



ENVIRONMENTAL SERVICES, INC.

Natural Forest Standard Forest Project Verification Report

TROCANO ARARETAMA CONSERVATION PROJECT

Report Date: 17 September 2013

Project Developer:

Celestial Green Ventures PLC

Verification Conducted by:

Environmental Services, Inc.

Forestry, Carbon, and GHG Services Division

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Project Number: VO12068.00



ANSI ACCREDITED PROGRAM
GREENHOUSE GAS
VALIDATION AND VERIFICATION
0800

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1 EXECUTIVE SUMMARY

Environmental Services, Inc., (ESI) was contracted by Celestial Green Ventures PLC (CGV) on 05 July 2012 to conduct the Natural Forest Standard (NFS) project verification of Trocano Araretama Conservation Project, Project Design Document (PDD) dated March 2013. Our verification process closely followed the NFS Standard Requirements (Version 1.1, April 2013) the selected methodology (NFS AM001.1), ISO14064-3:2006, and ISO 14065:2007.

The Trocano Araretama Conservation Project's primary objective is to mitigate GHG emissions; including the conservation of the natural forest ecosystem, the protection of endangered habitats of the Indigenous Tribes and other communities, and biodiversity protection of both plants and animals, which are reliant on this vulnerable habitat. "The Trocano Araretama Conservation Project was conceived in order to generate reductions in deforestation in the project areas while preserving existing biomass in this region. This project presents a carbon stock baseline estimation of 65,708,138 tC at risk over the 20 year crediting period of the project, from the project start date of 10th June 2011, as calculated using the Natural Forest Standard AM001.1 methodology and the Geospatial Platform data layers. The project is located in the Municipality de Borba, Amazonia, Brazil. Nearest city is Manaus (150km). The project area is 1,346,541.26 hectares or 13,465.4126 km²."¹

The verification objective was to ensure the project is in compliance with NFS Standard Guidance criteria and the validated PDD. ESI assessed the GHG emission removals through avoiding deforestation and/or degradation of natural forests, and/or restoring degraded natural forest. The scope of the verification, included the GHG project and implementation; baseline scenarios; physical infrastructure, activities, technologies and processes of the GHG project; GHG sources, sinks and/or reservoirs; types of GHG's; time periods; and the validated PDD dated March 2013. The geographic verification scope was defined by the project boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods as outlined validated PDD.

The verification criteria followed the guidance documents provided by NFS: NFS Standard (Version 1.1, April 2013), NFS Glossary of Terms (Version 1.1 April 2013), NFS Standard Guidance (Version 1.2, April 2013), and Natural Forest Standard Approved Methodology NFS AM001.1. The method employed by ESI in the verification process was derived from all items in ESI's internal verification process, which included utilizing NFS documents and ISO 14064-3 to develop and implement a Verification & Sampling Plan.

A summary of all verification findings is included in Appendix B.

ESI confirms all verification activities including objectives, scope and criteria, level of assurance, monitoring and project documentation adherence to NFS (Version 1.1) as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that the PDD entitled *Trocano Araretama Conservation Project* (dated March 2013), the Project Implementation Report (dated 12 August 2013) and the internal Project Management Plan (Version 1.3, 12 August 2013) meets the requirements of NFS.

The GHG assertion provided by CGV and verified by ESI has resulted in the GHG emissions reduction or removal of 7,702,808 tCO₂ equivalents by the project during the verification period of 10 June 2011- 31 July 2012.

¹ *Trocano Araretama Conservation Project, Project Design Document, March 2013*



2 INTRODUCTION

This verification report is prepared in accordance with the requirements of the Natural Forest Standard (NFS) Version 1.1 (April 2013). Environmental Services, Inc., (ESI) presents project verification findings of the *Trocano Araretama Conservation Project* – prepared by Celestial Green Ventures PLC (CGV). The project verification was conducted as part of the NFS’s program requirements for GHG offset projects. ESI is accredited by the American National Standards Institute under ISO14065:2007 for greenhouse gas validation and verification bodies including ISO 14064-3:2006, ISO 14065:2007, and validation/verification of assertions at the project level for Land Use and Forestry (Group 3) and is approved to validate/verify for the NFS.

2.1 Project Developer and Other Entities - Contact Information

This project is implemented by CGV. Information regarding the project proponent is included below:

Project Proponent	Point of contact	Roles/ Responsibility	Contact Details
Celestial Green Ventures PLC	Ciaran Kelly Chief Executive Officer	Project developer, implementer, manager	93 St Stephens Green, Dublin 2, Ireland Telephone: +353 1 428 3404 Email: info@celestialgreenventures.com Web: www.celestialgreenventures.com

In addition to the project proponents, there are other individuals and organizations that play an operative role in the project. These entities are presented below:

Other Entities	Point of contact	Roles/ Responsibility	Contact Details
Municipality of Borba	José Maria da Silva Maia, Prefeito (Mayor) de Borba	Represents ownership and management of project lands.	Av May 13, 108 – Centro, Borba - Amazonas – Brazil, CEP: 69200-000 Tel: + 0055 92 35122065 Web: www.prefeituradeborba.am.gov.br
Instituto Amazon Livre (Institute Free Amazon)	Antônio José do Nascimento Fernandes, , General Secretary	Project technical consultant	Dr. Alminio Street, 236 – Centro, Manaus - Amazonas – Brazil, CEP: 69005-200 Tel: +55 92 8143 8420 Email: antoniojnf@hotmail.com
Ecometrica	Karin Viergever, Head of Land Use and Spatial Analysis	Project technical consultant, Geospatial Platform Liaison	Top Floor, Unit 3B, Kittle Yards, Causewayside, Edinburgh, EH9 1PJ Telephone: +44 131 662 4342 Email: karin.viergever@ecometrica.com Web: www.ecometrica.com



2.2 Verification Team - Roles and Responsibilities and Contact Information

<p>Accredited Validation Entity:</p> <p>Environmental Services, Inc.</p>	<p>Environmental Services, Inc. Forestry, Carbon, and GHG Services Division 7220 Financial Way, Suite 100 Jacksonville, Florida 32256 Phone: 904-470-2200 www.esicarbon.com</p> <p>Lead Verifier: Stewart McMorro Verification Team Members: Shawn McMahon, Rich Scharf, Jonathan Pomp, and Matt Perkowski Senior Internal Reviewer: Caitlin Sellers QA/QC: Janice McMahon</p>
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2.3 Project Description

The Trocano Araretama Conservation Project’s primary objective is to mitigate GHG emissions through avoided deforestation; including the conservation of the natural forest ecosystem, the protection of endangered habitats of the Indigenous Tribes and other communities, and biodiversity protection of both plants and animals, which are reliant on this vulnerable habitat.

“The Trocano Araretama Conservation Project was conceived in order to generate reductions in deforestation in the project areas while preserving existing biomass in this region. This project presents a carbon stock baseline estimation of 65,708,138 tC at risk over the 20-year crediting period of the project, from the project start date of 10th June 2011, as calculated using the Natural Forest Standard AM001.1 methodology and the Geospatial Platform data layers.

The primary objectives of the project are as follows:

- Avoid deforestation within the project area for the duration of the project;
- Categorize the risk of deforestation to the project area, using the ACEU rule as per the NFS AM001.1 methodology;
- Identify the areas most at risk of deforestation and implement effective protection and monitoring;
- Conservation and preservation of the natural forest;
- Raising civic pride and appreciation of the natural forest;
- Strengthening of Local Forest Protection;
- Biodiversity protection of the plants, animals and the ecosystem as a whole;
- Socio-economic enhancements for the local communities, including healthcare, education, employment and infrastructure improvements; and
- Data collection, including inventorying biodiversity, forest, flora and fauna.”²

² Trocano Araretama Conservation Project, Project Design Document, March 2013



2.4 Verification Objective:

The verification objective was to ensure that the project was in compliance with NFS Standard Guidance criteria and the validated PDD. ESI assessed the GHG emission removals through avoiding deforestation and/or degradation of natural forests, and/or restoring degraded natural forest.

2.5 Verification Level of Assurance:

The level of assurance was used to determine the depth of detail that the verifier placed in the verification plan to determine if there were any errors, omissions, or misrepresentations (ISO 14064-3:2006). For this verification, ESI selected samples of data and information to be verified to provide *reasonable assurance* and to meet the materiality requirements of the specific project (NFS).

2.6 Verification Criteria:

The verification criteria followed the verification guidance documents provided by NFS. These documents included the following:

- *NFS Standard (Version 1.1, April 2013)*
- *NFS Glossary of Terms (Version 1.1 April 2013)*
- *NFS Standard Guidance (Version 1.2, April 2013).*
- *Natural Forest Standard Approved Methodology NFS AM001.1*

2.7 Verification Scope:

The verification scope, included the GHG project and implementation; baseline scenarios; physical infrastructure, activities, technologies and processes of the GHG project; GHG sources, sinks and/or reservoirs; types of GHG's; time periods; and the validated PDD, dated March 2013. The geographic verification scope was defined by the project boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods.

Baseline Scenario	No increase in environmental services to the project area including the three main activities outlined below.
Activities/Technologies/Processes	The Trocano Conservation Project's primary project activity over the 1,346,541.26-ha total project area is to reduce GHG emissions from avoiding deforestation and degradation within the project area. This will be achieved by implementing an effective monitoring and management plan, whilst encouraging more effective forest governance and providing additional co-benefits to the communities and biodiversity within the project area. These additional activities include the following: <ul style="list-style-type: none"> • Conservation and preservation of the natural forests; • Biodiversity protection of the plants, animals and the ecosystem as a whole; • Socio-economic enhancements for the local communities, including healthcare, education, employment and infrastructure improvements; and • Data collection, including inventorying biodiversity, forest, flora and fauna.
Sources/Sinks/Reservoirs	Above-ground biomass, Below-ground biomass
GHG Type	CO ₂
Time Period	Start Date: 10 June 2011



	Crediting Period: 20 years (10 June 2011 to 09 June 2031) Verification Period: 10 June 2011- 31 July 2012
Project Boundary	Portion of the Municipality of Borba – total eligible project area is 1,346,541.26 hectares

2.8 Verification Materiality Threshold:

Materiality is a concept that errors, omissions and misrepresentations could affect the GHG reduction assertion and influence the intended users (ISO 14064-3:2006). As the NFS does not define a materiality threshold, ESI defined the materiality threshold as being ± 5%. As defined by the Natural Forest Standard, verifiers can identify major or minor discrepancies. Major discrepancies identified by the verifier were addressed prior to credit issuance. Major discrepancies are defined as errors in quantification that exceed the 5% materiality threshold or are deemed to be out of compliance with the Guidance. Minor discrepancies include errors, omissions or other misstatements and clarifications that area raised by the verifier. Minor discrepancies identified by the verifier were addressed within a timescale agreed with the verifier.

3 VALIDATION PROCESS, FINDINGS, and CONCLUSION

3.1 Validation Process

The validation process for the project closely followed ESI’s procedures for NFS validations outlined within our Management System Manual. The validation was conducted to a limited-level of assurance under the following criteria: *NFS Standard Requirements (Version 1.0, June 2012)*, *NFS Standard Requirements Inc. Brief Guidance Notes (Version 1.0, June 2012)*, *NFS Definitions for Standard and Guidance (Version 1.0, June 2012)*, *NFS Standard Guidance (Version 1.1, August 2012)*, and *Natural Forest Standard Approved Methodology NFS AM001.0*.

3.2 Validation Findings

During the validation process, there was a risk that potential errors, omissions, and misrepresentations would be found. The actions taken when errors, omissions, and misrepresentations were found included: notifying the client of the issue(s) identified, and expanding our review to the extent that satisfied the Lead Validator’s professional judgment.

During the course of the validation, thirty-three (33) Non-conformance Reports (NCRs) /Clarifications (CLs) were identified. All NCRs/CLs were satisfactorily addressed. The NCRs/CLs provided necessary clarity to ensure the project was in compliance with the requirements of the NFS. For a complete summary of ESI’s verification findings, please refer to the *Natural Forest Standard Forest Project Validation Report – Trocano Araretama conservation Project*, dated 20 March 2013.

3.3 Validation Conclusion

Environmental Services, Inc. confirmed all validation activities including objectives, scope, criteria, level of assurance, and PDD adherence to the NFS (Version 1.0, June 2012) as documented in the Validation Report (dated 20 March 2013) were complete. ESI concluded that, based on our validation process conducted to a limited-level of assurance, nothing had come to our attention that caused us to believe that the Project Design Document did not conform to the NFS Standard. For a complete summary of the validation process, please refer to the *Natural Forest Standard Forest Project Validation Report – Trocano Araretama conservation Project*, dated 20 March 2013.

4.0 VERIFICATION PROCESS

4.1 Overall Process

The verification assessed the Project's compliance with the NFS (Version 1.1, April 2013) the selected methodology (NFS AM001.1), and the validated PDD. This verification assessed the GHG emission removals through avoiding deforestation and/or degradation of natural forests, and/or restoring degraded natural forest.

The Verification & Sampling Plan methodology was derived from all items in our verification process stated above. Specifically, the sampling plan utilized the NFS guidance and ISO 14064-3. The verification site visit focused on qualitative over-flights of the project area as well as detailed personal interviews with project participants and governing bodies in the project regions. Areas deemed to be high risk for leakage were targeted as well as known illegal logging areas.

4.2 Document Review

A detailed review of all project documentation was conducted to ensure consistency with, and identify any deviation from, NFS and the validated PDD. Initial review focused on the validated PDD, the Project Implementation Report (PIR), and the internal Project Management Plan and included an examination of the project details, implementation status, data and parameters, and quantification of GHG emission reductions and removals.

Along with a review of the PIR, documentation for the selected sample areas was requested, provided by the Project Developer and subsequently reviewed for consistency, accuracy, and appropriateness with regard to NFS program requirements and the validated PDD. Documents reviewed included land ownership documentation, legal support for customary tenure, carbon rights contracts, property boundaries, maps and aerial images, data from monitoring, biomass and carbon calculation spread sheets, biodiversity assessment, community involvement, and responses to Non-conformance Requests (NCRs)/Clarification Requests (CLs)/Opportunities for Improvement (OFIs).

For a listing of all documents received from the client for this verification, please see Appendix A.

4.3 Interviews

The verification site visit occurred between 21 June 2013 – 28 June 2013. Onsite interviews and informal discussions were conducted with project staff and members and leaders of the community. Most of the interviews were conducted by traveling up and down the Madeira River and stopping at community areas and randomly interviewing community members who were present. In some cases, a community leader would be located and that person would lead verifiers around to a few homes where others were present. During most interviews, the underlying negative comment received was that the community members wanted the project activities to begin sooner, demonstrating their eagerness and willingness to participate in the project and share in the economic benefits. No other negative comments were received, and information provided in the PDD was supported. These interviews were also used in the verification review to support the claims of the Project. Meetings included discussions with the individuals listed. The community name for each is listed following the name, if applicable. Several individuals in communities preferred to not be named, and therefore they are referred to as Anonymous:

- Hildebrando- Puxurizal
- 4 Anonymous- Piaba
- Jose Rocha De Abreu (Goiano)- Borba
- Milena- Jabuti
- 2 Anonymous- Jabuti



- Jobat- Puxurizal
- Borba Municipality Meetings Monday 24th June, 2013 –
 - -José Maria da Silva Maia, “Baía” – Mayor
 - - Simão – City Councillor (president of the City Council of Borba)
 - - Miguel Lima – City Councillor
 - - Denes Coimbra – City Councillor
 - - Silvio – City Councillor
 - - Didi – City Councillor
 - - Fandinho – City Councillor
 - - Zé Pedro – City Councillor
 - - Betinha – City Councillor
 - - Niceia Palheta – City Councillor
 - - Edilson Batista – Secretary for Production
 - - José Rocha de Abreu, “Goiano” – Councillor of the Production Secretary
 - - Lucia Garcia – Secretary for Civil Defense and Head of Office
 - - Francisco Ferreira – Secretary for Education
 - - Jorge Machado – Secretary for Sports and the Environment
 - - Lysandra Nívea Guimarães Farias – Secretary for Health Issues
 - - Nixon Ricardo Cardoso da Fonseca – Secretary for Social Assistance
 - - José Nilton – Representative of indigenous community, leader of one indigenous association
 - - Laércio Donato – President of the Rural Producers Union
 - - Tarcísio da Silva – Director of IDAM in Borba (Institute for the Development of Sustainable Agriculture and Forestry in the Amazonas State)
 - - Alan Daniel Lopes Pantoja – Secretary for Finance
 - - José Melo de Souza – Secretary for Transportation and Urban Planning
 - - Ricardo José Sá de Souza – Secretary for Administration Issues
- Jose - Castanhal
- Jaimon- Sao Joseph
- Omero plus two anonymous health agents on site- Caisara
- Manuel- Flechal
- Zaneti- Jauari
- Duque- Santa Helena
- Moises- Awara
- Linhares Ribeiro- Punta Alegre
- Anonymous- Sao Joaquin
- Anonymous- Aximi
- Instituto Amazon Livre (Institute Free Amazon) Meetings, 22 June and 27th June, 2013
 - Waldemar de Lima
 - Antônio José do N. Fernandes
 - Rodrigo da Costa Lima
 - Cibele Lopes Bastos
 - Sâmara Assef da Rocha
 - José Souza dos Santos
 - Renan Albuquerque

Interviews were conducted so that participants were not made to feel like their livelihoods or way of life was being judged or negatively viewed. Simple questions were presented that allowed verifiers to



determine if the community members had been given an opportunity to learn about the project, offer their point of view, offer their thoughts on the benefits associated with the project and what types of activities they currently take part in. Finally, a question on whether the project was reasonable to them, given that they would need to adjust how they use and interact with the landscape. The interviews confirmed with reasonable assurance that no community members will be negatively affected by the project and that the community members were eagerly participating in project activities.

4.4 Site Visit

The verification site inspection (field visit) occurred from 21-28 June 2013. The verification field activities closely followed ESI's Verification & Sampling Plan. Sample size and techniques were based on the project parameters, scope, and best professional judgment of the Lead Verifier. Areas selected for detailed review were at the discretion of the verifier to ensure a reasonable level of assurance. Areas deemed to be high risk for leakage were targeted as well as known illegal logging areas.

A review of the project area as a whole was conducted, and boundary checks were done at select locations. Travel within the project area was by boat and airplane. This allowed verifiers the opportunity to select areas for detailed review. Verifiers traveled by boat in to several communities for interviews with community members and leaders. Verifiers used a small airplane to gather observational and GPS data over the larger project area, with emphasis on high risk and remote locations.

The air flight gave an overview of the project area where sites of recent deforestation could be confirmed, and cross checked with the remote sensing data being presented by the project. The over flight also focused on review of the risk areas near to rivers and roads. Verifier's observations confirmed that the project had constructed the risk 'bands' in the appropriate locations. The following items were included in the verification either through the site visit and/or desk review:

General Project

- Review of total project boundaries- communities and project areas involved
- Review and observation of tribal lands not included in project but adjacent
- Review and confirm baseline conditions
- Project additionality review on site- direct observations and through interviews
- Risk analysis comparison to site visit vs. project description
- Review at risk areas of the project

Leakage

- Review of any deforestation occurring, where and by whom- (rates of deforestation calculations correct; less than 5 ha areas may not be detected with remote sensing – fly-overs and ground-based checking needed)
- Review and observation of high-low risk areas for leakage.
- Review of leakage area monitoring, selection of leakage areas, justification for areas selected (on site visit).
- Activities for minimizing deforestation- what is planned, what is in process, what is being implemented?

Management/Community

- Meet and interview project management team
- Review dispute and resolution process- reporting
- Review benefit mechanism and funds allocation system- interview those involved
- Governance structure review and interviews with officials involved



- Interviews with community members regarding knowledge of the project and expectations
- Review Public Meeting notes and summaries
- Community patrol training activities
- Confirm forest conservation practices

Carbon/Bio Monitoring- Geospatial platform

- Review of carbon stocks monitoring process and calculations
- Review of annual monitoring via remote sensing
- Review of ground based monitoring efforts- any incidents recorded? Legal and illegal irregularities? Interventions?
- Interview on the ground monitoring team- community members
- Normative Biodiversity Metric Review
- Illegal logging areas

4.5 Resolution of Any Material Discrepancy

When potential material discrepancies were identified during the verification process, an NCR, CL, or OFI was issued. The ESI verification team identified 13 NCRs/CLs/OFIs. All were addressed satisfactorily by the Project Developer during the verification process. The responses to these NCRs/CLs/OFIs and supporting documentation provided the necessary clarity to ensure the project was in compliance with NFS program requirements for GHG projects and the validated PDD. All issues and their resolutions are attached (Appendix B).

5.0 VERIFICATION FINDINGS

5.1 Project Start Date and Project Crediting Period

The project start date is 10 June 2011. The project crediting period for this project is 20 years, beginning on 10 June 2011 and ending on 09 June 2031.

Estimated net GHG emission reductions for *Trocano Araretama Conservation Project* are 7,702,808 tCO₂e per year. A risk buffer of between 15% and 20% is estimated; however, the risk buffer will be determined by the NFS Risk Panel. The Risk Panel will assess each project on an individual basis and set appropriate buffer levels of credits accordingly.

5.2 Project Implementation Status

The project activities and Management Plan as described in the validated PDD, have been fully initiated as outlined in the Project Implementation Report dated 12 August 2013, for the 10 June 2011 to 20 May 2013 Reporting Period. There are no remaining issues from the validation. As this is the initial verification, many activities are still being implemented, but the Verifiers observed much progress during the Verification Site Inspection.

The Verifiers requested to visit examples of all activities during the various Site Inspections and subsequently confirmed the progress to implementation of all items. The following project activities and implementation status were confirmed through the site visit observations, interviews and/or desk review:



Activities outlined in the PDD and Verification Findings

- Conservation and preservation of natural forests - Initial measures are in place and ongoing as a basic element of this project.
- Biodiversity protection - Initial measures are in place and ongoing.
- Socio-economic enhancements including healthcare, education, employment and infrastructure improvements - Awaiting funding; however, plans are formulated and in process. Interviews with the Borba Mayor and Vice Mayor confirm that this aspect is planned and ready to implement, following the first round of carbon sales, as indicated in the PDD.
- Data collection including inventorying biodiversity, forest, flora and fauna - Initial measures are in place and ongoing with detailed plans included in the Project Management Plan.
- Development and implementation of effective management plan - Project Management Plan is in place.
- Provide viable sustainable and economic alternative practices to project area inhabitants- Initial measures are in place and ongoing through the planning and preparation for offering agricultural courses.
- Strengthening of local forest protection - Initial measures are in place and ongoing.
- Incentivize local communities to adapt their current behavior - Initial measures are in place and ongoing. Current efforts are focused on education, communications and surveys to determine the most needed incentives to offer at this time.
- Incentivize and reward changes in behavior - Awaiting funding; however, plans are formulated and in process.
- Capacity-building and environmental awareness- Ongoing efforts as part of the project are in place.
- Participation in project implementation, through monitoring, management, conservation and other activities- Ongoing efforts as part of the project are in place. This was evidenced through meeting with project management staff, speaking to community members and meeting with the Borba Municipality.
- Participation in project-related training- Ongoing efforts as part of the project are in place. Community members had been offered trainings relating to, for example, upgrading their agricultural practices. Many community members expressed interest in this aspect of the project. Verifiers also met with the Agricultural Extension Officer in Borba who confirmed that they are preparing to roll out these courses.
- Environmental Education Program - Awaiting funding; however, plans are formulated and in process.
- Raising civic pride of the natural forest - Ongoing result of the project and was seen in the interviews with community members.
- Understanding the nature of threats - Ongoing result of the project and was seen in the interviews with community members.
- Strengthening legal frameworks protecting natural forest- The Borba Municipality by-laws are being amended to include the project; this will ensure protection of the forests, long-term.
- Sustainable financial models - Awaiting further funding.
- Effective durable governance structures - The management team have developed the appropriate structures and implemented the initial aspects required to take the project forward and be successful.
- Alignment of conservation with economic development



5.3 Project Location

The project area is located in the Municipality of Borba, Amazonas, Brazil, which is situated on the banks of one of the main tributaries of the Amazon River, with the nearest city being Manaus (150km). The project area consists of three clearly differentiated areas (West Zone, Central Zone, and South Zone) within the Municipality of Borba, totaling 1,346,541.26 ha project area. The project area does not include indigenous land areas, urban areas, or areas of the RDs of Madeira or Matupiri that are within the Municipality of Borba.

Borba Geographical Coordinates:

Latitude: -4.38835, Longitude: -59.5945

4° 23' 18" South, 59° 35' 40" West

Verifiers conducted aerial flights of the project area and confirmed to a reasonable level of assurance that the project area delineations were accurate. This was also discussed during internet meetings with the clients that were aimed at reviewing the Geospatial Platform and associated data inputs and analysis.

5.4 Accuracy of GHG Emission Reduction or Removal Calculations

ESI conducted an intensive review of all input data, parameters, formulas, calculations, conversions, statistics and resulting uncertainties and output data to ensure consistency with NFS, the validated PDD and the methodology. Further, ESI reproduced calculations for selected samples to ensure accuracy of the results. As the Project stores its information in its Geospatial Platform, the Verifier requested samples of data in order to perform a quantitative comparison. Samples of data with associated conversion factors, formulas, and calculations were provided by the Project Developer in spreadsheet format to ensure all formulas were accessible for review. The verifier recalculated subsets of the Geospatial Platform analysis to confirm correctness. The Project Developer also provided a step-by-step overview of calculations to ensure ESI understood the approach and could confirm its consistency with validated PDD.

ESI also reviewed a comprehensive assessment of data collection and storage procedures to ensure all opportunities for error in transposition of data between data were minimized. Field data collection utilized appropriate principles of data collection, including appropriate tools and methods. Collected data was handled appropriately, including a structured process for QA/QC. Analysis of collected data used appropriate formulas, conversions, and parameters, supported by scientific literature. Where ranges of parameters exist, or other types of formulaic uncertainty, appropriately conservative values were used in data analysis.

During ESI's verification, the evidence provided by the Project Developer was sufficient in both quantity and quality to support the determination of GHG emission removals reported by the project. Throughout the verification, the Project Developer demonstrated a commitment toward conservativeness and took all measures appropriate to ensure the reliability of evidence provided. Interviews conducted (oral evidence) are outlined in Section 4.3 of this report, and the final documents received from the Project Proponent supporting the determination of GHG removals can be viewed in Appendix A.

5.5 Project Management and Operational System

The management system employed by the Project Developer utilizes appropriate field measurement methods (systematic, appropriate measurement tools and techniques), high quality data collection and management techniques (database, with data entry oversight by one person; clearly identified responsibilities for data accuracy; appropriate data quality control), and data analysis (web-based calculation system via Geospatial Platform). The Project Developer has demonstrated that they effectively carry out their responsibilities and are appropriately experienced and trained for these responsibilities.



Accordingly, in the process of the verification, ESI confirmed the suitability and appropriateness of the Project Developer's management system for monitoring and reporting. The project has completed their internal Project Management Plan, which includes verifiable and discrete plans, actions, results and quantifiable metrics for each of the specific action items listed in the PDD. This Project Management Plan is meant to remain as an internal document, however, during the course of the verification, auditors were given the opportunity to review, discuss and comment on the Plan. Discussions with project management resulted in several changes and additions being made to the Plan. It is recommended that the Project Management Plan be reviewed in each verification cycle as a means to quantify progress made.

5.6 Biodiversity

During the verification process, verification site visit and interviews, verifiers confirmed threats to biodiversity; invasive species prevention; the project's desire to start educational programs regarding hunting and Bushmeat; and home gardening for food production, as stated in the validated PDD and ESI's validation report.

The Step-By-Step Biodiversity Assessment process and overall approach was validated during the desktop review and was confirmed to have been conducted correctly. The verification site visit and interviews confirmed the elements of the Normative Biodiversity Metric for this time period. The NBM score has not reached a point where it needs to be revised yet. This item is confirmed to be completed correctly for this verification time period.

5.7 Monitoring of Project and Leakage Areas

According to the validated PDD, "The monitoring of the Trocano Araretama Conservation Project consists of 3 areas of monitoring:

- Monitoring of emissions from deforestation
- Monitoring of carbon sequestration
- Monitoring of leakage zones

The monitoring of the project, covering all three areas will mainly be carried out by using a combination of remote-sensing and satellite images. There is also be a team of on-the ground rangers who will constantly be patrolling and monitoring the areas, making regular visits to the known high-risk areas, patrols of the project boundaries where possible, and along access points such as roads, rivers and existing forest paths. The teams also have a schedule of visits for the accessible areas of the whole project area. Given the size, vastness and separation of the project areas, sole use of on-the-ground monitoring is not possible, effective or efficient use of resources."³

During the verification, it was found that the Trocano project is conforming to and applying the NFS AM001.1 methodology and that the recommended procedures were being utilized. The project has performed preliminary observational reporting and monitoring for deforestation. Records of these monitoring events are housed at the IAL offices in Manaus, Brazil. These records were viewed in their original formats while on the site visit and some sample photos taken and put in the files. There have also been ground based, boat and airplane patrols conducted in the project area. The project management is currently finalizing their plans for this aspect, given the observations and lessons learned from the initial monitoring. The project has drafted an internal project management plan that outlines specific dates, times, equipment, staff and areas to be applied towards the monitoring effort. This plan was viewed in draft form while on the site visit. Some comments were forwarded to the project management at that time

³ *Ibid.*



and the final draft is still in the finalization phase. Since this plan is not public information and is intended to be an internal document (as per NFS guidance) this plan will be reviewed in final form once finished, but will not be appended to the project description or Annual Report. The project management plan details the specific systems in place for each of the monitoring systems that will be in operation through the future of the project. The project management plan includes details of who will record, monitor and store the records of these monitoring activities. The verifiers reviewed the final monitoring plan and the Project Implementation Report to confirm these aspects during the verification process and found them to be accurate and confirmed conformance with the NFS Standard.

6 VERIFICATION CONCLUSION

After review of all project information, procedures, calculations, and supporting documentation and site visits, ESI confirms that the monitoring conducted by the Project Proponent, along with the supporting Monitoring Report, are accurate and consistent with all aforementioned NFS criteria, the validated PDD, and the selected methodology. ESI confirms that *TROCANO ARARETAMA CONSERVATION PROJECT*, (Project Implementation Report dated 26 August 2013) has been implemented in accordance with the validated PDD.

ESI confirms all verification activities, including objectives, scope and criteria, level of assurance, monitoring and project documentation adherence to The Natural Forest Standard (and all associated updates), as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that *TROCANO ARARETAMA CONSERVATION PROJECT*, (Project Implementation Report dated 26 August 2013) meets the requirements of the Natural Forest Standard and all associated updates.

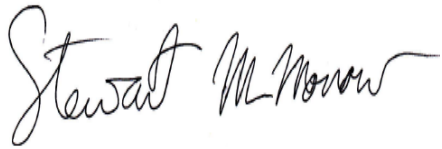
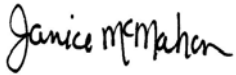
The GHG assertion provided by the Project Proponent and verified by ESI has resulted in the GHG emission reduction or removal of 7,702,808 tCO₂e equivalents by the project during the verification crediting period (10 June 2011 – 31 July 2012). This does not include any deduction based on the non-permanence risk assessment as calculated and applied by the Natural Forest Standard.

GHG Emission Reductions or Removals	tCO ₂ e
Baseline Emissions Reductions	7,761,183
Project Emissions	0
Leakage	53,555
Undetected Emissions*	4,820
Net GHG emission reductions or removals (10 June 2011 to 31 July 2012)	7,702,808

**In order to account for emissions undetected by the INPE’s PRODES Amazon Annual Monitoring Program, an additional 9% was added to the deforested area extent within more intensely deforested areas. Please refer to the Assessment of PRODES data and Undetected Deforestation document available under the Science tab of the Geospatial Platform for the full methodology.*

Submittal Information:



Report Submitted to:	Natural Forest Standard Celestial Green Ventures PLC
Report Submitted by:	Environmental Services, Inc. Corporate Office 7220 Financial Way, Suite 100 Jacksonville, FL 32256
ESI Lead Verifier Name and Signature:	 Stewart McMorrow Lead Validator
ESI Division Regional Technical Manager Name and Signature:	 Janice McMahon Vice President and Forestry, Carbon and GHG Division Regional Technical Manager
Date:	17 September 2013

SPM/JPM/rmb/VO12068 Verification Report-Final.doc
K PF 09/17/13f



Appendix A - Documents Received / Reviewed

Previously received from client during validation, and used in verification

- PDD_NF1_NFS.pdf

Received from client on 2013-03-26

- Certification_Report_NF1_NFS.pdf

Received from client on 2013-05-28

- Trocano Project Implementation Report June_10 to May_13 DRAFT --240513.pdf

Received from client on 2013-05-31

- Project_Areas_shp.zip
- 1370010413-21875.gpx
- borba_project_areas.kmz
- Borba_project_areas_gpx.zip

Received from client on 2013-06-27

- Annex 14b - Legal Consultants Legal Review of Trocano Araretama English.pdf
- PROJECT MANAGEMENT PLAN version 1.0 260613.pdf

Received from client on 2013-07-24

- Trocano Project Implementation Report June_10 to May_13 FINAL 240713.pdf
- CGVAssessmentofPRODESdataandUndetectedDeforestation.pdf
- CGVCarbonMapAdjustmentMethodology1.pdf
- CGVProdesDeforestationLayersMethodology.pdf
- PROJECT MANAGEMENT PLAN version 1.2 190713.pdf

Received from client on 2013-08-13

- Trocano Project Implementation Report June_10 to May_13 FINAL 120813.pdf
- 068-NFS Project Verification NCR-CL-OFI Round 1 Responses 120813.docx
- 068-NFS Project Verification NCR-CL-OFI Round 1 Responses 120813.pdf
- PROJECT MANAGEMENT PLAN version 1 3 120813.pdf

Received from client on 2013-08-27

- Trocano Project Implementation Report June_10 to May_13 FINAL_260813.pdf
- NFS technical panel minutes 14082013.pdf
- NFSAM001.1 Risk Based Methodology for NCC Quantification 22082013.pdf
- NFSAM001.1 Risk Based Methodology for NCC Quantification_22082013.pdf

Received from client on 2013-08-30

- Trocano Project Implementation Report June_10 to May_13 FINAL_300813.pdf



Appendix B – NCR/CL Summary

1. Clarification (NFS Natural Forest Standard NFS AM001.0line 45)

Verification	
NFS Criteria: Leakage area monitoring will comprise remote sensing from PRODES and MODIS near real time alerts, when this becomes available.	
Evidence Used to Assess Conformance: Assessment of PRODES data and Undetected Deforestation	
Findings: The project management plan outlines this process as required by the NFS. An NCR has been issued regarding this in line 39 of the Guidance v1.2 tab of this workbook. The PRODES data was analyzed in detail for the purpose of detecting the deforested areas for the time frame that includes the monitoring period. As part of this analysis, the project purchased Rapid Eye satellite data from 2009 and 2011. This information was reviewed and it was ultimately determined that the PRODES data was missing or not detecting some small areas of deforestation due to several factors related to the quality of the remote sensing data. Because of this situation, the project calculated an additional reduction factor of 5% over and above the carbon stocks lost to the measured deforestation during the monitoring period. This 5% factor was determined by comparing the amount deforested in each previous year, from 1997 - 2012. The average amount of deforested areas missed equated to less than 5% in every year but one, when the average amount would have been equal to 5.12%. This additional reduction is considered to be adequate given the analysis that was conducted. It is recommended that this process be replicated in each year of the project monitoring so that the project can account for undetected deforestation in a consistent way. This should be added to the project management plan.	
Clarification Request: CL: Please add the process for quantifying undetected deforestation to the project management plan so that this process can be replicated in the same way in subsequent years so that this average figure can be updated in each verification event.	
Date issued:	2 August 2013
Project proponent response/actions:	Date Received: 12 th August 2013
The methodology and process for carrying out the quantification of undetected deforestation has been added into the Project Management Plan at section A4; with footnote references to appropriate methodological documentation.	
Evidence used to close CL: The project management plan now contains this information and the plan appears to be adequate for the purpose of quantifying undetected deforestation. This plan includes application of this process in each monitoring year. Issue is addressed.	
Date CL closed:	13 August 2013

2. Clarification (NFS Natural Forest Standard NFS AM001.0line 46)

Verification	
NFS Criteria: Leakage area monitoring will comprise remote sensing from PRODES and MODIS near real time alerts, when this becomes available.	
Evidence Used to Assess Conformance: Assessment of PRODES data and Undetected Deforestation	
Findings: The project management plan outlines this process as required by the NFS. An NCR has been issued regarding this in line 39 of the Guidance v1.2 tab of this workbook. The PRODES data was analyzed in detail for the purpose of detecting the deforested areas for the time frame that includes the monitoring period. As part of this analysis, the project purchased Rapid Eye satellite data from 2009 and 2011. This information was reviewed and it was ultimately determined that the PRODES data was missing or not detecting some small areas of deforestation due to several factors related to the quality of the remote sensing data. Because of this situation, the project calculated an additional reduction factor of 5% over and above the carbon stocks lost to the measured deforestation during the monitoring period. This 5% factor was determined by comparing the	



<p>amount deforested in each previous year, from 1997 - 2012. The average amount of deforested areas missed equated to less than 5% in every year but one, when the average amount would have been equal to 5.12%. This additional reduction is considered to be adequate given the analysis that was conducted. It is recommended that this process be replicated in each year of the project monitoring so that the project can account for undetected deforestation in a consistent way. This should be added to the project management plan.</p>		
<p>Clarification Request: CL: In the process of reviewing the PRODES data for deforestation between the years 2009 and 2011, it is unclear how the deforestation was determined to have been from 2010 or 2011. The maps presented do not make it clear enough as to how this was determined. As a connected issue, the document "Assessment of PRODES data and Undetected Deforestation" does indicate that 37.13 ha of deforestation was deemed to have been undetected during those two years. Please indicate how much was undetected in 2010 and 2011 respectively.</p>		
Date issued:	2 August 2013	
Project proponent response/actions:	Date Received:	12 th August 2013
<p>From the RapidEye data, it was not possible to determine in which specific year the deforestation has taken place. The reason why the area covered by RapidEye data is a mix of different dates is that it is difficult to find useable data with not much obstructive cloud cover, so we had to take what was available as close as possible to the same time of year in both 2009 and 2011. For the largest part of the area this is for the period between 30th July 2009 and 25th May 2011, which covers a time period of 22 months, or roughly 2 years. We had assumed that the undetected deforestation (as shown by RapidEye) had occurred equally over the 2 years.</p> <p>However, upon reconsideration we feel that it would be a more conservative approach to assume that all undetected deforestation has occurred within 1 year. We have therefore revised the calculations to add an additional 9% of undetected deforestation per year to the area of deforestation detected by PRODES. The methodology documents and PIR, section 14.2, have been adjusted accordingly.</p> <p>This assessment was undertaken over an area of 179,000 ha, which included both project and leakage areas, and that has had considerable deforestation activity over the 2000 to 2012 period. All areas of undetected deforestation occurred on or very near to the boundary areas of areas already recorded as intensely deforested areas by PRODES. No deforestation was recorded by PRODES as having occurred within the project areas directly within the 2012 dataset.</p>		
<p>Evidence used to close CL: Project has described a small unknown in relation to the undetected deforestation detection ability. As a result they have claimed all undetected deforestation from 2009-2012 and have applied that percentage to the current years carbon stocks in the form of an additional cut in credits. The previous figure of 4.37% was simply doubled and rounded to 9% by the project proponent. Each year moving forward will only have one year of monitoring data to compare, thus bringing the process in line with future methods. This change appears to be reasonable and is approved by project verifiers. Issue addressed. Refer to: Assessment of PRODES data and Undetected Deforestation document</p>		
Date CL closed:	13 August 2013	

3. Non-Conformity Report (NFS Checklist Trocano v1, Guidance V1.2, line 19)

Verification	
NFS Criteria:	NFS Standard Guidance, V1.2, 2.3 Benefit Distribution Mechanism - The development of a mechanism should be guided by the principles of FPIC. It should also be transparently and effectively administered to ensure that outputs are delivered on time and in appropriate quality; <u>details of which shall be outlined in the project management plan.</u>
Evidence Used to Assess Conformance:	Site visit, project description and project management plan
Findings:	This aspect is largely spelled out in section D of the project management plan. The project includes several facets of the benefit system, including funding the local Municipality of Borba, as well as special funds



for community led project development, education, training and other benefits. The project management plan states for D8: Actions: Implementation of the Benefits Distribution Mechanism Target: Implementation of 10 BDM project/programs by 30th June 2014 Project description simply needs more details about the benefit system that will be followed that will allow for this target to be reached. There are not enough details in the plan on this aspect. See the criteria listed above for reference.	
Non-conformity report (NCR): Please add more details of the specific benefit distribution system that will deliver the 10 BDM projects. Please elaborate in the management plan how these will be delivered and what type of BDM projects you expect to see.	
Date issued:	2 August 2013
Project proponent response/actions:	Date Received: 12 th August 2013
Discussion has been added in section D8.1, D8.2 and D8.3 of the Management Plan	
Evidence used to close NCR: The management plan has been amended to include a detailed process and targets both in terms of types of projects but also timing. Issue is addressed.	
Date NCR closed:	13 August 2013

4. Clarification (NFS Checklist Trocano v1, Guidance V1.2, line 25)

Verification	
NFS Criteria: NFS Standard Guidance, V1.2, 2.5.1 Process for Complaints and Disputes - The mechanism, developed by the project, should seek to address concerns or complaints in a timely and transparent manner. Project level grievance mechanisms offer an alternative to dispute resolution processes but should include the possibility of independent arbitration, and recourse to legal or administrative remedies if negotiations do break down.	
Evidence Used to Assess Conformance: Site visit interviews with community members and direct observation	
Findings: The project has a conflict resolution process that was validated previously. Verification reports and site visit confirm that the project does have a functional system in place that meets the requirements for NFS. This system however has not been tested yet. During the site visit, it was clear that many communities did need additional information about the project and the benefit distribution system; however, almost every community we visited had at least heard of the project. While additional education and training is an ongoing project activity, it is not clear if the expectation that all communities in the project area will have access to the meetings in Borba.	
Clarification (CL): Please explain what avenues the outlying communities will have in order to register their complaints or concerns to the Borba Municipality due to their difficulties with long distance transport.	
Date issued:	2 August 2013
Project proponent response/actions:	Date Received: 12 th August 2013
The outlying communities present in the project area are able to register any concerns or complaints to the Municipality through a number of sources, and they do not have to travel into the municipality seat to be able to do this. There are a number of outreach methods being implemented throughout the project area that will give the communities the opportunity to raise any issues they have with the project representatives, and this is applicable to the outlying communities as well as the more accessible ones.	
Concerns can be raised through the following avenues (further detail given in CL5, where relevant):	
Monthly community leader meetings	



<p>PIT members visiting communities IDAM liaison Community representative meetings Message box collections from the 18 ‘polo educacionais’ PIT presence at community meetings Official Municipality visits Contact with the OTG monitoring teams Project office walk-in</p> <p>Training will be given to any persons involved to deal with any minor concerns in situ where appropriate, with the option of escalating the concern to the PIT, and onward through the grievance procedure as necessary. Any concerns relating directly to the Municipality, can be registered using the communication network or any of the avenues detailed above, who will in turn refer the appropriate concerns to the Municipality representatives.</p> <p>Through the carbon funding achieved, it is the project intention to widen the scope of opportunity to develop an effective network of communication, by having additional resources for reaching the outlying communities, as well as engaging full-time representatives for the project from communities to ensure that a) employment is sourced from the project area inhabitants, and b) that the cultural needs of the community inhabitants are appropriately and accurately reflected. As these representatives will come from the communities themselves, they understand and are part of the culture, so will ensure that all information, training, registering of complaints etc. are culturally relevant and appropriate and community members can be assured that their cultural needs are being recognised and represented. These representatives will have regular meetings with members of the PIT to, amongst other topics; raise any concerns that may have arisen since the previous meeting. These matters can then either be dealt with in situ, or escalated through the grievance procedure, as appropriate.</p>	
<p>Evidence used to close CL: It appears that the project has considered this issue and has presented a reasonable and culturally relevant set of possible avenues for community input. This combined with the plans set out in the project description and management plan satisfy this issue.</p>	
<p>Date CL closed:</p>	<p>13 August 2013</p>

5. Clarification (NFS Checklist Trocano v1, Guidance V1.2, line 26)

Verification	
<p>NFS Criteria: NFS Standard Guidance, V1.2, 2.5.1 Process for Complaints and Disputes - The project should ensure that stakeholders are made aware of, and have access to the process. The process should consider including grievance tracking and response systems, incorporating reporting on project progress at monitoring meetings to discuss satisfaction and hear grievances.</p>	
<p>Evidence Used to Assess Conformance: Site visit interviews with community members and direct observation</p>	
<p>Findings: During the site visit, several interviews indicated that the local communities need additional information and contacts with project staff. While the communities involved appear to be aware of the project and its benefits, they are somewhat unclear on the total process.</p>	
<p>Clarification (CL): Please detail and summarize the outreach methods will be used to assure that all communities will have an equal opportunity to be informed, participate in trainings and register their needs with the project in a culturally appropriate means. Please focus on the outlying communities and their ability to be reached.</p>	
<p>Date issued:</p>	<p>2 August 2013 2013</p>
<p>Project proponent response/actions:</p>	<p>Date Received: 12th August 2013</p>
<p>The project will use a number of appropriate outreach methods to ensure that all communities are able to be</p>	



informed of the project activities and development, as well as their opportunity to raise concerns, and participate in training. Because of the vastness of the project area, strategic thinking is important when addressing this issue.

Community visits are a priority for the project team, but logistically are not the most effective or efficient way of reaching the communities to disseminate information. It is more feasible to utilise already existing structures that are in place. For example, there are 18 ‘polo educacionais’ sites, which are education zones positioned throughout the Municipality, that students can travel in to, to receive their education. By engaging the students and making them messengers for their communities, information can be passed in this way from these centres back to their residing communities. These 18 zones can also have message boxes or boards located there, for community members to register any issues that they wish to raise; any messages submitted in this way can be regularly collected by or delivered to the PIT, who can then provide further action, as required.

Also, as a way of allowing remote communities to avail of training opportunities and informational meetings, these zonal centres can be used as outreach centres to hold training sessions by the PIT or relevant person travelling in to these locations and carrying out the training, informative talks, or indeed receiving any complaints or concerns about the project. Members of the PIT can pre-arrange visit times to these centres to ensure communities have the opportunity to have their say and to air their views, concerns or suggestions. Offering an incentive such as food and water for attending or (dependent on carbon funding) laying on transport for community members to travel to their nearest centre, is a way of attracting more people to participate.

Once carbon funding is achieved, this will give the project much wider scope of opportunity to develop effective methods and networks of communication, by having additional resources for reaching the outlying communities, as well as engaging full-time representatives for the project from communities to ensure that a) employment is sourced from the project area inhabitants, and b) that the cultural needs of the community inhabitants are appropriately and accurately reflected. As these representatives will come from the communities themselves, they understand and are part of the culture, so will ensure that all information, training, registering of complaints etc. are culturally relevant and appropriate and community members can be assured that their cultural needs are being recognised and represented. These representatives will have regular meetings with members of the PIT to, ensure all communities within the project area have equal opportunity to receive information, participate in training and have their needs appropriately addressed.

Another important way of reaching outlying communities is to ally with local organisations; IDAM being the most relevant to the project. Acting as ambassadors for the project, and using their existing avenues of outreach, IDAM and other such organisations will be integral to reaching otherwise remote communities that could traditionally have little or no contact.

Other ways of reaching outlying communities is to partner with any Municipal visits or meetings that are carried out as part of the Municipal Secretaries work. For example, Lucia Garcia, the Secretary for Civil Defence and Head of Office, make regular visits out to the communities of the project area, and members of the PIT can share her timetable and attend these meetings also, as a further opportunity to give and receive information.

A summary of methods are as follows: monthly community leader meetings; PIT members visiting communities, IDAM liaison, Community representative meetings; message box collections from the 18 ‘polo educacionais’; PIT presence at community meetings; official Municipality visits; contact with the OTG monitoring teams.

Evidence used to close CL: This response combined with NCR #4 response address this question. The project



management plan and project description also detail these plans. Issue addressed.	
Date CL closed:	13 August 2013

6. Clarification (NFS Checklist Trocano v1, Guidance V1.2, line 39)

Verification

NFS Criteria: NFS Standard Guidance, V1.2, 2.8 Leakage - When indicators of leakage are found they should be investigated and, if possible, a negotiation to reduce or minimize these activities should occur. The project managers should where possible reduce leakage through improved project management and the encouragement of economic activities within the project area. Any land use change and forest degradation that appears to result from displacement of activities from within the project area should be quantified using standard methods recommended in GOF-C-GOLD Source Book, using the same methods for estimating carbon stocks within a project area.

Evidence Used to Assess Conformance: validated Project description

Findings: The basic plans for this were validated. Current efforts are outlined in the internal Project Management plan and these include active monitoring of the leakage zones; however, in the case of this project, the leakage zones may not be fully captured since they are not always aligned with roads or rivers. The project management plan indicates that leakage zones "will be monitored via satellite and remote-sensing, with visits from the OTG team where appropriate. Any deforestation displacement that is deemed direct leakage from the project area will then be mapped recorded and reported as part of the annual review process. When the overall monitoring of the project area is carried out, any evidence of displaced deforestation in the leakage buffer zone will be investigated and appropriately dealt with."

It is not clear exactly what will occur in the leakage monitoring zones or exactly how this monitoring will take place.

Clarification (CL): Direct observations of the leakage zones for this project indicate that they are generally in areas that are mostly inaccessible. The project has, none the less, identified the leakage zones according to the NFS. Please add more detail as to how the leakage zones will be access or what areas of the leakage zones will receive the most attention during monitoring and how these will be directly monitored.

Date issued: 2 August 2013

Project proponent response/actions:	Date Received:	12 th August 2013
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Narrative to address this clarification has been added in section A14 of the Management Plan.

Evidence used to close CL: The following statement from the management plan summarizes: "The leakage area will be predominantly monitored via aerial monitoring, satellite imagery and remote-sensing. The identified high-risk areas within the leakage buffer will be targeted as high-risk leakage areas and monitored accordingly through the monthly aerial monitoring, focusing on the areas within the leakage belt that are accessible via roads and trails. The project does not differentiate in its monitoring procedures between the project area and leakage area; the same processes apply."

The plans set forward in the management plan adequately address this issue. The project has specific dated plans and targets that appear to be the most reasonable approach to monitoring given the drivers of deforestation in the area.

Date CL closed: 13 August 2013

7. Non-Conformity Report (NFS Checklist Trocano v1, Guidance V1.2, line 46)

Verification

NFS Criteria: NFS Standard Guidance, V1.2, 3 Project Management and Monitoring - The management plan and supporting documents should where relevant, contain information on the following:

- Maps of the project areas, showing:
- areas under protection



<ul style="list-style-type: none"> • areas to be restored • potential leakage zones • land ownership or use rights (as appropriate) • vegetation types • other relevant characteristics. • The main activities that will be undertaken by the project (including locations and timing). • The expected outputs of activities and anticipated outcomes. • The main functions and responsibilities of key staff. • The structures and arrangements for collaboration, partnership or sub-contracting with local organizations, government bodies and sub-contractors. • The process for interacting with local organizations and communities to ensure FPIC is achieved and maintained. • The budgets for activities, and intended sources and recipients of project funds. • The mechanism by which benefit distribution will operate. • The process for dealing with complaints or grievances. • The process by which progress will be monitored, reviewed and evaluated. 	
Evidence Used to Assess Conformance: validated Project Description	
Findings: The project has drafted a project management plan and this has been reviewed by verifiers. The plan appears to be a comprehensive list of the core project activities that the project will be undertaking over the next several years. This management plan will need to be updated each year, but for this monitoring period, the plan includes all needed items except the updated maps.	
Non-conformity report (NCR): Please add the maps, and all features listed above, to the management plan.	
Date issued:	2 August 2013
Project proponent response/actions:	Date Received: 12 th August 2013
The Geospatial Platform serves as the supporting documentation of the management plan, and contains all maps and methodological documents relevant to the project. The GP is freely accessible by all senior project staff and Project Implementation Team members, so is deemed an appropriate access point for all this data; as the Management Plan is an internal document, and all parties that have access to the Management Plan also have access to the GP, it is deemed appropriate that all maps are accessed and referenced in this way, as an annex to the Management Plan. Paragraph iv of the Management Plan and an additional paragraph in the Overview of section A has been added to reflect this. Also, sections vii and F have been added to address sources and recipients of funds.	
Evidence used to close NCR: This approach seems reasonable given that the management plan is to remain an internal document. Issue addressed.	
Date NCR closed:	13 August 2013

8. Non-Conformity Report (NFS Checklist Trocano v1, Guidance V1.2, line 67)

Verification	
NFS Criteria: Step 5: Monitoring NBM Scores	
The project should provide information on the scores for both pristineness and endangered mammals. <ul style="list-style-type: none"> • This information should be monitored over time with a report on progress included in the annual project report. 	
Evidence Used to Assess Conformance: Validated project description and Implementation Report	
Findings: The project management plan indicates that this score will be reviewed annually for the purpose of updating the score. The project implementation report indicates a score that is now much lower than the original score calculated in the validated project description at 5.3. The score is now being reported at 4.2. While it is important to make sure this score is recorded accurately, it is unclear why or how this score has	



changed in less than one year time.		
Non-conformity report (NCR): Please include a description and calculations from both the original NBM and the current NBM scores. Please include this information in the Implementation Report. Please add a discussion as to why this score has decreased in less than one year’s time and please indicate how, moving forward, the score will be calculated. Please include in your response, the special status species that were included in this score and how their home ranges were analyzed relative to the project area.		
Date issued:	2 August 2013	
Project proponent response/actions:		
Date Received:	12 th August 2013	
The Project Implementation Report actually reports the score as being 5.08, not 4.2 as referenced above. The 4.2 being referenced by the verifier has actually been taken from an example screenshot from one of the 13 project areas for the purposes of demonstrating the quantification process in section 14.1.8. It is section 6.1 of the PIR that directly addresses the NBM score of the project, and describes the difference in score reflected between the original calculation for the validated PDD, using data sets collected and analyzed by IAL for the purposes of the PDD, and the newly introduced NBM layer of the Geospatial Platform. It is true to say that there is a difference in calculation; however the PIR explains why the difference occurs. It is therefore deemed by us that this is not a valid NCR.		
Please note, for clarity, the example screenshots have been removed from section 14 of the PIR to avoid any further misinterpretation of data; the example screenshots are still included in the full methodology document included under the Science tab of the Platform. Also, a table of NBM scores attributed to each of the 13 project areas has been added to section 6.1 to show how the score of 5.08 was calculated with further detail on the content of the data within the Geospatial Platform.		
Evidence used to close NCR: Verifiers recognize the error and consider this issue addressed with the removal of possibly confusing info. This NCR is retracted.		
Date NCR closed:	13 August 2013	

9. Clarification (NFS Checklist Trocano v1, Site Visit Questions, line 2)

Verification		
NFS Criteria: NFS Standard Guidance, V1.2		
Evidence Used to Assess Conformance: Site Visit		
Findings: Site visit observations.		
Clarification (CL): Please describe how the communities currently receive little to no direct benefits from the municipality will be directly benefitted from the project. As part of the response, please explain what actions will be taken that will monitor the scope of the benefit distribution so that all communities in the project area will receive benefits relative to the size of their community and/or relative to the amount of deforestation they avoid.		
Date issued:	2 August 2013	
Project proponent response/actions:		
Date Received:	12 th August 2013	
The project aims to make the project benefits available to all communities within the project area. The funding that the project will provide is to be distributed across the entire project area, and the BDM will play a part in ensuring that this is the case. The PMC, through their responsibility of facilitating the BDM process, will be responsible for ensuring that the correct benefit distribution structures outlined in the PDD and management plan will be adopted; this will include attention to the principle of fair, equitable and transparent benefit allocation and that it will be applied proportionately.		
From information gathered through the community visits, and from meetings held, training sessions given and		



all other sources of contact with the communities, the PIT will be able to ascertain the needs and requirements of each community, and the relevant benefits they require, resulting from their participation in the project and the number of community members, especially women and children. Also, by ensuring that all communities are aware that they can submit proposals to the PMC for specific benefit programs they wish to avail of in their specific areas, and through building their capacity to take participative responsibility for the protection of their habitat, and onwardly taking responsibility for the extent and type of benefits they can receive from doing this will allow the communities to take an active role in ensuring they receive benefit from the project, that they would otherwise not have the opportunity of availing of.

The PMC, as part of their role in the BDM, will analyse and assess the distribution of benefits as part of the annual review process outlined in the Management Plan, and that they are indeed being proportionately and appropriately applied. As the project proceeds, the mechanism will be assessed as to its appropriateness, effectiveness and suitability, and will be adapted, adjusted and developed over the duration of the project to ensure an efficient and effective benefit structure, with a fair and equitable allocation of resources and benefits is available to all inhabitants of the project area.

Evidence used to close CL: This explanation clarifies the role of the PMC and the process where the benefit mechanism is made available and information disseminated. The project management plan also refers to this oversight. The assessments and reviews will help to steer this process along. This response ties together the various entities critical for management of the BDM. Issue is addressed.

Date CL closed:	13 August 2013
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10. Clarification (NFS Checklist Trocano v1, Site Visit Questions, line 3)

Verification		
NFS Criteria: NFS Standard Guidance, V1.2		
Evidence Used to Assess Conformance: Site Visit		
Findings: Site visit interviews brought this issue to verifier’s attention.		
Clarification (CL): Please describe how the impending forest code will be related to the current project activities. Will the project undertake a review of the forest code and make any needed changes? What actions towards this issue have been taken to date? Please discuss these in the implementation report and the project management plan.		
Date issued:		2 August 2013
Project proponent response/actions:	Date Received:	12 th August 2013
<p>The Trocano project is aware of and acknowledges the Brazilian Forest Code, the amendments that were voted in in May 2012 and the veto to 9 articles of the new forest code in October 2012. Since this time, the Brazilian Forum on Climate Change was held in Brasilia on 5th June 2013, and the first step to enacting the new code, triggered by a one-year deadline from the original amendments were just starting, with the view that it could be four to five years before any result could be seen.</p> <p>The current project activities are primarily concerned with avoiding deforestation, and promoting sustainable practices throughout the project area, and the new Forest Code does not change these objectives. The Trocano objectives remain and the project will continue to avoid as much deforestation as possible within the project area, allowing for essential livelihood deforestation. The 20% deforestation allowance within private areas still stands for Amazonia state, and this has been addressed in the response to CL11 below. Also as stated in answer CL11, it is and will never be the intention of the project to claim credits for any deforestation, regardless of cause or source and will take all emissions resulting from the project and leakage areas into account when quantifying the expected credits for each crediting period.</p>		



With this in mind, it has been deemed by the project that no actions toward this issue have been required to take place to date. The Trocano Araretama PIT legal advisor, Juliana Terezinha da Silva Medeiros, Masters in Environmental Law is tasked with ensuring any amendments or developments to the Forest Code, and indeed all relevant laws are reviewed periodically, and any necessary changes to the project activities will be made accordingly, where appropriate.	
Evidence used to close CL: Verifiers are not aware of any immediate actions needed on the part of the project that would deem the project incapable of full implementation under the current form. It is clear the project and their partners are keeping a watchful eye on the developments as well as consulting independent legal advisers. It seems probable that the forest code would greatly impact the project given that it is aimed at avoiding deforestation. This issue is addressed with this explanation.	
Date CL closed:	13 August 2013

11. Clarification (NFS Checklist Trocano v1, Site Visit Questions, line 4)

Verification		
NFS Criteria: NFS Standard Guidance, V1.2		
Evidence Used to Assess Conformance: Site Visit		
Findings: Site visit interviews brought this issue to the verifier’s attention.		
Clarification (CL): It was evident during the site visit that there are some areas of the project area where deforestation is allowed up to 20%. Please explain how this finding relates to the addition of the project to the municipal bylaws. It seems that the allotment of the 20% deforestation is necessary for the survival of the people who live in these relatively new communities. Will the municipal bylaws supersede the federal allotments and will these areas be calculated differently for carbon crediting?		
Date issued:	2 August 2013	
Project proponent response/actions:	Date Received:	12 th August 2013
<p>It is true to say that there is an allowance of up to 20% deforestation on private lands; however it is also true to say that Municipal law can supersede Federal law. The Trocano projects’ legal advisor, Juliana Terezinha da Silva Medeiros, Masters in Environmental Law, specialist in Civil Procedural law gave the following statement regarding this issue.</p> <p>“It is possible in Brazil to have a municipal law that overrides a federal law, due to a feature of the Environmental Law, the principle of which is that the rule is for whatever is more favourable to the environment. This is possible as long as the Municipality is legally applying its legislative competence in environmental issues, and when the municipality can justify that it would be legislating following local interests. Precedent has been set through the Municipality of Codajás; in this area deforestation must be 0% due to there being virtually no forest left and they have 3 endangered species present.”</p> <p>Therefore in the instance of the project being added to the Municipal by-laws, it will be possible for these to supersede the federal law where appropriate.</p> <p>The project recognises, and is fully aware that some deforestation is required and necessary for the survival of communities within the project area; this will not be stopped, however training will be given to ensure that any deforestation that is essential to their livelihood is carried out in a sustainable way and kept to a minimum. The project and their partners will work with such communities to educate and assist them in making the correct and most environmentally sound decisions when carrying out their usual way of life.</p> <p>Any deforestation that would be allowed within the 20% allotment stipulated in the federal law, will be discouraged, and the project will focus on the training of inhabitants in sustainable practices for all aspects of their way of life, and will ensure that the individuals and groups concerned are aware that by changing their</p>		



ways, they can not only benefit from a more sustainable way of life, but also can be rewarded for doing so through the BDM. The promotion of the project, its objectives and its benefits are crucial to ensuring a difference.

With regards the calculations for deforestation in regards the quantification of credits, the project will not discriminate against the type of deforestation that occurs within the project area or leakage buffer. The fact is that if deforestation occurs for any reason, this will be calculated into the total emissions for the project area for each crediting period, and will be deducted from the expected number of credits each year. The fact that any areas have been deforested must be deducted from the credit calculations, as no credits will be claimed for areas of forest that no longer exist.

Evidence used to close CL: Verifiers recognize the fact that the project is accounting for all deforestation in the project area, as well as claiming credits for any avoided deforestation. Given that the project aims to reduce deforestation by teaching residents a more sustainable approach. Further, legal counsel indicates that the Municipal law supersedes the Federal law in such that the local law is more protecting of the environment. Finally, the project will enhance the ability of the Municipality of Borba to enforce the laws. The project will eventually prove that avoiding deforestation will result in more community based projects. There is no information found in the NFS Standards that would prohibit the project from both claiming credits and/or taking deductions to credits as a result of this opposition of Municipal and Federal law. Verifiers find no reason why this approach is invalid, especially since it is not discriminating against the type of deforestation that occurs in regards to calculations. Issue is considered addressed, however it is noted that verifiers have requested a copy of the legal opinion from the legal counsel.

Date CL closed:	13 August 2013
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12. Clarification (NFS Checklist Trocano v1, Site Visit Questions, line 5)

Verification		
NFS Criteria: NFS Standard Guidance, V1.2		
Evidence Used to Assess Conformance: Site Visit		
Findings: Site visit observations while conducting an over flight of the area found many areas that were probably not used for growing crops, did not appear to have been deforested in the past, but did appear to have some tree cover that may be seen as forest in a low to medium resolution satellite image. During the over flight these areas clearly had standing water under the tree canopy.		
Clarification (CL): How does the GSP differentiate between the areas where the water table is high or where the area is flooded for part or all of the year? While these areas were obvious from the air, it did not seem that they would be as obvious from the satellite imagery. These areas were not being deforested since the water table was quite high and they did not seem like they were accessible for this purpose, even when they were located in areas near roads and river banks.		
Date issued:		2 August 2013
Project proponent response/actions:		Date Received: 12 th August 2013
Potential credits were adjusted for areas categorised as regularly or permanently flooded according to the European Space Agency Globcover V2.3 land cover map for 2009. Flooded areas included in the analysis are based on 3 categories identified by the ESA Globcover categories:		
<ul style="list-style-type: none"> • 160: Closed to open (>15%) broadleaved forest regularly flooded (semi-permanently or temporarily) - Fresh or brackish water • 170: Closed (>40%) broadleaved forest or shrubland permanently flooded - Saline or brackish water • 180: Closed to open (>15%) grassland or woody vegetation on regularly flooded or waterlogged 		



soil - Fresh, brackish or saline water	
Areas prone to flooding were grouped within the ACEU risk categories and show the average and potential credit values originally assigned to them in the “Regularly Flooded Areas per ACEU Risk Category” query. These credits were then subtracted from the total potential credits for the project sites (as shown in the "Credit Calculations & Adjustments for Trocano Araretama Project Sites" document).	
The GlobCover Land Cover product is based on ENVISAT MERIS data at a resolution of 300m. The lack of SWIR band in the MERIS sensor was noted as hampering some discrimination between flooded and non-flooded forest classes, for this reason these classes were largely classified using ancillary data imported from the ESA's reference land cover database which includes higher resolution as well as ground truth data. Full classification methodologies for the Globcover V2.3 land cover map are detailed here: http://due.esrin.esa.int/globcover/LandCover_V2.2/GLOBCOVER_Products_Description_Validation_Report_I2.1.pdf	
Evidence used to close CL: The project clearly has a system for sensing this type of vegetation and has accounted for these areas in the form of reductions to both the pixel value and well as removing entire pixels from the quantification process. The referenced documents on the geospatial platform were reviewed. This process appears to be adequate for the purpose. Issue is addressed.	
Date CL closed:	13 August 2013

13. Clarification (NFS Checklist Trocano v1, Site Visit Questions, line 6)

Verification		
NFS Criteria: NFS Standard Guidance, V1.2		
Evidence Used to Assess Conformance: Site Visit		
Findings: Site visit observations during an over flight of the area found that there are many very small areas of deforestation that appear to be difficult to capture in remote sensing applications alone.		
Clarification (CL): How will the project capture and quantify the areas where deforestation consists of many very small areas. These would be 1- 2 hectares in size. These areas would be deforested and grow crops for only one year according to the community members, and then left fallow.		
Date issued:	2 August 2013	
Project proponent response/actions:	Date Received:	12 th August 2013
The smallest area of undetected deforestation observed on the RapidEye satellite data was 1.06 ha. We are therefore fairly confident that RapidEye (and similar high resolution) satellite data will be suitable for detecting and quantifying small patches of deforestation.		
The recording of such deforestation incidences will also be recorded through the aerial flyovers, scheduled visits and on the ground monitoring activities; Where and when these are observed, they will be recorded and included within the process for quantifying and calculating the annual expected credits for each crediting period. Any areas that are left fallow after one year, as suggested by the community members, will be detected and/or observed as deforestation in the subsequent monitoring period and quantified accordingly.		
A similar exercise to the one carried out during this monitoring period will be carried out annually, whereby high resolution satellite data for 2 moments in time will be acquired for (a subset of) areas that have been reported during the monitoring period to have undergone many small disturbances.		
Evidence used to close CL: The project is undertaking several types of annual monitoring activities including both aerial and ground based monitoring of deforested areas, in addition to directly receiving input from the community members. If the project experiences numerous reports of deforestation in a given area, the		



RapidEye satellite imagery will be able to detect these small areas with a 1 ha detection rate. As the project is verified in future years, the project should be able to justify the areas chosen for this more detailed and focused approach as well as identify what actions the project has taken to avoid such deforestation. This process is outlined in the project management plan. Although the project management plan is an internal document, the project shall be held accountable for any differences in activities in future verifications. Issue is addressed.

Date CL closed:

13 August 2013