologies in the host country?	/1/	DR	The ECOMAPUÁ AMAZON REDD PROJECT used the state of art technology to analyse land use and land cover (LU/LC) prior to project initiation and the projection the future land use in the region. For this, Gis Mapping techniques and remote sensing satellite analysis were carried out.		**OK**
2.4.	Are the sectoral scopes and project type applicable to the project clearly described? Is the project a grouped project?	/1/	DR	The project is n°14 sectoral scope (Agriculture, Forestry, Land Use). The project is not a grouped project and is clearly identified as an REDD Avoided Unplanned Deforestation (AUD) project as part of the VCS AFOLU definition.		**OK**
2.5.	In cases where the project activity involves the alteration of an existing installation or process, does the VCS PD provide a clear description of the differences between the project and the pre-project scenario? *Please, provide Yes/Now answer and update Tables 2, 3 and 4 accordingly, if there is anything unclear in the provided description.*	/1/	DR	Not applicable		**N/A**
	Are all the contact information and responsibilities for the project proponents and others clearly described?	/1/	DR	The PD provides all the information about the project´s proponents and other entities involved in the project.		**OK**

2.6.	Does the project grouping apply for the proposed project? If yes, does the VCS PD include a description of one central GHG information system and controls associated with the project and monitoring?	/1/	DR	Not applicable.		**N/A**
2.7.	Does the central GHG information system and controls include items identified in ISO14064-3:2006, clause 4.5?	/1/	DR	Not applicable.		**N/A**
2.8.	What is the scale of the project? What are the estimated annual GHG emission reductions or removals for the project crediting period?	/1/ /3/ /4/	DR	The project is classified as a "Project". Because the estimated average annual GHG emission reductions of the project will producing less than 1 million of VCUs.		**OK**
2.9.	Does the VCS PD provide a clear description of the location of the project?	/1/ /5/ /6/	DR	Yes, the PD provides a clear description of the location of the project, the areas belonging to Ecomapuá Amazon REDD Project are located in the Furos de Breves micro-region. The Project is situated on Marajó Island (Ilha de Marajó) in Pará State, and is split into five properties (Portuguese: Fazendas): Bom Jesus, Brasileiro, Lago do Jacaré, São Domingos and Vila Amélia.		**OK**

2.10. Does the VCS PD provide a clear description of the characteristic or condition of wether, geographic, biodiversity and vegetation cover prior to the project initiation? Are there supporting evidence?	/1/ /2/	DR	Yes, the PD provides a clear description of the defining characteristics of climate, geomorphology, vegetation and biodiversity of the project area through maps and documents technicians. Furthermore, the data provides only 9 years before the beginning of the project (image 1993), and the second part of the methodology in "applicatibility condition" letter ***b***; "*At project commencement, the project area shall include only land qualifying as "forest" for a minimum of 10 years prior to the project start date".*	**CAR 1**	**CLOSED**
3. Compliance with Laws, Statutes and Other Regulatory Frameworks					

3.1 Are identifided the relevant local, regiona and national laws, statutes and regulatory frameworks?	/1/	DR	Yes, the PD identified. According to the Brazilian Forest Code (Law Nº 4.771, 15/09/1965 - D.O.U. of 16/09/65), all rural estates located in forest zones should have: I - Permanent preservation area: protected areas covered or not by native vegetation, with the environmental function of preserving water resources, landscape, geological stability, biodiversity, gene flow of plants and animals, protect the soil and ensure the well-being of human populations. II - Legal Reserve (LR): an area located within a rural property or possession, except for the permanent preservation, necessary for the sustainable use of natural resources, conservation and rehabilitation of ecological processes, biodiversity conservation and shelter, and protection of native flora and fauna. In the Brazilian Legal Amazon, eighty percent (80%) of a rural property should be preserved as LR.		**OK**

3.2	Is the project in compliance with all the relevant local, regional and national laws, statutes and regulatory frameworks identified?	/1/	DR	Yes, the project is in compliance. However, due that there is a general non-compliance with the Brazilian Forest Code, as around 23.4% of native vegetation has already been suppressed in 2001 (i.e. there was a deficit of 3.4% of native forest areas that should not have been suppressed in the Reference Region before the crediting period start date). Therefore, all calculations were made assuming that the Reference Region of the project has a general non-compliance with the Brazilian Forest Code. Thus, the baseline scenario considers the potential of unplanned deforestation in Project Area to surpass the limits stipulated by the Law.		OK
4.	**Ownership and Other Programs**					
4.1	Are available of proof of title of the land of the project?	/1/ /7/ /8/	DR	Yes, the legal documents proving the land title and ownership of each property were available for validation.		OK
4.2	Has the project been registered, or is seeking registration under any other GHG programs or other forms of environmental credits?	/1/	DR	No, the project have not registration in other GHG program or environmental credits program.		OK
5	**Project Start Date and Crediting Period**					

5.1 Are the project's start date clearly defined and evidenced? Does the project start date meet the requirements as stated in VCS AFOLU Requirements v3.3, clause 3.2.1?	/1/	DR	Yes, the PD described that a diagnostic study of the area, commissioned by Ecomapuá Ltda., was published on this date (start of project) analyzing the risk of deforestation over the next 30 years. The diagnostic study was the first action of the Ecomapua Company in terms of initiating the present REDD project, and is thus the designated project start date. This can be considerate as implementing activities management or protection plans.		**OK**
5.2 Is the start of the crediting period clearly defined and reasonable?	/1/	DR	Yes, the start of the crediting is clearly defined (January 1, 2003). And the finished data is on December 31, 2033. The project has a crediting period of 30 years.		**OK**
6 Application of Methodology					
6.1 General requirements					
6.1.1 Is the methodology used in the project activity an approved VCS Program methodology or a methodology from a VCS-approved GHG program? Is the selected methodology version still valid?	/1/ /14/	DR	The PD used the VM0015 Methodology for Avoided Unplanned Deforestation v1.1 (last version approved – December 3, 2012). This methodology is from VCS Program.		**OK**
6.2 Applicability of the selected methodology					
6.2.1 Are all applicability conditions of the selected methodology and all tools involved satisfied by the project activity?	/1/	DR	Most conditions were met, however the part that "*the project area shall include only land qualifying as "forest" for a minimum of 10 years prior to the project start date*" was not met because the images are available for 1993, nine years before the beginning of the project and not 10 years as required by the methodology.	**CAR 2**	**CLOSED**

6.2.2 Is the selection of the applied methodology justified?	/1/ /14/	DR	Yes, the selection is justified. The present project activity falls within category **A**, "Avoided Deforestation without Logging". The reason is that the project area contains only riparian dense tropical rainforest, and degradation is not included in either the baseline or project scenario.		**OK**
6.2.3 Is the selected methodology correctly quoted in all related documents?	/1/	DR	Yes, the selected methodology is quoted in the documents.		**OK**
6.2.4 Does the VCS PD sufficiently describe all the GHG emission sources or sinks occurring as a result of project activity, which have not been accounted for under the selected methodology and are expected to contribute less than 5% of the overall expected average annual emission reductions? .	/1/	DR	The source or sinks which were negligible are Dead Wood, Harvested wood products to be insignificant in their emissions. Litter e Soil organic carbon not to be measured according to VCS Program Update of May 24th, 2010 and Not to be measured in conversions to pasture grasses and perennial crop according to VCS Program Update of May 24th, 2010, respectively. Also, biomass burning and livestock emission were excluded because no biomass burning increase is predicted to occur in the project scenario compared to the baseline case and no livestock agriculture increase is predicted to occur in the project scenario compared to the baseline case.		**OK**
6.3 Project boundary					

6.3.1	Does the VCS PD correctly describe the spatial boundaries of the Project Area, Reference Region, Leakage Belt and Leakage Management?	/1/ /2/	I, DR	Yes, the PD (1.9 item) describe the spatial boundaries. However, the limits of the Leakage Belt and Leakage Management are presented in a different item (3.3), which complicates the understanding. Within the project area have been identified areas that were excluded because they were not defined as forest 10 years prior to PSD, but it was not given its size.	**CAR 3 CL1**	**CLOSED**
6.3.2	The criteria for defining forest and the maps used in PD are correct regarding the methodology?	/1/	DR	The criteria of this definition in accordance with the limits of the parameters of an area classified as "forest". The maps used comply with the size of Minimum Mapping Unit (MMU), where the pixel should be less than 1 hectare. In the maps shown in PD, the pixel corresponds to an area of 0.09 hectares.		**OK**
6.3.3	Does the VCS PD correctly indicate and describe the emission sources and sinks of GHG gases that are included in the project boundary?	/1/	DR	Yes, the project included Above-ground and Below-ground biomass of forest.		**OK**
6.3.4	In cases where the methodology allows project participants to choose whether a source or gas is to be included in the project boundary, is the choice explained and justified by PPs?	/1/	DR	The PD explains correctly the source or gas chosen.		**OK**
6.4 Baseline identification						
6.4.1	Has the procedure contained in the selected methodology to identify the most reasonable baseline scenario been applied correctly and documented in the VCS PD?	/1/	DR	It was identified applying the procedure contained in the methodology that best adjusted to more reasonable Baseline.		**OK**

| 6.4.1.1 Is the identified baseline scenario plausible? | /1/ /2/ | DR, I | It was identified that the Selection of Baseline Approach was the approach b., Time function, which was adopted to create the baseline.

Despite presenting a scenario Baseline drop in deforestation in the region of reference. That seems the most plausible. Were presented values of deforested areas in the years 2015, 2018, 2020, 2026 and 2032 significantly different from the years before and after them. (Table 21). It is not clear to "projection of future deforestation" how the application of Markov chains can predicting quantity of future deforestation. Being that is a stochastic model and serves to calculation of the probability of conversion of a pixel from "forest" to "non-forest" class at time t+1, ou seja, predicting location of future deforestation.

It was identified that the regression was carried out in a GIS environment (i.e. software IDRISI Selva), and the model of best fit was found to be the non-linear logistical logit regression. But it was unclear in Regression Analysis, how the **distance** to deforested areas currently can be a predictor of the **quantity** of future deforestation. | **CL 2** | **CLOSED** |

| 6.4.1.2 Are all assumptions stated in a transparent and conservative manner? | /1/ /2/ | DR, I | The DP has established assumptions for the baseline, where they are analyzed agents and drivers which cause the deforestation in the RR such as commercial timber harvest, extractivist activities (palm-heart e Açai-berry) and Family/ subsistence agriculture. These, in PD, are separated so that it seems that can act individually and with different forces as causes of deforestation. This fact does not happen in reality in Brazil, since the dynamics of deforestation presents these activities in a sequence and overlap in the same area. So we cannot say that a particular agent causes deforestation associated with their economic values of production - as described in PD. Also, note that does not match the activity of extraction of Acai (fruit) is an agent of deforestation.

Could not understand why it was done (described in PD) correlation between the prices of commercial timber extraction activities and deforestation in RR, and it was from this concluded that timber prices are variable which significantly predict the quantity of future deforestation in an inverse relationship. | **CAR 4**
CL 3 | **CLOSED** |

6.4.2 Does the selected methodology require the use of tools <u>and</u> does VCS PD reflects that correctly?	/1/	DR	The method requires the use of tools and techniques, the DP describe the use of them. Was used the GIS mapping, remote sensing techniques. In order to analyse land use and land cover (LU/LC) prior to project initiation, described in the present section, remote sensing satellite analysis was carried out.		**OK**
6.4.2.1 Were all the tools applied correctly?	/1/ /2/	DR	The methodology requires that the reference period of history is between 10-15 years before the start of the project (2002). In PD are presented satellite images of 1993, which do not meet the 10 years prior.	**CAR 5**	**CLOSED**
6.4.3 Were presented the maps to locate future deforestation?	/1/	DR	Were identified on the PD, the risk maps and the location of future deforestation maps to Leakage belt and Project Area.		**OK**
6.4.3 In case the methodology requires several alternative scenarios to be considered in the identification of the most reasonable baseline scenario, have all scenarios been considered <u>and</u> have no reasonable alternative scenario been excluded?	/1/	DR	Not applicable		**N/A**
6.4.3.1 Has the choice of the baseline scenario been done using conservative assumptions?	/1/	DR	Not applicable		**N/A**
6.4.4 Is the identified baseline scenario reasonable according to the assumptions, calculations and rationales used in the VCS PD and other reference sources?	/1/	DR	The Baseline follows a logical sequence and this according to the assumptions, calculations and rationales used in the VCS PD and other reference sources.		**OK**

6.4.5 Does the VCS PD describe how the national and sectoral policies relevant to the baseline scenario have been identified and considered in the VCS PD?	/1/	DR	Been identified in PD, which announces that the lack of oversight for implementation of the Forest Code is considered in the Baseline scenario.		**OK**
6.4.6 Is or has been the Baseline updated??	/1/	DR	Not identified the upgrade of the Baseline, and the methodology requires updating after 10 years of its establishment.	**CAR 6**	**CLOSED**
6.4.7 Does the VCS PD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the project activity?	/1/	DR	Yes, the VCS PD provides.		**OK**
6.5 Algorithm and/or formulate used to determine emission reductions					
6.5.1 Are all calculations applied and documented according to the selected methodology and in a complete and transparent manner?	/1/ /2/ /3/ /4/	DR	An error was detected in the calculation of the quantification of emissions to below-ground biomass at Baseline and Project Activity.	**CAR 7**	**CLOSED**
6.5.2 In case the methodology allows a selection between different options for equations or parameters, has adequate justification been given and have the correct equations and parameters been used, in accordance with the methodology selected?	/1/ /9/ /23/	DR	The PD applies the biomass inventory value determined by Nogueira (2008), which is in accordance with the type of vegetation present in the area of the project and scientific literature country. In PD parameter biomass conversion to carbon appears as 0.5. However, in the document "Definition of stock Carbon" (Annex V) appears as the factor 0.48.	**CL 4**	**CLOSED**
6.5.3 In case some data and parameters will not be monitored throughout the crediting period, but have already been determined and fixed, are all data sources, assumptions and calculations correct, applicable to the proposed VCS project activity and conservative?	/1/	DR	Not applicable		**N/A**

6.5.4 In case data and parameters will be monitored on implementation and hence become available only after validation of the project activity, are the estimates provided in the VCS PD for these data and parameters reasonable?	/1/	DR	Not applicable		**N/A**
6.6 Leakage Belt and Leakage Management					
6.6.1 Has the leakage been identified and calculated according to the approved methodology?	/1/	DR	It was identified that the Leakage Belt and Leakage Management were calculated according to the methodology.		**OK**
6.6.2 Have the leakage been addressed in complete, conservative and substantiated manner?	/1/	DR	The Leakage presents so complete, conservative and substantiated.		**OK**
7 Additionality					
7.1 Identification of alternatives					
7.1.1 What additionality tool has been selected in the VCS PD?	/1/ /19	DR	The PD applied the VCS Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities (VT0001) Version 3.0		**OK**
7.1.2 Does the VCS PD identify and list credible alternatives to the VCS project activity in order to determine the most realistic baseline scenario, unless selected approved methodology prescribes/identifies the baseline scenario and no further analysis is required?	/1/	DR	The PD indentified 3 possible activities or alternatives to the VCS project and they are the most realistic baseline scenario.		**OK**
7.1.3 Does the list of alternatives include as one of the options that the project activity is undertaken without being registered as a VCS project activity?	/1/	DR	The list of alternatives included are options that not being registered as a VCS project activity		**OK**

7.1.4 Does the list contain all realistic/credible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the project activity?	/1/	DR	The activities are shown to be credible alternatives by official data, timber, açaí and palm-heart being the three products with the highest average production values in the four municipalities of the project area.		**OK**
7.1.5 Is the exclusion of the alternatives for legal reasons justified? *Note: Some alternatives might be illegal, according to the local regulations, but still widely practiced due to lack of enforcement. It should be verified.*	/1/	DR	Not applicable		**N/A**
7.2 Investment Analysis					
7.2.1 Are all sources of revenues (including savings) have been considered in the VCS PD and all calculations?	/1/	DR	Yes, all the source of revenues has been considered.		**OK**
7.2.2 Is the type of investment analysis selected correctly in the VCS PD?	/1/	DR	The simple cost analysis was determined as the appropriate analysis method.		**OK**
7.2.3 Is the selected financial indicator chosen and applied correctly?	/1/	DR	Not is selected any indicator for this analysis.		**OK**
7.2.4 Is the guidance on IRR calculation and assessment correctly applied? *Note: Means of validation should be recorded.*	/1/	DR	Not applicable		**OK**
7.2.5 In case project participants use values from Feasibility Study Reports (FSR) is it possible to verify that the period between the FSR date and investment decision was reasonably short and FSR values did not change materially?	/1/	DR	The PD not presented the FSR.		**OK**
7.2.6 Are all the values consistent between FSR and VCS PD and are inconsistencies properly justified?	/1/	DR	The PD not presented the FSR.		**OK**

7.2.7	Were all the values from FSR applicable and valid at the time of the investment decision?	/1/	DR	The PD not presented the FSR.		**OK**
7.2.8	Is it reasonable to assume that no investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the project participants or some verifiable circumstances that have lead to a change in the benchmark?	/1/	DR	At the PD was determined that the Ecomapuá Amazon REDD project does not generate any financial or economic benefits other than VCS related income. There is no for-profit sale of NTFPs, timber or any other product involved in the project activity, and the sum of Ecomapuá Ltda. annual financial balance, since the company's founding in 2001 until 2011, was minus R$298,222.		**OK**
7.3 Barrier analysis						
7.3.1	Are there any issues addressed in the barrier analysis that have a clear impact on the financial viability of the project activity and that shall be assessed by an investment analysis?	/1/	DR	Not applicable		**N/A**
7.3.2	Do the listed barriers exist and is their existence substantiated? Note: (a) by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics and/or (b) by interviews with relevant individuals: including members of industry associations, government officials or local experts if necessary?	/1/	DR	Not applicable		**N/A**

7.3.3 Would any of the identified barriers prevent the implementation of the project activity but not equally prevent the implementation of the possible alternatives, in particular the implementation of the identified baseline scenario?	/1/	DR	Not applicable		**N/A**
7.4 Common practice analysis					
7.4.1 Does the additionality tool require common practice analysis for the project?	/1/	DR	Yes, the additional tool require common practice analysis for the REDD project.		**OK**
7.4.2 If the PPs claim in the VCS PD that VCS project activity is the "first of its kind", is it justified?	/1/	DR	The ECOMAPUA REDD Project is not the unique project in State of Pará, however it´s the first at Marajó Island and the project VCS AFOLU activity is not the baseline scenario in the region.		**OK**
7.4.3 Are the geographical scope of the project activity identified correctly?	/1/	DR	The geographical scope was understood as correct. Due that the REDD Project activity is at Marajó Island.		**OK**
7.4.5 Are there similar operational project activities, other than VCS activities, "widely observed and commonly carried out" in the defined region?	/1/	DR	There are some others similar operational project activities on the State of Para, however they all have the essential distinction that none are located within privately-owned areas. For example, two projects in Pará state, which are located in Indigenous Reserves: the "Fundo Kayapó de Conservação em Terras Indígenas", and the Pilot REDD project in São Félix do Xingu municipality. The fact of being located within a government conservation area makes these projects essentially different to the Ecomapuá REDD project. Futhermore no one of them are located on the Marajó Island.		**OK**

7.4.6 In case there are similar commercially operated project activities, other than VCS activities, already "widely observed and commonly carried out" in the defined region, are there essential distinctions between the VCS project activity and the other similar activities?	/1/	DR	There is the RainTrust REDD+ project, which is a privately-owned forest conservation area, however it cannot be considered in the present common practice analysis because it is a registered V-C-S AFOLU project, which is to be excluded in accordance with the V-C-S Additionality Tool.		**OK**
8 Methodology Deviations					
8.1 Has any methodology deviation been applied? If yes, has the deviation been justified?	/1/	DR	Yes, deviation has been applied and justified.		**OK**
9 Quantification of GHG Emission Reductions and Removals					
9.1 Has the procedure for quantification of the baseline emissions and/or removals been properly described? Have all the relevant equations described?	/1/ /2/ /3/ /4/	DR	The procedure for quantification of the baseline emissions and/or removals is not properly described. The calculation procedure presents wrong in Tables 45 and 46. All the relevant equations are described on VCS – PD.	**CAR 8**	**CLOSED**
9.2 Are the estimated baseline emissions calculated correctly?	/1/ /2/ /3/ /4/	DR	An error was detected in the calculation of the quantification of emissions to below-ground biomass in RR, PA and LK Belt. (Table 49, 51 and 54).	**CAR 9**	**CLOSED**
9.3 Has the procedure for quantification of the project emissions and/or removals been properly described? Have all the relevant equations described?	/1/	DR	The procedure for quantifying carbon emissions by the project activity does not have to be appropriate for this case. In the PD are described in the relevant equations.		**OK**
9.4 Are the estimated project emissions calculated correctly?	/1/ /2/ /3/ /4/	DR	The calculations are presented in the right way, but as dependent on other values previously calculated, the results are not correct.	**CAR 10**	**CLOSED**

9.5 Has the procedure for quantification of leakage belt been properly described? Have all the relevant equations described?	/1/	DR	The procedure for quantifying carbon emissions by the project activity does not have to be appropriate for this case. In the PD are described in the relevant equations.		**OK**
9.6 Are the estimated leakage belt calculated correctly?	/1/ /2/ /3/ /4/	DR	Calculations show up correctly, but how depends on the value of DLF, the results are not correct.	**CAR 11**	**CLOSED**
9.7 Has the procedure for quantification of net GHG emission reductions and removals been properly described? Have all the relevant equations described?	/1/	DR	The procedures for quantitation were appropriately described as the equations.		**OK**
9.8 Are the net GHG emission reductions and removals calculated correctly?	/1/ /2/ /3/ /4/	DR	The results of GHG emissions do not show up correctly calculated.	**CAR 12**	**CLOSED**
9.9 Have the major risks and uncertainties, which can influence the emission reduction estimates, been identified and addressed in the VCS PD?	/1/	DR	Not were identified in the PD, the risks and uncertainties of project.		**OK**
10 Monitoring plan					
10.1 Are all parameters required by the selected approved methodology or tool identified <u>and</u> listed in the VCS PD?	/1/	DR	The parameters required by the selected approved methodology or tool identified are listed in the VCS PD.		**OK**
10.2 Is the measurement method clearly stated for each value to be monitored and deemed appropriate?	/1/	DR	Yes, the measurement method is clearly stated for each value to be monitored and deemed appropriate.		**OK**
10.3 Are values of the ex-ante parameters / monitoring parameters selected correctly and conservative in accordance to methodology or tools?	/1/	DR	Yes, the values of the ex-ante parameters / monitoring parameters are selected correctly and conservative in accordance to methodology or tools.		**OK**
10.4 Is the measurement equipment for each parameter described and deemed appropriate?	/1/	DR	Yes, the measurement equipment is described.		**OK**
10.5 Is the measurement accuracy addressed and deemed appropriate?	/1/	DR	Yes, the measurement accuracy is deemed appropriate.		**OK**

10.6 Are procedures in place on how to deal with erroneous measurements <u>and</u> are the corrective actions identified?	/1/ /2/	DR	Not presented (1st round of validation)/ Not were identified in the PD V2.	**CAR 13**	**CLOSED**
10.7 Is the frequency of measurement identified and deemed appropriate?	/1/ /2/	DR	Not presented (1st round of validation) / Yes, the frequency of measurement was identifies and is deemed appropriate.	**CAR 13**	**CLOSED**
10.8 Is the monitoring plan documented according to the approved methodology and in a complete and transparent manner?	/1/ /2/	DR	Not presented (1st round of validation)) / Yes, the monitoring plan is documented according to the methodology.	**CAR 13**	**CLOSED**
10.9 Are the sampling, measurement methods and procedures defined?	/1/ /2/	DR	Not presented (1st round of validation) / Yes, the sampling, measurement methods and procedures are defined in the VCS PD V2.	**CAR 13**	**CLOSED**
10.10 Are procedures identified for maintenance of monitoring equipment and installations?	/1/	DR	Not Applicable		**N/A**
10.11 Are the equipment calibration intervals identified and justified?	/1/	DR	Not applicable		**N/A**
10.12 Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	/1/	DR	Not applicable		**N/A**
10.13 Are the monitoring arrangements described in the monitoring plan feasible within the project design?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, the monitoring arrangements described in the monitoring are plan feasible within the project design	**CAR 13**	**CLOSED**
10.14 Are the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, sufficient to ensure that the emission reductions achieved by / resulting from the project activity can be reported ex post and verified?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, the means of implementation of the monitoring plan can be reported ex post and verified	**CAR 13**	**CLOSED**

10.15 Do the PPs make provisions for personnel training needs?	/1/ /2/	DR	Not presented (1st round of validation) / Not was defined make provisions for personnel training needs in the VCS PD V2.	**CAR 13**	**CLOSED**
10.16 Is the authority and responsibility of overall project management clearly described?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, the authority and responsibility of overall project management is clearly described	**CAR 13**	**CLOSED**
10.17 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, the procedures are identified for emergency as monitoring of natural disturbance and catastrophic events.	**CAR 13**	**CLOSED**
10.18 Are procedures identified for review of reported results/data?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, procedures are identified.	**CAR 13**	**CLOSED**
10.19 Is the data archiving period for this project activity stated in the VCS PD and appropriate?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, the data archiving period is stated and appropriate.	**CAR 13**	**CLOSED**
11 Monitoring of the leakage					
11.1 Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage. This information is available in section 4.3 of VCS PD V2	**CAR 14**	**CLOSED**
11.2 Is the choice of project leakage indicators made according to selected methodology in a reasonable and conservative manner?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, the choice of indicators is reasonable and conservative manner.	**CAR 14**	**CLOSED**
11.3 Is the measurement method clearly stated and deemed appropriate for each leakage value?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, the measurement method clearly stated and deemed appropriate for each leakage value.	**CAR 14**	**CLOSED**
12 Sustainable development					

12.1 If VCS PD indicates any additional environmental benefits of the project, other than GHG emission reductions, were those benefits properly substantiated?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, some environmental benefits apart from GHG emission reduction are described in section 5 of PD	**CAR 15**	**CLOSED**
13 Stakeholders' consultation and comments					
13.1 Were the stakeholders identified in appropriate and complete manner?	/1/ /2/	DR	Not presented (1st round of validation) / VCS projects don't claim for a Stakeholder Consultation Process, but even so, the PPs identified in appropriate and complete manner the stakeholders for this project activity. This information is available in section 6 of PD	**CAR 16**	**CLOSED**
13.2 Are the identified stakeholders plausible?	/1/ /2/	DR	Not presented (1st round of validation) / Yes, the identified stakeholders are plausible. There are identifying by the presence list.	**CAR 16**	**CLOSED**
13.3 Does VCS PD describe the means being used to invite local stakeholder's comments?	/1/ /2/	DR	Not presented (1st round of validation) / Yes, the stakeholders were informed about the project through letters.	**CAR 16**	**CLOSED**
13.4 Were those means appropriate?	/1/ /2/	DR	Not presented (1st round of validation) / Yes, the Validation Team considered that sending letters are appropriate.	**CAR 16**	**CLOSED**
13.5 Was the project presented to the stakeholders in unbiased manner?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, the stakeholders were informed in unbiased manner.	**CAR 16**	**CLOSED**
13.6 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/1/ /2/	DR	Not presented (1st round of validation)/ Not applicable. There is no need under Brazilian law to carry out a stakeholder consultation process for REDD projects.	**CAR 16**	**CLOSED**
13.7 Is a summary of the stakeholder comments provided in the VCS PD?	/1/ /2/	DR	Not presented (1st round of validation)/ No comments were provided yet.	**CAR 16**	**CLOSED**

13.8 Has due account of any stakeholder comments been taken by PPs and reflected in the VCS PD?	/1/ /2/	DR	Not presented (1st round of validation)/ No comments were provided yet.	**CAR 16**	**CLOSED**
14 Environmental impacts					
14.1 Is the documentation supplied by the PPs regarding environmental impacts relevant and accurately reflected in the VCS PD?	/1/ /2/	DR	Not presented (1st round of validation) / No documentation were provided on VCS PD V2	**CAR 17**	**CLOSED**
14.2 Is an environmental impact assessment (EIA) required for the VCS project activity? *Note: determine by using a review of relevant legislation and local expertise.*	/1/	DR	Not applicable		**N/A**
14.3 In case an EIA is required, has the EIA has been approved by local authorities and is the outcome accurately reflected in the VCS PD?	/1/	DR	Not applicable		**N/A**
14.4 Does the VCS PD include a brief description of the environmental effects of the project, including transboundary?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, there is a brief description on page 112 and 113 of PD V2.	**CAR 17**	**CLOSED**
14.5 Are those effects properly addressed in the design of the project activity?	/1/ /2/	DR	Not presented (1st round of validation)/ Yes, there are effects properly addressed in the PD V2.	**CAR 17**	**CLOSED**
14.6 Does the project comply with environmental legislation in the host country?	/1/ /2/	DR	Not presented (1st round of validation) / Yes, the Project is the accordance with environmental legislation in Brazil.	**CAR 17**	**CLOSED**

Table 2: List of Requests for Corrective Action (CAR) and Clarification (CL)			
Observation (CAR/CL)	**Reference**	**Summary of project owner response**	**Validation team conclusion**
CAR1 Is required to submit data at least 10 years before the date of commencement of the project. According to the methodology indicated in VCS.	2.11	Due to the conditions of the region, some satellite images covering the reference region at the year of 1992 were missing and not available, thus not being possible to complete the whole image. In addition, there was a high cloud-cover level in the available images of this year. Thus, this year was not included into the analysis. The year of 1993 was then utilized to exclude from the project area, forests that are less than 10 years old at the project start date. This was clarified in the VCS PD V2, section 1.10.	Response accepted. In addition, although the start date of the project is in 2002, the credit period begins in 2003. However, the evidence of images of 1993 may be considered to comply with the 10 years prior. CAR is CLOSED.
CAR2 Evidence must be submitted with at least 10 years prior to the beginning of the project, on the classification of forest and non-forest in the project area.	6.2.1	Due to the conditions of the region, some satellite images covering the reference region at the year of 1992 were missing and not available, thus not being possible to complete the whole image. In addition, there was a high cloud-cover level in the available images of this year. Thus, this year was not included into the analysis. The year of 1993 was then utilized to exclude from the project area, forests that are less than 10 years old at the project start date. This was clarified in the VCS PD V2, section 1.10.	Response accepted. CAR is CLOSED.
CAR3 It is necessary to put in item 1.9 of the PD description of the spatial boundaries of the Leakage Belt and Leakage Management for better understanding.	6.3.1	Both Leakage Belt and Leakage Management Area descriptions were moved to the section 1.9 of the VCS PD V2, Project Location.	Corrections were done. CAR is CLOSED
CAR4 It is necessary to reassess the analysis on the weight of each driver on deforestation in the RR, since the	6.4.1.2	The analysis of agents, drivers and underlying causes of deforestation was corrected in the VCS PD V2,	Information properly added to VCS PD V2. CAR is CLOSED.

	dynamics of land use and deforestation in Amazonia, these activities follow a sequence and are superimposed in the same area. Thus, it is not correct to say that each driver has his weight and pressure on deforestation associated with the sale value of their products. Taking out the PD, the activity of extracting the Acai fruit as driver of deforestation. This is an erroneous statement.		section 2.4. The agents were not considered separately anymore, but as being spatially overlapping and forming a single deforestation dynamic. The açaí extraction was removed from the analysis of agents and drivers of deforestation.	
CAR5	Present evidence of at least 10 years prior to the date of commencement of the project to evaluate the historical reference of RR, as required by the methodology.	6.4.2.1	Due to the conditions of the region, some satellite images covering the reference region at the year of 1992 were missing and not available, thus not being possible to complete the whole image. In addition, there was a high cloud-cover level in the available images of this year. Thus, this year was not included into the analysis. The year of 1993 was then utilized to exclude from the project area, forests that are less than 10 years old at the project start date. This was clarified in the VCS PD V2, section 1.10.	Response accepted. In addition, although the start date of the project is in 2002, the credit period begins in 2003. However, the evidence of images of 1993 may be considered to comply with the 10 years prior. CAR is CLOSED.
CAR6	Submit to update the BL because that was the beginning of the project in 2002, and the methodology requires that this update is performed after 10 years of its implementation, so it would be in 2012.	6.4.6	The Project start date of this project was on 01/09/2002, and the crediting period start date begins on 01/01/2003. The revision of the second baseline period will be done together with the 1st monitoring report, comprising information from 2003 to 2012.	Response accepted. CAR is CLOSED.
CAR7	It is necessary to redo the calculations to quantify emissions of carbon into the pool below-ground biomass in the BL. This was because only considered the first year of deforestation of BL, not being	6.5.1	The calculations of below ground biomass emissions were corrected.	Corrections were done. CAR is CLOSED

quantified the remaining years of the BL project.			
CAR8 Describe the procedure of calculation correctly in tables 45 and 46.	9.1	The tables 47 and 48 (old 45 and 46, respectively) were both corrected accordingly.	Corrections were done. CAR is CLOSED
CAR9 Recalculate quantifying emissions that appear in Tables 49, 51 and 54 to below-ground biomass of RR, PA and KL Belt.	9.2	These tables were all corrected.	Corrections were done. CAR is CLOSED
CAR10 It is necessary to recalculate emission estimates for the project area in PD.	9.4	The PD was revised and the estimated emission reductions in the project area were recalculated.	Corrections were done. CAR is CLOSED
CAR11 It is necessary to recalculate emission estimates for the Leakage Belt, since it must also be analyzed again the value of DLF.	9.6	The estimated emissions in the leakage belt were recalculated according to the corrected DLF value.	Corrections were done. CAR is CLOSED
CAR12 Recalculate and restate the estimates of C emissions from the project.	9.8	The PD was revised and the estimated emission reductions generated by this project were recalculated.	Corrections were done. CAR is CLOSED
CAR13 Must be presented the full item Monitoring Plan.	10.6 – 10.19	The section 4.3 – Monitoring Plan was presented in the VCS PD V2.	This information was properly added to the VCS PD V2, and all evidences were checked and deemed appropriate by the Validation Team. CAR is CLOSED.
CAR14 Must be presented the full item Monitoring Leakage.	11	The item – Monitoring Leakage – was presented in the VCS PD V2, section 4.3.	This information was properly added to the VCS PD V2, and all evidences were checked and deemed appropriate by the Validation Team. CAR is CLOSED.
CAR15 Must be presented the full item Sustainable Development.	12	The item – Sustainable Development – was presented in the VCS PD V2, section 5. Moreover, the present project aims to improve and quantify its social and environmental benefits through application of the	This information was properly added to the VCS PD V2, and all evidences were checked and deemed appropriate by the Validation Team. CAR is CLOSED.

		SOCIALCARBON® Methodology, which will be carried out during the first monitoring period.	
CAR16 Must be presented the full item Stakeholders	13	The section 6 – Stakeholder Comments was presented in the VCS PD.	This information was properly added to the VCS PD V2, and all evidences were checked and deemed appropriate by the Validation Team. CAR is CLOSED.
CAR17 Must be presented the full item Environmental Impacts	14	The section 5 – Environmental Impact was presented in the VCS PD V2.	This information was properly added to the VCS PD V2, and all evidences were checked and deemed appropriate by the Validation Team. CAR is CLOSED.
CL1 Clarify the size of the areas that were considered as non-forest in the Project Area.	4.3.1	The size of the areas that were considered as non-forest within the project area was clarified in the VCS PD V2, section 1.9.	Correction made. CL is CLOSED.
CL2 Clarify for "projection of future deforestation" how the application of Markov chains can Predicting quantity of future deforestation. Being that is a stochastic model and serves to calculation of the probability of conversion of the pixel from "forest" to "non-forest" class at time t +1, ie, Predicting location of future deforestation. Clarify how, in Regression Analysis, the **distance** to deforested areas currently can be a predictor of the **quantity** of future deforestation.	6.4.1.1	The projection of future deforestation was better described in the VCS PD V2, section 2.4. In order to project the quantity and location of future deforestation, the following sequence of functions was applied in the GIS Idrisi 17.0 environment to determine the land use scenario from 2003 – 2032: Markov chains; followed by Markov chains coupled with a cellular automata algorithm. Combined, this model, called *ca_Markov*, joins the changing cells concept from cellular automatons with the change probability from Markov chains. When utilized together, this method can be used to predict the future land use change.	Explanation accepted. CL is CLOSED

		In the regression analysis, the distance to areas currently deforested was considered as a predictor of the probability of future deforestation. This was corrected in the VCS PD.	
CL3 Clarify why the correlation between the prices of commercial timber and extraction activities and deforestation in RR, and this correlation appears as failure, since, for example, the area deforested in one year may not be related the commercial price of wood because this extraction activity is limited to only a few trees per hectare and not to cut all the trees in the area.	6.4.1.2	The correlation between the driver variables of deforestation was corrected in the VCS PD V2, section 2.4. This analysis now comprises the correlation between population growth rate, increase in human development index (HDI) and transition to urban areas versus deforestation.	Correction accepted. CL is CLOSED.
CL4 Clarify what is the parameter to convert biomass to carbon used in PD, since it appears as 0.5 in PD, however, the document "Definition of stock Carbon" (Annex V) appears as the factor 0.48.	6.5.2	The correct parameter to convert biomass to carbon is 0.5. The annex V was corrected accordingly.	Correction made. CL is CLOSED.