

MADRE DE DIOS AMAZON REDD PROJECT

IMPLEMENTATION REPORT



Content

Monitoring Report Madre de Dios Amazon REDD Project

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GHG Accounting/ Crediting Period	CCB Gold Level Validated 2nd December 2009 CCB Gold Level Verified May 2015 05 - October - 2012 Validation VCS 2009 - 2012 verified by VCS 2009 - 2013 verified by CCB 11 - June - 2013 verified vintage 2012, by VCS 09 - December - 2014 verified vintage 2013, by VCS

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History of CCB Status	<p>01 - January, 2009 the validation / Gold Level (8 criteria achieved) 13 - May, 2013 the verification (01- January 2009 to 31 - December 2013)</p>
Distinction Level	<p>The Madre de Dios Amazon REDD Project is the first REDD project in forest concessions in Peru to be certified by the CCB and VCS standards. It has been carrying out a sustainable management of the 98,932.0 ha of forest that the Peruvian State has granted it as a concession. The Project has implemented activities aimed at improving the capacities and standard of living of the local inhabitants, reducing deforestation and degradation of the Project area, thus preserving its biodiversity. Consequently, during the period 2014-2018, no deforestation has occurred in the Project area, while in the Leakage area, a total of 1552.43 ha has been deforested. In addition, low-impact harvesting techniques certified by FSC have made it possible to maintain biodiversity in the Project area, achieving better results than expected in this component, according to the validated PDD. With regard to the community component, the Project has contributed to improving the living conditions of the communities by creating jobs, supporting education and basic needs, and so forth, particularly, of the Native Community (NC) Bélgica (Yine tribe), as the main actor, who have been actively involved in the Project activities. The project achieved the Gold Level of the standard during its validation, and has implemented actions to maintain it: it has established an adaptive management, leading to improving the Project objectives in response to lessons learned; it has disseminated the lessons learned in the REDD Project implementation process at all levels (governmental, civil and enterprise); it has included relevant training sessions to its employees and members of local communities; the Project actions have respected the cultures of neighboring communities and CN Bélgica has held relevant positions and has signed important agreements that have helped its sustainable development; it has used native species and</p>

carried out best practices to preserve soil and water resources during harvesting activities; it has conducted studies to better understand climate variability and how to cope with it, and it has sold its VCUs in the voluntary market.

1 SUMMARY OF PROJECT BENEFITS

The Madre de Dios Amazon REDD Project is a project whose proposed activity is to avoid unplanned deforestation of forests that are managed sustainably by the certified timber concessions “Maderera Rio Acre SAC” and “Maderera Rio Yaverija SAC”, in the department of Madre de Dios, southeastern Peru, in the Peruvian Amazon.

Both companies have signed concession contracts with the Peruvian Government, renewable for 40 years (for a total of 80 years of contract); in May 2002 for an area of 98,932.0 hectares (49,376.0 Maderacre and 49,556.0 Maderyja). These contracts explicitly give legal rights over both areas under concession, and all the environmental services included in them. There are no current or future land-use conflicts, nor are there people living within the concession boundaries. According to the Final Verification Report of the Project under CCBA performed by SCS, Maderyja and Maderacre have exclusive rights to environmental services within the project area, including forest carbon.

The project area is located within 30 km of the South Inter-Oceanic Highway (IOH), linking Brazil with the Peruvian ports, in the Amazon region that belongs to the Vilcabamba - Amboró Corridor, one of the world’s biodiversity hotspots. The presence of the IOH is a major risk. Until its paving, Madre de Dios was an isolated region, more integrated with Brazil than with the rest of the country. To get to the nearest city, Cuzco, people had to travel two to three days, which has been reduced to only about 14 hours. This facilitates the immigration of new settlers, mainly from rural Andean areas, and the establishment of economic activities not compatible with the forest that are consequently practiced, such as slash-and-burn agriculture, cattle ranching in poor pastures, etc. Deforestation and forest degradation are the result of these activities.

In this sense, it is necessary to consolidate the sustainable management of the area, as is the case of concessions for harvesting of timber and non-timber resources, private conservation areas and protected natural areas.

The project aims to reduce land pressure in the project area and its buffer zone, to ensure sustainable forest management of both timber concessions, and to improve the living conditions of local communities through implementation of an avoided deforestation project to help generate more resources for the management of the area.

The project started on January 1st, 2009, when the validation process was completed under the Climate, Community and Biodiversity Project Design Standards (CCB), thus ensuring social and environmental sustainability of the proposal. This was reinforced by obtaining the Gold Level of the standard. As a complement, the project was also validated under the Verified Carbon Standard (VCS)

on September 20, 2012, subsequently completing the verification of 2009-2012 on 21 May 2013, and afterwards achieving the verification of vintages 2013, 2014, 2015 and 2016. We have already audited vintage 2017 and are awaiting its approval.

1.1 Unique Project Benefits

Table 1-1: Impacts of Objective 1 in the reporting period

Outcome or Impact (objective 1)	Achievements during the Monitoring Period (2014-2018)	Section Reference	Achievements during the Project Lifetime
<p>1) Socialization and Dissemination of Project Objectives</p>	<p>a) Virtual Spaces: www.greenox.com</p> <p>b) Conferences and Events:</p> <ul style="list-style-type: none"> • Meeting on Productive Technological Innovation for the Amazonia at the ExpoAmazonica (2015). • Forest Management at the ExpoAmazonica (2015). • Participation in the FSC International Meeting (South Africa, 2015). • Sustainable Forest Harvesting and Environmental Services for Conservation and Local Development. (COP 20, 2015) • Participation in the national initiative YO MADERA LEGAL (Ministry of Environment, 2015). • The 2nd European Sustainable Tropical Timber Coalition Conference, STTC - European Sustainable Tropical Timber Coalition. Spain (2015) • Business Opportunities of FSC® Certified Flooring Products. (China, 2015) • Forum Biodiversity, Capital for Sustainable Development. (PromPerú, 2015) • “Presentation: “Importance of Applied Forestry Research for the Development of the Forestry Sector” (2018). • SERFOR-CAF Project (2018). • “Presentation: “Sustainable Forest Investment: Challenges and Opportunities” Universidad del Pacifico (2018). • Identification and Design of a Map of Strategic Forest Ecosystem Services that Promote Sustainable Development in the Region of Madre de Dios (2018). <p>c) Community spaces:</p>	<p>Section 4.1 and annexes S-1 al S-12</p>	<p>Throughout the project useful life period, socializations of REDD objectives have been performed in various local events, citizen participation workshops, and national and international conferences. Historical information on the project can be reviewed. Data not available from the beginning of the project Since 2015, 12 conferences have been held or participated to disseminate the project; 18 workshops or talks with communities and project stakeholders.</p> <p>The REDD project is recognized at national level as well as the concessions, which are also recognized as concessions that protect biodiversity by managing the</p>

	<ul style="list-style-type: none"> • Meetings in Iñapari, Villa Primavera and the Native Community of Bélgica to disseminate the program “Environmentally Friendly Projects” January 2015, See Annex S-1. • Socialization of REDD objectives in the Native Community of Bélgica, March 2015, See Annex S-1. • Workshop on Citizen Participation and Meeting with Consultative Committee 2015, to provide information on the program, the progress of the REDD Project-March, April 2015, See Annex S-1. • Launch of Contest 2015, diffusion by graphical media and local radio socializing the objectives. See Annex S-1. • Workshop on Citizen Participation, Dissemination of the REDD Program and Progress Report. August, 2015. See Annex S-1. • Workshop on Start of REDD Project and Objective, in the Community of Villa Primavera, for adults and children together with ANIA. The dissemination of the REDD objectives that are the basis of the BONI project was carried out, and the methodology of the project was explained. November, 2015, See Annex S-2. • Workshop on Citizen Participation and REDD Objectives and Consultative Committee 2016. See Annex S-3. • Workshop on REDD Objectives in the Community of Villa Primavera, May 2016. See Annex S-4. • Talk on REDD Objectives and Mission of Planete Urgence in the Native Community of Bélgica. August, 2016. See Annex S-5. • Workshops to Promote REDD Objectives for Environmentally Friendly Projects - Native Community of Bélgica. May, 2017. See Annex S-6. • Workshops to Promote REDD Objectives for Environmentally Friendly Projects - Villa Primavera Community, May 2017. See Annex S-7. • Workshop on Citizen Participation and Consultative Committee 2017 for Dissemination of REDD Objectives 2017. See Annex S-8. • Dissemination of REDD 2017 Contest, REDD Objectives of Environmentally Friendly Projects. November, 2017. See Annex S-9. • Dissemination of REDD Objectives and II Contest of Environmentally Friendly Projects. March, 2018. See Annex S-10 	<p>forest ecosystem adequately, and therefore the project is presented very frequently in different events. Besides this, it contributes with the schooling of students at national and global level by means of student exchanges and the elaboration of thesis Works in the project area.</p> <p>As to the communities, they have become allies and replicate and complement management actions, which helps to reduce GHG emissions due to good management and dissemination to other nearby areas.</p>
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	<ul style="list-style-type: none"> • Talk at the Noaya Community Educational Institution to socialize REDD objectives and guide them in the II Friendly Projects Contest. April, 2018. See Annex S-11. • Workshop on Citizen Participation and Advisory Committee for Dissemination of REDD Objectives and Progress of Environmentally Friendly Projects. April, 2018. See Annex S-12. 		
<p>2) Identification and Selection of Environmentally Friendly Projects</p>	<p>The project maintains the identification of actors and social organizations close to each concession and constantly updates it. In this way, the identification of environmentally friendly projects is carried out and communication is maintained with the communities and/or actors of each of the friendly projects. In the period 2015 - 2018, 7 environmentally friendly projects (EFP) were identified, which are located in five (05) localities within the social scope of the project. These localities are:</p> <ul style="list-style-type: none"> • Native Community of Bélgica (“Handicrafts for life and the forest, by the women of the CNB”) • Villa Primavera Rural Community (“Forest for Children, The Incredible Forest of Wonders”) • Noaya Rural Community (“Forest for Noaya Children”) • Nueva Esperanza (“Reforestation of Shihuahuaco and agroforestry species”) • Iñapari Cercado (“Agroforestry products and cocoa”; “Valuation of forests through the Estancia Colibrí” and “Platform of opportunities around bamboo for the efficient management of forest resources in the region of Madre de Dios”). <p>Currently, the projects are being developed in various stages. Two (02) are in design and formulation stages; four (04), in execution and one (01), in monitoring. The general description of each friendly project is given below:</p> <ol style="list-style-type: none"> a) <i>“Handicrafts for life and the forest by the women of the Native Community of Bélgica”</i>, is an artisan and cultural project whose objective is the good management of forest resources that includes 20 ha of forests through the collection of seeds and use of species for the elaboration of handicrafts of the Native Community of Bélgica for sale; in this way, this project contributes to the socio-cultural development of the community and generates capacities in the women who belong to it. The direct beneficiaries of the project are members of the native community of Bélgica. This project is in the implementation stage. b) <i>“Forest for Children, The Incredible Forest of Wonders”</i> is a friendly project on environmental education that aims to create an educational and conservation space in 20ha of forest, taking advantage of the natural space for education and BONI methodology. The generation of capacities in the children of the community will allow to turn the forests 	<p>Section 4.1 y 4.2 and Annexes S-13</p>	<p>The identification of friendly projects began in 2015. Until now, 07 environmentally friendly projects have been identified</p>

into a space of respectful coexistence. The direct beneficiaries of the project are the children of the Villa Primavera community. This project was executed between 2016-2017 thanks to alliances with the Association for Children and their Environment (ANIA) and the Fund of the Americas (FONDAM); from 2018 to the present it is being monitored. The REDD program together with ANIA carries out visits and alternative activities for the sustainability of the REDD objectives.

- c) *“Forest for Noaya’s Children”* is the first replica project, 3 years after the implementation of the friendly projects. It is the second project in environmental education under the BONI methodology that was identified in 2018 (II Contest), and whose objective is carrying out the valuation of 5ha of forests through the implementation of a Forest for Children. This project will have as beneficiaries the children of Noaya. This project is in the beginning of execution.
- d) *“Reforestation of Shihuahuaco and agroforestry species”* is a friendly project which aims to reforest 5ha of forests degraded by agricultural activities in the area of Nueva Esperanza and in turn, to value the main forest species, such as Shihuahuaco and fruit species. The direct beneficiaries are the Huamán family. This project is in formulation and design.
- e) *“Agroforestry products and cocoa”* is a friendly project that seeks to manage 5ha of secondary forest through the planting of cocoa and agroforestry products in the area of Iñapari. The beneficiaries are the Mamani family. This project began its execution in 2018; technical and field visits were made with the technical team working on the project; however, it was halted in December 2018 at the request of the owner. The REDD program is willing to resume project activities by mid-2019; provided the owner and beneficiaries agree and are willing to participate.
- f) *“Valuation of forests through Estancia Colibrí”* is an ecotourism project that aims to add value to 35 ha of primary forest and diverse landscapes in the area, through the improvement and potentiation of Estancia Colibrí. The beneficiaries are the Estancia Colibrí team headed by its founder and the visitors to the estancia. This project is in the execution stage.
- g) *“Platform of opportunities around bamboo for the efficient management of forest resources in the Madre de Dios region”* is a friendly project that was identified in the process of 2018, whose objective is to represent a model of sustainable management of forest species through the value enhancement of the use and benefit that can be obtained from the great diversity of bamboos in Madre de Dios, this represented in a physical space in Iñapari as

	<p>peripheral to its base in Tambopata. The direct beneficiaries are the people of Iñapari who can participate in the development of capacities raised by the project. This initiative is in the process of formulation and design.</p> <p>To know the summary of activities to date for each project See Annex S -13</p> <p>NOTE:</p> <p>There are two types of beneficiaries of environmentally friendly projects: direct and indirect. The direct beneficiaries are the owners (families) and communities related to each project. The indirect beneficiaries result from the execution of each project.</p>		
2.1 Design of profiles of the selected projects	<p>The design of the profiles of the environmentally friendly projects was carried out after the first contest, that is, in 2016 and after the second contest, in 2018. The design of the profiles is the first activity of the projects with the advice of REDD. So far, there are 07 project profiles. See Annex S-14.</p>	Section 4.1 and Annexes S-14	<p>Since the beginning of the project, and specifically since it was able to start to implement programmed activities, its profile design has been carried out in two milestones. These milestones took place in 2016 (4 projects), and in 2018 (3 projects). Therefore, up to the present date, 07 project profiles have been developed.</p>
2.2 Development of skills and capacities of members of associations linked to the selected projects.	<p>The development of skills and capacities that enable Environmentally Friendly Productive Projects for the period 2015-2018 are mentioned in the following items:</p> <ul style="list-style-type: none"> • Capacity building in garment and handicraft design, color, cost management, product quality, tourist service and resource management in 15 women artisans from the native community of Bélgica through the coexistence and training from 07 foreign professional volunteers. See Annex S-15. • Support and advice in the field to the human team of the Estancia Colibrí in forest study and ecotourism with technical equipment (students, graduates and specialists) from the National University of Madre de Dios (UNAMAD), with the friendly ecotourism project in the Estancia Colibrí. See Annex S-16. 	Section 4.1 and Annexes S-15, S-16 and S-19.	<p>Since the beginning of the project, the dissemination and promotion of socio-environmental capacities related to REDD objectives has been carried out through workshops, talks, sessions, meetings and socializations.</p>

	<ul style="list-style-type: none"> • In terms of eco-business plans by the team of professionals from MINAM CAF and REDD during 2016 to 2018. See Annex S-16 • Capacity building in environmental education for 3 teachers and 40 children of the Villa Primavera Community through the synergy between Madre de Dios Amazon Redd Project (REDD) and ANIA, with which the First Forest for Children was executed. The children learned how to sow important plants of the area, the importance of the forest, environmental values and how to project all the effort towards their families and community. • Support in the field to train the owner Moisés Mamani in the planting and production of cocoa, within the framework of the development of his friendly project. See Annex S-17. • Skills in environmental education through the development of visits to Noaya by ANIA and REDD. See Annex S-18. • Development of an agreement between the Regional Management of Madre de Dios and Maderacre, as proponent of the REDD Project, to provide regular basic education spaces for the adult population of Iñapari to complete basic studies. By 2018, 43 beneficiaries, including the native community of Bélgica. See Annex S-19. • Promotion of environmental capacities through dissemination sessions of REDD objectives in communities related to projects such as Villa Primavera Community, Native Community of Bélgica and Iñapari Center. 		<p>Data not available from the beginning of the project; 17 capacity development activities and programs have been carried out since 2015.</p>
<p>2.3 Assistance in the implementation of approved projects</p>	<p>For supporting the implementation of environmentally friendly projects, REDD established the following guidelines between 2014 -2018:</p> <ol style="list-style-type: none"> 1. Search for Third-Party Financing: to make the objectives of each particular project feasible. These third-party funds may be from state, companies, private, international funds, among others. To date, we have managed and achieved the Americas Fund, in the amount of US\$ 20,000 for the project Forest for Children of the Villa Primavera Community, in cooperation with the NGO ANIA; the investment of Planete Urgence and REDD in the approach of volunteers, for the equivalent of US\$ 24,500 between 2015 and 2018; and, the donation of wood from the concessions for building in 2019 in the Native Community of Bélgica, whose value is US\$ 20,000. 2. REDD Financial Funds Provision and Project Support. The activities of REDD projects are coordinated and planned from the program by a team of professionals and technicians who are the support in all processes. To date, the investment made in these technicians 	<p>Section 4.1 and 4.2</p>	<p>Data not available from the beginning of the project The implementation of friendly projects began after the 2015 contest, that is, from 2016. The activities are described in this table.</p>

	<p>has been of US\$ 92,288. In addition to that, all the activities of management of funds and support, as well as funds destined to finance first implementation activities, to improve the eligibility conditions of the projects to access the complete financing of the different projects, have been financed by the REDD project. We have in execution activities financed directly by the REDD Project in “Agroforestry products and cocoa” and “Valuation of forests through the Estancia Colibri”, for a value of US\$ 10,000.</p> <p>3. Manager and Promoter, through a technical team and a specialist in social projects that accompanies and advises from the design to the implementation of the main activities of the friendly projects, with an investment in this period of US\$ 19,100 in human resources for it and US\$ 5,500 in the logistical deployment of human resources. Each friendly project started with the diagnosis of the current conditions of the project. Throughout the process and at all times, communication is maintained, the owners or those participating in each friendly project are informed and involved. The management of the MAPs to date can be shown in the following graph:</p>		
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ENVIRONMENTALLY FRIENDLY PRODUCTIVE PROJECTS

2015

- 4 projects.
- Project appraisal.
- Look for financing.
- Agreement with ANIA.
- 1 Found achieved: FONDAM.
- Elaboration of the project fiche design
- Citizen Participation Workshop for REDD objectives dissemination.
- Agreement with Planele Urgence. (Volunteers in Native Community Bélgica)
- Events for dissemination of the program.

2016

- Project appraisal of 3 selected projects.
- Look for financing.
- Children's Forest of Villa Primavera monitoring.
- Citizen Participation Workshop for REDD objectives dissemination.
- Elaboration of the profile of new projects.
- Business Plan presentation and start-up of the operation of Colibri's Residence Project 2018.
- Start-up of the activities of the Agroforestry and cocoa products Project.
- Formulation of Reforestation project and Bamboo opportunities project.
- Start-up of the activities of Children's Forest In Noaya.
- Positive impacts of social support around the Project.
- Renewal commitments with Planele Urgence.

2017

- 3 selected projects from the contest.
- Look for financing.
- Operation of Children's Forest In Villa Primavera (ANIA and FONDAM) Final phase.
- Citizen Participation Workshop for REDD objectives dissemination.
- Agreement with Planele Urgence. (Volunteers in NC Bélgica)
- Events for dissemination of the program.
- Presentation of the Colibri's Residence Business Plan 2017.
- Provision of REDD funds to finance a part of the project.
- Positive impacts of social support around the Project.

2018

- Elaboration of the profiles of each project.
- Project management of the 4 projects.
- Look for financing.
- Operation of Children's Forest In Villa Primavera (ANIA and FONDAM)
- Citizen Participation Workshops for REDD objectives dissemination.
- Agreement with Planele Urgence. (Volunteers in NC Bélgica)
- Events for dissemination of the program.
- Business Plan presentation of Colibri's Residence 2016.

2019

- Continue off Projects managemene and new project's strategies 20

(*) Project stopped by the owner 4 September 2018 to the middle of 2

See Annex S-20.

4. REDD as a facilitator for value chains; that is, in addition to all of the above, the implementation of projects requires the establishment of alliances, agreements or synergies with other state or private institutions that promote and provide public spaces for environmentally friendly projects.

The signed agreements are, See Annex S-21:

	<ul style="list-style-type: none"> • Inter-institutional collaboration agreement with ANIA 2018. • Agreement with Universidad Nacional de Madre de Dios 2019 for the collaboration of professional development and local talent in the PAMs. • Agreement with Planete Urgence 2015 - 2018. • Loop and link with Conservamos por Naturaleza, support in the web space for the community: https://www.conservamospornaturaleza.org/noticia/colabora-con-la-comunidad-nativa-belgica-inapari/, valued in \$5.000 dollars. <p>Social development agreements:</p> <ul style="list-style-type: none"> • Health Agreement with the Native Community of Bélgica 2015 - 2018. (contribution of US\$10,000) • Education Agreement with the Native Community of Bélgica 2015 - 2018. (contribution of US\$7,300) • Cooperation Agreement with the Native Community of Bélgica • Agreement with CLASS Iñapari Health Post 2015-2018. • Agreement with the Regional Directorate of Education and CEBA Dos de Mayo, 2018. • Agreement with CEBA Dos de Mayo, Maderacre (as project proponent) and Native Community of Bélgica, 2018. • Partnership Agreement for the sustainable use of forests, between the Native Community of Bélgica and Maderyja (as project proponent) from 2015, with a validity of 5 years. <p>The projects that are in stage of execution are:</p> <ol style="list-style-type: none"> a) Forest for Children in Noaya b) Forest Valuation for Estancia Colibrí c) Agroforestry products - Cocoa d) Handicrafts for Life and the Forest NC of Bélgica. <p>The activities carried out have been recorded in the activity reports. The communication system with the friendly projects and the follow-up of each project are made through virtual channels (e-mails), telephone calls and field visits.</p>		
<p>2.5 Seeking funding and/or co-</p>	<p>The process of seeking funding began with the listing of possible sources of funding in 2015, then until 2018 the following institutions were contacted:</p> <ul style="list-style-type: none"> • Fund of the Americas (FONDAM): US\$ 20,000 obtained. 	<p>Section 4.1</p>	<p>Data not available from the beginning of the project</p>

<p>financing for approved profiles</p>	<ul style="list-style-type: none"> • Ministry of Environment of Peru (MINAM)-Minam CAF: Technical contribution in Business Plan. • Empresa Tecmedios: US\$ 470.00. • Planete Urgence: US\$ 24 500. • Association for Children and their Environment (ANIA): Technical contribution of the BONI methodology. • Conservamos por Naturaleza: Technical contribution of web space valued at US\$ 5,000. • Universidad Nacional Amazónica Madre de Dios- UNAMAD: Technical contribution from professionals in forestry engineering and ecotourism. <p>An agreement has been signed with the Municipality of Tahuamanu, in order to obtain financing lines (some non-reimbursable) for environmentally friendly productive projects estimated at US\$ 500mil.</p>		<p>The search for financing of friendly projects began after the 2015 contest.</p>
<p>2.6 Monitoring of implemented projects</p>	<p>Up to 2018, there is one project in the monitoring stage (post) that is the Forest for Children of Villa Primavera. The monitoring consists of periodic visits to the project to identify the continuity of activities by the community in maintaining the project spaces, possible needs and actions that can be taken from the program, as well as providing them with information on the REDD objectives. The constant monitoring of the projects in general is carried out by means of calls and field visits. The Villa Primavera Project is self-sustaining, which demonstrates the correct implementation (and support) of the project. This is recorded through photographs and visit reports. See Annex S-22.</p>	<p>Section 4.1 and Annex S-22</p>	<p>Data not available from the beginning of the project Monitoring of implemented projects begins in 2018 with the first project executed at 100%.</p>

Table 1-2: Impacts of Objective 2 in the Reporting Period

Outcome or Impact (Objective 2)	Achievements during the Monitoring Period (2014-2018)	Section Reference	Achievements during the Project Lifetime
<p>2. Review and update of the Custody Plan</p>	<p>Since the beginning of the project to date, the Custody Plan of the forest management unit corresponding to the project area has been updated annually.</p> <p>The plans have addressed, every year, the aspect of security of the area in a comprehensive manner, considering for them the following axes:</p> <ul style="list-style-type: none"> • Maintenance of perimeter trails and milestones at the perimeter vertices. • Patrolling the area with emphasis on the most vulnerable sectors. • Establishment and maintenance of signs. • Construction and operation of access control booths. <p>The implementation of the Custody Plan has allowed the non-occurrence of events of invasion, felling or illegal hunting within the project area.</p>	<p>Integral Custody Plan (PDF file: Integral Custody Plan 2018)</p>	<p>From the start date of the project, the Custody Plan for the project area has been constantly updated and implemented.</p> <p>To date, 100% of the non-natural borders of the project area have been delimited by pedestrian trails.</p> <p>Five surveillance posts have been installed and are currently functioning, in the project area access points.</p> <p>100% of the milestones have been placed in the vertices of the area. At the same time signs have been installed and</p>

			<p>maintained in all crucial points</p> <p>In addition to the aforementioned, annual patrolling has taken place and as a result the area is free of invasions, illegal logging and poaching up to date.</p>
<p>2.1 Installation of control booth PCA 5 Maderacre</p>	<p>The decision was taken to restate the location of the control booth that was to be installed in the PC5 of Maderacre. The PC that was installed and is working in alliance with NC Bélgica is located at the beginning of its territory, thereby involving the community in the active protection of their lands that are part of the buffer area of the project, and at the same time, guards access to the project area in that sector.</p> <p>This mechanism has been extended to other points that are part of the project buffer area, thus ensuring not only the protection of this buffer area but also of a larger territory by the installation of control booths before reaching the limits of the project area.</p> <p>The surveillance posts installed and operating to date are:</p> <ul style="list-style-type: none"> • PV Shingo: With land access, located in Carretera Iñapari - Concesión Maderacre (UMT: 422977-8774048) • PV. Bélgica: With land access, located in Carretera Iñapari - Santa Marta towards NC Bélgica (UTM: 427034-8783897) • PV Amatec: With land access, located in Carretera Chilina - Sector AMATEC (UTM: 432559-8756508) • PV. Luchador: With fluvial access by the river Tahuamanu - Sector Quebrada Luchador (UTM: 389889-8751533) • PV. Caldero: With fluvial access by the river Tahuamanu - Sector Caldero (UTM: 417630-8742571) <p>Of the indicated surveillance posts, the last four are located outside the project area, allowing protection of the area to begin earlier, in its buffer zone. This PC network also allows direct protection of access through the Tahuamanu River to the Alto Purús National Park and the</p>	<p>Custody Integral Plan (PDF file: Custody Integral Plan 2018)</p>	<p>Since the start date of the project, 5 surveillance posts have been progressively installed, surpassing in this way the proposed goal.</p>

	Madre de Dios Territorial Reserve, areas of high biodiversity that are also occupied by indigenous people in voluntary isolation.		
2.2 100% Boundary delimitation of the 2 forest concessions	<p>To date, 100% of the non-natural boundaries of the project area have been delimited with pedestrian trails. 100% of the non-natural boundaries demarcated since the beginning of the project are delimited now.</p> <p>For this purpose, shrubs or minor understory plants were cleared with the use of compasses for orientation and machetes for cutting the plants. The trails have an average width of 1.2 m.</p>	Custody Integral Plan (PDF file: Custody Integral Plan 2018)	Since the start date of the project, 100% of the non-natural borders of the project area have been progressively delimited. This represents approximately 156,462 lineal meters of pedestrian trails.
2.3 Installation of "Milestones" in the vertices of the concessions	<p>Milestones have been installed in 100% of the vertices of the project area. These consist of stakes of squared wood or round wood of species of good natural durability; they have a plate where the number of the vertex and their UTM coordinates are indicated, according to information declared in the PGMF of the concessions that form the Project area. Periodically, and depending on the vulnerability of the sector, the milestones have been maintained. For this purpose, we cleared the weeds that grew around or on the milestone.</p> <p>For their installation and maintenance, it is usually necessary to have squads made up of 03 workers.</p>	Custody Integral Plan (PDF file: Custody Integral Plan 2018)	To date 100% of the milestones have been installed in the project area vertices.
2.4 Improvement of signposting within concessions<0 }	<p>Several sectors of the Project area have been signposted, prioritizing their vulnerability.</p> <p>The signage includes signs indicating the data of the Concessions, the UTM coordinates and instruction regarding the prohibition of the passage, it also contemplates the installation of other informative signs allusive to the conservation of water and biodiversity, with emphasis in the care of the wild fauna and the prohibition of activities like the illegal felling and the furtive hunt.</p>	Custody Integral Plan (PDF file: Custody Integral Plan 2018)	The area is signposted since the start date of the project.
2.5 Periodic and annual patrolling in vulnerable sectors	<p>From the beginning of the Project to date, periodic land and river patrolling have been enhanced.</p> <p>The terrestrial patrols are carried out in conjunction with the maintenance work of borders and milestones, following the pedestrian trails built along the non-natural borders and focusing on</p>	Custody Integral Plan (PDF file: Custody Integral Plan 2018)	Annual patrolling has been carried out, both along the pedestrian trails and the vertices, as well as river

	<p>sectors considered critical due to their vulnerability. They are carried out by squads consisting of 1 leader and 3 to 4 workers.</p> <p>Fluvial patrols are more constant and are carried out almost weekly by the custodians designated to watch the area in the Caldero and Luchador PCs, for which they use boats and communication radios to report incidents. Patrolling the Acre River is sporadic because it is considered a very low risk sector due to the limited navigability of the river. River patrol squads are usually made up of 2 guards.</p> <p>The subdivision of the boundaries of both concessions into “sectors” is fundamental for the adequate planning of the Bordering and Patrolling tasks, and due to the existence of natural limits (watercourses). In this sense, the present classification has been carried out:</p> <p>Maderacre Concession:</p> <ul style="list-style-type: none"> • Yaverija River - Noaya River Sector • Noaya River – Cobija Ravine Sector • Cobija Ravine – Maderyja South East Sector • Maderacre - Maderyja Sector • Maderacre - Acre River Sector • Maderacre - NC Bélgica Sector • Headwaters Yaverija River – Josefina Ravine Sector <p>Maderyja Concession:</p> <ul style="list-style-type: none"> • Maderyja - Maderacre Sector • Maderyja South East – Mala Ravine Sector • Mala Ravine – Acre River Sector • Maderyja - Acre River Sector 		<p>patrolling along the Acre river and the Tahuamanu river.</p> <p>To date, the patrollings have not identified one case of invasion to the project area.</p>
<p>2.6 Annual monitoring of possible invasions using satellite imagery</p>	<p>Annually, the project carries out an analysis of the deforestation that occurred during that period. To do this, Landsat satellite images are interpreted to allow us to define the areas of forest and those of non-forest. This analysis is done both at the level of the project area and in its leakage belt. In the case of the project area, special attention is paid to determine if there were events of loss of vegetation cover or burns caused by invaders. To date, there are no reports of invasions, all disturbances that could have occurred in the forest of the Project area correspond to the implementation of the Forest Management Plan and not to external agents.</p>	<p>Annual reports for deforestation analysis / PRA Report</p>	<p>Since the start date of the project, the satellite monitoring and the patrolling have validated the fact that the area has not been affected by external agents.</p>

<p>2.7 Field verification of the sectors identified as potential points of invasion (by deforestation).</p>	<p>Since the reports of invasions in the Project area were negative, it was not necessary to carry out verification activities.</p> <p>What is done annually at the Project leakage belt level is the verification work of interpreting the satellite images to validate whether the interpretation of deforestation is correct.</p>	<p>Annual reports for deforestation analysis / PRA Report</p>	<p>No invasions have been reported in the project area.</p>
<p>3. Development and implementation of mechanisms for the dissemination of environmental education for children, young people and communities involved in the Project.</p>	<p>The environmental education activities of the project is a line of action in both concessions. Throughout the period, talks, workshops, and activities related to environmental education have been held in public spaces, educational institutions, among others. The activities carried out in the period 2015 - 2018 are as follows:</p> <ul style="list-style-type: none"> • Workshop on Redd Objectives, Villa Primavera (2015 and 2016). • Implementation of the Forest for Children as an environmentally friendly project where the children of the community made a space for planting and learning the main species of the forest. Also, the development of learning and recreation spaces in the middle of the forest. The implementation of the project consisted of several sessions of environmental education with the children of the community at the school. (2016-2017) • Talks on the importance of forest resources and forest management at school and college of Iñapari. (2014-2018) • Talks on REDD objectives in the Native Community of Bélgica. (2015 and 2018) • Talks on REDD objectives in the Noaya Community. 2018 • Citizen Participation Workshops to disseminate the importance of forest resources and REDD objectives (2014-2018). • Educational talks at schools in Iñapari by Maderacre and Maderyja from 2015 to 2018. 	<p>Section 4.1</p>	<p>Data not available from the beginning of the project. Since 2015, 18 environmental education activities with the community have taken place.</p> <p>The environmental education activities of the project are a line of action in both concessions. Throughout the useful life period, talks, workshops, and activities related to environmental education have been held in public spaces, educational institutions, among others.</p>

1.2 Standardized Benefit Metrics

Table 1-3: Net benefit achieved by the Project during the monitoring period

Category	Metric	Achievements during Monitoring Period ¹	Section Reference	Achievements during the Project Lifetime
GHG emission reductions & removals				
	Net estimated emission reductions in the project area, measured against the without-project scenario	4,193,012.27 ² tco2 ³	File: VCU Estimation 2018. Post Audit /VCS Monitoring Report 2018. Post Audit	9,505,640.77 ⁴ tco2
Forest ⁵ cover	For REDD ⁶ projects: Number of hectares of reduced forest loss in the project area measured against the without-project scenario	Protection of 97,817 ha. In the PD, it had been determined that there would be a loss of 10,177.8 ha. (21982.8-11805) within the project area during monitoring period	Chart 25, page 150 PDD	21 982.8 ha.
Improved land management	Number of hectares of existing production forest land in which IFM ⁷ practices have occurred as a result of the project's activities, measured	Project area: 97817.41 ha Managed areas 2014 al 2018: 38,505.63 ha	Excel parcelas intervenidas and Excel Cp Estimation 2018. Post Audit.	Managed areas 2009 to 2018 57,317.92 ha

¹ Total project area has been considered with leakage belt.

² The CREED buffer and adjusted is not considered. See VCU Estimation 2018. Post Audit (VCUs 2009-2018)

³ The subtraction CREDDt 2018- (CREDDt 2012+ CREDDt2013) has been done, since the data for CREDD t 2018 are a cumulative value.

⁴The CREED buffer and adjusted is not considered.

⁵ Land with woody vegetation that meets an internationally accepted definition (e.g., UNFCCC, FAO or IPCC) of what constitutes a forest, which includes threshold parameters, such as minimum forest area, tree height and level of crown cover, and may include mature, secondary, degraded and wetland forests (*VCS Program Definitions*)

⁶ Reduced emissions from deforestation and forest degradation (REDD) - Activities that reduce GHG emissions by slowing or stopping conversion of forests to non-forest land and/or reduce the degradation of forest land where forest biomass is lost (*VCS Program Definitions*)

⁷ Improved forest management (IFM) - Activities that change forest management practices and increase carbon stock on forest lands managed for wood products such as saw timber, pulpwood and fuelwood (*VCS Program Definitions*)

Category	Metric	Achievements during Monitoring Period ¹	Section Reference	Achievements during the Project Lifetime
	against the without-project scenario			
	Number of hectares of non-forest land in which improved land management has occurred as a result of the project's activities, measured against the without-project scenario	There has been a better management of the community's non-forest lands in a total of 75 ha. Since 2010 the Yine Community of Belgium has FSC certification in the management and use of its forests, due to the constant work of the project with the community.		
Training	Total number of community members who have improved skills and/or knowledge resulting from training provided as part of project activities	439	4.3.1. Social Monitoring; Social report of social programs	No information available since the beginning of the project. During the entire useful life of the project, skills training in the work areas of the collaborators has been carried out.
	Number of female community members who have improved skills and/or knowledge resulting from training provided as part of project activities of project activities	49	4.3.1. Social Monitoring; Social report of social programs	No information available since the beginning of the project. Throughout the Project useful life, training has been provided skills training in the work areas of the collaborators has been carried out without distinction of sex.

Category	Metric	Achievements during Monitoring Period ¹	Section Reference	Achievements during the Project Lifetime
Employment	Total number of people employed in of project activities, ⁸ expressed as number of full-time employees ⁹	269	4.3.1. Social Monitoring; Social report of social programs	No information available since the beginning of the project. Local work opportunities have been promoted throughout the Project useful life.
	Number of women employed in project activities, expressed as number of full-time employees	29	4.3.1. Social Monitoring; Social report of social programs	No information available since the beginning of the project. Throughout the Project useful life, local work opportunities have been promoted with an emphasis on jobs for women.

⁸ Employed in project activities means people directly working on project activities in return for compensation (financial or otherwise), including employees, contracted workers, sub-contracted workers and community members that are paid to carry out project-related work.

⁹ Full time equivalency is calculated as the total number of hours worked (by full-time, part-time, temporary and/or seasonal staff) divided by the average number of hours worked in full-time jobs within the country, region or economic territory (adapted from UN System of National Accounts (1993) paragraphs 17.14[15.102];[17.28])

Category	Metric	Achievements during Monitoring Period ¹	Section Reference	Achievements during the Project Lifetime
Livelihoods	Total number of people with improved livelihoods ¹⁰ or income generated as a result of project activities	364	4.3.1. Social Monitoring; Social report of social programs	No information available since the beginning of the project. Throughout the Project useful life, good working conditions have been provided to the workers and local dynamics have been promoted through local suppliers, which has led to an improvement in family income.
	Number of women with improved livelihoods or income generated as a result of project activities	104	4.3.1. Social Monitoring; Social report of social programs	No information available since the beginning of the project. Throughout the Project useful life, good working conditions have been provided to the workers and the local dynamic has been promoted through local suppliers, which has led to an improvement in family income.
Health	Total number of people for whom health services were improved as a result of project activities, measured against the without-project scenario	568 There is an agreement with the Iñapari Health Center and support has been given to this	4.3.1. Social Monitoring; Social report	No information available since the beginning of the project. Throughout the Project useful life, agreements

¹⁰ Livelihoods are the capabilities, assets (including material and social resources) and activities required for a means of living (Krantz, Lasse, 2001. *The Sustainable Livelihood Approach to Poverty Reduction*. SIDA). Livelihood benefits may include benefits reported in the Employment metrics of this table.

Category	Metric	Achievements during Monitoring Period ¹	Section Reference	Achievements during the Project Lifetime
		establishment for the improvement of its care since 2010 that allowed the improvement of health care services to more than 2000 thousand people of Iñapari.	of social programs	have been made with the health posts to provide quality care for workers and access to services in nearby communities such as NC of Bélgica.
	Number of women for whom health services were improved as a result of project activities, measured against the without-project scenario	113 There is an agreement with the Iñapari Health Center and support has been provided to this establishment for the improvement of its care since 2010 that allowed the improvement of care of health services and women's specialties through support campaigns or medical teams.	4.3.1. Social Monitoring; Social report of social programs	No information available since the beginning of the project. Throughout the Project useful life, agreements have been made with the health posts to provide quality care for female workers and to provide access to medical services for women in the corresponding specialties through medical campaigns.
Education	Total number of people for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario.	300	4.3.1. Social Monitoring; Social report of social programs	No information available since the beginning of the project. Throughout the Project useful life, agreements have been signed with educational institutions to improve educational services through financial support for professionals, infrastructure, materials and others.

Category	Metric	Achievements during Monitoring Period ¹	Section Reference	Achievements during the Project Lifetime
	Number of women and girls for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario.	110	4.3.1. Social Monitoring; Social report of social programs	No information available since the beginning of the project. Throughout the Project useful life, agreements have been made with Educational Institutions to improve educational services and provide spaces for educational development for women. In 2018, CEBA was opened in the Native Community of Bélgica and in Iñapari.
Well-being	Total number of community members whose well-being ¹¹ was improved as a result of project activities	<ul style="list-style-type: none"> Direct beneficiaries who improved their well-being among which are local workers, beneficiaries of community health programs and education programs, among others: 469; indirect beneficiaries: the population and organizations of 	4.3.1. Social Monitoring; Social report of social programs; https://www.inei.gob.pe/eestadisticas/in dice-tematico/pob lacion-y- vivienda/	No information available since the beginning of the project. Since 2011, 100% of the workers in both concessions have comprehensive state health insurance. Since 2011, 100% of the workers in both concessions received at least 01 training per year to improve their technical skills.

¹¹ Well-being is people's experience of the quality of their lives. Well-being benefits may include benefits reported in other metrics of this table (e.g. Training, Employment, Health, Education, Water, etc.), but could also include other benefits such as empowerment of community groups, strengthened legal rights to resources, conservation of access to areas of cultural significance, etc.

Category	Metric	Achievements during Monitoring Period ¹	Section Reference	Achievements during the Project Lifetime
		<p>Iñapari: 2391 (INEI,2017)</p> <ul style="list-style-type: none"> • 100% of the workers in both concessions have comprehensive state health insurance. • 100% of the workers in both concessions received at least 02 trainings annually to improve their technical and soft skills. 		
	<p>Number of women whose well-being was improved as a result of project activities</p>	<ul style="list-style-type: none"> • 100% of women workers in both concessions have comprehensive state health insurance and maternity leave, if any. • 100% of the women workers in both concessions received at least 01 training per year to improve their technical skills. • Direct beneficiaries who improved their well-being: 250; indirect beneficiaries: the female population 	<p>4.3.1. Social Monitoring; Social report of social programs; https://www.inei.gob.pe/eestadisticas/in dice-tematico/pob lacion-y- vivienda/</p>	<p>The entry of female staff has been progressive since the beginning of the project. Since 2011, female staff have health insurance and applicable rights.</p>

Category	Metric	Achievements during Monitoring Period ¹	Section Reference	Achievements during the Project Lifetime
		of Iñapari: 1002 (INEI, 2017).		
Biodiversity conservation	Change in the number of hectares significantly better managed by the project for biodiversity conservation, ¹² measured against the without-project scenario	We do not lose forest area. All the area is better managed by the project, from the point of view of biodiversity and preservation Project Area: 97,817.41. Area of Belgium Native Community 5,000 ha. Friendly projects: 100 ha. Buffer area: 159,018.02	Annual reports for deforestation analysis Certificado Valid FSC Certificate for sustainable management https://info.fs.c.org/certification.php?lang=SPA	Since the start date of the project, the whole area has been protected. There are 97,817.41 ha of forests under sustainable management and complying with the FSC standards.
	Number of globally Critically Endangered or Endangered species ¹³ benefiting from reduced threats as a result of project activities, ¹⁴ measured against the without-project scenario	From wildlife assessments, it has been possible to record that in the project area there is no presence of critically endangered or endangered species of fauna. Assessments determine that there are up to 9 species in danger or with some degree of vulnerability.	2018 Endangered Species Wildlife Report (Excel file: Fauna Silvestre en Peligro Rep 2018)	There are 9 species with different grades of vulnerability present in the project area. Thanks to the efficiency of the control system in the project area and that hunting is forbidden within its borders, their populations are healthy and in better condition than in without project scenario.

¹² Biodiversity conservation in this context means areas where specific management measures are being implemented as a part of project activities with an objective of enhancing biodiversity conservation.

¹³ Per IUCN's Red List of Threatened Species

¹⁴ In the absence of direct population or occupancy measures, measurement of reduced threats may be used as evidence of benefit

2 GENERAL

2.1 Project Description

2.1.1 Implementation Description

The Madre de Dios Amazon REDD Project is a project whose proposed activity consists of avoiding unplanned deforestation of the forests that are managed sustainably by the certified timber concessions “Maderera Río Acre SAC” and “Maderera Río Yaverija SAC”, in the department of Madre de Dios, southeastern Peru, in the Peruvian Amazon.

Both companies have signed concession contracts with the Peruvian State, for 40 renewable years (making a total of 80 years of contract), in May 2002 for an area of 98,932.0 hectares (49,376.0 ha Maderacre, and 49,556.0 ha Maderyja). Such contracts explicitly grant legal rights over the two areas under concession, and over all environmental services included therein. No current or future conflicts have been detected with respect to land use, nor are there people living within the limits of the concessions. According to the Final Project Validation Report under CCBA, conducted by SCS, Maderacre and Maderyja have exclusive rights to environmental services within the Project area, including forest carbon.

The presence of the Interoceanic Highway represents a great risk. Before its paving, Madre de Dios was an isolated region, more integrated with Brazil than with the rest of the country. To get to the nearest city, Cuzco, one had to travel between two and three days, time that has been reduced to only about 14 hours. This situation facilitates the immigration of new settlers, mainly from rural Andean areas, and the establishment of economic activities not compatible with the forest that are consequently practiced, such as slash-and-burn agriculture, extensive cattle ranching on poor pastures, and so on. Deforestation and forest degradation are the result of these activities. Similar effects are already visible in Brazil, where the Trans-Amazonian Highway was completed some time ago.

The main implementation actions have been developed as mentioned in Chart 1-1. They consist of socialization, implementation of the environmentally friendly projects, the implementation of the custody plan and environmental education. The actions oriented towards management, control of the area and dissemination of information related to the REDD project to communities and people related to the forestry sector, have been very important to contribute to chain reactions and create awareness related to the protection and benefits of the rainforests.

The main natural risks for the project, which could affect its permanence are fires (natural disturbance events, plagues have not occurred up to date). Fires due to slash and burn and biomass losses are monitored by satellite and annual reports on losses, that is to say leakage, are presented. This as a regular measure to verify area losses due to this type of events. It is important to take into account the people’s distrust regarding the admission of others into their properties, which makes it very difficult to make a visit in situ at the moment the fire is happening.

The project has been implementing an Environmentally Friendly Productive Projects program with the objective of encouraging farmers and local communities to protect the rainforest and to implement their activities considering low impact procedures.

At the same time, the project monitors annually the occurrence of disturbances in the forest cover within the project area through the employment of satellite images. These should be corroborated by in field verifications in the case of the existence of an alert with respect to forest cover changes. During the 2014-2018 period no changes have been identified in the forest cover within the project area.

Additionally, the project takes part in the Platform for Civil Defense of the Tahuamanu Province, which makes public through a Whatsapp group information on fire risks with the finality that the community members and the authorities can be alerted in case of forest fires in the Tahuamanu province, which is the province where the whole project is located. Within this platform, the COER MDD publishes information on climate, forest fires forecasts and heat focus.

Another important event, is the possibility of forestry mass losses due to illegal logging. This is monitored by means of the PRA, which is carried out every two years. Five control posts have been installed and which are permanently active. Hundred percent of the access points to the project area are covered. Additionally, the Custody Integral Plan is being implemented within the project area. It contemplates bordering, signposting and patrolling. During the 2014-2018 period, the patrolling has detected no violation of the project borders nor the presence of illegal loggers. In the same way, the PRAs carried out detect that there is low risk of the occurrence of illegal logging activities within the project area.

Complete information regarding risks or non-permanence factors that were mentioned in the PD, is presented in Chart 2-9, item 2.2.5

The total emission reductions for the period, REDDt, (2014 al 2018), has been 4 193012.27 T CO₂ (buffer not included). Total calculations are presented in Chart 2-1

Se presenta el resumen de los cálculos en toda la vida del proyecto, en la siguiente tabla:

Tabla 2-1

Annual	$\Delta C_{BSL,unplanned}$	ΔC_P	$\Delta C_{LK-AS,unplanned}$	$C_{REDD,t}$	Adjusted $C_{REDD,t}$	Buffer _{UNPLANNED}	VCU_t
Period 2009-2012	4,958,227.99	460,725.00	1,144.16	4,496,358.83	4,496,358.83	449,750.30	4,046,608.53

Annual	$\Delta C_{BSL,unplanned}$	ΔC_P	$\Delta C_{LK-AS,unplanned}$	$C_{REDD,t}$	Adjusted $C_{REDD,t}$	Buffer _{UNPLANNED}	VCU_t
Period 2012-2013	1,190,498.00	220,328.96	153,899.36	816,269.67	816,269.67	97,016.90	719,252.77

Annual	$\Delta C_{BSL,unplanned}$	ΔC_P	$\Delta C_{LK-AS,unplanned}$	$C_{REDD,t}$	Adjusted $C_{REDD,t}$	Buffer _{UNPLANNED}	VCU_t
Period 2013-2014	1,107,895.00	192,324.27	143,307.63	772,263.10	772,263.10	91,557.07	680,706.03

Annual	$\Delta C_{BSL,unplanned}$	ΔC_P	$\Delta C_{LK-AS,unplanned}$	$C_{REDD,t}$	Adjusted $C_{REDD,t}$	Buffer _{UNPLANNED}	VCU_t
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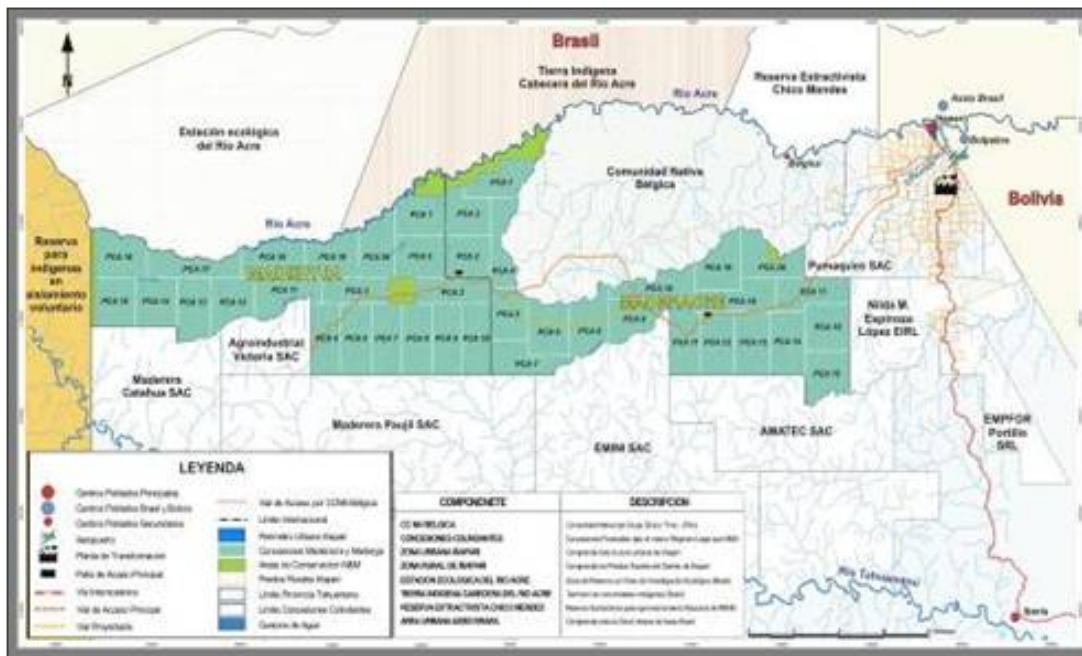
Period 2015	1,046,807.00	535,911.65	131,669.99	379,225.36	379,225.36	51,089.54	328,135.83
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Annual	$\Delta C_{BSL,unplanned}$	ΔC_P	$\Delta C_{LK-AS,unplanned}$	$C_{REDD,t}$	Adjusted $C_{REDD,t}$	Buffer _{UNPLANNED}	VCU_t
Period 2016	1,028,258.00	99,388.06	125,365.12	803,504.82	803,504.82	92,886.99	710,617.82

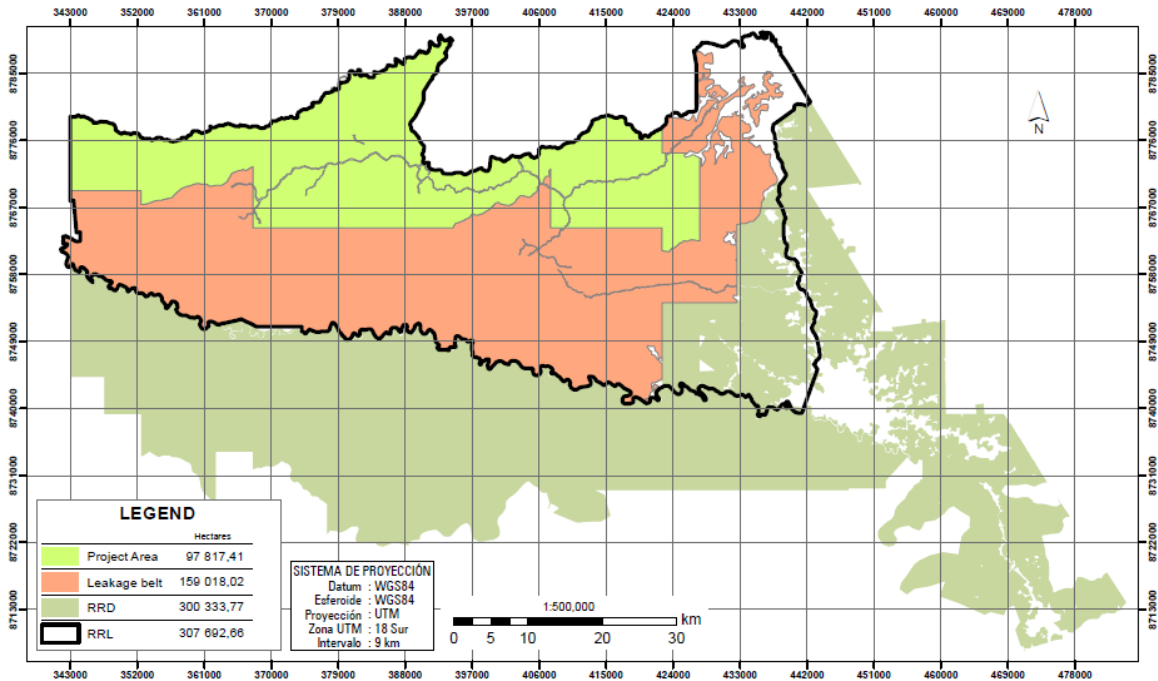
Accumulate	$\Delta C_{BSL,unplanned}$	ΔC_P	$\Delta C_{LK-AS,unplanned}$	$C_{REDD,t}$	Adjusted $C_{REDD,t}$	Buffer _{UNPLANNED}	VCU_t
Period 2017	10,365,094.99	1,555,347.80	168,918.51	8,640,828.67	8,640,828.67	880,974.71	7,759,853.96

Accumulate	$\Delta C_{BSL,unplanned}$	ΔC_P	$\Delta C_{LK-AS,unplanned}$	$C_{REDD,t}$	Adjusted $C_{REDD,t}$	Buffer _{UNPLANNED}	VCU_t
Period 2018	11,419,937.00	1,711,062.59	203,233.64	9,505,640.77	9,505,640.77	970,887.43	8,534,753.34

Figure 1 and 2 are presented, the map of the project area, the project boundaries (project zone, leakage belt).



MAPA: Project Area, Leakage Belt and, RRD and RRL,



The project has been managing its areas, with constant monitoring on its boundaries and involving the community of Bélgica and actors who are on the boundaries in order to learn and be allies in the care of the Forest.

Annually, satellite monitoring is being carried out and observing how the project area and leakage belt are maintained. It has been observed that there is still deforestation in the leakage belt, but the areas are smaller than those projected. Also, the PRA that is carried out every two years to see if there is entrance to the project area and illegal logging has resulted negative. The monitoring that has been carried out and the training and friendly projects with which it is intended to take care of the forest, from a perspective of sustainable use with minimal impact, is yielding results.

Entrance to the forest for harvesting is carried out with high standards, using adequate machinery and trained personnel: In the same way, traceability accompanies the log from its place of origin: the cutting plot to its final destination. The machinery for harvesting gives the company minimal losses. The risk is controlled and there are no disturbances that could damage the good progress of the Project.

2.1.2 Project Category and Activity Type

The project category is AFOLU-REDD, the activity type is REDD AUDD (Reduce emissions from unplanned deforestation). Baseline projections were made according to the requirements of the Modular Methodology (VM0007) of the VCS standard, and were validated under the same standard in 2012. This methodology consists of a series of modules that allow the development of Baseline estimates according to the project activity. In the present case, as it is an avoided deforestation project, Module VMD007 v2 "Estimation of

carbon stock changes in baseline and greenhouse gas emissions from unplanned deforestation” (BL-UP) has been used.

2.1.3 Project Proponent(s)

Table 2-2: Maderacre Representative

Organization name	Maderera Rio Acre Sac,
Contact person	Nelson Kroll
Title	Regional Manager
Address	Carretera Interoceánica sur, Puerto Maldonado km227, Iñapari- Provincia Tahuamanu- Región Madre de Dios.
Telephone	+(51)982798120
Email	nkroll@maderacre.com

Table 2-3: Maderyja Representative

Organization name	Maderera Rio Yaverija sac,
Contact person	Alejandro Ji
Title	Commercial Manager
Address	Carretera Iñapari Iberia Km 5 Iñapari- Provincia Tahuamanu- Región Madre de Dios.
Telephone	+(51)98143311
Email	a.ji@grupoamaz.com

Table 2-4: Greenoxx Representative

Organization name	Greenoxx
Contact person	Silvia Gomez
Title	Deputy Manager
Address	Plaza Independencia 753, 11.100 Montevideo, Uruguay
Telephone	+5982 6040869
Email	silvia@grenoxx.com

2.1.4 Other Entities Involved in the Project

Not more entities involved in the project

Project Start Date (G3.4)

VCS: The project activities started to be implemented on 1st January, 2009 (Project validation date 5th October, 2012).

CCB: The Project activity started in the 31st May 2006 (Project validation date 2nd December, 2009).

2.1.5 Project Crediting Period (G3.4)

VCS + CCB: Crediting period start date: 1st January 2009.

Crediting period end date: 31st December 2046.

Project crediting period: 38 years.

2.1.6 Project Location (G3.3)

The project is located in the hydrographic basin of the Acre River, Iñapari district, Tahuamanu province in the Madre de Dios department, South East of Peru, in the Peruvian Amazon, in the boundary with Bolivia and Brazil.

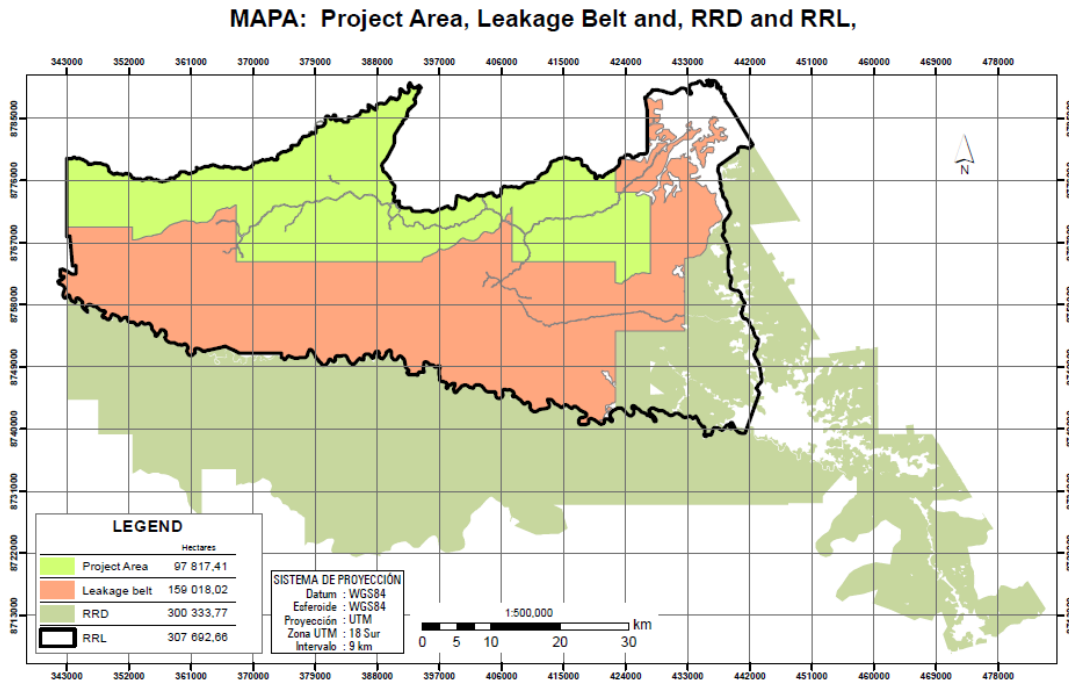
The area is located 28 km to the side of the new inter-oceanic road that joins Brazil with the Peruvian ports, in the region that belongs to the Vilcabamba-Amboró Conservation Corridor in the Peruvian Amazon, one of the world biodiversity hotspots.

The following pictures show the location of the Madre de Dios Amazon REDD Project.



Fig. 1: General location of the Madre de Dios Amazon REDD Project

Figure 4. Map of the Area, Project Boundaries and Main Actors



2.1.7 Title and Reference of Methodology

CCB First Edition.

Modular Methodology (VM0007) v. 1.2 from the VCS Standard. The present monitoring report employs the following:

Modules/tools employed	Last verification
Methods for monitoring of greenhouse gas emissions and removals (M-MON)	VMD0015 v 2.1
Estimation of uncertainty for REDD project activities (X-UNC)	VMD0017 v 2.1
Estimation of emissions from activity shifting for avoided un planned deforestation (LK ASU)	VMD0010 v 1.1
Tool for AFOLU non permanence risk analysis	V 3.3

2.1.8 Other Programs

No other programs

2.1.9 Sustainable Development

The Project helps the sustainable development of the forest and to carry out forest management actions in a competitive and profitable way without significantly impacting the environment, the forest mass and the communities involved.

The State wants the concessions granted for 40 years to be:

- Profitable. The REDD Project collaborates with the profitability of the concessions and it is complementary to the main action of forest management.
- Dynamize the local economy. The REDD project, through its forest management, control and monitoring activities, provides direct employment to nearby communities and promotes the growth of local businesses.
- Sustainable. The REDD project collaborates with the sustainability of the Project area and annexed areas through activities of: management, control, supervision, forest monitoring. The social activities: friendly projects, workshops, agreements, social support and so on, also collaborate with this, through environmental education, replication of management models, training among others.
- That they are respectful of the environment and forest resources. The forest management plan is based on the recovery capacity of the forest, taking only what is necessary and considering minimum cutting diameters. In addition, it has been considered to have conservation areas and maintain the principles of FSC.
- The following chart describes the contribution of the project to the sustainable development objectives.

Table 2-6: Contribution to the Millennium and Sustainable Development Goals

Millennium Development Goals	Project Activities related to the Objective
Eradicate extreme poverty and hunger	<ul style="list-style-type: none"> Local employment opportunities: 36% of the total jobs offered by the project per annum in average. Acquisition of local services or products from local businesses that represent 53% of the total services acquired per year by the project. Social support (trails and road cleaning, donation of water and food products, infrastructure construction) during the floods that occurred in Iñapari in 2012. Permanent provision of support in cases of social emergencies.
Achieve universal primary education.	<ul style="list-style-type: none"> Agreement with the educational institutions of Iñapari to carry out environmental education activities. Creation of a CEBA (basic education center) for adults from Iñapari and the Belgian Native Community to complete their primary and secondary education. 41 beneficiaries were registered in 2018. School bonus to teachers of the Yine Belgium Native Community to reinforce their school activities with children in initial education and primary education.
Promote gender equality and women empowerment.	<ul style="list-style-type: none"> Recruitment of at least 5% of women for the project annually. The middle management positions contemplate the participation of 50% of women. Execution of a handcrafts project with the women of the Belgium Native Community to promote the participation of women in economic activities, their feminine role within the community with capacity development. Participation of female leaders in the Project Advisory Committee as the representative of the Mothers Club of Iñapari. Support in social activities where female participation is promoted, such as fairs, sports activities, Mother's Day, among others.
Reduce child mortality.	<ul style="list-style-type: none"> Health Agreement with the CLASS Iñapari Health Center to carry out health campaigns in populations and workers in good health. Monthly donation of medicines to the Native community of Belgium.
To improve maternal health.	<ul style="list-style-type: none"> Health Agreement with the CLASS Iñapari Health Center for health care for pregnant workers. Comprehensive health insurance for all workers, including pregnant mothers. Compliance with labor rights according to the legal and regulatory framework of Peru for women working on the project.
Fight HIV / AIDS, malaria and other diseases.	<ul style="list-style-type: none"> Health Agreement with the CLASS Iñapari Health Center to carry out health campaigns in populations and workers in good health.
Ensure environmental sustainability.	<ul style="list-style-type: none"> Promotion of environmentally friendly projects for the good management and / or conversion of 80 hectares of forests. Implementation of a significant project to prevent deforestation and indiscriminate logging within 97,817.41 hectares. Said forest affects the region and the Amazon basin through a socially responsible and environmentally friendly production system. Execution of Custody Plans to monitor possible threats or activities that alter the ecological stability of forests in the project area. Protocols and clauses of treatment or action in the presence of ecosystems or species of high conservation value.

	<ul style="list-style-type: none"> Biodiversity monitoring in the project.
Promote a world association for development.	<ul style="list-style-type: none"> The inter-institutional articulation allows the synergy of the efforts that impact the social capital of the project, the well-being in health, education and revitalization of the local economy. The agreements, inter-institutional alliances open the possibilities of maximizing the positive results in good forest management and community welfare. One of the most important results is regarding the FSC criteria positioning in the native community of Belgium in its forestry activity. It maintains good relations with state organizations. The project is considered as an important platform in the development and well-being of Iñapari.
Sustainable development goals	Project Activities related to the Objective
End of Poverty	<ul style="list-style-type: none"> Local employment opportunities: 36% of the total jobs offered by the project per year in average. Acquisition of local services or products from local businesses that represent 53% of the total services acquired per year by the project. Social support (trails and road cleaning, donation of water and food products, infrastructure construction) during the floods that occurred in Iñapari in 2012. Permanent provision of support in cases of social emergencies.
Zero Hunger	-
Health & Wellness	<ul style="list-style-type: none"> Health Agreement with the CLASS Iñapari Health Center to carry out health campaigns in populations and workers in good health. Monthly donation of medicines to the Native community of Belgium. Compliance with the general and specific labor rights of the Peruvian labor legal framework. 100% of workers have social and health insurance. Compliance with labor rights according to the legal and regulatory framework of Peru for women working on the project. Execution of a Community Development Program whose main line of action is health and education.
Quality education	<ul style="list-style-type: none"> Agreement with the educational institutions of Iñapari to implement environmental education activities. Creation of a CEBA (regular basic education center) for adults from Iñapari and the Belgian Native Community to complete their primary and secondary education. 41 beneficiaries were registered in 2018. School bonus to teachers of the Yine Belgium Native Community to reinforce their school activities with children in initial education and primary education. Execution of a Community Development Program whose main line of action is health and education.
Gender equality	<ul style="list-style-type: none"> Recruitment of at least 5% of women in the project annually. The middle management positions contemplate the participation of 50% of women. Execution of a handcrafts project with the women of the Belgium Native Community to promote the participation of women in economic activities, their feminine role within the community with capacity development. Participation of female leaders in the Project Advisory Committee as the representative of the Mothers Club of Iñapari. Support in social activities where female participation is promoted, such as fairs, sports activities, Mother's Day, among others.

	<ul style="list-style-type: none"> Total rejection of any discriminatory action based on gender, economy, origin or other in full agreement with the Convention on the Elimination of All Forms of Discrimination against Women (1979), which stipulates "the right to the same employment opportunities"; in ILO Convention No. 100 on equal remuneration (1951): agreement concerning equal remuneration between male and female labor for work of equal value; and in ILO Convention No. 111 on discrimination in employment and occupation (1958) extends its commitment to suppliers.
Clean Water and Sanitation	-
Affordable and Non-Pollutant Energy	-
Decent work and economic growth	<ul style="list-style-type: none"> Local employment opportunities: 36% of the total jobs offered by the project per year in average. Acquisition of local services or products from local businesses that represent 53% of the total services acquired per year by the project. Compliance with the general and specific labor rights of the Peruvian labor legal framework. 100% of workers have social and health insurance.
Industry, Innovation and Infrastructure.	<ul style="list-style-type: none"> The Forest Use and Management that employs and promotes the Madre de Dios Amazon REDD Project means an innovative system of establishing a system of harvesting with significant moderate impacts that allows the coexistence of economic activity with ecological biodiversity and in turn generates well-being for the communities in the project area.
Inequality reduction	<ul style="list-style-type: none"> Participation of female leaders in the Project Advisory Committee as the representative of the Mothers Club of Iñapari. Recruitment of at least 5% of women annually in the project. The middle management positions contemplate the participation of 50% of women. Acquisition of local services or products from local businesses that represent 53% of the total services acquired per year by the project.
Sustainable Cities and Communities	<ul style="list-style-type: none"> Promotion and execution of environmentally friendly projects to harmonize local production, educational or reforestation activities with the conservation and / or good management of forest resources. Acquisition of local services or products from local businesses that represent 53% of the total services acquired per year by the project. Execution of a Community Development Program whose main line of action is health and education.
Responsible Production and Consumption	<ul style="list-style-type: none"> FSC certification of the project. Execution of a significant project to prevent deforestation and indiscriminate logging of 97,817.41 hectares. It has a forest that affects the region and the Amazon through a socially responsible and environmentally friendly production system.
Climate Action	<ul style="list-style-type: none"> Promotion and execution of environmentally friendly projects to harmonize local productive, educational or reforestation activities with the conservation and / or good management of forest resources. Execution of a significant project to prevent deforestation and indiscriminate logging of 97,817.41. Its forest that affects the region and the Amazon basin through a socially responsible and environmentally friendly production system.

Submarine life	
Life of terrestrial ecosystems	<ul style="list-style-type: none"> • The Forest Use and Management that executes and promotes the Madre de Dios Amazon REDD Project means an innovative system of establishing a system of harvesting with significant moderate impacts that allows the coexistence of economic activity with ecological biodiversity and in turn generates the welfare of the communities in the project area. • Action protocols for evidence of species or ecosystems of high conservation value. • The biodiversity of the project is monitored.
Peace, Justice and strong institutions	<ul style="list-style-type: none"> • The project develops spaces for Citizen Participation within the scope of the project. • The project has an Advisory Committee with which it meets every year to share information about the project and to generate consultations regarding the main needs. This committee is made up of all ethnic and cultural groups in the social sphere of the project, political authorities and women's organizations are present. • The project maintains good relations with state institutions and private companies related to the project. • The project has contributed to the solid construction of conservation and good forest management in the Native Community Belgium which allowed FSC certification for the forest of said Native Community since 2010.
Alliance to achieve the objectives	<ul style="list-style-type: none"> • The project establishes agreements with the institutions of the state of Peru, private companies and non-profit organizations of civil society to improve the quality of education, access to health services, the promotion of sustainable forest management, environmental education in the importance of forests, promotion of environmentally friendly productive projects and partnerships for national and international research and promotion of sustainable management of forest resources.

2.2 Project Implementation Status

2.2.1 Implementation Schedule (G3.4)

Table 2-7: Key dates and milestones in the development and implementation of the Project from the beginning of the Project useful life

Date	Milestone(s) in the project's development and implementation
2011	Implementation of use of common track and custody booth in Bélgica.
From 2011 to date	Construction and operation of the Control Booth at the entrance of the community Bélgica
From 2011 to date	Construction and operation of 3 Surveillance Posts in strategic sectors of the Project's leakage belt
From 2011 to date	Implementation of periodic patrols, both terrestrial and fluvial, to protect the limits of the Project area.
2011 - 2016	Installation of milestones at the vertices of concessions.
From 2011 to date	Improvement of signposting within concessions
From 2012 to date	Annual monitoring of deforestation in Leakage and Project area
From 2011 to 2019	Development of the PRA every two years. (See reports)
2015	First friendly project contest (See reports)
2018	Second friendly projects contest
2017	Implementing the First Forest for Children (See reports)
2011 to 2018	Agreements in support of health, education with the native community of Bélgica (See files)
2011 to 2018	Dissemination of REDD objectives in public spaces

2.2.2 Methodology Deviations (VCS Reports)

The VCS Standard states that “The monitoring report describes all the data and information related to the monitoring of GHG emission reductions or removals. In the VCS Monitoring Report Template must use this and adhere to all instructional text within the template.”

While employing “VM0007, REDD Methodology Modules (REDD-MF) version 1.2, during the validation, in order to obtain the Madre de Dios Amazon Redd Project validation, the methodology showed that the buffer allocation should be calculated using equation 4 in which the final function of the formula was:

VM0007, Version 1.2
Sectoral Scope 14

$$Buffer_{UNPLANNED} = \left(\left(\Delta C_{BSL,unplanned} - \sum_{t=1}^{t^*} \sum_{i=1}^M (E_{FC,i,t} + N_2O_{direct,i,t}) \right) - \left(\Delta C_{P,(UnplannedDeforestationAreas)} - \sum_{t=1}^{t^*} \sum_{i=1}^M (E_{FC,i,t} + N_2O_{direct,i,t}) \right) \right) * (1 - Buffer\%) \quad (5)$$

and in this occasion the team observed that was incorrect. The Madre de Dios Amazon REDD Project, during the validation and during all verification audits used the following equation:

VM0007, Version 1.4
Sectoral Scope 14

$$Buffer_{UNPLANNED} = \left(\left(\Delta C_{BSL,unplanned} - \sum_{t=1}^{t^*} \sum_{i=1}^M (E_{FC,i,t} + N_2O_{direct,i,t}) \right) - \left(\Delta C_{P,(UnplannedDeforestationAreas)} - \sum_{t=1}^{t^*} \sum_{i=1}^M (E_{FC,i,t} + N_2O_{direct,i,t}) \right) \right) * (Buffer\%) \quad (5)$$

this is the correct equation and this equation is showed in the recently version 1.4

The deviation relates only to the criteria and procedures for monitoring or measurement, and does not relate to any other part of the methodology. This deviation does not impact negatively the conservativeness of the quantification of GHG emission reductions or removals, and relates only to the criteria and procedures for monitoring or measurement, and does not relate to any other part of the methodology

- a) The other methodology deviations were applied from the guidance of the parameter (RRL, forest, t), since it has not been recalculated, as the methodology indicates. This deviation does not negatively impact the conservativeness of the quantification of GHG emission reductions, since the parameter is not included in annual carbon calculations and therefore does not need to be monitored until baseline re- assessment. And it is related, only to the criteria and procedures for monitoring or measurement because it relates to measurement of baseline emissions, as carried out following the BL-UP module.

During this monitoring period 2017, we used field data.

2.2.3 Minor Changes to Project Description (Rules 3.5.6)

Changes have been made to the indicators of biodiversity presented in the Project Design. This, due to the fact that in various cases the indicators that were presented did not offer relevant information for the project objectives. The total of the indicators is presented in Chart 5-6. Updating the periodicity of the evaluated parameters for each biodiversity monitoring report

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
Abundance of potentially harvestable trees/specie/ha (N° of harvestable trees by specie in a determined area)	Annual	Annual		
Total abundance/specie/diametric class/ha (total number of individuals by specie in a determined area, arranged by diametric class)	Annual		Discarded. They do not present relevant information for the REDD project objectives. These are indicators which are employed to identify the wood potential of the forest and it is employed for the forestry management operations.	
Total abundance/specie/ha (total number of individuals by specie in a determined area)	Annual		Discarded. They do not present relevant information for the REDD project objectives. These are indicators which are employed to identify the wood potential of the forest and it is employed for the forestry management operations.	
Frequency/ha (existence or absence of a specie within a determined sub-plot)	Annual		Discarded. They do not present relevant information for the REDD project	

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
Dominance of harvestable trees/specie/ha (area occupied by the harvestable trees of each specie within a certain area)	Annual		objectives. These are indicators which are employed to identify the wood potential of the forest and it is employed for the forestry management operations as primary input for the calculation of the Importance Value of a certain specie with the objective of getting to know its weight in the forestry species population and therefore determine its viability for management.	
Total dominance/specie/diametric class/ha (area occupied by each specie, arranged by diametric class within a certain area)	Annual			
Total dominancy/specie/ha (area occupied by each specie within a certain area)	Annual			
Capacity of the forest of increasing the number of trees as a result of the survival and growth of the juvenile individuals. (Number of individuals that surpasses the minimum limit of a determined diametric class annually)	Annual	Annual		
Mortality/specie/ha. (N° of dead individuals within a certain period of time and area)	Annual	Annual		
Current sociological position. (Height of individuals/class of height)	Annual		Discarded. It does not present relevant information for the REDD project objectives. It is an indicator which is employed to know the vertical structure of the forest with the objective of acquiring complementary information for the decision-making process about wood species.	Dynamics and structure report (PPM)

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
Annual growth. (Comparison of DAP2-DAP1 in random individuals)	Annual	biannual		Growth rate report (AP)
N° of native fauna sights/specie (measures the annual evolution of native fauna sights within the exploitation areas)	Annual	Annual		
Area deforested by buildings (Ha).	Annual	Annual		Annual environmental monitoring report of forest operations
Watercourses affected by roads. (N°/PCA)	Annual	Annual		Annual environmental monitoring report of forest operations
Area impacted by tree felling. Efficiency of directed felling	Annual	Annual		Annual environmental monitoring report of forest operations
Trees (DAP > 10 cm) damaged by the use of trees. (N° of individuals affected/ tree harvested)	Annual	Annual		Annual environmental monitoring report of forest operations
N° of affected individuals/interest species/harvested tree (DBH >10cm)	Annual		Discarded. They do not present relevant information for the REDD project objectives. The loss of carbon due to management collateral damage is represented in our calculations by the factor LDF (0.67 TnC/m3). These indicators are only applicable to our sustainable management project.	
N° of affected seeding trees/harvested tree	Annual			
N° of affected trees of future harvest/harvested tree	Annual			
N° of affected trees/dragging tree (DBH >10cm / injuries by a blow or friction)	Annual			
Drainage that leads to watercourses within the PCA. (N° of drains in each PCA)	Annual	Annual		Annual environmental monitoring report of forest operations
Extraction of non-wood products (N° products)	Annual	Annual		Annual environmental monitoring report of forest operations

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
N° of the identified non-wood resources N° of the non-wood resources that were inventoried	Annual	Annual		
Volume extracted annually. (m3)	Annual	Annual		Annual environmental monitoring report of forest operations
Extraction efficiency and census quality. (Extracted volume / censored volume / PCA)	Annual		Discarded. They do not present relevant information for the REDD project objectives. The information is only applicable to our sustainable forest management project.	Annual environmental monitoring report of forest operations
% of decreasing of non working days per activity (efficacy in the logistics and planning of the infield work)	Quarterly		Discarded. They do not present relevant information for the REDD project objectives. The information is only applicable to our sustainable forest management project.	
Unit costs (commercial census, logging, trawling and transport) (cost/m3/activity/month)	Biannual	Annual		Cost center annual report
Evaluation of any use by the people living in the camping sites of water from water courses.	Once a year	Once a year		
Measurement of the erosion degree. Set up of sampling plots in camping sites, roads and paths areas, felling and cutting up areas, wood extraction areas, as well as in areas without any kind of intervention as a tester.	Once a year after the rainy season		Discarded. Since the natural forest cover is maintained the soil erosion is negligible.	
Number of sick people.	Once a month	Once a month		

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
Measurement of roads, wood storage sites and camping site sizes in sampling points.	Once a year during the dry season			
Evaluation of selected water courses. Number of felled trees in the river edges.	Once a year	Once a year		
Number of contact points of the forestry canopy over the roads	Once a year during the dry season	Once a year during the dry season		
New and unresolved RNCs. (Closed RNCs)	Annual	Annual		Annual environmental monitoring report of forest operations
Evaluation of the DFFS/OSINFOR. (Regulation of the entity)	Annual	Annual		Annual environmental monitoring report of forest operations
Census: Ha/year	Annual		Discarded. They do not present relevant information for the REDD project objectives. The information is only applicable to our sustainable forest management project.	Annual environmental monitoring report of forest operations
Census: number of species counted	Annual		Discarded. They do not present relevant information for the REDD project objectives. The information is only applicable to our sustainable forest management project.	Annual environmental monitoring report of forest operations
Census: cost/census/ha	Annual	Annual		Cost center annual report
Census: cost/census/m3	Annual	Annual		Cost center annual report
Points of deforested areas. Evaluation of satellite images (once a year) - invasions	Once a year	Annual or period		Monitoring Report on Deforestation and Degradation

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
Random evaluation of machinery used in forestry operations	Once a year	Annual		Annual environmental monitoring report of forest operations
Public events and workers drinking alcohol within the area (N°)	Once a year		Discarded. They do not present relevant information for the REDD project objectives. The information is only applicable to our sustainable forest management project.	Annual social monitoring report
Camp area: Evaluate if the site is adequate and the existence of a platform	Annual	Annual		Annual environmental monitoring report of forest operations
Machinery maintenance: Random evaluation.	Annual	Annual		Annual environmental monitoring report of forest operations
Roads: verify that they are closed during the rainy season	1 time per event	Annual		Annual environmental monitoring report of forest operations
Temporary roads: Verify that the roads are closed.	once a year in the dry season	Annual		Annual environmental monitoring report of forest operations
Illegal exploitation: record of volume and species	Annual	Annual		Annual environmental monitoring report of forest operations
Security booths. (N° of monitoring posts in the access to the project area)	Annual	Annual		Annual environmental monitoring report of forest operations
Wildlife (Primates): Ateles chamek - Population density	Annual	quinquennial	New. This indicator is incorporated because it is necessary to monitor the health of wildlife populations that are key indicators under low impact forestry management, no hunting and therefore to evaluate the ecosystem's health.	Wildlife Assessment Report

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
Nesting sites and presence of collpas affected by the activities. N° of places	Annual	Annual		Annual environmental monitoring report of forest operations
Illegal hunting	Once a month	Annual		Annual environmental monitoring report of forest operations

In the social component of the project, social monitoring indicators have been modified, this is due to the increase in social activities, increase in agreements and specialization of certain activities. It was necessary to add indicators, in addition to those proposed in the project design, and adjust some that did not represent relevant information in the development of activities for community welfare. In this way, identify the impacts that contribute to the quantification of social results of the project. The registration of social indicators with the changes made can be seen in Tables in the section 4.3.1. The changes were mainly for the following scopes:

- Show the participation of women in project activities.
- Specialization of the themes of the training of collaborators.
- Differentiation of beneficiaries and internal and external social welfare activities.

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
% of local workers with respect to the foreign ones	Annual	Annual	–	–
% of local women workers compared to total women.	–	Annual	New. It is relevant according to the objectives of the Madre de Dios Amazon REDD Project. Job opportunities are scarce in the region; meanwhile the project provides and promotes these opportunities and it is important to quantify them.	Workers spreadsheet
% of direct workers who have access to the ESSALUD system	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. The personnel from the Madre de Dios Amazon REDD have dignified jobs that comply with the corresponding labour rights required by the Peruvian Government.	Personnel registration forms. Insurance payments and invoices.
% of workers that have access to a training opportunity during the year	Annual	–	Discarded. It is not relevant for the objectives of the Madre de Dios Amazon REDD Project. It does not specify which type of training is offering the project.	–
N° of training activities carried out by the concessions	Annual	–	Discarded. It is not relevant for the objectives of the Madre de Dios Amazon REDD Project. It does not specify which type of training is offering the project.	

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
% of workers who have had access to health and safety training developed by the company.		Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. More specialized indicators concerning the trainings were added.	Training reports.
N° of trainings in forestry, good practices, skills and topics of labor interest.	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. More specialized indicators concerning the trainings were added.	Training reports.
N° of activities and/or training for the promotion of healthy living, labor rights, families and recreation with collaborators in the framework of social welfare.	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. More specialized indicators concerning the trainings and activities were added.	Training reports.
N°. of hours allocated to staff training	Annual	Annual	–	–
N° of workers that count with complete and adequate equipment of protection for the development of their work	Bi-monthly	Bi-monthly	Modified. The methodology of the indicator has been modified from ordinal number to percentage, since this modality represents more adequately the project's scope. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project.	Administration report.
% of workers who have complete and adequate personal protective equipment to carry out their tasks	Bi-monthly	Bi-monthly	Modified. Modified according to the previous indicator. The methodology of the indicator has been modified from ordinal number to percentage, since this modality represents more adequately the project's scope.	Training reports and inspections to workers.
% of activities for the improvement or monitoring of working conditions and services of the collaborator	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. The project monitors the good working conditions of our collaborators.	Social welfare reports.
General satisfaction level of the year of the services rendered towards the collaborator	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. The project looks to get to know the positive impacts of the benefits that are offered to collaborators.	Social Responsibility Reports.
% of Collaborators (with one year or more of seniority) who improved their quality of life and family in the last year.	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. The project evaluates the positive impacts of the in collaborators.	Social Responsibility Reports.
N° of activities that promote respect and recognition of the local culture and neighboring communities.	–	Quarterly	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. It represents the counting of activities that the project carries out in order to socialize with its collaborators, their procedures and their good practices with the communities.	Social Responsibility Reports.
% of local suppliers with respect to the national ones	Annual	Annual	–	–
% of the prices paid to the local suppliers with respect to the national suppliers	Annual	Annual	–	–

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
N° of suppliers that adopt at least one of the positive practices promoted by the concessions related to the social responsibility	Annual	–	Discarded. It does not offer relevant and precise information for the objectives of the Madre de Dios Amazon REDD Project.	–
N°. of activities promoting good practices, respect for local culture and other institutional values with suppliers.	–	Quarterly	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. It represents the counting of activities that the project carries out in order to socialize with its collaborators, their procedures and their good practices.	Social Responsibility Reports.
N° of guided visits organized within the social responsibility program framework, to the sawmill and to the concessions	Bi-monthly	–	Discarded. It is not relevant for the objectives of the Madre de Dios Amazon REDD Project. The Community Development Program has a much broader scope.	–
N° of actions and/or activities for the contribution and promotion of social development within the framework of the Community Development program.	Annual	–	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. The project carries out activities to promote social development.	Social Responsibility Reports.
N° of signed or ratified agreements with public or private universities	Annual	-	Discarded. It is not relevant for the objectives of the Madre de Dios Amazon REDD Project. There are more agreements with schools, high-schools, universities and other educational organizations.	–
N° of agreements signed and in force with institutions or social organizations for education, environment and social development.	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. There are more agreements with schools, high-schools, universities and other educational organizations, among others.	Valid agreements.
N°. of Social Conflicts registered	Annual	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. Registration of possible controversies.	Social Responsibility Reports.
N°. of Social Conflicts Resolved	Annual	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. Registration of solved cases of the possible controversies.	Social Responsibility Reports.
N° of informative and/or participative activities such as meetings, workshops, socializations or other with interest groups of the population	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. Registration of the activities of citizen participation.	Social Responsibility Reports.
N°. of beneficiaries of the area of social influence by the programs and activities of SR	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. It measures the quantity of beneficiaries from the nearest and more influenced localities.	Social Responsibility Reports.
N°. of beneficiaries of the NC Bélgica for the programs and activities of SR	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. It measures the beneficiaries of of an important social group as is the Native Belgium Community.	Social Responsibility Reports.

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
N° of women beneficiaries of the various communities by the programs and activities of RS	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. It specifies the number of women who benefit from the social development programs.	Social Responsibility Reports.
N° of organizations, families or communities with sustainable projects that receive technical or economic support from the company.	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. It measures the actions that promote economically sustainable activities in the population.	Social Responsibility Reports and Environmentally Friendly Projects reports.
N° of institutions in which Maderacre and Maderya concessions count with a formally designed representative.	Bi-monthly	–	Discarded. It is not relevant for the objectives of the Madre de Dios Amazon REDD Project. The indicator does not necessarily represent the promotion and diffusion actions of the project.	–
N° de eventos u organismos en el que Maderacre participa para la promoción del desarrollo académico, socio ambiental y/o institucional del sector forestal.	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. It measures the actions for promoting sustainable forest management in society.	Social Responsibility Reports and Management reports.
N° of researches carried out within the agreements with universities framework	Bi - monthly	–	Discarded. It is not relevant for the objectives of the Madre de Dios Amazon REDD Project. The promotion of investigations that the project carries out is related to agreement, cooperation and others	–
N° of publications made, reporting the main results of the researches carried out	Bi - monthly	–	Discarded. It is not relevant for the objectives of the Madre de Dios Amazon REDD Project. Publication are not only subject to investigations	–
N° of research and/or publications carried out within the framework of inter-institutional or other agreements.	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. It is better to quantify investigations and publications that are a result of interinstitutional agreements at small, medium and big scale.	Social Responsibility Reports and Management reports.
N° of written dissemination or promotion documents elaborated	Bi - monthly	–	Discarded. It is not relevant for the objectives of the Madre de Dios Amazon REDD Project. The number of diffusion materials that are employed is not considered relevant.	–
N° of diffusions of materials elaborated for the information of activities, procedures and others related to CSR.	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. It is considered more important to quantify diffusion activities, campaigns and socializations	Social Responsibility Reports and Management reports.
Amount of monthly Maderacre social investment.	–	Annual	New. The indicator is relevant for the objectives of the Madre de Dios Amazon REDD Project. It is considered important to quantify the cost of social activities.	Finanacial Management

2.2.4 Project Description Deviations (Rules 3.5.7 – 3.5.10)

A project description deviation has been applied. The PD document indicates that the interpretation would be done with ENVI 4.7. However, ERDAS was employed during this verification period. This interpretation work does not affect the final calculations, it does not increase or decrease them nor does it affect the calculation methodology that could exist difference in the baseline. On the contrary, interpretation has been consistent since 2012 with ERDAS. ERDAS is used, since the team is familiar with this software and it is used for geometric and radiometric correction, in order to assign a coordinate system to the images and improve their visual appearance in order to highlight the elements and proceed with their interpretation. The team that does the data interpretation work uses the methodology of visual interpretation of the elements in the landscape, because it is a more real interpretation and collects fewer errors than the digital interpretation. Changes are recorded through observations of visual interpretation elements such as color, texture, tone, shape, size, spatial pattern, among others. This interpretation does not affect the final calculation

2.2.5 Risks to the Project (G3.5)

During the period 2014 and 2018, the Project has been implementing concrete actions to minimize the risk of impact on the components of climate, community and biodiversity.

At the same time, factors such as human-induced degradation that could occur due to the extraction of wood for firewood, charcoal production or illegal logging, have been monitored. In order to validate the existence or non-degradation potential, the diagnostic methodology was followed with the participation of the actors living in the adjacent area and the area of influence of the project. The biannual evaluations carried out during the period demonstrate the absence of degradation by environmental agents. Taking these results into account, it is concluded that the REDD Project Area currently lacks degradation potential.

Results are then represented for indicators focused on measuring the degree of effort made by the Project to maintain key objects that guarantee climate health, biodiversity and at the same time reduce the negative impact on the community.

Table 2-8: Risks to the project

Activity	Indicator	Respons. Area	Activities 2014-2018	Important data
<p>Minimizing the risk of extinction of local populations of timber species included in CITES Appendix II and III: <i>Swietenia macrophylla</i> and <i>Cedrela odorata</i></p>	<p>% of seedlings and remaining trees of <i>Swietenia macrophylla</i> post-harvest. % of seedlings and remaining trees of <i>Cedrela odorata</i> post-harvest.</p>	<p>Forest Management Area</p>	<p>The Project implements a polycyclic management system based on the natural regeneration of the forest. In this framework it implements a selective use of reduced impact, putting in place a scheme of "Productive Conservation" of the forests. Only the harvesting of trees above the DMC is allowed and with a harvest intensity that allows the natural regeneration of the intervened species.</p>	<p>During this period, the % of individuals remaining by use of the species <i>Swietenia macrophylla</i> is 96.9%, while the % of individuals remaining post use of the species <i>Cedrela odorata</i> is 98.9%. In both cases, the number of remaining individuals is very high and they assure the health of the population of both species, guaranteeing their permanence in the forest and the fulfillment of their ecological functions.</p>

<p>Minimize the risk of extinction of local populations of wood species that are currently gaining commercial importance within the region: wood species for floor manufacturing (<i>Cumaru</i> - <i>Dipteryx micrantha</i>. and <i>Estoraque</i> - <i>Myroxylon balsamum</i>, among others)</p>	<p>% of seedlings and remaining trees of hard post-harvest species.</p>	<p>Forest Management Area</p>	<p>The project implements a polycyclic management system based on the natural regeneration of the forest. In this framework, it implements a selective use of reduced impact, by using a scheme of "Productive Conservation" of the forests. Only the harvesting of trees above the DMC is allowed and with a harvest intensity that allows the natural regeneration of the intervened species.</p>	<p>During the period 2014-2018, the average % of remaining individuals of post-harvest hardwood tree species is 90.49%. On the other hand, the species <i>Dipteryx micrantha</i>, in spite of having a greater intensity of harvest, maintains as remnants 66.2% of its population and <i>Myroxylon balsamum</i> maintains as remnants 96.72% of individuals. This proportion of trees ensures the maintenance of the health of their populations, as well as the fulfillment of their ecological functions in the forest.</p>
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<p>Reduction of forest pests that can occur due to changes in the microclimate caused by a decrease in deforestation and the conservation of population controllers of fauna.</p>	<p>% of areas degraded by forestry activities by PCA and by year.</p>	<p>Forest Management Area</p>	<p>The selective extraction and reduced impact model reduces the impact on the forest to an extremely low level, which maintains its intangible capacity to provide ecosystem services.</p>	<p>Areas affected by the forest management operation during the period 2014-2018:</p> <p>Year 2014 (Harvest season (zafra) 2014-2015/PC 12): 0.18%</p> <p>Year 2015 (Harvest season (zafra) 2015-2016/PC 13): 0.39%</p> <p>Year 2016 (Harvest season (zafra) 2016-2017/PC 14): 0.22%</p> <p>Average: 0.26%.</p> <p>The proportion of areas degraded annually by the execution of the Project's forest management activities is minimal; in addition, it must be considered that this is distributed over the entire extension of the cutting plots, which makes its effect on the climate of a given zone minimal or null.</p> <p>Additionally, it must be considered that the high percentages of remaining individuals of timber species ensure that they continue to fulfill their ecological functions, which in addition to the effective prohibition of hunting guarantees the conservation of the population controllers of fauna. In this sense, the risk of occurrence of forest pests is low in comparison with other areas where there is a high rate of deforestation.</p>
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<p>Reduction of the loss and degradation of the genetic variability of wildlife species due to hunting bans and the implementation of an appropriate custodial system.</p>	<p>Number of registered hunting events.</p>	<p>Forest Management Area</p>	<p>Hunting is prohibited within the project area. Five surveillance posts have been established that control access to the project area and restrict access to hunters. Patrols are carried out along the limits of the project area. Signs have been placed to inform of the prohibition of hunting and other illegal activities.</p>	<p>During the period there were no recorded or reported hunting events within the project area. Hunting activities within the project area have been prohibited since 2005. The custody system has been effectively implemented, and there have been no reported incursions of hunters into the project area.</p>
<p>Minimize loss and degradation of habitats and critical sites for fauna (collpas, fruit trees and caves or hollow trees) and fish.</p>	<p>% of important wildlife sites affected by PCA per year.</p>	<p>Forest Management Area</p>	<p>Forest management operations include the identification, protection, and maintenance of high conservation value (HCV) sites, which are identified prior to forest intervention and excluded from harvesting. During the 2014-2018 period, no VCA sites affected by forest management within the project area were reported.</p>	<p>During the period 2014-2018 the percentage of important fauna sites affected within the project area is zero.</p>

<p>Human-induced degradation: wood extraction, charcoal production, illegal logging. We wanted to validate the existence or not of this degradation potential through the elaboration of a diagnosis with the participation of the actors that live in the adjacent area and the area of influence of the project.</p>	<p>PRA potential degradation Every two years (2015 and 2017)</p>	<p>Social Area</p>	<p>PRA assessments carried out during the period determine that the project area lacks degradation potential.</p>	
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Tabla 2-9 Riesgos de no permanencia y otros inicialmente contemplados en el PDD

Likely risks	Mitigación	Activities conducted during the period
Illegal logging	Install control points in each vulnerable access via with a couple of permanent forest guards in each point.	<p>Five control posts have been installed, all of them are permanently active. 100% of the project area access are covered.</p> <p>Additionally, the Integral Custody Plan is being implemented within the project area. It contemplates the bordering, signposting and patrolling activities. During the 2014-2018 period, no patrolling detected a violation of the borders of the project nor the presence of illegal loggers.</p> <p>In the same way, the PRAs that were carried out, detected that there is low risk of the occurrence of illegal logging within the project area. The monitoring activities and the PRA are carried out according to the Monitoring Module VMD 0015 Version 2.1, where it is indicated how monitoring activities should be carried out to determine the existence or not of degradation caused by illegal logging.</p>
Forest fires caused by slash & burn practices	Promote and fund sustainable local initiatives in order to give alternatives of income generation to local families without destroying the near forest.	<p>The project is implementing an Environmentally Friendly Projects program with the objective of promoting the conservation of the forests and the implementation of activities with low impact procedures in farmers and local communities. The achievements during the 2014-2018 period, are described in the community section.</p> <p>At the same time, the project monitors annually the occurrence of disturbances in the forest cover within the project area through the use of satellite images. This should be corroborated by in field verifications in case of the existence of an alert in cover change. During the 2014-2018 period, no changes in coverage have been identified within the project area.</p> <p>Additionally, the project belongs to the Civil Defense Platform of the Tahuamanu province, which publishes the information on fire risks through a group, so that the community members and the authorities are alerted in case of forest fires that could occur in the Tahuamanu province, where the whole project is located. In this platform the COER MDD publishes information on climate, forest fire forecasts and heat focus.</p>

Invasions of human settlements	Support the efforts to carry out a planned settlement process of new immigrants without threatening the forest concessions.	Satellite monitoring reveals that there have been no settlements installed within the project area. This is also corroborated by the patrolling. Control in access points has been effective due to the constant presence of guards and due to the forestry management within the project area.
Soil erosion	Implementation of a low impact working scheme	All the forestry management activities within the project area are carried out following a low impact scheme and in the strict compliance of the FSC criteria. Since the forest cover is maintained, the project has decided not to continue to monitor this indicator.
Genetic Forest Material Loss	Harvest trees below a Minimum Logging Diameter (defined according to scientific researches) and also to leave some seeding trees.	All the forestry management activities within the project area are carried out following a low impact scheme and in the strict compliance of the FSC criteria. The implemented management is highly selective since it is only applied in individuals with a certain DMC and 20% of the individuals are preserved as seed producers. Due to this type of management the project has decided not to continue to monitor this indicator.
Water Contamination with Fuel Spread	Each fuel container has a capacity of only 200 liters and there is written procedures in case of spread. The personnel that operate these containers have been previously trained	All the forestry management activities within the project area are carried out following a low impact scheme and in the strict compliance of the FSC criteria. There are procedures related to the management and manipulation of fuels, oils and contaminated residues. The personnel are being continuously educated on this matter. Due to this type of management the project has decided not to continue to monitor this indicator.
Accidents of the machinery operators and wild animal attacks (snakes, etc.)	Each worker must wear all the time that he is in the forest Personal Protection Equipment and each camp is implemented with a basic safety kit.	The procedures of low impact management not only contemplate mechanisms to protect the environment but also the physical integrity and life of the operators. The personnel are provided EPP and first aid kits, besides maintaining in management areas health specialized personnel. Due to the very low accident indexes, the project has decided not to continue to monitor this indicator.

2.3 Management Capacity Required Technical Skills and Expertise (G4.1, G4.3)

Team Experience

During these years of implementation, the project has received the collaboration of important professionals. Although in the first years all the effort was reflected in achieving the carbon calculation methodology according to the requirements of the VCS, which only had methodologies in December

2010, the concessions since the beginning of the REDD Project have had valuable professionals, the base of them still continues.

- Eng. Silvia Gómez: Vice President of Greenox
- Eng. Rocco Cheirasco: President of Greenox
- Eco. José Luis Canchaya: Maderacre Manager
- Eng. Nellson Kroll: Maderacre Forestry Manager.

New professional staff have been hired, but with the same commitment and experience in forest management and REDD, as well as in socio-environmental issues, indispensable for the development and smooth running of sustainable forest development and the implementation of REDD projects under the VCS and CCB standards. The professional staff has boosted the progress and achievement of the commitments of the REDD Project.

Also, there has been support and collaboration for the implementation of carbon calculations and the development of methodologies requested by both VCS and CCB from:

AIDER, NGO that has cooperated with initial carbon calculations in CCB.

Amazon Forests: Company that has cooperated with the carbon calculation and baseline of the REDD Project.

Eng. Tatiana Lapeyre: Consultant who first collaborated as staff of the company Bosques Amazónicos and then as consultant for carbon calculations under VCS for monitoring 2009-2012, 2013, 2014, 2015, 2016 and 2017.

2.3.2 Scale of Management Capacity (G4.2)

Capacities

The following is a brief summary of the capacities of each of the main players involved:

Maderacre

- Commercial Manager: José Luis Canchaya

José Luis Canchaya is currently the Commercial Manager of Maderacre. Until 2011, he held the position of General Manager. He has worked in the company since 2005, when he joined as Administration and Finance Manager. He has experience in the forestry sector since 2003. He has a degree in Economics from Universidad del Pacífico, and an MBA from Tulane University and Universidad Católica del Perú. He has lectured in Peru and abroad on sustainable forest management and REDD projects.

- Forestry Manager: Nellson Kroll

Nelson Kroll has been Maderacre's Forest Manager since 2005. He has led the FSC, CCB and VCS certification for Maderacre and Maderyja. His experience in these certifications has even led him to be considered an auditor in FSC certification processes. He has 15 years of experience in the forestry sector. He is a forestry engineer from the Universidad Nacional Agraria La Molina and has led different specializations in forestry. He has lectured in Peru and abroad on forest management, FSC certification and REDD projects.

Maderyja

- General Manager: Xiaodong Ji Wu

Xiaodong Ji Wu, is General Manager of the company MADERYJA SAC, he has more than 10 years of experience in forest management and industry, he is commercial manager for wood export, he has been working in compliance with the Principles and Criteria of Voluntary Forest Certification FSC. He is currently responsible for the company's REDD+ Project and has participated in different national and international trade events.

He is a Certified Chinese-Spanish Translator, recognized by the Chinese Embassy in Peru, has a Master's degree in Beijing, and is director of the Journal of the Voice of the Chinese colony.

- Forestry Operations Manager: David Ovalle

David Ovalle Focori, FSC Forest Operations Manager since 2013 in the company MADERYJA SAC, has been leading the monitoring teams, forest harvesting and processing plant, in compliance with the Principles and Criteria of FSC Voluntary Forest Certification.

He is a Forestry and Environmental Engineer from the Universidad Nacional Amazónica de Madre de Dios, he was a teacher at UNA-MDD, in FSC Voluntary Forest Certification and Community Forest Management, he has knowledge of forest concessions and has participated in different events on Sustainable Forest Management in the region. He has knowledge of the company's REDD Project.

Greenoxx NGO

Greenoxx NGO was officially established on February 15, 2005 and its founding partners were Rocco Cheirasco and Silvia Gomez Caviglia. Greenoxx, as an NGO, has within its main objectives: the promotion, development, promotion, research and support in all its forms to the development of activities related to the Environment, Sustainable Development, Climate Change, and Clean Development Mechanism of the Kyoto Protocol, Mitigation of Greenhouse Gases and Ecology in general. In addition, contribute to research, provide training tools for placement of Uruguayan products abroad, and others related to the carbon market.

Its main achievements are the implementation of projects worldwide, including the development of the first REDD Project in Peru: Madre de Dios Amazon REDD Project, the second REDD project to obtain CCB Gold worldwide, and:

- Advice to Uruguayan entities, in which framework Greenoxx has been declared of National Interest by the Presidency of the Eastern Republic of Uruguay and of
- Ministerial interest by the Ministry of Livestock, Agriculture and Fisheries and the Ministry of Foreign Affairs.
- Participation in the Chicago Climate Exchange as Offset Aggregator, member of the CCX Forestry Committee and the Committee on Avoided Deforestation, which had the function of approving the CCX Forestry and Avoided Deforestation Projects and, in addition, dictate the rules and protocols that regulated them. In particular, in the Committee on Avoided Deforestation, Greenoxx NGO participated since its inception along with other entities such as Conservation International, The Nature Conservancy, Winrock, etc. in the development of protocols and methodologies for the inclusion of REDD projects in CCX.
- Collaboration with McKinsey & Co in the development of large-scale carbon sequestration investments and markets by forests, for the Clinton Climate Initiative.

- Development of Afforestation/Reforestation projects and REDD projects for MGM International and 33 Asset Management. For several years, Greenoxx acted as the forestry area for both companies.
- Greenoxx ONG has developed the following forestry projects to mitigate climate change: Forestal Caja Bancaria and Caja Notarial in Uruguay, being the first projects to sell carbon certificates in the country; Saint Gobain, Tectona and Soroteca in Brazil, in addition to collaborating with dozens of projects in those countries, in addition to Argentina, Costa Rica, Paraguay, Bolivia, Colombia, Egypt, Congo, Italy, and so on.

- Social Responsible Person: Milagros Ñique

She is currently Advisor to Maderacre's Social Responsibility Area, guiding the vision and guidelines of REDD projects. The social aspects of the program are carried out in permanent coordination with the social coordinators of Maderacre and Maderyja. She has been working in this position since 2015. She works as a social specialist carrying out social impact studies, citizen participation and management of community social projects. She has 5 years of experience in extractive industries such as mining and forestry. She is a sociologist by the Universidad Nacional Federico Villarreal and has developed specialties in strategic planning, community relations and project management.

- Eng. Tatiana Lapeyre

Tatiana Lapeyre Zárata is currently an independent consultant working with Maderacre and Maderyja on the REDD Project. She knows the problems of climate change and has collaborated in the elaboration of the first greenhouse gas inventory in Peru. She has participated in the elaboration of PDDs of REDD projects in Peru and in some audits as a local auditor by SCS to validate CCB and VCS projects. She has experience in the forestry and environmental sector since 1997. She is a Forest Engineer and Magister Scientiae by the Universidad Agraria La Molina. She has worked in state and private entities on forest, environmental, climate change and REDD issues.

2.3.3 Financial Health of Implementing Organization(s) (G4.4)

The Madre de Dios Project Amazon REDD Project started in 2008 from its conception, 11 years ago. It was first certified by CCB in 2009, 10 years ago, in addition to the Gold category. In 2013, it was validated by VCS and since then has been verified by VCS every year. This shows that the Project has been sustainable, both in environmental and social terms, and now this section seeks to demonstrate the same, in financial terms.

Maderacre and Maderyja are two forest concessions that practice sustainable forest management. That is, they conserve the forest through the sustainable use of forest resources and services. In this sense, they use wood responsibly (with FSC certification) and environmental services such as carbon sequestration (certified by VCS and CCB). These resources and services are sold in the market, which market values the sustainable seal of responsibly-obtained products/services. These revenues allow the sustainable use of the forest model to be maintained. In other words, they not only maintain the REDD Project, but also the conservation of the forest and allow the positive influence of the population living in the forest environment (either through direct or indirect employment).

Speaking more specifically about the Madre de Dios Amazon REDD Project, the project has already financed all its initial investment and its annual activities are financed with sales that are made in the voluntary carbon market. More financial details will be available to the auditor.

2.4 Land Tenure and Local Stakeholders

2.4.1 Protection of Property Rights (G5.1 – G5.2)

The concessions of Maderacre & Maderyja continue with their concession contracts with the Peruvian Government. This contract began in 2002 for 40 renewable years. Contract N°17-TAH/C J 001-02 and N°17-TAH/C J004-02. Both contracts were ratified in 2006. The project area is 98,932 ha, (49,376 of the Maderacre concession and 49,556 of Maderyja according to contracts N°17 - TAH/C-J001-02 and N°17 -TAH/C-J004-02.).

2.4.2 Voluntary Relocation (G5.2)

There has been no relocation, or involuntary resettlement of property rights, and no problems with interest groups adjacent to the area. There are defined boundaries with the communities.

2.4.3 In-migration (G5.3)

Neither in the monitoring period nor previously have there been migration processes within the project areas. Continuous controls are carried out as part of the forest monitoring process.

2.4.4 Local Stakeholder Identification (G3.6)

No new interest groups or social groups have been identified during the current monitoring period, nor have they been identified before.

2.4.5 Accessibility of Project Documents (G3.7)

The activities where the Project has shared project results are:

- Citizen Participation Workshops and Advisory Committees from 2014 to 2018.
- Socialization of annual social monitoring results.
- Informative talks are held with the Project workers where the Project is explained and shared.

All media and messages shared with local stakeholders have been in Spanish. This language is the one managed by the social environment of the Project and on its website.

2.5 Legal Status

2.5.1 National and Local Laws (G6.1)

New laws in 2014-2018. None directly involved with the Project.

Framework Law on Climate Change No. 30754. Not yet regulated. Published on April 17, 2018¹⁵

¹⁵ <https://busquedas.elperuano.pe/normaslegales/ley-marco-sobre-cambio-climatico-ley-n-30754-1638161-1/>

Law on compensation mechanisms for ecosystem services. Published on July 21, 2016 and Regulation¹⁶ approved by DS 009-2016 MINAM¹⁷¹⁸

2.5.2 Approval (G6.2)

The concessions of Maderacre & Maderyja continue with their concession contracts with the Peruvian Government. This contract began in 2002 for 40 renewable years. Contract N°17-TAH/C J 001-02 and N°17-TAH/C J004-02. Both contracts were ratified in 2006. The Project area is 98,932 ha (49,376 of the Maderacre concession and 49,556 of Maderyja according to contracts N°17 -TAH/C-J001-02 and N°17 -TAH/C-J004-02).

2.6 Optional Criterion: Adaptive Management

2.6.1 Feedback (G7.1)

In order to reduce the vulnerability of the project area to external factors causing deforestation and degradation, the project annually updates its custodial plans incorporating the results of patrol reports and the current situation in the area, It has been possible to prioritize, year after year, the installation of guard posts, boundary delimitation and maintenance, installation and maintenance of milestones, and future patrol work, among other activities.

With respect to forest management, wildlife assessments and the definition of high conservation values have allowed us to define the presence of components to be conserved, which is why the decision has been taken to gather information on the presence of HCVs during the execution of forest censuses, which are then protected during the planning and development of forest use. This can be seen in the forest harvesting maps and the protected sites on the ground. This allows us to maintain biodiversity and ecological functions within the project area.

The dimensional growth of the species of interest for management considered in the PGMF of the concessions that make up the Project area has been monitored. The results of these evaluations have allowed us to validate the growth rates considered in the design of the management system, which was initially secondary information. This allows inferring that the calculations of the silvicultural variables are appropriate and a sustainable management of the forest resource is guaranteed, thus contributing to maintain healthy populations of the forest species, not only for future wood harvests, but also for the fulfillment of their ecological roles in the landscape. These results are incorporated in the PGMF of the Project area, documents that constitute the forest management instruments of the area.

Five-yearly fauna assessments have made it possible to define priority umbrella species for wildlife monitoring as an indicator of ecosystem health. This is how annual monitoring uses this list as an objective for field verification. From the social management, the feedback of the processes starts from a planning based on the needs of the population and sources of official information (see item 3.1.3.) Generating spaces for citizen participation and consultation, such as Citizen Participation Workshops

¹⁶ The new Regulation establishes that among the ecosystem services that can form part of a MRSE are: water regulation; maintenance of biodiversity; carbon sequestration and storage; landscape beauty; soil erosion control; provision of genetic resources; regulation of air quality; climate regulation; pollination; regulation of natural risks; recreation and ecotourism; nutrient cycling; and soil formation.

¹⁷ http://www.minam.gob.pe/wp-content/uploads/2014/06/ley_302105_MRSE.pdf

¹⁸ <https://busquedas.elperuano.pe/normaslegales/aprueban-reglamento-de-la-ley-n-30215-ley-de-mecanismos-de-decreto-supremo-n-009-2016-minam-1407244-4/>

and the Advisory Committee. All citizen participation workshops and Committees are carried out with attendance lists, reports and photographic records, in case any agreement or formal request is made, meeting minutes are drawn up. The latter represents the group of principal representatives of the population and the community, who express the main needs and opinions of the population and communities. In case agreements or formal requests are made, minutes are made. Likewise, the MDP ARP, through its concessions, attends meetings or dialogues convened by the community or local authorities. The constant communication opens the doors to new initiatives or to the modification of the activities that are already carried out, from the planning from the cabinet and the execution in the field of the social team. On the other hand, it is important to mention the trust built with governments and communities that positions the project as a promoter of good opportunities and communicative with the population.

2.6.2 Internal Knowledge Sharing (G7.2)

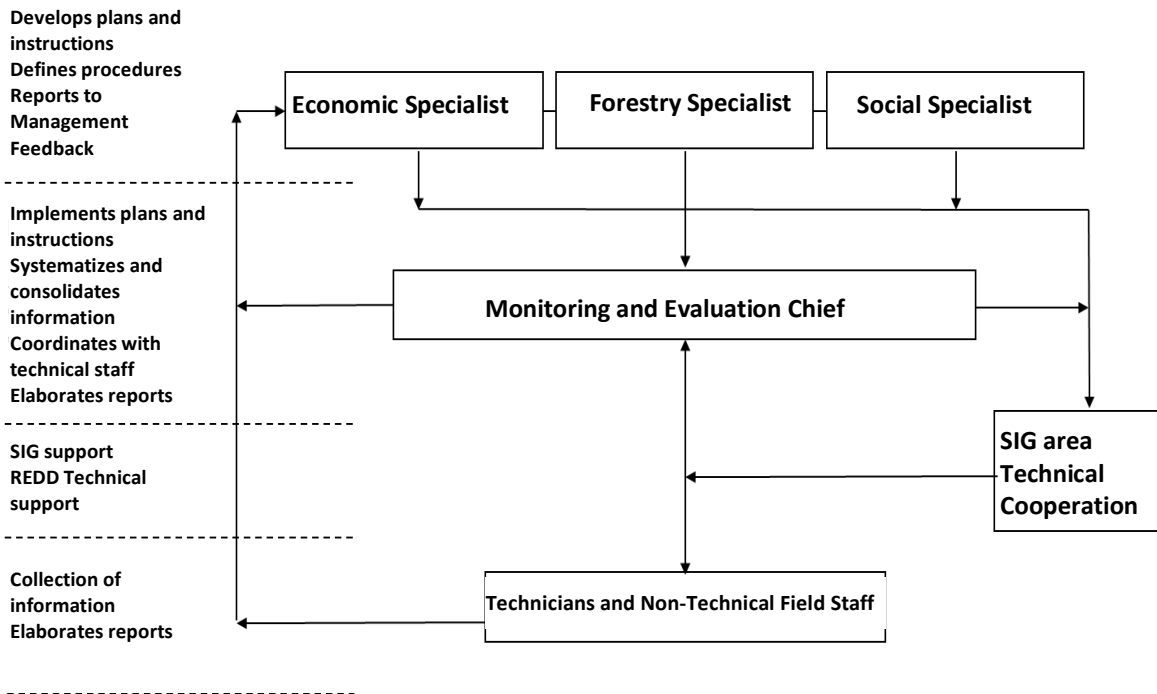
From each concession, trainings and talks have been held with the collaborators in order to present the project, its progress and the importance of the project in the area. In the period from 2014 to 2018, at least 01 annual training has been carried out, mainly with forest workers.

2.6.3 Project Flexibility (G7.3)

The project activities are based on the concept of Adaptive Management, for which it has defined 4 fundamental pillars:

- Generation of knowledge, through studies and evaluations of the forest resource, biodiversity and social environment (participation spaces and official or own studies).
- Training to strengthen the team on the basis of previously acquired knowledge.
- Planning of activities as a step prior to implementation and based on management tools that have been designed for this purpose, which have had as inputs the knowledge acquired from studies and evaluations.
- System monitoring and feedback. Monitoring exposes results that can validate decisions made or, in any case, modify them allowing the project to be flexible.

Information management follows the following flow:



2.6.4 Long-Term Sustainability of Benefits (G7.4)

Forest management in the Project area responds to the implementation of a Forest Management System with two levels of planning:

- The General Forest Management Plan (PGMF): This is the area's long-term management tool, with a duration of 40 years, which is even longer than the useful life of the project. Its implementation began in 2002 and with a horizon of 40 years is valid until 2042. This period is renewable, which guarantees that the management of these forests is in perpetuity according to their categorization as Permanent Production Forests (PPF) with restrictions on land use change. It proposes the silvicultural system to be implemented: (rotation cycle (CC), administrative division (DA) of the management unit, minimum cutting diameters (DMC), harvest intensities (IC) the proportion of seedlings for natural regeneration, etc.).
- The Annual Operational Plan (POA): It constitutes the short-term management tool (1 year), defines the activities to be implemented at the silvicultural level, training and monitoring for the annual management of the project area. Its development and implementation is consistent with the guidelines defined at the PGMF level. At the social level, there are Management Documents and protocols. The social action plan is represented in a Social POA (Annual Social Operations Plan) that contains all the activities to be carried out during the year, social programs, participation workshops, committees, social monitoring evaluations, etc.

2.7 Optional Criterion: Project Implementation Knowledge Dissemination (G8)

In 2015, the project Forest for Children in the Villa Primavera Community began, the first project of its kind in the province of Tahuamanu in partnership with the NGO ANIA and with economic funds from the Americas Fund (US \$20,000.00) executed between 2016 and 2017. This project was an important model in the promotion of environmental education focused on children where the forest becomes an educational space to learn the biodiversity of the nature and importance of the forest. The impact of the educational project affected the community, motivating its continuity with the important collaboration of the community school. In 2018, after a process of identifying friendly projects, the first replica project of Forest for Children was identified in the Noaya Community, another rural community surrounding the Project. The Project allowed organizations such as ANIA to join again to establish cooperation agreements and promote the execution of this project in the following years.

A roadmap¹⁹ has been developed, which indicates the realization of general actions in order to determine emission reductions, carbon calculations and audit instances. A specific project plan is being developed, but due to the fact that the income from VCUs sales has been very fluctuating and there are still many carbon credits to be sold, said income has been mainly directed towards the following activities by the contracted personnel:

- Prioritize the implementation of the Environmentally Friendly Productive Projects program
- Carry out the necessary actions to achieve the total control and custody of the project area
- Social actions
- Deforestation monitoring
- Monitoring of skid trails, logging decks and roads
- Emission reduction calculations
- Audits.

With reference to the incorporation of comments from the local populations to the project, the following actions are being carried out:

- Regular visits to projects
- Forestry building capacity and communities

3 CLIMATE

3.1 Monitoring GHG Emission Reductions and Removals

3.1.1 Data and Parameters Available at Validation

Table 3-1: Data and Parameters available at validation

Data Unit / Parameter:	Regional Forest / Non-forest Cover Benchmark Map
Data unit:	Ha

¹⁹ Excel de hoja de ruta.

Description:	Map that shows the stratification and location of forest and non-forest areas in the Reference Region RRD at the beginning of the accreditation.
Source of data:	Landsat satellite images.
Value applied:	n/a
Justification of choice of data or description of measurement methods and procedures applied:	The Landsat images have an adequate resolution and they are an available tool to all public
Purpose of the data	Determination of baseline scenario
Comments	The stratification was based on the Ecological and Economic Zoning of the Region of Madre de Dios. It was developed by the IIAP in 2009 and the regional government uses it as its official source. Non-forest has been determined as beach and water bodies areas. In addition, there are other areas that are access roads (rivers, bridges, alternate roads, the Interoceanic Highway)

Data Unit / Parameter:	Project Forest Cover Benchmark Map.
Data unit:	Ha
Description:	Map that shows the stratification and location of forest areas in the Project area at the beginning of the accreditation (100% forested).
Source of data:	Landsat-8 satellite image. Sensor OLI.
Justification of choice of data or description of measurement methods and procedures applied:	The Landsat images have the adequate resolution and they are an available tool to all public.
Any Comment	The stratification was based on the Ecological and Economic Zoning of the Region of Madre de Dios. It was developed by the IIAP in 2009 and the regional government uses it as its official source. Non-forest has been determined as beach and water bodies areas. In addition, there are other areas that are access roads (rivers, bridges, alternate roads, the Interoceanic Highway). To date there is no other use but forest usage.
Used in equations	3 y 8
Data Unit / Parameter:	Leakage Belt Forest Cover Benchmark Map.
Data unit:	Ha
Description:	Map that shows the stratification and location of forest in the Leakage belt at the beginning of the accreditation (100% forested).

Source of data:	Landsat-8 satellite image. Sensor OLI.
Justification of choice of data or description of measurement methods and procedures applied:	The Landsat images have the adequate resolution and they are an available tool to all public.
Any Comments	The stratification was based on the Ecological and Economic Zoning of the Region of Madre de Dios. It was developed by the IIAP in 2009 and the regional government uses it as its official source. Non-forest has been determined as beach and water bodies areas. In addition, there are other non-forested areas that used as access roads (rivers, bridges, Interoceanic Highway, alternate roads).
Used in equations	3

Data Unit / Parameter:	A_i
Data unit:	Ha
Description:	Total area of each stratum i .
Source of data:	Landsat-8 satellite image. Sensor OLI.
Justification of choice of data or description of measurement methods and procedures applied:	Frequency at a minimum every 10 years prior to baseline renewal. Is the same area of validation
Any Comments	Ex-ante it is assumed that strata area will remain constant.

Data Unit / Parameter:	A_{RRD} , unplanned, hrp
Data unit:	Ha
Description:	Total deforested area during the term of reference (until 2008) in the RRD
Source of data:	Value taken from the Landsat-8 satellite image. Sensor OLI., used by the Deforestation Model of Madre de Dios.
Justification of choice of data or description of measurement methods and procedures applied:	The Landsat images have the adequate resolution and they are a free and available tool to all public. Is the same area of validation
Any Comments	Monitored for purpose of baseline revisions.

Data Unit / Parameter:	CF
Data unit:	$t C t^{-1} d.m.$
Description:	Carbon fraction of dry matter.

Source of data:	Value taken from IPCC 2006 INV GLs AFOLU Chapter 4 Table 4.3 ²⁰
Value applied:	0.47 t C t-1 d.m ²¹
Justification of choice of data or description of measurement methods and procedures applied:	for Tropical Forests and wood, tree d>10 cm. IPCC 2006 INV GL Afoly chapter 4, table 4.3
Purpose of the data	Calculation of baseline emissions
Comments	n/a

Data Unit / Parameter:	D_j
Data unit:	t d.m. m ⁻³
Description:	Basic wood density in t d.m. m ⁻³ for species <i>j</i> .
Source of data:	National species-specific densities. www4.congreso.gob.pe/comisiones/1999/ciencia/cd/inia/inia-p4/inia-p4.htm#TopOfPage
Justification of choice of data or description of measurement methods and procedures applied:	Species densities have been taken from different sources of national species-specific researches being the main ones: <ul style="list-style-type: none"> - Evaluation of mechanical and physical properties and probable uses of the wood of 20 species in Jenaro Herrera, Loreto – Perú (Aróstegui and Acevedo). - Summary of technical information of 32 tree species. Peruvian Confederation of Wood. 2008. CPM. CITE Madera. - Global wood density database. (Chavé et al., 2009).
Purpose of the data	Calculation of project emissions
Any Comments	n/a

Data Unit / Parameter:	D_{mn}
Data unit:	t d.m. m ⁻³
Description:	Mean wood density of commercially harvested species
Source of data:	National species-specific densities. .

²⁰ <https://www.ipcc.ch/meetings/session25/doc4a4b/vol4.pdf-pag> 172

²¹ http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_04_Ch4_Forest_Land.pdf

Justification of choice of data or description of measurement methods and procedures applied:	Species densities have been taken from different sources of national species-specific researches being the main ones: <ul style="list-style-type: none"> - Evaluation of mechanical and physical properties and probable uses of the wood of 20 species in Jenaro Herrera, Loreto – Perú (Aróstegui and Acevedo). - Summary of technical information of 32 tree species. Peruvian Confederation of Wood. 2008. CPM. CITE Madera. - Global wood density database. (Chavé et al., 2009).
Purpose of the data	Calculation of project emissions
Any Comments	n/a

Data Unit / Parameter:	$f_j(X,Y)$
Data unit:	t d.m. tree ⁻¹
Description:	Allometric equation for species j linking measured tree variable (s) to aboveground biomass of living trees, expressed as t d.m. tree ⁻¹
Source of data:	The Chavé formula for trees and Winrock for palm trees.
Value applied:	<p>B = $\rho \cdot \exp(-1.499 + 2.148 \cdot \ln(\text{DBH})) + 0.207 \cdot (\ln(\text{DBH}))^2 - 0.0281 \cdot (\ln(\text{DBH}))^3$ in Kg (dry)..Chavé</p> <p>B = 6.666 + 12.826 x H^{0.5} x LN (H) in Kg (dry)...palm</p> <p>B=47.022 Kg (dry)...bamboo</p>
Justification of choice of data or description of measurement methods and procedures applied:	Both formulas have been taken from: <ul style="list-style-type: none"> - Pearson, T., Walker, S. and Brown, S. 2005. Sourcebook for Land Use, Land-Use Change and Forestry Projects. Winrock International and the World Bank Biocarbon Fund. 57pp. - Chave, J, et. Al. 2005. Tree allometry and improved estimation of carbon stocks and balance in tropical forests. Ecología 145: 87-99.
Purpose of the data	Calculation of baseline emissions
Any Comments	The validation of the equations will be performed with either of both methods presented in VMD0015 module:

	<ul style="list-style-type: none"> - Limited Measurements - Destructive sampling
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Data Unit / Parameter:	Carbon stock in all pools in the forest stratum																		
Data unit:	T CO ₂ e / ha																		
Description:	Carbon stock by stratum in baseline before deforestation.																		
Source of data:	Determined from carbon inventories carried out in the Project Area.																		
Value applied:	<table border="1"> <tr><td>Hill Forest</td><td>505.10</td></tr> <tr><td>Terrace Forest</td><td>547.81</td></tr> <tr><td>Bamboos</td><td>604.48</td></tr> <tr><td>Tree swamp</td><td>543.42</td></tr> <tr><td>DP</td><td>18.63</td></tr> <tr><td>DA</td><td>31.75</td></tr> <tr><td>DI</td><td>-</td></tr> <tr><td>DC</td><td>31.75</td></tr> </table>	Hill Forest	505.10	Terrace Forest	547.81	Bamboos	604.48	Tree swamp	543.42	DP	18.63	DA	31.75	DI	-	DC	31.75		
Hill Forest	505.10																		
Terrace Forest	547.81																		
Bamboos	604.48																		
Tree swamp	543.42																		
DP	18.63																		
DA	31.75																		
DI	-																		
DC	31.75																		
Justification of choice of data or description of measurement methods and procedures applied:	<ul style="list-style-type: none"> - The inventory was made inside the Project Area. The inventory was coordinate by Nelson Kroll - Parcels were built in the different stratum. - DBH and HT were taken from each individual found. - It was determined the aerial biomass based in the Chavé formula for trees and Winrock for palm trees. - Factor 0.24 was used to determine the root biomass according to module CP-AB. 																		
Purpose of the data	Calculation of baseline emissions																		
Comments	The exact data for each stratum is found in module CP-AB.																		

Data Unit / Parameter:	Change in the land use.		
Data unit:	%		
Description:	Percentages of the project area that will change the land use after deforestation.		
Source of data:	Determined according to the studies of land use carried out in the region of Madre de Dios. <ul style="list-style-type: none"> - CDC, UNALM, SZF, INRENA 2007. 		
Value applied:	Clean cultivation	4%	

	Grasslands 54% Agriculture and livestock 40% Infrastructure 2%
Justification of choice of data or description of measurement methods and procedures applied:	The study mentioned has been carried out in areas that include the Project Area, or next to them. Furthermore, this data is updated and actors that are also in our areas have been considered. Is the same data of validation
Purpose of the data	Calculation of baseline emissions
Comments	n/a

Data Unit / Parameter:	Emissions by biomass burning
Data unit:	T CO ₂ e
Description:	Tons of CO ₂ equivalents, coming from emissions of CH ₄ and N ₂ O by forest and agriculture residues burning.
Source of data:	Factors of module E-BB were used (table 2.6 and 2.5) for tropical forest. Likewise, it was used the combustion factor of table 2.6 by agriculture biomass burning The deforested forest percentage that is burnt after deforestation has been taken from official sources ²²
Value applied:	Used values: - 55 % of the deforested forest is burnt. - Combustion factor. Tropical Humid Forest = 0.5 Agriculture Residues (Corn) = 0.8 - Emission Factor Tropical Forest = 6.8 (CH ₄) and 0.2 (N ₂ O) Agriculture Residues = 2.7 (CH ₄) and 0.07 (N ₂ O).
Justification of choice of data or description of measurement methods and procedures applied:	The percentage of 55% is moderate. Some experts consulted consider that 100% of hectares that are torn down are burnt
Purpose of the data	Calculation of baseline emissions
Comments	n/a

²²Deforestation map of the Peruvian Amazon – 2000. MINAM (2009)

3.1.2 Data and Parameters Monitored

Table3-2: Data and Parameters monitored

Data Unit / Parameter:	Project Forest Cover Monitoring Map
Data unit:	
Description:	Map evidencing the stratification and location of the forest in the Project area at the beginning of each verification period. It has to be evidenced if within the Project area there are deforested areas.
Source of data:	Satellite images and field verification of deforested areas if any (GPS).
Description of measurement methods and procedures to be applied:	Analysis and Classification of Satellite Images Lizardo Fachin was the coordinator, he did the accuracy assessment and determinate the change use land. The visit field was responsible by personal field.
Frequency of monitoring/recording:	Every year with images. Verification of deforested areas will be permanent in field by the surveillance carried out by the monitoring equipment.
Value monitored:	See Map
Monitoring equipment:	Software GIS, available satellite images, GPS, professional monitoring equipment in field.
QA/QC procedures to be applied:	Permanent verification of the area of the project surfaces. Compliance Technical Quality Parameters on the Selection and processing of images including trothing
Purpose of the data	Calculation of project emissions
Calculation method	Where relevant, provide the calculation method, including any equations, used to establish the data/parameter
Comments	Stratification is the same as the one used at the beginning of the term

Data Unit / Parameter:	Leakage Belt Forest Cover Monitoring Map.
Data unit:	Ha
Description:	Map evidencing the stratification and location of the forest in the Leakage Belt at the beginning of each verification period. It has to be evidenced if there are deforested areas.
Source of data:	Satellite images and field verification of deforested areas if any (GPS).
Description of measurement methods and procedures to be applied:	Analysis and Classification of Satellite Images Lizardo Fachin was the coordinator, he did the

	accuracy assessment and determinate the change use land. The visit field was responsible by personal field.
2016 Frequency of monitoring/recording:	Every year with images to report monitoring.
Value monitored	2014: 16.84 ha / 2015: 87.28 ha / 2016:153.21 / 2017: 605.91 / 2018: 689.19
Monitoring equipment:	Software GIS, available satellite images, GPS, professional monitoring equipment in field.
QA/QC procedures to be applied:	Verification of the area of the project surfaces. Also, through the accuracy assessment, during monitoring. Verification of the area of the surfaces of the projects. In addition, through evaluating the accuracy during monitoring. Compliance Technical Quality Parameters on the Selection and processing of images including field trothing. Staff Training and Technical Specialists
Purpose of the data	Calculation of leakage
Calculation method	VCS module Estimation of emissions from activity shifting for avoided
Comments	Stratification is the same as the one used at the beginning of the term.

Data Unit / Parameter:	Degradation PRA Results
Data unit:	Surveys and/or interviews.
Description:	The PRA will be executed from interviews and/or surveys to local actors with the purpose of identifying the existence of degradation potential within the area of the project due to: <ul style="list-style-type: none"> • Extraction of firewood. • Illegal logging If ≥ 10% of the surveys indicate that there is a risk of degradation then the procedures to verify and estimate the degradation should be executed. An additional result of the PRA would be the penetration distance that should be applied to calculate the area with degradation potential (buffer area).
Source of data:	Current PRA
Description of measurement methods and procedures to be applied:	It would be developed according to the provisions set forth in the M-MON.
Frequency of monitoring/recording:	Every 2 years.
Value monitored:	There is no degradation in 2015 and 2017
Monitoring equipment:	PRA sociologist in charge with focusing criteria.

QA/QC procedures to be applied:	There would be templates to carry out surveys and/or interviews.
Purpose of the data	Calculation of project emissions
Calculation method	Used PRA each two year
Comments	n/a

Data Unit / Parameter:	Results of Limited Degradation Survey
Data unit:	Existence of stumps
Description:	Verification of degradation processes in the project area
Source of data:	Field measurements
Description of measurement methods and procedures to be applied:	This period does not verify any degradation
Frequency of monitoring/recording:	Each two years the PRA indicates there is or there isn't degradation potential to the project area.
Value monitored:	PRA indicate that evidence of degradation is non-existent
Monitoring equipment:	GPS, compass, tape line, interviews.
QA/QC procedures to be applied:	Trained staff for field measurement
Purpose of the data	Calculation of project emissions
Calculation method	PRA
Comments	n/a

Data Unit / Parameter:	$A_{burn, i, t}$
Data unit:	Ha
Used in equations:	Section 2.2.2
Description:	Area burnt in stratum i at time t. There isn't any burnt area within the project area.
Source of data:	Field measurements, and satellite images
Description of measurement methods and procedures to be applied:	there isn't a record of a burning. (If there is: it will be indicated the type of forest and burnt area to determine the GHG emissions (CH ₄ and N ₂ O). If possible, the new use of the land will also be indicated)
Frequency of monitoring/recording:	Every time there is an occurrence.
Value monitored	There are no burned areas in this period 2014-2018
Monitoring equipment:	GPS
QA/QC procedures to be applied:	n/a
Purpose of the data	Calculation of project emissions Calculation of leakage

Calculation method	
Comments	Ex-ante burnt areas (baseline) have been determined by interviewing experts and by what it is known in the region of Madre de Dios. The obtained value will be used in the EBB module

Data Unit / Parameter:	A _{DefPA, i, t}
Data unit:	Ha
Description:	Deforested area in the Project area by type of forest
Source of data:	Satellite images / Monitoring field
Description of measurement methods and procedures to be applied:	The images used will be compatible with the ones already used in the estimations ex-ante in order to be compared
Frequency of monitoring/recording:	All moment, constant monitoring area in field. We need information to every verification event. With satellite images every year.
Value monitored:	According with the results of satellite image analysis, there is no deforestation inside PA
Monitoring equipment:	Software GIS, available satellite images, verification in field with GPS and professional equipment with monitoring the perimeter and inside of the area.
QA/QC procedures to be applied:	n/a
Purpose of the data	Calculation of project emissions
Calculation method	-
Comments	There is no deforestation during this period inside PA

Data Unit / Parameter:	A _{DefLB, i, t}
Data unit:	Ha.
Description:	Deforested area in the Leakage belt by type of forest
Source of data:	Landsat-8 satellite image. Sensor OLI. And monitoring with personal field
Description of measurement methods and procedures to be applied:	The images used will be compatible with the ones already used in the estimations ex-ante in order to be compared
Frequency of monitoring/recording:	For every monitoring report. Constant monitoring in field
Value monitored:	Results Table 2014-2018: Deforestation

RRL	Types of forest	Area (ha)	2012	2013	2014	2015	2016	2017	2018	Total
Types of forest in the leakage belt	Hilly forest	134515.75	1,079.99	-	-	87.3	86.2	475.38	512.5	132,274.4
	Terrace forest	17183.17	1,155.28	-	16.8	-	38.6	121.43	78.39	15,772.62
	Others	1622.92	3.23	-	-	-	28.4	9.1	21.28	1,564.16
	Bamboo	3103.45	437.12	-	-	-	-	-	77.04	2,589.29
	Tree Swamps	2592.74	17.89	-	-	-	-	-	-	2,574.85
	TOTAL AREA SIG	159,018.0	2,693.51	-	16.8	87.2	153.2	605.9	689.19	154,775.3
Monitoring equipment:	Software GIS, available satellite images, verification in field with GPS and professional equipment									
QA/QC procedures to be applied:	Look the area in satellite images and ratified with personal field the area and use soil. Compliance with technical parameters of quality in the selection and processing of images including trothing. Training of technical and specialist personnel.									
Purpose of the data	Calculation of leakage									
Calculation method										
Comments	It was confirmed that deforestation for the period monitored in leakage belt.									

Data Unit / Parameter:	$A_{DegW, i}$
Data unit:	Ha
Description:	Area under potential degradation process. Buffer area resulting from PRA, if it shows that there is potential degradation in the Project Area.
Source of data:	GIS delineation and ground validation data.
Description of measurement methods and procedures to be applied:	The buffer area shall be composed from all access points. The length is obtained from the PRA results, and the width shall be equal to the length.
Frequency of monitoring/recording:	Must be repeated each two years the PRA indicates a potential for degradation
Value monitored	PRA results indicates that evidence of degradation is non-existent

Monitoring equipment:	GIS software, field staff, GPS, Measuring tape
QA/QC procedures to be applied:	n/a
Purpose of the data	Calculation of project emissions
Calculation method	-
Comments	There is no evidence of depredated areas or parcels ex-ante within the project area.

Data Unit / Parameter:	A DECKS, i, t																		
Data unit:	Ha																		
Description:	Area of logging decks in stratum i at time t.																		
Source of data:	Field measurements.																		
Description of measurement methods and procedures to be applied	Field measurements of all logging decks and one pca estimated.																		
Frequency measurement:	Every year																		
Value monitored:	<table border="1"> <thead> <tr> <th>Forest</th> <th>2014 (ha)</th> <th>2015 (ha)</th> <th>2016 (ha)</th> <th>2017 (ha)</th> <th>2018 (ha)</th> </tr> </thead> <tbody> <tr> <td>Hilly</td> <td>12.99</td> <td>12.44</td> <td>2.58</td> <td>1.49</td> <td>6.41</td> </tr> <tr> <td>Terrace</td> <td>0.59</td> <td>3.5</td> <td>0.09</td> <td>0.13</td> <td></td> </tr> </tbody> </table>	Forest	2014 (ha)	2015 (ha)	2016 (ha)	2017 (ha)	2018 (ha)	Hilly	12.99	12.44	2.58	1.49	6.41	Terrace	0.59	3.5	0.09	0.13	
Forest	2014 (ha)	2015 (ha)	2016 (ha)	2017 (ha)	2018 (ha)														
Hilly	12.99	12.44	2.58	1.49	6.41														
Terrace	0.59	3.5	0.09	0.13															
Monitoring equipment	Equipment used to monitor the data/parameter: GPS, Measuring tape and personal field.																		
QA/QC procedures to be applied	GPS was calibrated. Development of evaluation protocols or guidelines. Training of technical <i>and specialist personnel</i> .																		
Purpose of the data	Calculation of project emissions																		
Calculation method	Width and large with Measuring tape and know the number of logging deck in PCA.																		
Comments	Ex-ante estimations of emissions are based on average size and number of decks produced due to logging in the region. (see chart 5)																		

Data Unit / Parameter:	A DistPA, q, l, t
Data unit:	Ha
Description:	Area impacted by natural disturbance in the project stratum i converted to natural disturbance stratum q at time t; ha.
Source of data:	Satellite images and GPS coordinates.
Description of measurement methods and procedures to be applied	Interpretation of Landsat-8 satellite image. Sensor OLI.
Frequency measurement:	Every monitoring report

Value monitored	Zero, there is no disturbance during this period
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of the data	
Calculation method	-
Comments	Ex ante estimations of emissions from natural disturbances will be based on historic incidence of such event in the Project region.

Data Unit / Parameter:	A ROAD, I, t																																	
Data unit:	Ha																																	
Used in equations:	17																																	
Description:	Area of roads in stratum i at time t.																																	
Source of data:	Field measurements and estimated																																	
Description of measurement methods and procedures to be applied	Length and width of roads known in field registries. See the file Guia M&E -REDD																																	
Frequency measurement:	Every year																																	
Value monitored	<table border="1"> <thead> <tr> <th>Forest</th> <th>Type of road</th> <th>2014 (ha)</th> <th>2015 (ha)</th> <th>2016 (ha)</th> <th>2017 (ha)</th> <th>2018 (ha)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Hilly</td> <td>Secondary</td> <td>48.61</td> <td>215.54</td> <td>10.98</td> <td>13.21</td> <td>49.04</td> </tr> <tr> <td>Primary</td> <td>13.41</td> <td>79.18</td> <td></td> <td>22.95</td> <td></td> </tr> <tr> <td rowspan="2">Terrace</td> <td>Secondary</td> <td>2.22</td> <td>1.69</td> <td></td> <td>1.21</td> <td></td> </tr> <tr> <td>Primary</td> <td>0.61</td> <td>0.18</td> <td></td> <td>2.01</td> <td></td> </tr> </tbody> </table>	Forest	Type of road	2014 (ha)	2015 (ha)	2016 (ha)	2017 (ha)	2018 (ha)	Hilly	Secondary	48.61	215.54	10.98	13.21	49.04	Primary	13.41	79.18		22.95		Terrace	Secondary	2.22	1.69		1.21		Primary	0.61	0.18		2.01	
Forest	Type of road	2014 (ha)	2015 (ha)	2016 (ha)	2017 (ha)	2018 (ha)																												
Hilly	Secondary	48.61	215.54	10.98	13.21	49.04																												
	Primary	13.41	79.18		22.95																													
Terrace	Secondary	2.22	1.69		1.21																													
	Primary	0.61	0.18		2.01																													
Monitoring equipment	GPS and Measuring tape																																	
QA/QC procedures to be applied	GPS was calibrated. Development of evaluation protocols or guidelines. Training of technical <i>and specialist personnel</i>																																	
Purpose of the data	Calculation of project emissions																																	
Calculation method	With field data, average width by the total length. All width was taken in field, some length was estimated (see chart 5)																																	
Comments	Ex-ante estimations are based on average length of roads produced per unit area due to logging in the region																																	

Data Unit / Parameter:	ARRL, forest, t
Data unit:	Ha
Description:	Remaining area of forest in RRL
Source of data:	Landsat-8 satellite image. Sensor OLI.

Description of measurement methods and procedures to be applied:	The images used will be compatible with the ones already used in the estimations ex-ante in order to be compared.
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value monitored	See Map
Monitoring equipment	Satellite imagen
QA/QC procedures to be applied:	n/a
Purpose of the data	Calculation of baseline emissions
Calculation method	-
Comments	-

Data Unit / Parameter:	AP _i
Data unit:	Ha
Description:	Total degraded area verified by sampling plots.
Source of data:	Ground measurement.
Description of measurement methods and procedures to be applied:	The sampling plan must be designed using plots systematically placed over the buffer zone so that they sample at least 3% of the area of the buffer zone.
Frequency of monitoring/recording:	Every time the Limited Degradation Survey indicates degradation (existence of stumps).
Value monitored:	Zero, PRA showed no degradation pressure
Monitoring equipment:	GPS, field equipment: tape line, compass. And field staff.
QA/QC procedures to be applied:	Trained staff for field measurement.
Purpose of the data	Calculation of project emissions
Calculation method	-
Comments	-

Data Unit / Parameter:	C _{DegW, i, t}
Data unit:	T CO ₂ - e
Description:	Biomass carbon of removed trees through degradation process from plots measures in stratum.
Source of data:	Field measurement.
Description of measurement methods and procedures to be applied:	With the tree-stumps identified during the evaluation of sampling parcels of the buffer area, the following procedures should be considered:

	<ul style="list-style-type: none"> - Take the diameter of the tree-stumps that will be assumed as DBH. In case they are too big (for example, due to buttress roots), then the specimen should be identified and place other individuals of the same species standing next to it. Then, measure their DBH and tree-stumps diameter. With this data, DBH should be estimated as from the tree-stumps diameter of the individuals deforested. - With DBH data, the carbon stock of individuals deforested is calculated using an allometric equation, yet to be defined. - It will be assumed that all stock will be send to the atmosphere.
Frequency of monitoring/recording:	Every time there is a degradation event or at least every 5 years. This period (2014-2018) the PRA was negative
Value monitored:	Zero
Monitoring equipment:	GPS, field equipment: tape line, compass. And field staff.
QA/QC procedures to be applied:	n/a
Purpose of the data	Calculation of project emissions
Calculation method:	Through an allometric equation, using the DBH as one of its variables
Comments	n/a

Data Unit / Parameter:	$C_{AB_tree_dest,i}$
Data unit:	T CO ₂ -e ha ⁻¹
Description:	Carbon stock in aboveground tree biomass assumed to be killed per unit area resulting from the creation of the skid trail per stratum. As baseline, and it permits the methodology (pag 15 M-MON)
Source of data:	CP-AB and documentation stating maximum size tree able to be killed during skid trail creation
Description of measurement methods and procedures to be applied	It is assumed that $C_{AB_tree_dest,i} = C_{AB_tree,i}$ in the baseline.
Frequency of monitoring/recording	Specify measurement and recording frequency
Value monitored	Hilly forest 407.34 t CO ₂ /ha Terrace forest 441.78 t CO ₂ /ha
Monitoring equipment	-

QA/QC procedures to be applied	the same as in validation
Purpose of the data	Carbon emission by skid trails, road and logging deck
Calculation method	It can be assumed that all diameter trees are destroyed and therefore the aboveground and belowground tree biomass destroyed by the skidder equates to the mean aboveground biomass carbon stock of trees in the stratum
Comments	n/a

Data Unit / Parameter:	$C_{BB_tree_dest,i}$
Data unit:	$T\ CO_2-e\ ha^{-1}$
Description:	Carbon stock in belowground tree biomass assumed to be killed per unit area resulting from the creation of the skid trail per stratum.
Source of data:	$C_{AB_tree_dest,i}$
Description of measurement methods and procedures to be applied	Estimation of belowground biomass will be performed following the procedures set in module CP-AB.
Frequency of monitoring/recording	Specify measurement and recording frequency
Value monitored	Hilly forest: 97.76 TCO ₂ /ha Terrace forest: 106.03 TCO ₂ /ha
Monitoring equipment	-
QA/QC procedures to be applied	the same that validation
Purpose of the data	Carbon emission by skid trails, road and logging deck
Calculation method	It can be assumed that all diameter trees are destroyed and therefore the aboveground and belowground tree biomass destroyed by the skidder equates to the mean aboveground biomass carbon stock of trees in the stratum
Comments	The root-to-shoot ratio 0.24 is used (same as used in baseline carbon-stock calculations).

Data Unit / Parameter:	L_{sk}
Data unit:	M
Description:	Length of skid trail sk.
Source of data:	Field measurements and estimated
Description of measurement methods and procedures to be applied	A systematic sampling with random start within a sampled known logged area within the project boundary will produce an estimate of the length of

	skid trails created. The total length of skid trails in the project area equals the mean length of skid trails per unit area times the total area logged.																		
Frequency of monitoring/recording:	Every year																		
Value monitored	Lsk was monitored in the field (2014-2018) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Forest</th> <th>2014 (m)</th> <th>2015 (m)</th> <th>2016 (m)</th> <th>2017 (m)</th> <th>2018 (m)</th> </tr> </thead> <tbody> <tr> <td>Hilly</td> <td>242,279.61</td> <td>523,631.55</td> <td>172,563.14</td> <td>78,572.04</td> <td>328,925</td> </tr> <tr> <td>Terrace</td> <td>11,076.09</td> <td>8,284.99</td> <td>11,658.60</td> <td>282.90</td> <td></td> </tr> </tbody> </table>	Forest	2014 (m)	2015 (m)	2016 (m)	2017 (m)	2018 (m)	Hilly	242,279.61	523,631.55	172,563.14	78,572.04	328,925	Terrace	11,076.09	8,284.99	11,658.60	282.90	
Forest	2014 (m)	2015 (m)	2016 (m)	2017 (m)	2018 (m)														
Hilly	242,279.61	523,631.55	172,563.14	78,572.04	328,925														
Terrace	11,076.09	8,284.99	11,658.60	282.90															
Monitoring equipment	GPS, personal field																		
QA/QC procedures to be applied	Development of evaluation protocols or guidelines. Training of technical <i>and specialist personnel</i>																		
Purpose of the data	Skid trail area																		
Calculation method	Field data and estimated.																		
Comments	n/a																		

Data Unit / Parameter:	$V_{EXT, z, i, t}$																		
Data unit:	m^3																		
Description:	Volume extracted from logging stratum z in stratum i at time t.																		
Source of data:	Records and reports (based on field measurements) documenting amount of wood extracted within project boundary.																		
Description of measurement methods and procedures to be applied	Documentation includes: <ul style="list-style-type: none"> • Delineation of the location. • Total area logged in the Project area. • Methods used to measure the amount of wood extracted. • Methods to estimate and catalog the volume of wood felled and extracted. 																		
Frequency of monitoring/recording:	Avery year																		
Value applied	<table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Forest</th> <th>2014 (m3)</th> <th>2015 (m3)</th> <th>2016 (m3)</th> <th>2017 (m3)</th> <th>2018 (m3)</th> </tr> </thead> <tbody> <tr> <td>Hilly</td> <td>24,635.74</td> <td>46,772</td> <td>15,774.30</td> <td>3,285.06</td> <td>16,015</td> </tr> <tr> <td>Terrace</td> <td>1,133.61</td> <td>17,859.61</td> <td>702.39</td> <td>287.21</td> <td></td> </tr> </tbody> </table>	Forest	2014 (m3)	2015 (m3)	2016 (m3)	2017 (m3)	2018 (m3)	Hilly	24,635.74	46,772	15,774.30	3,285.06	16,015	Terrace	1,133.61	17,859.61	702.39	287.21	
Forest	2014 (m3)	2015 (m3)	2016 (m3)	2017 (m3)	2018 (m3)														
Hilly	24,635.74	46,772	15,774.30	3,285.06	16,015														
Terrace	1,133.61	17,859.61	702.39	287.21															
Monitoring equipment	Measuring tape, GPS and field personal.																		
QA/QC procedures to be applied	Development of evaluation protocols or guidelines. Training of technical and specialist personnel.																		
Purpose of the data	Volume extracted in this period																		
Calculation method	Data taken in field used to know the volume per tree and then the volume total. the general equation= $\pi * (D^2/4)$																		
Comments	n/a																		

Data Unit / Parameter:	W _{SKID}																		
Data unit:	M																		
Description:	Mean width of skid trails.																		
Source of data:	Field measurements.																		
Description of measurement methods and procedures to be applied	Systematic sampling with a random start to produce an average width of skid trails																		
Frequency of monitoring/recording	Every year																		
Value monitored	<table border="1"> <thead> <tr> <th>Forest</th> <th>2014 (m)</th> <th>2015 (m)</th> <th>2016 (m)</th> <th>2017 (m)</th> <th>2018 (m)</th> </tr> </thead> <tbody> <tr> <td>Hilly</td> <td>4.28</td> <td>5.15 y 3.07 (prom)</td> <td>3.33 y 3.21</td> <td>3.5</td> <td>4.03</td> </tr> <tr> <td>Terrace</td> <td>4.28</td> <td>5.15</td> <td>3.33</td> <td>3.5</td> <td></td> </tr> </tbody> </table>	Forest	2014 (m)	2015 (m)	2016 (m)	2017 (m)	2018 (m)	Hilly	4.28	5.15 y 3.07 (prom)	3.33 y 3.21	3.5	4.03	Terrace	4.28	5.15	3.33	3.5	
Forest	2014 (m)	2015 (m)	2016 (m)	2017 (m)	2018 (m)														
Hilly	4.28	5.15 y 3.07 (prom)	3.33 y 3.21	3.5	4.03														
Terrace	4.28	5.15	3.33	3.5															
Monitoring equipment	GPS, Measuring tape and field personal																		
QA/QC procedures to be applied	Development of evaluation protocols or guidelines. Training of technical <i>and specialist personnel</i>																		
Purpose of the data	Carbon emissions by skid trail																		
Calculation method	Take in field with Measuring tape the width																		
Comments	n/a																		

Data unit:	PRO imm
Description:	Proportion of area deforested by immigrants in the leakage belt and project area
Source of data:	Statistic data
Description of measurement methods and procedures to be applied	Calculations performed with national office data
Frequency of monitoring/recording	Every five years
Value monitored	0.18 in 2014, 2015 and 2016 0.03 in 2017 and 2018
Monitoring equipment	
QA/QC procedures to be applied	INEI information
Purpose of the data	
Calculation method	
Comments	n/a

Data unit:	Colb
Description:	Area weighted average aboveground tree carbon stock for forests available for unplanned deforestation outside the leakage belt
Source of data:	Use numbers derived from peer-reviewed literature that are nationally or at least regionally appropriate, We use of data from the report “Estimación de los contenidos de carbono de la biomasa aérea en los bosques de Perú”. This document was been peer-reviewed.”
Description of measurement methods and procedures to be applied	Weighted average carbon content established by the forest economy. Consider dry, hydromorphic or unhelpful areas for agriculture and livestock activities
Frequency of monitoring/recording	Every five years (no other updated value was found)
Value monitored	379 in this period (2014-2018)
Monitoring equipment	
QA/QC procedures to be applied	Use national data
Purpose of the data	
Calculation method	
Comments	n/a

3.1.3 Monitoring Plan

The Madre de Dios Amazon REDD Project involves two adjacent timber concessions, included within the “Permanent Production Forest” of the Madre de Dios region. It has a total official area of 97,817.41 hectares covered by natural tropical forests with the presence of “Paca” (native bamboo). This type of forest is characterized by a great diversity of flora and fauna of Amazonian species. The physiographic type corresponds mainly to “Low Hills”.

Although the management of the area for the production of forest products, mainly wood under an FSC scheme, is in charge of the two forest concessions, both constitute a single unit for the implementation of the Madre de Dios Amazon REDD Project. In this sense, the implementation of the activities related to the monitoring component of the project is performed by a single technical team.

The main goal of this Monitoring Plan is the collection of the data that allow the verification of the deforestation and the degradation within the project area and its leakage belt throughout

time, regularly updating the emissions estimations as well as the generation of sufficient and timely information to make the necessary adjustments to the strategies included in the VCS Madre de Dios Amazon REDD Project PD Template.

The Monitoring Plan is focused in the following two main components:

1. Monitoring of the Madre de Dios Amazon REDD Project objectives.

- a) OUTCOME 1: Contribute to the sustainable development of rural producers living in the buffer zone of the project.
- b) OUTCOME 2: Reduce the vulnerability of the project area from external factors of deforestation and degradation.

This component will be conducted through the assessment of compliance with the activities proposed for each objective.

2. Monitoring the parameters described this Monitoring Plan (Data and Parameters Monitored):

- c) Forest cover map – Strata within the project area
- d) Forest cover map – Strata within the project leakage belt
- e) Results of the PRA
- f) Degradation results
- g) Burned area
- h) Deforested area within the project area
- i) Deforested area within the project leakage belt
- j) Potentially degraded area within the project area
- k) Degraded area within the project area
- l) Carbon stock loss due to degradation
- m) Emissions due to biomass burning (if deforestation within the project area occurs – land use change to agriculture and burning of the forest)
- n) Carbon stock in wood products
- o) And other in the section 3.1.2

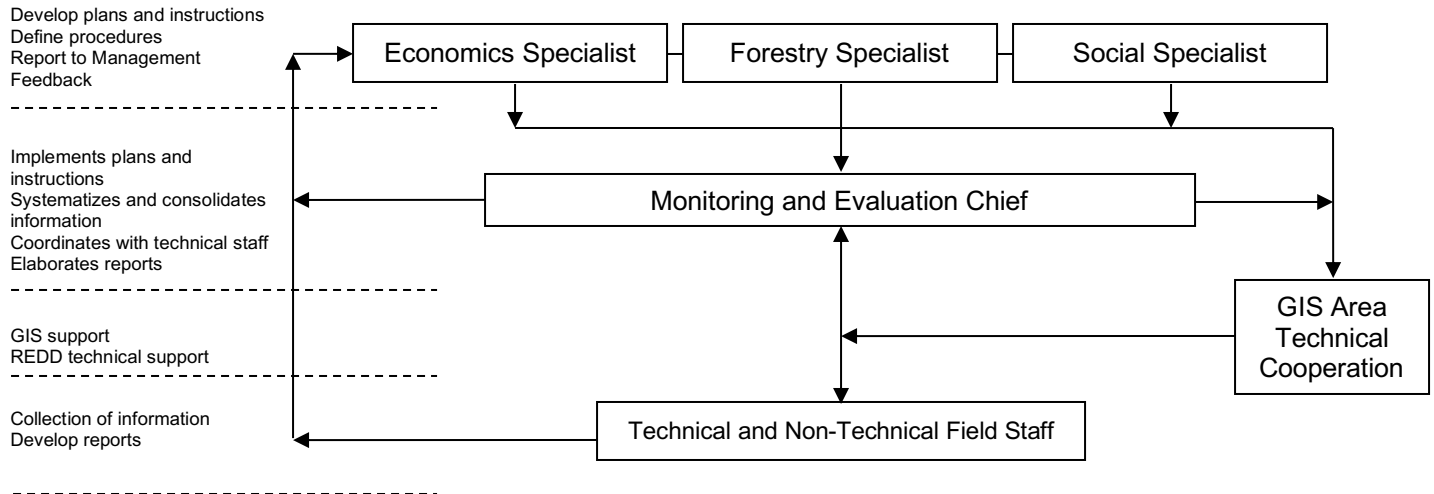
ORGANIZATIONAL STRUCTURE

The Madre de Dios Amazon REDD Project counts with a skilled and experienced technical team for its implementation and its monitoring component. In addition to this, it also counts with the technical advice of Greenoxx NGO, Tatiana Lapeyre and Lizardo Fachín and other specialist consultant in carbon projects (Eco Development Group Sac), all of them experienced institutions in the development of conservation and sustainable use of resources projects and projects involving the use of environmental services such as REDD Projects.

The development of the Monitoring Plan is in charge of a multidisciplinary team, led by an Economist, a Forestry Specialist and a Social Specialist, allowing the integral address of the different components of the plan. Its implementation is responsibility of the Monitoring and Evaluation Chief, who must articulate it with the technical and non-technical field staff, the same that carry out the in-field measurements and the corroboration of the laboratory

information. There is also a GIS Area for mapping support. Additionally, BAM NGO, Tatiana Lapeyre and Lizardo Fachín (Eco Development Group sac) provides support for the development of the modeling and specialized items that are required for the monitoring of the project.

Following, the information flow of the monitoring system is detailed:



INFORMATION MANAGEMENT: DATA COLLECTION, PROCESSING AND REPORT

The project is based in the premise of the “Adaptive Management”, in this sense every intervention on the forest, changes to the project’s approach or any decision that is taken about its implementation is sustained in previous information collected in field as a knowledge basis. Based on this knowledge is that Management Plans, Operative Plans and the rest of the necessary instructions for the implementation of the project, the interventions on the forest and the treatment of the social component are defined. An example of this are the discards or incorporations of biodiversity indicators for monitoring. One case was the incorporation of a new indicator to monitor the health of wildlife populations that are key indicators under forestry operations, no hunting and in consequence to determine the ecosystem’s health.

Similarly, for the social component, “Adaptive Management” refers to the collection of social information based on two main sources: on the one hand, the spaces for citizen participation and consultation that are generated and promoted by the project such as Citizen Participation Workshops and the Advisory Committee. The latter represents the group of main representatives of the population and community, who express the main needs and opinions of the population and communities. The advisory committee is made up of five representatives: the mayor of the Provincial Municipality of Tahuamanu, the President of the Mothers Club of Iñapari, the President of “Barrio la Colonia”, the President of the Belgium Native Community and a representative of Madre de Dios Amazon REDD Project. These social participation spaces are held twice a year. On the other hand, the basic social

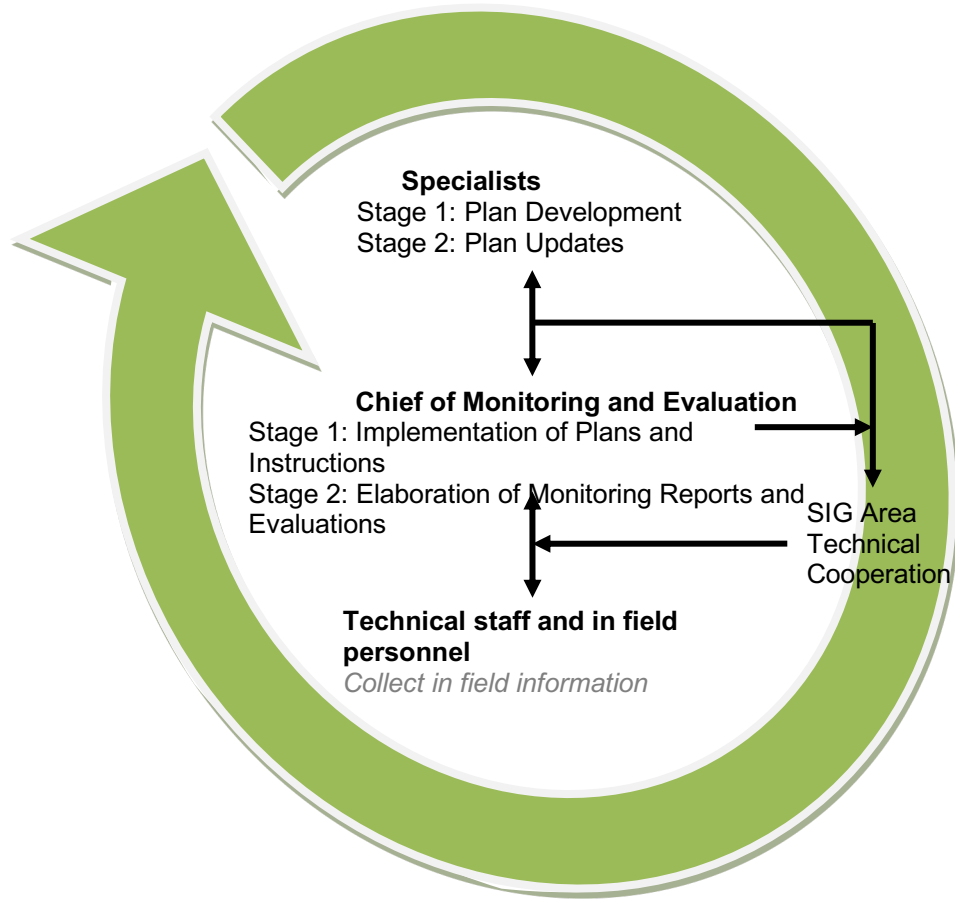
information is complemented with indicators or official information of the Peruvian state such as population census or local studies of social indicators that provide information on the socio-economic context of the project in order to identify trends or changes that may be significant in the population. Based on these sources of information, the content is systematized with the social team to determine the planning from the cabinet and establish the strategies and measures of action that contribute to the main needs of the population and to the objectives that each concession has individually and together as a REDD project. This means, each social plan, program or project is oriented considering the real needs of the population and a constant communication process that offers feedback to each of the social activities carried out by the project. All citizen participation workshops and Committees are carried out with attendance lists, reports and photographic records, in case any agreement or formal request is made, meeting minutes are drawn up. In this way, the results are reported monthly and annually internally (between the corresponding areas of the project) and a public summary with the stakeholders is socialized. Finally, the reports contribute to assessing the impacts and effectiveness of our social actions and the high impact that is generated on the welfare of the population.

The permanent implementation of the Monitoring Plan allows the identification of the tendencies of the different parameters, including those that are useful to evaluate the compliance with the objectives of the Project. The knowledge that is generated allows the adaptation of the system (plans and the rest of the instructions).

The information collected in field by the technical staff is systematized by the Monitoring and Evaluation Chief, who at the end of the year (November-December) presents the Monitoring Report for the period to the specialists who together with other members of the project, will elaborate the Operative Plan of the following period, identifying additionally which manuals of instructions or protocols should be updated or adapted to the occurring changes. Since the following up in the implementation of the project is permanent, if important changes occur, the system can be updated during the same period, without having to wait for the report at the end of said period.

Following, the information flow in the framework of the adaptive management of the project is presented:

ADAPTATIVE MANAGEMENT



PLANIFICATION AND MONITORING

Forms have been defined for the collection of the field data that is currently within the concessions, processes and forms have been defined for those variables to be monitored. The collected data have been systematically digitalized in Excel type spreadsheets, also designed according to the information requirements. The calculations have been made in said spreadsheets using the correspondent formulas and afterwards the necessary reports are delivered as the basis for the elaboration of the consolidated Monitoring Report.

All the field monitoring processes should be documented, all the established sample units or plots should be georeferenced and systematized within the GIS.

The physical and digital files which store the data generated during the monitoring process will be accessible in the two modalities described before (physical files and digital files), being

kept in the project offices in the locality of Iñapari and in Maderacre's central office in Lima, Perú throughout the Madre de Dios Amazon REDD Project duration and for at least two years after the end of the project crediting period.

The information management comprises the following steps or processes:

Step 1: Selection and Analysis of the Source of Land Use Change

1.1 For the monitoring period of 5 years, the following actions will be carried out:

- a) The collected and analyzed data should cover the entire project area and leakage belt. Available data for the year when verification occurs.
- b) For the calculation of each category of land use change:
 - The area of each category within the project area will be calculated and where required within the leakage belt.
 - The forest cover maps of reference for the project area and leakage belt will be updated.
 - The remaining forest area within the project zone will be updated.

1.2 For the monitoring period of 10 years. Baseline review:

- a) Use of middle resolution images (30 m x 30 m or less, if available) at the end of the period where the baseline will be renewed.
- b) The collected and analyzed data should cover:
 - The entire reference region: available data for the year of baseline renewal or not less than a year earlier.
 - For the processing of the data change for the Great Land Use Capacity (in Spanish Capacidad de Uso Mayor de las Tierras), will be georeferenced and geometrical corrections will be made as well as clouds and shadows detections.
 - The area of each category within the reference region, project area and where required within the leakage belt will be calculated.
 - The forest cover maps of reference for the reference area, project area and leakage belt will be updated.
 - The total deforested areas during the first 10 years will be estimated in order to adjust the baseline and the deforestation rate if necessary.

Note: The indications of the correspondent Module of the REDD Methodology Modules will be taken into account with respect to clouds for the determination of maps. A classification accuracy of 90% or more will be sought.

Step 2: Interpretation and Analysis

2.1 Monitoring of Deforestation

- a) Deforested area within the Project Area (PA) per stratum.
- b) Deforested area within the Leakage Belt (LB) per stratum.
In both cases it must be specified to what type of Land Use (LU) the deforested areas have been changed. For the baseline re-calculation it should be established or indicated if the percentages of land use change are still the same as in the initial baseline.

- c) Carbon stock in carbon pools:
 - Carbon stock in each stratum defined in the baseline is maintained. It will be reassessed for the baseline review (in 10 years).
 - Carbon stock of each land use is maintained. It will be reassessed for the baseline review (in 10 years).
- d) Volume of timber harvested in each concession, per stratum and per year.
- e) Deforested area within the Reference Region (for the baseline review).

2.2. Monitoring of Degradation

The Madre de Dios Amazon REDD Project counts with a Custody System in the process of implementation (control posts, defined boundaries, regular patrolling, etc.). In this sense, it is expected that there will be no degradation by wood extraction due to illegal logging or firewood or coal production. If this occurs within the concessions, this degradation will be discounted.

A Participatory Rural Appraisal (PRA) will be conducted in order to determine whether degradation occurs. In this sense, these steps will be followed:

- a) Degradation due to illegal logging:
 - The PRA will be conducted every 2 years. The first PRA was done in 2011-2012, the last PRA was conducted in 2015 and 2017. If the results indicate that the project area has no pressure from this type of degradation, then it will be assumed that: $\Delta C_{p,Deg,i,t} = 0$. (that was to this period)
 - If the results of the PRA indicate that there is potential for degradation, then it must:
 - Obtain a “penetration distance” in the PRA (distance that the degradation agents can enter from the nearest access points).
 - Identify the most important access points to the vulnerable area.
 - From said points, draw the distances and create a Buffer Area with a width equal to length.
 - Transects will be established to evaluate the buffer zone. The assessed area should not be lesser than 1% of the buffer area.
 - If stumps are not found (harvested trees), then it is assumed that $\Delta C_{p,Deg,i,t} = 0$ and the assessment is repeated every 2 years.
 - If stumps are found, then a systematic assessment is carried out. For this, plots are distributed systematically, being the area to assess $\geq 3\%$ of the buffer area.
 - Take into account the diameter of the stumps, which will be assumed as their DBH. If they were very large (e.g. due to buttresses), then the species of the stump is identified and standing trees of the same species are located. Afterwards, their DBH and stump diameter are measured and a ratio between DBH/stump diameters is calculated. With this ratio, the DBH from the stump diameter of the cleared individuals that were found is estimated.
 - With the DBH data, the carbon stock of the harvested trees is calculated, using the allometric equation that was employed for the estimation of the tree carbon stocks in the baseline (Chavé Equation).
 - It will be assumed that all stock will be lost to the atmosphere.

- This assessment must be repeated every 5 years.
- b) Degradation due to fire:
 - Burned areas must be measured in the field using
 - GPS.
 - In order to calculate the emissions from this, the E-BB Module of the approved VCS REDD Methodology Modules shall be followed.

2.3 Monitoring of areas of increased carbon stocks

The increase in carbon stocks is assumed to be zero, thus it does not require monitoring.

2.4 Monitoring of project emissions

The Non-CO₂ GHG emissions will be calculated:

- a) N₂O and CH₄ from the burning of agricultural and forest biomass. It is carried out in those areas of land where use change occurred. For the ex-ante calculations of the biomass burned within the forest, it was estimated (through expert consultation) that 50% of the deforested forest was burned. In the case that deforestation within the project area occurs, a new percentage will be established (based on real measurements that will be made or literature support). It will be indicated what was done for the baseline recalculation (every 10 years).
- b) N₂O emissions due to the use of fertilizer within deforested areas. In the case that deforestation and N₂O use occur during the project lifetime, the amount of nitrogen fertilizer used per deforested hectare shall be determined.

SATELLITE IMAGES ANALYSIS AND INTERPRETATION

The deforestation and the source of land use change analysis should be conducted through the use of satellite images and in-field verifications. The procedures that will be considered are the following:

1. Selection of satellite images:

The image was obtained from the image server: Instituto Nacional de Pesquisas Espaciais - (INPE-Brazil) <http://www.dgi.inpe.br/catalogo/>

The satellite image used was Landsat- 8, path 003 and row 068. The image has only 1% of cloud cover, in the evaluated area.

The monitoring reports must detail the relationship between the acquired images and the use of an "Images Acquisition Form" that includes the following information: Path, Row, Date, Year, Source and Code.

Images with a cloud cover surpassing 10% of the entire area of the image must not be used, this to ensure the proper analysis of them.

2. Satellite images processing:

For the processing of the selected satellite images, the software used are Erdas Imagine 2011 2® and ArcGis v10.1®. This activity should include the following steps:

a) Band composition

As the image is acquired in TIFF format (raw format), it has to be decompressed and exported to Erdas Imagine matrix (*.img). Then, all bands are grouped in a 543-RGB combination, which is the most optimal combination for visual interpretation of deforestation and land use change.

b) Geometric Correction

This process is applied to transform images by eliminating geometrical distortions from the sensor, which means that they must be georeferenced. It is a very important step because it assures that the image is located in the same geographical space as the historic images.

c) Radiometric Improvement

This is done to get a better visual appearance of the image.

d) Visual classification

IIAP methodology was used to classify the satellite images. The working scale was 1:80 000. The classes identified were:

- Forest
- Non-forest land, which was divided into sub categories:
 - Pastures
 - Agriculture
 - Farming
 - Infrastructure
 - Secondary forest, included here to avoid accounting for positive changes in forest (natural regeneration).

For this period no deforestation has occurred in the Project Area. The Leakage Belt has 2425.94 ha, of deforestation since 2009 and the last period (2014 -2018) was 1552.43 ha.

INTERNAL AUDITING

The main purpose of the management system of the project's information quality is to minimize the risks of error, obtaining reliable data on which to base the monitoring results. It includes the following steps:

1. Training

It includes the training of general staff in the different roles to play within the framework of the Madre de Dios Amazon REDD Project, however, aiming at always having quality information, the training on those critical points of the information management will be prioritized, which are field collection and its processing (Evaluation and Monitoring Chief, field staff and GIS Specialist). All staff must go through an induction process before executing any activity related to the monitoring.

2. In-field verification

It basically consists of monitoring in the field, and that the field staff is following the procedures set out in the methodological guidelines given in the previous process of induction. This work is in charge of the Evaluation and Monitoring Chief.

An error in following the procedures should be corrected in the field during the execution of samplings or assessments.

3. Review of the collected data pre and post digitalization

The collected data should be reviewed before (field forms) and after (electronic spreadsheet) its digitalization, so that a second eye can detect inconsistent information. This work is in charge of the Evaluation and Monitoring Chief.

If any information inconsistency is identified at the level of field forms, this information must be verified in the field. If the inconsistency is found in the digitalized information, it must be corroborated in the field forms and whether the inconsistency persists, it must be corroborated in the field.

4. Review of the monitoring reports prior to publication

The monitoring reports must be reviewed prior to publication, in order to confirm the calculations, analysis and the conclusions are accurate and measured. This work is in charge of the Project Chief or Coordinator.

If non-conformities exist during the internal or external auditing processes, the data should be reviewed and the non-conformities addressed

3.2 Quantification of GHG Emission Reductions and Removals

3.2.1 Baseline Emissions²³

As showed in the Project PD, the net GHG emissions under the baseline scenario during this period is presented in the next chart according to PD VCS (pg. 164 in PD). According with the PD the project estimated the VCU in the first 10 years of the project:

²³ All the information was taken of the PDD pag. 155 to 164

Chart 25. Annual areas of post-deforestation classes within the project area in the baseline case (activity data per non-forest class)

Area of post-deforestation classes established on deforested areas within the Project Area							
Strata f		Deforestation for Pastures	Deforestation for Farming*	Deforestation for Agriculture (Corn)	Deforestation for Infrastructure	Deforestation for Illegal Mining	Total Cumulative
% historic		53,73%	40,47%	3,37%	2,41%	0,00%	
T	Year	ha	ha	ha	ha	ha	ha
1	2009	1.236,7	931,6	77,6	55,5	-	2.301,7
2	2010	2.595,6	1.955,2	162,9	116,4	-	4.830,8
3	2011	3.939,8	2.967,8	247,3	176,7	-	7.332,6
4	2012	5.133,2	3.866,8	322,2	230,2	-	9.553,7
5	2013	6.342,9	4.778,0	398,2	284,4	-	11.805,0
6	2014	7.478,3	5.633,3	469,5	335,3	-	13.918,2
7	2015	8.560,1	6.448,2	537,4	383,8	-	15.931,6
8	2016	9.627,8	7.252,5	604,4	431,7	-	17.918,7
9	2017	10.706,3	8.064,9	672,1	480,1	-	19.926,1
10	2018	11.811,4	8.897,4	741,5	529,6	-	21.982,8

Chart 26. Annual areas of post-deforestation classes within the leakage area in the baseline case (activity data per non-forest class)

Area of post-deforestation classes established on deforested areas within the <u>Leakage Belt</u>							
Strata f		Deforestation for Pastures	Deforestation for Farming*	Deforestation for Agriculture (Corn)	Deforestation for Infrastructure	Deforestation for Illegal Mining	Total
% historic		53,73%	40,47%	3,37%	2,41%	0,00%	Cumulative
t	Year	ha	ha	ha	ha	ha	ha
1	2009	929,6	700,2	58,4	41,7	-	1.730,1
2	2010	1.589,6	1.197,5	99,8	71,3	-	2.958,6
3	2011	2.246,5	1.692,2	141,0	100,7	-	4.181,0
4	2012	2.993,5	2.254,9	187,9	134,2	-	5.571,3
5	2013	3.715,6	2.798,9	233,3	166,6	-	6.915,2
6	2014	4.501,1	3.390,6	282,6	201,8	-	8.377,1
7	2015	5.323,4	4.010,0	334,2	238,7	-	9.907,6
8	2016	6.122,1	4.611,7	384,3	274,5	-	11.394,2
9	2017	6.933,1	5.222,6	435,2	310,9	-	12.903,4
10	2018	7.673,3	5.780,2	481,7	344,1	-	14.281,2

Chart 22. Carbon stocks of all land use and land cover classes in baseline

n°	ID	Name	Above Ground	Below Ground	Cstock
			t CO ₂ -e ha ⁻¹	t CO ₂ -e ha ⁻¹	t CO ₂ -e ha ⁻¹
002		Hilly Forest	407,34	97,76	505,10
003		Terrace forest	441,78	106,03	547,81
004		Bamboos	487,48	117,00	604,48
005		Others	-	0,00	0,00
006		Tree swamps	438,24	105,18	543,42
008	DP	Deforestation for Pastures	15,11	3,52	18,63
009	DF	Deforestation for Farming*	28,82	2,93	31,75*
010	DI	Deforestation for Infrastructure	0,00	0,00	0,00
011	DA	Deforestation for Agriculture (Corn)	28,82	2,93	31,75

* The total carbon stock of Farming has been established to be equal than Agriculture's.

The Carbon Stocks for the Forest Strata come from the Forest Inventory of the Project.

The Carbon Stocks of post-deforestation land-uses were taken from Alegre, J. Arevalo, L. Ricse, A.

Chart 27. Carbon stock in post-deforestation (non-forest) classes in the project area

Carbon stock changes in final (post-deforestation) non forest classes in <u>Project Area</u>												Total C stock change in final post-deforestation classes	
Strata f		Deforestation for Pastures		Deforestation for Farming*		Deforestation for Agriculture (Corn)		Deforestation for Infrastructure		Deforestation for Illegal Mining		Cumulative t CO ₂ -e	Annual t CO ₂ -e
t	Year	ha	t CO ₂ -e	ha	t CO ₂ -e	ha	t CO ₂ -e	ha	t CO ₂ -e	ha	t CO ₂ -e		
1	2009	1.237	23.040	932	29.578	78	2.465	55	-	-	-	55.083	55.083
2	2010	2.596	48.356	1.955	62.078	163	5.173	116	-	-	-	115.608	60.524
3	2011	3.940	73.399	2.968	94.229	247	7.853	177	-	-	-	175.481	59.873
4	2012	5.133	95.632	3.867	122.771	322	10.231	230	-	-	-	228.634	53.153
5	2013	6.343	118.168	4.778	151.701	398	12.642	284	-	-	-	282.511	53.877
6	2014	7.478	139.320	5.633	178.857	469	14.905	335	-	-	-	333.083	50.572
7	2015	8.560	159.474	6.448	204.730	537	17.062	384	-	-	-	381.266	48.183
8	2016	9.628	179.366	7.252	230.266	604	19.190	432	-	-	-	428.821	47.556
9	2017	10.706	199.459	8.065	256.061	672	21.339	480	-	-	-	476.859	48.038
10	2018	11.811	220.047	8.897	282.491	741	23.542	530	-	-	-	526.080	49.220

Chart 28. Carbon stock in post-deforestation (non-forest) classes in the leakage area

Carbon stock changes in final (post-deforestation) non forest classes in <u>Leakage Belt</u>												Total C stock change in final post-deforestation classes	
Strata f		Deforestation for Pastures		Deforestation for Farming*		Deforestation for Agriculture (Corn)		Deforestation for Infrastructure		Deforestation for Illegal Mining		Cumulative	Annual
t	Year	ha	t CO ₂ -e	ha	t CO ₂ -e	ha	t CO ₂ -e	ha	t CO ₂ -e	ha	t CO ₂ -e	t CO ₂ -e	t CO ₂ -e
1	2009	930	17.318	700	22.232	58	1.853	42	-	0	-	41.403	41.403
2	2010	1.590	29.615	1.197	38.019	100	3.168	71	-	0	-	70.803	29.400
3	2011	2.246	41.852	1.692	53.728	141	4.478	101	-	0	-	100.057	29.255
4	2012	2.993	55.769	2.255	71.595	188	5.966	134	-	0	-	133.330	33.272
5	2013	3.716	69.221	2.799	88.865	233	7.406	167	-	0	-	165.492	32.162
6	2014	4.501	83.855	3.391	107.651	283	8.971	202	-	0	-	200.477	34.985
7	2015	5.323	99.174	4.010	127.318	334	10.610	239	-	0	-	237.103	36.626
8	2016	6.122	114.055	4.612	146.422	384	12.202	275	-	0	-	272.679	35.576
9	2017	6.933	129.163	5.223	165.817	435	13.819	311	-	0	-	308.798	36.119
10	2018	7.673	142.954	5.780	183.521	482	15.294	344	-	0	-	341.769	32.970

Chart 29. Total net baseline carbon stock change in the project area

Classes		Total C stock change in initial forests		Total C stock change in final post-deforestation classes		Total baseline carbon stock change in <u>Project Area</u>	
		cumulative	annual	cumulative	annual	annual	cumulative
t	Year	t CO ₂ -e	t CO ₂ -e	t CO ₂ -e	t CO ₂ -e	tCO ₂ -e	tCO ₂ -e
1	2009	1.187.886	1.187.886	55.083	55.083	1.132.803	1.132.803
2	2010	2.520.509	1.332.623	115.608	60.524	1.272.098	2.404.901
3	2011	3.860.807	1.340.298	175.481	59.873	1.280.425	3.685.326
4	2012	5.058.642	1.197.836	228.634	53.153	1.144.682	4.830.009
5	2013	6.272.258	1.213.615	282.511	53.877	1.159.738	5.989.747
6	2014	7.402.088	1.129.830	333.083	50.572	1.079.258	7.069.005
7	2015	8.470.010	1.067.922	381.266	48.183	1.019.739	8.088.745
8	2016	9.519.229	1.049.219	428.821	47.556	1.001.663	9.090.408
9	2017	10.573.942	1.054.713	476.859	48.038	1.006.675	10.097.083
10	2018	11.650.712	1.076.769	526.080	49.220	1.027.549	11.124.632

Chart 30. Total net baseline carbon stock change in the Leakage area

Classes		Total C stock change in initial forests		Total C stock change in final post-deforestation classes		Total baseline carbon stock change in Leakage Belt	
		Cumulative t CO ₂ -e	Annual t CO ₂ -e	Cumulative t CO ₂ -e	Annual t CO ₂ -e	Annual t CO ₂ -e	Cumulative t CO ₂ -e
t	Year						
1	2009	826.886	826.886	41.403	41.403	785.483	785.483
2	2010	1.385.507	558.621	70.803	29.400	529.222	1.314.704
3	2011	1.943.691	558.184	100.057	29.255	528.929	1.843.633
4	2012	2.637.282	693.592	133.330	33.272	660.320	2.503.953
5	2013	3.303.009	665.727	165.492	32.162	633.564	3.137.517
6	2014	4.046.868	743.859	200.477	34.985	708.874	3.846.391
7	2015	4.815.945	769.076	237.103	36.626	732.451	4.578.842
8	2016	5.581.143	765.198	272.679	35.576	729.622	5.308.464
9	2017	6.357.681	776.538	308.798	36.119	740.419	6.048.883
10	2018	7.063.576	705.894	341.769	32.970	672.924	6.721.807

Project Emissions

According to the VMD0015 M-MON Module of the approved VCS VM0007 REDD Methodology Modules, carbon stock changes in the project scenario are determined by the following formula:

$$\Delta C_P = \sum_{i=1}^{t^*} \sum_{j=1}^M (\Delta C_{P,DefPAi,j} + \Delta C_{P,Deg,j,i} + GHG_{P-E,j,i} - \Delta C_{P,Enh,i,j})$$

Where,

$\Delta C_{P,DefPAi,j}$ = Carbon stock change as a result of deforestation in the project area in the with project scenario.

$\Delta C_{P,Deg,j,i}$ = Carbon stock change as a result of degradation

$GHG_{P-E,t}$ = GHG emissions as a result of deforestation and degradation activities within the project area.

$\Delta C_{P,Enh,t}$ = Carbon stock change as a result of forest growth and sequestration during the project life in areas projected to be deforested in the baseline. This variable can be conservatively considered as zero, as indicated for areas with baselines determined as BL-UP.

For a with project scenario, there would be no changes in carbon stock in the project scenario as a result of deforestation or degradation, since surveillance and monitoring activities will be carried out within the Madre de Dios Amazon REDD project area to avoid the activities of deforestation agents. Therefore, it can be considered that there would be no deforestation within the project area, neither non-CO2 emissions due to deforestation activities.

In relation to forest growth and sequestration in the with project scenario, it was also conservatively considered as zero (0) (ex-ante).

Leakage

To determine the leakage indications set forth in module LK-ASU were followed, and this section contains a summary thereof.

The Project Area and Leakage Belt are located in the province of Tahuamanu (covering the District of Tahuamanu, Iberia and Iñapari).

In order to calculate the proportion of deforestation by immigration, the information provided in the National Census of 2007⁵⁸ has been considered, as showed in the following table.

Estimation of Leakage inside the Leakage Belt

According to the module, the estimated carbon stock changes and the GHG emitted in the Project Area should be multiplied by a factor less than 1, which represents the percentage of deforestation that would be displaced in the Leakage Belt. This factor has been obtained by analyzing the activities that cause deforestation within groups of people in the districts of Tahuamanu and Las Piedras, as mentioned above.

Chart 33. Percentage expected at the Interior of the Leakage Belt.

Actors	Deforesters by Agriculture & Cattle Ranching %	Proportion not changed by Project Activity	Expected Proportion of Inhabitants engaged in deforestation %		4.37
			1.76	1.76	
Migrants	17.61	0.10	1.76	1.76	4.37
Residents	26.12	0.10	2.61	2.61	

As can be seen above, 26.12% of deforestation in the project area will be carried out by residents and 17.61% by migrants.

With the farmers, whose activity is often of subsistence and from which they obtain a low revenue, the REDD Project aims to work and conduct surveillance, monitoring and training activities for the implementation of sustainable activities. This is why it is estimated that 10% (worst scenario) of such population will not change their line of business and will maintain the deforestation activity while 90% could revert to alternative sustainable economic activities promoted by the project.

Therefore, with these data, it is estimated that the population that will cause deforestation and will migrate to the Leakage Belt will be **4.37%**.

In the case of the project and according to the Model of Deforestation developed for the project, the areas to be deforested within the Project Area will be 21,982.8 ha in 2018 and 54,075.3 ha by year 2046 (expiration of the REDD Project).

The total emissions in the PA in the baseline would be equal to 11'419,936.96 t CO₂ in 2018 and 27'626,600.19 t CO₂ by 2046. When multiplied by 0.0437 (factor determined as the displacement of areas to the Leakage Belt) these amounts result in 499,409.18 and 1'208,148.34 t CO₂ respectively of emissions by deforestation displacement from the Project Area to the Leakage Belt. This should be verified during monitoring.

Estimation of leakage outside the Leakage Belt

Once the deforestation displacement to the leakage belt area is determined, it was also estimated the displacement to areas outside the leakage belt. To that end it has been defined the total area of forest available nationwide (TOTFOR), which has been equal to the total area of forest in the country as there is no information of the forest area in buffers around roads and rivers. The forest in protected areas (PROTFOR) and forest under management (MANFOR) were excluded.

$$AVFOR = TOTFOR - PROTFOR - MANFOR$$

The forest area nationwide has been considered as there is no information of the total area of 5Km of roads and rivers. The national TOTFOR in the Peruvian jungle is of 70'180,130.4 ha (PROCLIM, 2000). The PROTFOR^[3], considering protected areas within the forest area is of 16'452,255.72 ha in total. Nationwide the areas of forest management are 8,586,493.5^[4] ha (7,480,783 ha of timber concessions and 1'105,710 of non-timber concessions: Brazil nuts, Rubber, reforestation, wildlife, etc.)

$$AVFOR = TOTFOR - PROTFOR - MANFOR$$

$$AVFOR = 70'180,130.4 - 16'452,255.72 \text{ ha} - 8'586,493.55$$

$$AVFOR = 45'141,381.13$$

The proportion of the forest area in the Leakage Belt with relation to the national area is given by

$$PROP_{LB} = LBFOR / AVFOR$$

The LBFOR area was defined as the total forest area in the LB minus the areas under active management, represented by Forest Timber Concessions (153,289.32 ha).

$$PROP_{LB} = (159,018.02 - (153,289.32)) / 45'141,381.13$$

$$PROP_{LB} = 0.00013$$

According to the methodology, the stratification of AVFOR by carbon stock has to be made. There are studies of carbon stock nationwide, in different stratum or types of forests. However, such studies have not been homogenized to date. At a country level, there is an ongoing work. For this step, the data established for Peru in the Second Communication on Climate Change⁵⁹ was used to derive the country average carbon stock: the emissions by land use change in natural forests for period 1990 – 2000 (56,827 Gg CO₂ equivalent) divided by the deforested areas on the same period (149,631.76 has). The resulting carbon stock for available forest outside LB is 379.779 t CO₂/ha

The average of the carbon stock in the Leakage Belt has been determined based on the average carbon stock by stratum, and the representation of each in the Leakage Belt (LB) (weighted average), being equal to 518.69 t CO₂

$$PROP_{CS} = C_{OLB} / C_{LB}$$

$$PROP_{CS} = 379.779 \text{ t CO}_2/\text{ha} / 518.69 \text{ t CO}_2/\text{ha}$$

$$PROP_{CS} = 0.73$$

An important value to calculate the leakage outside the Leakage Belt is the proportion of migrant residents ($PROP_{IMM}$) that presumably will go into the region to carry out activities involving deforestation. This $PROP_{IMM}$ is equal to 0.18 and was determined based on the data presented in Table 30. The detail is shown in the table below.

Chart 34. Proportion of Migrant Population which Deforests in the Project Area.

Iñapari Population	Deforester Migrants N°	Deforester Migrants %	$PROP_{IMM}$
670	118	18%	0.18

Then the proportional leakage of the areas with migrant population (LK_{PROP}) will be:

$$LK_{PROP} = PRO_{IMM} * (1 - PROP_{LB}) * PROP_{CS}$$

$$LK_{PROP} = 0.18 * (1 - 0.00013) * 0.73$$

$$LK_{PROP} = 0.05125 = 13.178\%$$

An important value to calculate the leakage outside the Leakage Belt is the proportion of migrant residents ($PROP_{IMM}$) that presumably will go into the region to carry out activities involving deforestation. This $PROP_{IMM}$ is equal to 0.18 and was determined based on the data presented in Table 30. The detail is shown in the table below.

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Iñapari Population	Deforester Migrants N°	Deforester Migrants %	$PROP_{IMM}$
670	118	18%	0.18

Then the proportional leakage of the areas with migrant population (LK_{PROP}) will be:

$$LK_{PROP} = PRO_{IMM} * (1 - PROP_{LB}) * PROP_{CS}$$

$$LK_{PROP} = 0.18 * (1 - 0.00013) * 0.73$$

$$LK_{PROP} = 0.05125 = 13.178\%$$

Finally, the leakage caused by deforestation actors that will be displaced outside the Leakage Belt, will be equal to the subtraction of the carbon stock changes in Baseline and the changes in stock in a Scenario with project, multiplied by the LK_{PROP} .

$$\Delta C_{LK-ASU,OLB} = (\Delta C_{LK-ASU,OLB} - \Delta C_{P,LB}) * LK_{PROP}$$

To year 2018 (the first 10 years of the project):

$$\Delta C_{LK-ASU,OLB} = (6,721,807.00 - 4,313,383.55) * 0.13178$$

$$\Delta C_{LK-ASU,OLB} = 317,374.44 \text{ tCO}_2$$

To year 2046 (all years with Project accreditation):

$$\Delta C_{LK-ASU,OLB} = (28,514,222.03 - 18,297,576.28) * 0.13178$$

$$\Delta C_{LK-ASU,OLB} = 1,346,317.31 \text{ tCO}_2$$

Emissions of Leakage Prevention Activities

The activities proposed for the project were designed to reduce deforestation inside the Project Area and the Leakage Belt, given that the latter is principally formed by other forest concessions and agricultural farms.

The following activities have been considered by the project to prevent the occurrence of leakage:

- Agroforestry and Silvopasture training to families from Iñapari and Belgica Indigenous Community.
- Training in alternative sustainable economic activities as ecotourism, rubber management, fish farming, etc., to promote the adequate management of non-timber resources in the reference region

Total Estimations of Leakage due to Unplanned Deforestation Displacement

$$\Delta C_{LK-AS,unplanned} = \Delta C_{LK-ASU-LB} + \Delta C_{LK-ASU,OLB} + GHG_{LK,E}$$

To year 2018 (the first 10 years of the project):

$$\Delta C_{LK-AS,unplanned} = 499,409.18 + 317,374.44 + 0$$

$$\Delta C_{LK-AS,unplanned} = 816,783.62 \text{ tCO}_2$$

And,

To year 2046 (all years with Project accreditation):

$$\Delta C_{LK-AS,unplanned} = 1,208,148.34 + 1,346,317.31 + 0$$

$$\Delta C_{LK-AS,unplanned} = 2,554,465.65 \text{ tCO}_2$$

Summary of GHG Emission Reductions and Removals

The total net of GHG reductions of the REDD Project are calculated as follows:

$$C_{REDD,t} = \Delta C_{BSL} - \Delta C_P - \Delta C_{LK}$$

Where,

$C_{REDD,t}$ = Total GHG emission reduction

ΔC_{BSL} = Net emissions under baseline

ΔC_P = Net emissions under project scenario

ΔC_{LK} = Net emissions by leakage

As shown in the calculations developed, there is no variation in carbon stocks by deforestation in the with-project case (ex-ante), as the Madre de Dios Amazon REDD Project will carry out activities to avoid the projected deforestation in 100%. On the other hand, there is no sufficiently reliable estimation about the increase in biomass by the actions of enrichment in the Project Area.

Estimation on the VCS buffer

The Buffer retention is estimated as a percentage of the subtraction between the Total Emissions by Unplanned Deforestation in Baseline and the Emissions in the Scenario with Project, regardless of the discounts by leakage. Previously, each one has to subtract their emissions by burning of fossil fuels and the incorporation of nitrogen.

The retention rate is determined according to the risk classification of the project, using the VCS tool for AFOLU of Risk of Non Permanence. According to the calculations, it has a total percentage of 10% buffer.

Therefore the retention of Buffer Credits to year 2018 should be:

$$\text{Buffer}_{\text{UNPLANNED}} = \{(11,419,937 - 0^*) - 0^{**}\} \times 10\% = 1,141,994 \text{ tCO}_2$$

And to 2046 (end of the accreditation period):

$$\text{Buffer}_{\text{UNPLANNED}} = \{(27,626,600 - 0^*) - 0^{**}\} \times 10\% = 2,762,660 \text{ tCO}_2$$

** It was already explained that the emissions due to the burning of fossil fuels and the incorporation of nitrogen fertilizers in baseline were not considered.*

*** There are no changes in carbon stocks in Scenario with Project (ex - ante) due to the planned prevention activities, and because none of them have considered using fertilizers.*

Uncertainty Analysis

The analysis of uncertainty of carbon stocks was developed according to the module X-UNC.

The assumptions made were:

- The uncertainty from emissions should be accounted as zero, since we used a conservative number (55%) in its calculation, and it is the percentage taken from literature.
- The uncertainty from Pools: Dead-wood, Litter, Soil organic, Wood products; and sources: Fossil fuel combustion and N₂O emissions from nitrogen application, were not analysed as they are not included in baseline calculations.
- The uncertainty resulting from calculations to estimate aboveground biomass, based on measured tree variables (DBH, specific density), is already included in the biomass equation itself

Estimation of Verified Carbon Units

- Considering what is indicated in the module, to know the verifiable carbon units in time t, the adjustment by uncertainty should be carried out as well as the reduction by risk buffer. For the development of this item it has been estimated the VCU of each year, as evidenced in the table below.

$$VCU_t = (Adjusted_C_{REDD,t_2} - Adjusted_C_{REDD,t_1}) - Buffer_{TOTAL}$$

Where:

VCU_t	Number of Verified Carbon Units at time $t = t_2 - t_1$; VCU
$Adjusted_C_{REDD,t_2}$	Cumulative total net GHG emissions reductions at time t_2 adjusted account for uncertainty; t CO ₂ -e
$Adjusted_C_{REDD,t_1}$	Cumulative total net GHG emissions reductions at time t_1 ; t CO ₂ -e
$Buffer_{TOTAL}$	Total permanence risk buffer withholding; t CO ₂ -e

Chart 35. Verifiable Carbon Units in the first 10 years of the Project

T	Year	$\Delta C_{BSL,unplanned}$	ΔC_P	$\Delta C_{LK-AS,unplanned}$	$C_{REDD,t}$	Buffer _{UNPLANNED}	VCU_t
1	2009	1.162.914	-	87.943	1.074.971	116.291	958.679
2	2010	1.305.876	-	82.095	1.223.781	130.588	1.093.193
3	2011	1.314.396	-	82.454	1.231.942	131.440	1.100.503
4	2012	1.175.042	-	82.564	1.092.479	117.504	974.974
5	2013	1.190.498	-	81.976	1.108.522	119.050	989.472
6	2014	1.107.895	-	81.920	1.025.975	110.789	915.186
7	2015	1.046.807	-	80.361	966.446	104.681	861.765
8	2016	1.028.258	-	79.417	948.841	102.826	846.015
9	2017	1.033.409	-	80.152	953.257	103.341	849.916
10	2018	1.054.842	-	77.902	976.940	105.484	871.456
Total		11.419.937	-	816.784	10.603.153	1.141.994	9.461.160

In conclusion, there will be 9.461.160 tCO₂ of verifiable carbon credits during the first 10 years, and 22.309.475 tCO₂ during the entire life of the project.

3.2.2 Project Emissions this periodo

The net change in carbon stock, inside the project area, by deforestation was “0”.

During the monitoring, all the steps in M-MON module were followed to obtain the Net greenhouse gas emissions under the project scenario.

$$\Delta C_P = \sum_{t=1}^{t^*} \sum_{i=1}^M (\Delta C_{P,DefPA,i,t} + \Delta C_{P,Deg,i,t} + \Delta C_{P,DistPA,i,t} + GHG_{P-E,i,t} - \Delta C_{P,Enh,i,t})$$

Table 3-3

Stratum	Cpdeg,PA,i,t					TOTAL
	2014	2015	2016	2017	2018	
Hilly Forest	183,556.02	530,345.64	94,583.69	43,843.43	176,314.02	1028642.80
Terrace forest	8,768.25	5,566.01	4,804.37	2,826.44		21965.07
TOTAL	192,324.27	535,911.65	99,388.06	46,669.86	176,314.02	1050607.87

$$\Delta C_{P,Deg,i,t} = \Delta C_{P,DegW,i,t} + \Delta C_{P,SelLog,i,t} \quad (7)$$

$$\Delta C_{P,DegW,i,t} = A_{DegW,i} * \frac{C_{DegW,i,t}}{AP_i} \quad (8)$$

Where the PRA or the limited sampling indicate no degradation occurring:

$$\Delta C_{P,DegW,i,t} = 0$$

$$\Delta C_{P,SelLog,i,t} = \sum_{t=1}^t (C_{LG,i,t} + C_{LR,i,t} - C_{WP,i,t}) \quad (9)$$

We can see in the following chart the different change in carbon stock by:)

Table 3-4

Stratum	Cp,SelLog,i,t (2014-2018)									
	2014		2015		2016		2017		2018	
	CLG	CLR	CLG	CLR	CLG	CLR	CLG	CLR	CLG	CLR
Hilly Forest	96,872.00	90,220.17	250,140.10	289,206.12	61,397.88	35,388.78	10,919.11	32,924.31	82976.02	93338
Terrace Forest	4,457.66	4,473.32	1850.71	3,782.42	2,724.81	2,176.77	954.65	1871.79		

CLG. Annual net project emissions arising from the logging gap

CLR Annual net project emissions arising from logging infrastructure

CLG (2014-2018):

$$C_{LG,i,t} = \sum_{z=1}^Z (C_{EXT,z,i,t} + (LDF_{z,i} * V_{EXT,z,i,t} * \frac{44}{12}))$$

Vext:

Table 3-5

Vext (m3)	2014	2015	2016	2017	2018
Hilly forest	24,635.74	46,772.01	15,774.30	3,285.06	16,161.51
Terrace forest	1,133.61	17,859.61	702.39	287.21	
	25,769.35	64,631.62	16,476.68	3572.27	16,161.51

Cext:

Table 3-6

Vext (m3)	2014	2015	2016	2017	2018
Hilly forest	36,350.20	68,317.20	22,645.70	2,848.83	43,272.58
Terrace forest	1672.75	24,895.26	999.27	249.07	
	38022.95	93,212.46	23,644.97	3097,90	43,272.58

LDF= 0.67

CLG (2014-2018):

Table 3-7

Stratum	2014	2015	2016	2017	2018
	CLG	CLG	CLG	CLG	CLG
Hilly Forest	96,872.00	250,140.10	61,397.88	10,919.11	82,976.02
Terrace Forest	4,457.66	1850.71	2,724.81	954.65	

CLR (2014-2018)

$$C_{LR,i,t} = \Delta C_{SKID,i,t} + \Delta C_{ROAD,i,t} + \Delta C_{DECKS,i,t}$$

Table 3-8

CLR 2014-2018					
	t i	Croad	Cdecks	Cskid	Total
2014	Hilly Forest	31,326.03	6,560.71	52,333.43	90,220.17
	Terrace Forest	1,553.21	325.29	2,594.81	4,473.32
2015	Hilly Forest	148,862.38	8,051.48	132,292.27	289,206.12
	Terrace Forest	1,024.60	418.86	2,338.97	3,782.42
2016	Hilly Forest	5,545.14	1,301.82	28,541.82	35,388.78
	Terrace Forest	-	50.74	2,126.03	2,176.77
2017	Hilly Forest	18,266.79	750.24	13,907.28	32,924.31
	Terrace Forest	1,746.34	71.14	54.31	1,871.79
2018	Hilly Forest	16,436.77	2,484.94	74,416.29	93,338.00
	Terrace Forest				

3.2.3 Leakage

$\Delta C_{P, LB}$ = Deforestation area in Leakage belt for this period 2014-2018 was 1552.42 ha. In the next chart, we can see the deforestation by types of forest in the leakage belt, during all the life project.

During the monitoring of period 2014-2018 and following the steps presented in LK-ASU module, the Next greenhouse gas emissions due to leakage are equal to:

$$\Delta C_{LK-AS,unplanned} = \Delta C_{LK-ASU-LB} + \Delta C_{LK-ASU-OLB} + GHG_{LK,E}$$

Table 3-9

Year	$\Delta C_{LK-ASU-LB}$	$\Delta C_{LK-ASU,OLB}$	GHG_{LK,E}	$\Delta C_{LK-AS,unplanned}$
2014	-	143307.63	-	143,307.63
2015	-	131669.98	-	131,669.99
2016	-	125365.12	-	125,365.12
2017	-	167617.40	-	167,617.40
2018	-	201668.212	-	201,668.21

$\Delta C_{LK-ASU-LB}$

Where:

$$\Delta C_{LK-ASU-LB} = \Delta C_{P,LB} - \Delta C_{BSL,LK,unplanned}$$

Where:

- $\Delta C_{LK-ASU-LB}$ Net CO₂ emissions due to unplanned deforestation displaced from the project area to the Leakage Belt; t CO₂-e
- $\Delta C_{BSL,LK,unplanned}$ Net CO₂ emissions in the baseline from unplanned deforestation in the leakage belt; t CO₂-e
- $\Delta C_{P,LB}$ Net greenhouse gas emissions within the leakage belt in the project case t CO₂-e

Table 3-10

Year	$\Delta C_{P,LB}$	$\Delta C_{BSL,LK,unplanned}$	$\Delta C_{LK-ASU-LB}$
2014	8,690.49	708,874.00	-
2015	41,318.45	732,451.00	-
2016	62,788.51	729,622.00	-
2017	303,065.59	740,419.00	-
2018	347,546.40	672,924.00	-

$\Delta C_{LK-ASU-LB} = IF < 0$, then it must be set = 0

$\Delta C_{LK-ASU-OLB}$

$$A_{LK-OLB,t} = A_{LK-IMM,t} - A_{LK-ACT-IMM,t}$$

$A_{LK-OLB,t}$ Area deforested by immigrants outside the Leakage Belt and project area under the project scenario at time t; ha

$A_{LK-IMM,t}$ Total area deforested by immigrant agents in the baseline and project scenario at time t; ha

$A_{LK-ACT-IMM,t}$ Area deforested by immigrants in the project area and Leakage Belt under the project scenario at time t; ha

Table 3-11

	ALK-IMM,t		
	PROP _{IMM}	A _{BSL,PA-unplanned,t}	Total 1
	from Step 2 LK-ASU	PDD pg 150 (2016)	Eq 7 LK-ASU
2014	0.18	2,113.20	380.38
2015	0.18	2,013.40	362.41
2016	0.18	1,987.10	357.68
2017	0.03	19926.10	538.36
2018	0.03	21,982.80	659.48

Table 3-12

	ALK-ACT-IMM,t			
	PROP _{IMM}	A _{Def,PA-i,t}	A _{Def,LB-i,t}	Total 2
	from Step 2 LK-ASU	from M-MON	from M-MON	Eq 8 LK-ASU
2014	0.18	-	16.84	3.03
2015	0.18	-	87.28	15.71
2016	0.18	-	153.21	27.58
2017 (accumulate)	0.03	-	3556.74	96.09

2018 (accumulate)	0.03	-	4,245.93	127.38
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$\Delta C_{LK-OLB,t} = \text{total 1} - \text{total 2} = T \text{ CO}_2$, If is > 0 leakage outside the leakage has occurred

Where

$$\Delta C_{LK-ASU-OLB} = C_{OLB} * \Delta C_{LK-OLB,t}$$

Tabla 3-13

	$\Delta A_{LK-OLB,t}$ (accumulative)	$\Delta C_{LK-ASU,OLB}$
	Eq 9 LK-ASU	11 LK-ASU
2014	377.34	143,307.63
2015	346.70	131,669.99
2016	330.10	125,365.12
2017	442.26	167,617.40
2018	532.11	201,668.21

$$\Delta C_{LK-ASU-OLB} = C_{OLB} * \Delta C_{LK-OLB,t}$$

C_{OLB}
379.00

GHG LK, E

Greenhouse gas emissions as a result of leakage of avoided deforestation activities; T CO₂. There wasn't in the project

3.2.4 Net GHG Emission Reductions and Removals

Table 3-14: Net GHG Emission Reductions and Removals

	$\Delta C_{BSL,unplanned}$	ΔC_p	$\Delta C_{LK-AS,unplanned}$	$C_{REDD,t}$	Adjusted $C_{REDD,t}$	Buffer _{UNPLANNED}	VCU_t
Period 2009-2012	4,958,227.99	460,725.00	1,144.16	4,496,358.83	4,496,358.83	449,750.30	4,046,608.53
Period 2013	1,190,498.00	220,328.96	153,899.36	816,269.67	816,269.67	97,016.90	719,252.77
Period 2014	1,107,895.00	192,324.27	143,307.63	772,263.10	772,263.10	91,557.07	680,706.03
Period 2015	1,046,807.00	535,911.65	131,669.99	379,225.36	379,225.36	51,089.54	328,135.83
Period 2016	1,028,258.00	99,388.06	125,365.12	803,504.82	803,504.82	92,886.99	710,617.82
Acumulado 2017	10,365,094.99	1,555,347.80 ²⁴	167,617.40	8,642,129.78	8,642,129.78	880,974.71	7,761,155.07
						VCUs annual 2017	1,275,834.10
Acumulado 2018	11,419,937.00	1,711,062.59 ²⁵	203,233.64	9,505,640.77	9,505,640.77	970,887.43	8,534,753.34
						VCUs annual 2018	774,899.38

²⁴ Only 2017: 46,203 t CO₂

²⁵ Only 2018: 155,714.79 t CO₂

3.3 Optional Criterion: Adapting to Climate Change and Climate Variability (CL4.2)

As described in the PDD page 289, the project has developed the following measures to adapt to climate variability resulting from climate change:

In view of the increase in the mortality rate and decrease in the growth of forest species / In view of changes in the composition and spatial distribution of species in the forest and / In view of changes in the phenological stages of the different forest species

- Establishment of a management system based on Adaptive Management in which the Planning, Monitoring and Feedback processes constitute the fundamental pillars of the model. This has allowed to make necessary changes or adjustments to management plans and silvicultural systems, as well as at the level of the processing industry.
- Periodic monitoring of:
 - The dynamics and structure of forests through the installation and evaluation of Permanent Monitoring Plots, with the objective of monitoring changes attributable to the implementation of forest management, as well as global climate change.
 - Changes in the natural regeneration of species, through the installation of temporary sampling plots, in order to identify the causes attributable to the implementation of forest management and those attributable to climate change.
- Five-yearly monitoring of wildlife provides information in a time series that allows for comparison and sampling of the impact on wildlife. This comparison has made it possible to determine the impact of the implementation of this project on wildlife and to make the corresponding adjustments and adaptations to the management plans to mitigate the identified impacts.

Given the increased risk of forest fires caused by the increased frequency of farmers and drought seasons

- The burning of wood and other waste has been banned.
- Forestry operations have been implemented, taking into account criteria of lesser impact and under appropriate industrial safety conditions.
- Adequate fuel management.
- Monitoring the quality of forest operations, including fuel management.
- Implementation of the Custody Plan: construction of control booths, periodic patrolling within critical sectors, delimitation of borders, demarcation of vertices, marking of access points, vertices and critical sectors, thus reducing the risk of invasions and unauthorized use of fire.
- Periodic training of project staff in the application of the Operations Manual and the Forest Management Practices Regulations. See list of internal trainings in annex 4.
- Agreements have been established with the University of Leeds, for the determination of an Allometric Formula for Carbon Stock Calculations.

Table 15: Summary of major climate change adaptation activities undertaken

Activity	Indicator	Current status-activities during
Establishment of a management system based on Adaptive Management	Frequency of reformulation of the General Forest Management Plan Frequency of development of Operational Plans	Since the beginning of forest management of the concessions that make up the project area, the frequency of reformulation of the General Forest Management Plans has averaged 3 years. This frequency is less than required by the national forest authority, which stipulates a maximum frequency of 5 years. Operational plans are renewed annually.
Periodic monitoring of the dynamics and structure of the forests, through the installation of permanent plots for monitoring.	Frequency of evaluation of permanent monitoring plots	Permanent monitoring plots have been installed within the project area, these are evaluated biannually.
Periodic monitoring of the natural regeneration of species and interest under management, in the pre- and post-harvest stages, through the installation of temporary plots of the strip type.	Abundance of regeneration of species under management	Evaluations have been made of the state of natural regeneration before and after harvesting. To date, only post-harvest evaluations have been carried out, since the aim is to determine the presence of the forest after the silvicultural interventions.

3.4 Optional Criterion: Carbon Benefits Withheld from Regulatory Markets (CL5)

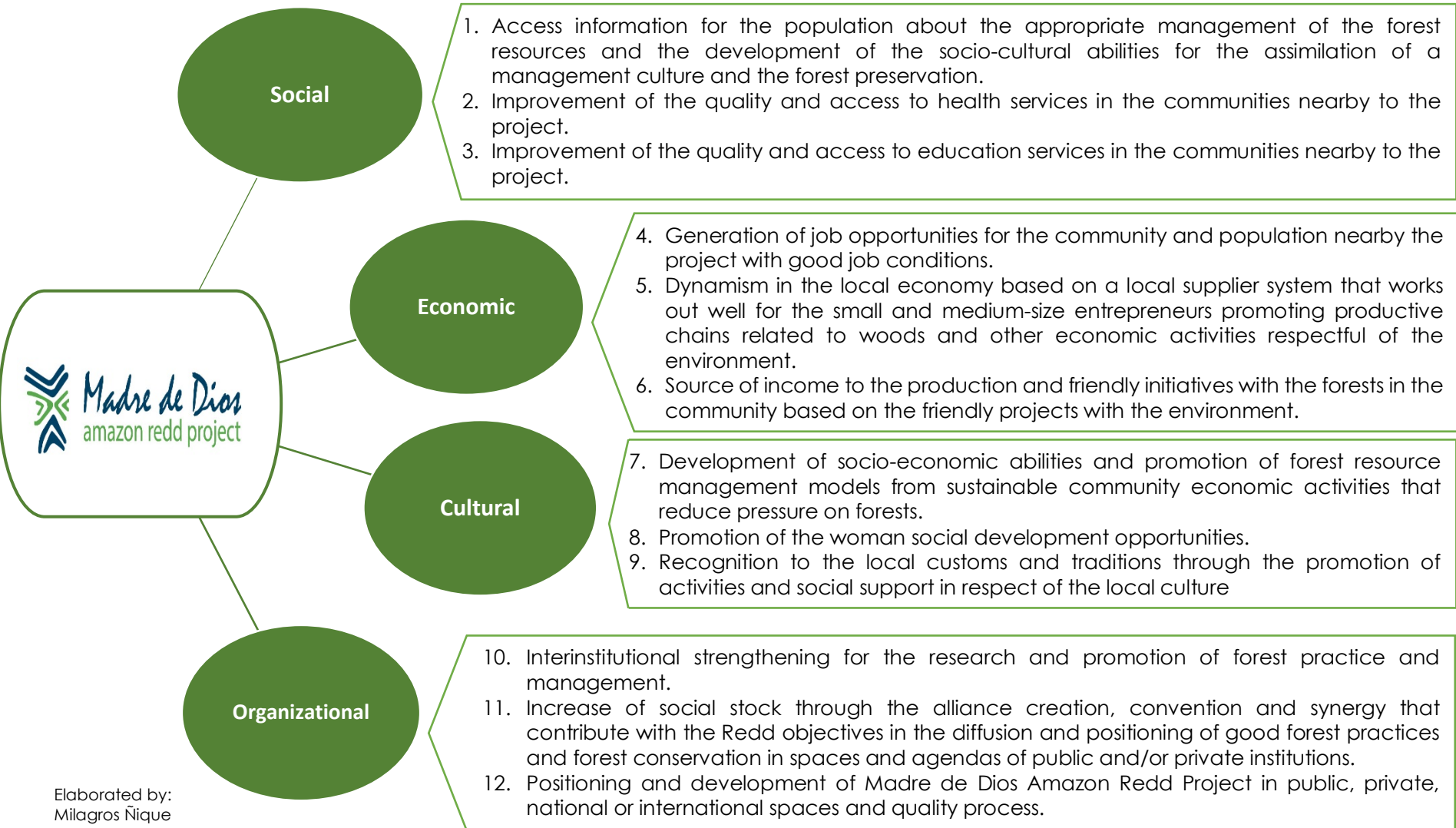
The project has sold its offsets generated on the extra stock market (OTC). This has been achieved through direct sales with Traders such as Green Choice, or some sales to end consumers such as ASO (Dakar), Scotiabank Peru, Fundación Ecología y Desarrollo, among others. 100% of the sales have been made in the voluntary market

4 COMMUNITY

4.1 Net Positive Community Impacts

4.1.1. Net Positive Community Well-Being Impacts (CM1.1, CM2.3)

Positive impacts on the community are developed from the main spheres of sustainable development; that is, they are conceived from the social, economic, cultural and organizational dimensions. The following graph shows the organization of the positive impacts of the community and then the description of each of them area in the table.



Elaborated by:
Milagros Nique

Table 4-1: Net positive impacts on the community 2014-2018

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
<p>1. Access of the population to information on the proper management of forest resources through the promotion of REDD objectives that provide content to the socio-cultural capacities of the population for the adoption of a culture of progressive forest management and conservation. The process is carried out through media adapted to the stakeholders.</p>	<p>The people close to the concessions do not receive information about sustainable forest management and the social and environmental importance of forest resources, they do not know the implications of forest degradation that they can carry out in their daily economic and social activities. They do not know references to good forest management, which is also reflected in the environmental education of children.</p>	<p>1.1. Execution of 17 workshops, talks or communications of REDD objectives in the community.</p> <ul style="list-style-type: none"> • Talks and activities in environmental education about the forests in the Villa Primavera Community with the participation of the NGO ANIA. (2015, 2016, 2017) • Talks on REDD objectives in the native community of Bélgica. (2016, 2017, 2018) • Talks on REDD Objectives in the Noaya community (2018). • Citizen Participation Workshop (beginning and end of harvest season) to provide scopes, information on project progress and promotion of REDD objectives (2014, 2015, 2016, 2017 and 2018). • Consultative Committee (beginning and end of harvest season) to provide scopes, information on project progress and promotion of REDD objectives (2014, 2015, 2016, 2017 and 2018). • Dissemination of REDD objectives in calls for environmentally friendly projects by radio and community visits. (2015 and 2018) <p>1.2. Development of 16 events or conferences related to REDD objectives.</p> <ul style="list-style-type: none"> • Meeting on Productive Technological Innovation for the Amazonia at the ExpoAmazonica (2015). • Forest Management at the ExpoAmazonica (2015). • Participation in the FSC International Meeting (South Africa, 2015). • Sustainable Forest Harvesting and Environmental Services for Conservation and Local Development. (COP 20, 2015) <ul style="list-style-type: none"> • Participation in the national initiative YO MADERA LEGAL (Ministry of the Environment, 2015). 	<p>Promote and sensitize people and the community to the importance of proper forest management from the daily and economic activities of the area. Generate empathy with REDD objectives demonstrating the sustainability of a forest friendly use and the generation of sustainable capacities for the economy and social benefit. There is a Consultative Committee (actors representing the main stakeholders of the population) with which there is constant communication and meetings at least twice a year to share the information of the project and the plans that we have, year by year.</p> <p>Generation of public and academic spaces for REDD objectives and the Madre de Dios Amazon REDD Project. Since 2012, the concessions have been participating in participatory spaces such as the Madre de Dios REDD Table, the Acre River Forest Management Committee, the Alto Purús Park Working Group, the Yaverija Sub-basin Working Group, the Madre de Dios-Acre-Pando Forum Working Group (MAP), and the Mahogany Working Group. They are also members of the Peruvian Export Association, through their participation in the Wood Chapter; the Madre de Dios Concessionaires Association; and also members of the Peruvian</p>

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
		<ul style="list-style-type: none"> • The 2nd European Sustainable Tropical Timber Coalition Conference, STTC - European Sustainable Tropical Timber Coalition. Spain (2015) • Business Opportunities of FSC® certified Flooring Products. (China, 2015) • Forum Biodiversity, capital for sustainable development. (PromPerú, 2015) • “Presentation: “Importance of Applied Forestry Research for the Development of the Forestry Sector” (2018). • SERFOR-CAF Project (2018). • “Presentation: “Sustainable Forest Investment: Challenges and Opportunities” Universidad del Pacifico (2018). • Identification and design of a map of strategic forest ecosystem services that promote sustainable development in the region of Madre de Dios (2018). <p>1.3. Degree of degradation potential of the population adjacent to the project: it lacks degradation potential. Diagnosis PRA 2015, 2017 and 2019.</p> <p>1.4. Creation of 01 advisory committee made up of representatives of the communities and local authorities with whom fluid communication and trust relationships are maintained for the decision making of the project. The committee is made up of:</p> <ul style="list-style-type: none"> - 01 representative of the Provincial Municipality of Tahuamanu - 01 representative of Barrio La Colonia- Iñapari - 01 representative of the Mothers Club of Iñapari - 01 representative of the Native Community Belgium - 01 representative of the Madre de Dios Amazon REDD Project. 	<p>Forest Certification (CFPERU). There is also a Community Relations Committee. In these spaces, as well as in the participation in various events, the concessions report their activities and inform about the sustainable forest management that is carried out, forest management standards, biodiversity conservation and the Madre de Dios Amazon REDD Project. In addition, at the beginning of each harvest season, an informative meeting is convened where the programmed scope of each year's harvest season is announced and training activities are also carried out for local personnel and suppliers.</p> <p>The existence of this potential for degradation is evaluated through the elaboration of a diagnosis (through surveys) with the participation of the actors living in the adjacent area or area of influence of the project. The results of the last three PRA diagnoses showed that there is no potential for degradation on the part of social agents in the environment.</p> <p>The Advisory Committee is a space created by the Project since 2012 with the purpose of maintaining fluid and transparent communication with the main stakeholders of the community, this advisory committee is made up of representatives and authorities of the social sphere of the project with whom the project meets twice a year (at the beginning and end of the harvest to provide information and</p>

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
			<p>results of the project) as well as feedback on the plans and activities proposed as social welfare programs or projects. That is to say, each activity or strategy of social promotion is raised according to the collection of information from these spaces of social participation, the project understands that its efforts must point to the needs and expectations of the nearby populations and communities, therefore it promotes and generates these spaces of constant participation.</p>
<p>2. Improving the quality of and access to health services in communities and localities close to the project.</p>	<p>Health conditions are of lower quality or capacity to meet the health service demands of the population.</p>	<p>2.1. 100% of the workers have health insurance in force and covered by the companies.</p> <p>2.2. 01 current agreement is maintained with the CLASS Iñapari health center, which allows employees to be treated for accidents or illnesses, as well as carrying out medical campaigns of various specialties for the benefit of the company's employees. The Iñapari Health Center is supported with fuel for emergencies in the transfer of patients by ambulance. In 2015, support was provided with equipment and cleaning personnel.</p> <p>2.3. Monthly and annual support during the period 2014-2018 to the community of Bélgica with pre-ordered medicines with a value of S/ 200.00 nuevos soles, and support in the health services of the Bélgica health post. Support in expenses of transfer of patients with ambulance of the health center. (2015, 2016, 2017, 2018). In 2015, cleaning and other equipment was donated. In 2017 strips and planks were donated to improve the environments of the post.</p> <p>2.4. For 2016 and 2017, a contract was signed with the CLASS medical center of Iñapari so that the workers of the company are treated free of charge, and the expenses are assumed by the company with an</p>	<p>Workers receive benefits in accordance with a law by recognizing their labor rights every year, such as: the staff receives the equivalent of 10% of the legal minimum income for the concept of family allowance; the granting of two gratuities (national holidays and Christmas); all Company personnel have a Life Insurance that is activated in the third month, and the SCTR that is activated immediately, being this a collective insurance so that they can insure their concubine or spouse and children; Law of compensation for time of services; Paternity leave. Constant training in Occupational Safety and Health. Socialization of the protocols of ILO Convention 87 and 98. Undoubtedly, the opportunity to work under benefits and legal rights provides opportunities for family welfare to all employees, allowing the improvement of the quality of life of each of them.</p>

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
		<p>amount proportional to S/ 500.00 nuevos soles or greater. Making a total investment of S/ 6000 soles per year.</p> <p>2.5. The project supported in 2016 with the construction of 01 a handmade swimming pool in the Native Community of Bélgica.</p> <p>2.6. It was financially supported with S/ 200.00 Nuevos Soles in order to organize health campaigns for the benefit of the Elderly (2016).</p> <p>2.7. In 2016 we supported with S/ 200.00 nuevos soles, as support for the fumigation campaign against “Dengue”, organized by the municipality and in coordination with CLASS “Tres Fronteras”. We also cooperated with 10 units of synthetic gloves and 10 gallons of gasoline the same that were used in preventive campaigns against dengue.</p> <p>2.8. In 2016 we collaborated with 25 gallons of oil to the CLAS health center in Iñapari, for the transfer of children to Puerto Maldonado for medical care.</p> <p>2.9. Support for health reasons of S/ 500.00 nuevos soles to community members of the Native Community of Bélgica during 2015, 2016.</p> <p>2.10. Support to the native community of Bélgica with water purifier filter.</p>	<p>Work is being done in conjunction with the Iñapari health center to provide care for company workers. Medical campaigns, first aid training, etc. are constantly carried out for the workers with the health post. The possibility of accessing medical consultations, specialized campaigns, and other services is greater thanks to the articulation with the company, which has the willingness to be involved in the promotion of social welfare in health.</p> <p>The support in health to the Native Community of Bélgica has allowed to extend the supply of medicines of the health post located in the community, mainly those medicines that the state cannot offer them and that take care of illnesses or specific cases. Monthly, it contributes the value of 200 nuevos soles in medicines. This also makes it possible to minimize indicators of morbidity in the community, such as the incidence of acute infections, among others. The health conditions and the support to improve them is one of the most important lines of action of the Project in the social component. The investment in health during the period is US\$ 28,500.</p>
<p>3. Improved quality and access to education services in communities</p>	<p>The conditions of education with less quality or capacity to the demands of service of</p>	<p>3.1. Agreement with the E.I. of Iñapari to give talks and activities in environmental education and forest management model. (2014 to 2018 and still in force). In 2015, support was provided to move children and adults to Festicinema (Environmental Film Festival in Iñapari). In 2016, learning spaces were provided through guided tours for students of UNALM's master's degree in forest exploitation. In 2017,</p>	<p>Two annual talks are held at the E.I. Iñapari on good forest management and environmental education strengthening the knowledge on the subject with high school students, and promoting in them a culture of sustainability in the future activities they plan to carry out. In the</p>

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
and localities close to the project.	education of the population.	<p>support was provided with sports materials, such as balls for E.I. Iñapari students, and wooden materials, such as blackboards, chairs, stands and tables were provided for the Villa Primavera School. In 2018, the E.I. of Villa Primavera continued to be supported with wooden materials.</p> <p>3.2. Agreement with the Regional Directorate of Education for the implementation of a Regular Basic Education Center for adults in Iñapari and in the Native Community of Bélgica, which together have benefitted 43 people during 2018. The economic contribution in this agreement is S/ 3,000 nuevos soles in 2018, which initiated the agreement in logistical support of teachers to the Native community of Bélgica and the population of Iñapari.</p> <p>3.3. A minimum of 40 Training sessions annually between 2014 - 2018 for workers in forest areas in technical aspects of their areas of work, sustainable forest management, criteria or standards and social capacities for teamwork.</p> <p>3.4. Training sessions were held at the Iñapari School (2016). We collaborated with 50 ishpingo boards and 2 copaiba boards for the construction of desk furniture in the Kindergarten of Iñapari.</p> <p>3.5. Donation of school supplies for the children of the Native Community of Bélgica in their schools, 2016 - 2018.</p> <p>3.6. Health Campaign with medical team from Lima in the Native Community of Bélgica, 2016.</p> <p>3.7. Training on First Aid and care for Emergencies, and donation of a first aid kit for the population of Nuevo Iñapari (2018).</p>	<p>same way, we share the experience of harvesting with future professionals in the field, universities and educational institutions in the area.</p> <p>There are people in the community and nearby towns who do not have complete basic studies, primary and secondary studies. Therefore, the project was able to manage and articulate with the Regional Directorate of Education and the Jorge Basadre Regular Basic Education Center for the implementation of a headquarters in Iñapari in 2018. Maderacre, as proponent of the project, was facilitator and manager of the headquarters and has 02 agreements for 2019. Each concession carries out an annual training plan; the financial income allows the project to attract occupational health and safety specialists who improve the soft skills and knowledge of the workers in their respective areas of work. Workers are constantly trained. The investment in education during the period is US\$ 25,500.</p>
4. Generation of employment opportunities for the community and population close to the	Scarce work opportunities in a sustainable forest use system and accredited with	4.1. In the period 2014 -2018, 216 local jobs (Iñapari - Tahuamanu) and 231 regional jobs have been provided, making a total of 447 people who have accessed a job with social benefits, and that contributed to their family income; the number of workers in the direct period of the native community of Bélgica varied between 3 and 5 community members.	In the period 2014 – 2018, both concessions continue to provide job opportunities to the communities close to the project providing family income opportunities that allow its members improving the quality of life of their families, better access to health and opportunity

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact										
project with good labor conditions.	good working conditions.		for growth in capacities. The number of workers in the period is: 25 (2014); 46 (2015); 47 (2016); 49 (2017) and 50 (2018) which is progressively growing and the projection is to maintain similar or greater amounts in the coming years.										
5. Dynamism of the local economy based on a system of local suppliers that favors small and medium entrepreneurs by promoting production chains linked to wood and other economic activities that respect the environment.	Low economic and commercial dynamics of small businesses and enterprises related to the forestry sector (sustainable and environmentally friendly) and general services.	<p>5.1. The project has allowed the contracting of 55 suppliers on average between 2015 and 2018 for the operation of the Project, suppliers that maintain an economic relationship with both concessions of the Project. Suppliers such as:</p> <ul style="list-style-type: none"> • Representaciones Valeria S.R.L. • Empresas de Turismo Iñapari. • Reynaldo Enrique Pachecho Kojagura • Inversiones Luz Amazónica E.I.R.L. • Maderera Canales Tahuamanu S.A.C. • Ferremax E.I.R.L. • Empresa Agrícola Las Gramas S.A.C. • Comercial Importadora Distribuidor • Boticas del Oriente S.A.C.; among others. <p>5.2. The economic investment for the local commercial dynamics of the Project and each concession is remarkable and representative from the beginning of operations. This, as reflected in the approximate expenditure on local suppliers:</p> <p>5.3.</p> <table border="1" data-bbox="638 1117 949 1325"> <tbody> <tr> <td>2018</td> <td>S/ 7,309,068</td> </tr> <tr> <td>2017</td> <td>S/ 4,203,757</td> </tr> <tr> <td>2016</td> <td>S/ 9,375,995</td> </tr> <tr> <td>2015</td> <td>S/ 17,782,057</td> </tr> <tr> <td>2014</td> <td>S/ 15,894,741</td> </tr> </tbody> </table>	2018	S/ 7,309,068	2017	S/ 4,203,757	2016	S/ 9,375,995	2015	S/ 17,782,057	2014	S/ 15,894,741	<p>In the period 2014 – 2018, both concessions continue to provide economic opportunities by promoting local businesses and small or medium enterprises related to forest resources or through the acquisition of products or services, year after year. This drives the economic dynamism of the social sphere in different business areas such as food, fuel, transportation services, etc.</p> <p>The hiring of local suppliers causes a positive impact on the generation of local businesses, promotion of formalization and improvement of the income of families linked to the virtuous circuit that ultimately impacts on the quality of life of families and the processes of modernization in services and products of the local market in Iñapari.</p> <p>The investment in local suppliers during the period is US\$ 16,050,711.</p>
2018	S/ 7,309,068												
2017	S/ 4,203,757												
2016	S/ 9,375,995												
2015	S/ 17,782,057												
2014	S/ 15,894,741												

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
		Out of this amount, the concession invests approximately 45% and 55% is destined to Iñapari suppliers of the years in question.	
6. Economic contribution to productive and forest-friendly initiatives in the community from environmentally friendly projects.	Absence of economic contributions or financing in productive initiatives in the populations and/or communities.	<p>6.1. As mentioned, for the implementation of environmentally friendly projects, Madre de Dios Amazon REDD Project established the following guidelines between 2014 -2018 for support in the implementation of projects:</p> <ul style="list-style-type: none"> • Search for financing from third parties interested in REDD objectives: Fund of the Americas with US\$ 20,000 for the project Forest for Children of Villa Primavera Community with the cooperation of ANIA; investment of Planete Urgence and REDD in the approach of volunteers US\$ 7,000 between 2015 and 2018; donation of wood from the concessions for hut in 2019 in the Native Community of Bélgica with a value of US\$ 20,000 and US\$ 470 from Tecmedios for the material to be used in the same mission. • Financial entitlements and support for REDD projects: With the funds, the program was able to provide an amount of US\$ 10,000 for the implementation of two environmentally friendly projects from mid-2018 to 2019. • Manager and Promoter, through a technical team and a specialist in social projects that accompanies and advises from the design to the implementation of the main activities of the friendly projects. With an investment of US\$ 24,686 in human resources for this purpose and US\$ 5,500 in the logistical deployment of human resources. • Madre de Dios Amazon REDD Project as facilitator for the value chains, which are: <ul style="list-style-type: none"> - Inter-institutional collaboration agreement with ANIA 2018. - Agreement with Universidad Nacional de Madre de Dios 2019. - Agreement with Planete Urgence, from 2015 - 2019. - Loop and link with Conservamos por Naturaleza, support in the web space for the community 	<p>The financial resources allow for the execution of environmentally friendly productive initiatives and the valorization or management of forest resources under the appropriate management of the community's economic activities, as well as providing spaces for education and strengthening of community capacities that allow them social and economic development in search of their social welfare. There are 4 friendly projects executed or in execution that counted on the sources of financing and that have offered improvements or positive changes in the community.</p> <p>The total investment of the entire implementation in relation to the financial aspect contributed by REDD and with external sources to environmentally friendly projects between 2015 and 2018 is US\$ 92,656.00.</p>

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
		<p>https://www.conservamospornaturaleza.org/noticia/colabora-con-la-comunidad-nativa-belgica-inapari/ valued in \$5.000 thousand dollars.</p>	
<p>7. Development of socioeconomic capacities in the community through the socialization of exemplary forest management processes and the promotion of forest resource management models of sustainable economic activities from community initiatives that reduce pressure on forests.</p>	<p>The population and communities close to the concessions do not know adequate processes for the management of forest resources so they prevail in economic activities that generate negative impact on forests such as large-scale cattle ranching and logging. There are no opportunities to develop alternative socioeconomic capacities and value chains compatible with the sustainability of forest resources.</p>	<p>7.1. Execution of at least 03 socializations a year between 2014-2018 with the native community of Bélgica, E.I. Ñapari and other localities in the Forest Management and good practices and procedures of the project.</p> <p>7.2. Execution of 02 processes of identification of environmentally friendly projects (2015 and 2018) to be advisors, facilitators and managers hand in hand with the community. The resultant as of 2018 is to have 04 projects in execution, 02 of formulation and 01 in post execution monitoring. These are represented in 7 project profiles.</p> <p>7.3. Execution of 13 technical support processes or training sessions received by the population and community involved in the friendly projects in REDD objectives on technical issues of productive activities such as ecotourism, agroforestry processes, business plans, handicrafts, environmental education on forests and project management.</p> <ul style="list-style-type: none"> • Execution of 01 field support and advice on ecotourism and forest management for tourism by the technical team of the National University of Madre de Dios to the Estancia Colibrí project team (2018-2019). • Execution of 01 field support and advice on sowing and production of cocoa (2018). • Execution of 07 talks and activities in advice on handicrafts, ecotourism, color, ideas and handicraft management by foreign professionals who were volunteers in the Native Community of Bélgica (From 2015 to 2018). • Execution of 01 Consultancy on business plans for the Estancia Colibrí project team by REDD and the Peruvian Ministry of Environment (2016-2017). 	<p>Both concessions seek to share processes or contents related to forest management and promote a culture of risk prevention. For this reason, it shares content regarding: protocol for dealing with social conflicts, protocol for dealing with complaints or requests, protocols for action before Indigenous Peoples in Situation of Isolation and in Situation of Initial Contact (PIACI), sustainable forest management and good practices.</p> <p>Environmentally friendly projects (EFP) generate a progressively growing innovative chain that builds sustainable production chains and provides economic opportunities for families and communities. The MAPs are developed in aspects of ecotourism (conservation of 35 ha of primary forests), agroforestry plantations (management of 5 ha of secondary forests), reforestation (5 ha of degraded areas); environmental education for children and community (25 ha of primary forests - 2 Forests for Children), handicrafts (20 ha of primary forests) and promotion of the value of forest species. By 2018, we have the first replica project of the first generation MAP, which is the second "Forest for Children" in the community of Noaya.</p>

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
		<ul style="list-style-type: none"> • Execution of 01 socio-environmental project with multiple educational sessions of ANIA to the children of the community of Villa Primavera (2016-2017). • Execution of 02 sessions of educational talks by ANIA and REDD to the children of the community of Noaya (2018). 	<p>The talks and consultations within the framework of the MAPs allowed children and adults to create new social capacities or reinforce those they had. Sharing the vision of REDD objectives provided an important basis since the activities carried out in each GPA have the aim of sustainably managing forests. Capacity building and effort are represented in the activities implemented and in the motivation of those involved to continue with the activities.</p>
<p>8. Promotion of opportunities for the social development of women in nearby communities and populations.</p>	<p>Few platforms, activities or development programs for women in employment or capacity building.</p>	<p>8.1. An average of 5% of the workers per year are women, giving them all the benefits of the law and their rights.</p> <p>8.2. In the period 2014 – 2018, 29 community workers were hired, number that has progressively increased by hiring 29 regional workers making a total of 58 permanent local workers. Productive friendly project that promotes and motivates the participation of 20 women from the Native Community of Bélgica through training, production and sale of handicrafts.</p> <p>8.3. Bringing together highly qualified professionals in design, administration and communications through the alliance with Planete Urgence for the presence of 7 volunteers in the Native Community of Bélgica to offer inductions or trainings to the women artisans of the community, strengthen in them diverse skills and knowledge about the sale, production and ecotourism sustainability.</p>	<p>The project does not have any discriminatory practices towards female staff. 50% of middle management jobs are held by women. Support is being given to women's groups in communities on holidays such as Mother's Day or Women's Day, as well as providing them with job opportunities. The number of female local workers in the period is: 2 (2014); 6 (2015); 6 (2016); 5 (2017) and 10 (2018) which is progressively growing and we project to maintain similar or greater numbers in the coming years. Job opportunities have been targeted to the Native Community of Bélgica providing employment opportunities to women, if applicable.</p> <p>Improvement in the development of capacities of the artisans of the Native community of Bélgica in the management of designs, colors, ecotourism, attention, resource administration and motivation that were carried out in alliance with Planete Urgence through the presence of</p>

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
			foreign volunteers in the community. These so-called “missions” provide motivation and advice to the group of craftswomen to improve their production of handicrafts and achieve the goals of their friendly project which include the local positioning of the handicrafts of Bélgica and the improvement of economic capabilities of women in the community, safeguarding the cultural characteristics of the community.
9. Recognition of local customs and traditions through the promotion of activities and social support in respect of the local culture.	Little promotion of cultural activities in the area.	9.1. Carrying out at least 01 annual activity of support or promotion of local culture through the participation of anniversaries or cultural events of the community. 9.2. In 2016, the native community of Bélgica was supported with 17 baskets of basic necessities on Mother's Day. Various activities were carried out during the year, such as: provision of hot chocolate milk, Christmas baskets, delivery of toys, and games for Christmas parties, activities that have been held every year until now. 9.3. Support in basic food baskets for Mother's Day in 2015. 9.4. Support with food supplies and donations for the anniversary of the Native Community of Bélgica (2015-2016-2017-2018). 9.5. 03 diggers and 10 gallons of oil were donated to the XVII FERIA AGROPECUARIA AGROINDUSTRIAL-Iberia, 2015 – 2016. 9.6. Support in the management of common waste in Iñapari. (2018) 9.7. Support in the celebration of the Father's Day of the Native Community of Bélgica (2015). 9.8. Support in the construction of the premises of the Integral Center for the Elderly.	Every year and during the period 2014-2018 the Project by means of both concessions participates in the promotion of culture and festivities in full respect and recognition of the local culture participating and valuing the customs and traditions of the population and nearby communities. These actions generate positive expectations of the population with the project by recognizing the willingness and increasing in the new generations the identity and cultural value of Iñapari. Both concessions have the willingness to social support and the opportunity to share cultural events that strengthen the relationship with the community.
10. Inter-institutional strengthening	Scarce opportunities for research on forest	10.1. In the period 2014-2018, the project was able to participate in the following activities:	The possibility of increasing the Project's value chains, not only in forest management and community benefits, but also in the growth and

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
<p>for research and promotion of forest management practices.</p>	<p>management practices.</p>	<ul style="list-style-type: none"> • 2017: The cooperation agreement with the World Wildlife Fund (WWF) for the development of studies and research related to forest management and FSC certification is maintained. • 2017: The Postgraduate School of the National University of La Molina (UNALM) is supported in the development of field courses for the Master's Degree in Forest Management. Support is provided to undergraduate and graduate thesis students for the development of their research at UMF. • We have representation or participation in: Exporters Association (ADEX), representative: José Luis Canchaya, until 2017; SIN: National Society of Industries, José Luis Canchaya, until 2017; FSC Certifier Peru, Nelson Kroll, in force and Association of Forest Concessions Tahuamanu, Nelson Kroll, in force. • Since 2012, concessions have been participating in participatory spaces such as the Madre de Dios REDD Table, the Acre River Forest Management Committee, the Alto Purús Park Working Group, the Yaverija Sub-basin Working Group, the Madre de Dios-Acre-Pando Forum Working Group (MAP), and the Mahogany Working Group. They are also members of the Peruvian Export Association, through their participation in the Wood Chapter; the Madre de Dios Concessionaires Association; and also members of the Peruvian Forest Certification (CFPERU). There is also a Community Relations Committee. In these spaces, as well as in the participation in various events, the concessions report their activities and inform about the sustainable forest management that is carried out, forest management standards, biodiversity conservation and the Madre de Dios Amazon REDD Project. In addition, at the beginning of each harvest season, an informative meeting is convened where the programmed scope of each year's harvest season is announced and training activities are also carried out for local personnel and suppliers. 	<p>dissemination of information by promoting research capacity favors the branching of capacities and the generation of study spaces and opportunities for new professionals that allow the continuous improvement of processes within the Forest. Inter-institutional links contribute to academic work and the formation of interesting platforms in the knowledge of forest management such as REDD.</p>

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
		<ul style="list-style-type: none"> • Training in the Graduate School by Greenoxx at the Universidad Pacifico del Peru, 2012-2013. • Quantification of the reduction of Greenhouse Gases through the implementation of AIR techniques. WWF (2015). • Analysis of costs and benefits for the valorization of branches of species of high commercial value in the concession MADERACRE. WWF (2015). • Analysis of Costs and Benefits of the implementation of Reduced Impact Forest Harvesting techniques. WWF (2015). • Measuring FSC impacts. WWF (2015). • Thesis candidate at the International Public Management at The Hague University in the Netherlands (Tim Strupat), for the research “how site-level REDD+ projects respond to operational challenges that emerge due to a lack of demand for carbon emission reductions in the voluntary carbon market”. WWF (2015). • Consultancy in performance increase. WWF (2015). • Coordination for installation and evaluation of permanent plots, 2016 with World Wildlife Fund -WWF. • Coordination for the study and evaluation of natural regeneration and seedbeds in mahogany and cedar - UNALM-ITTO Project, 2016 	
<p>11. Increase of social capital through the generation of alliances, agreements and synergies that contribute to the objectives of</p>	<p>Absence of strategic alliances or inter-institutional links for the forest socioeconomic development of the district and the province.</p>	<p>11.1. In the period 2014-2018, the Project allowed the following agreements:</p> <ul style="list-style-type: none"> • Inter-institutional collaboration agreement with ANIA 2018. • Agreement with Universidad Nacional de Madre de Dios 2019 for the collaboration of professional development and local talent in the PAM. • Agreement with Planete Urgence 2015 - 2018. • Inter-institutional link with Conservamos por Naturaleza 2016 - 2018. Web space. 	<p>The inter-institutional articulation allows the synergy of efforts that impact on the social capital of the project, the links and the opening of more possibilities and ways to achieve the REDD objectives that allow the approach of the project to other scenarios and in the public or private spheres; in addition, it originates the support towards sectors or more relevant social</p>

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
<p>Redd in the dissemination and positioning of good forestry practices and forest conservation in spaces and agendas of public and/or private institutions.</p>		<ul style="list-style-type: none"> • Agreement with the Forestry Chamber to provide training on occupational health and safety issues, 2016. • Agreement with the National Forestry Chamber of Madre de Dios, for the implementation of part of a project, Electronic Traceability of Wood, 2016. <p>Social development agreements:</p> <ul style="list-style-type: none"> • Health Agreement with the Native Community of Bélgica 2015 - 2018. • Education Agreement with the Native Community of Bélgica 2015 - 2018. • Agreement with CLASS Iñapari Health Post 2015-2018. Maderacre and Maderyja. • Agreement with the Regional Directorate of Education and CEBA Dos de Mayo, 2018. • Agreement with CEBA Dos de Mayo, Maderacre (as project proponent) and Native Community of Bélgica, 2018. • Partnership Agreement for the sustainable use of forests between the Native Community of Bélgica and Maderyja (as project proponent) from 2015 with a validity of 5 years. 	<p>needs of the social scope of the project allowing positive impacts in the general social welfare. Social capital in potential for the generation of alliances, agreements and synergies that contribute to the socio-forestry development of the area.</p> <p>Positioning of FSC criteria towards the native community of Bélgica.</p>
<p>12. Positioning and institutional development of Madre de Dios Amazon REDD Project in public, private, national or international spaces and quality processes.</p>	<p>Absence of any nationally-recognized and pioneering forest harvesting model platform that is disseminated and takes position in public spaces through the promotion of its</p>	<p>Events:</p> <ul style="list-style-type: none"> • Meeting on Productive Technological Innovation for the Amazonia at the ExpoAmazonica (2015). • Forest Management at the ExpoAmazonica (2015). • Participation in the FSC International Meeting (South Africa, 2015). • Sustainable Forest Harvesting and Environmental Services for Conservation and Local Development. (COP 20, 2015) • Participation in the national initiative YO MADERA LEGAL (Ministry of the Environment, 2015). 	<p>Madre de Dios Amazon REDD Project is the pioneering platform in forest development in Peru with regional, national and international impact that allows to identify in it a model of good forest management showing that it is possible to bring together economic, environmental and social objectives in an innovative, dynamic production process, which constantly feeds back and differs as a model of real socio-environmental management in the face of a global problem: forest degradation.</p>

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
	<p>objectives and economic model of the sector in the country.</p>	<ul style="list-style-type: none"> • The 2nd European Sustainable Tropical Timber Coalition Conference, STTC - European Sustainable Tropical Timber Coalition. Spain (2015) • Business Opportunities of FSC® certified Flooring Products. (China, 2015) • Forum Biodiversity, capital for sustainable development. (PromPerú, 2015) • “Presentation: “Importance of Applied Forestry Research for the Development of the Forestry Sector” (2018) • SERFOR-CAF Project (2018). • “Presentation: “Sustainable Forest Investment: Challenges and Opportunities” Universidad del Pacifico (2018). • Identification and design of a map of strategic forest ecosystem services that promote sustainable development in the region of Madre de Dios (2018). <p>Publications, representations and other brand actions with the program:</p> <ul style="list-style-type: none"> • Catalogue of Indicator Fauna Identification 2016 • Forest First Aid Manual 2016 • Public Summary of Forest Monitoring Report 2015-2016 • Public Summary of Social Monitoring 2015- 2016 • Pieces Quality Brochure 2016 • High Conservation Value Forest Identification Brochures • Camp 2016 Pocket Manual. • We have representation or participation in: Exporters Association (ADEX), representative: José Luis Canchaya, until 2017; SIN: National Society of Industries, José Luis Canchaya, until 2017; FSC Certifier Peru, Nelson Kroll, in force and Association of Forest Concessions Tahuamanu, Nelson Kroll, in force. • Report by Francois Badaire, a French journalist, on the Native Community of Bélgica 2017. 	

Positive Influence	Without Project Impact Scenario	Quantitative description of the impact	Qualitative Description of the Impact
		<ul style="list-style-type: none"> • Biodiversity Brief Madre de Dios Amazon REDD Project (Greenoox) 2016, 2017 and 2018. • Social Brief Madre de Dios Amazon REDD Project 2016, 2017. • Madre de Dios Amazon REDD Project Brochure. 	

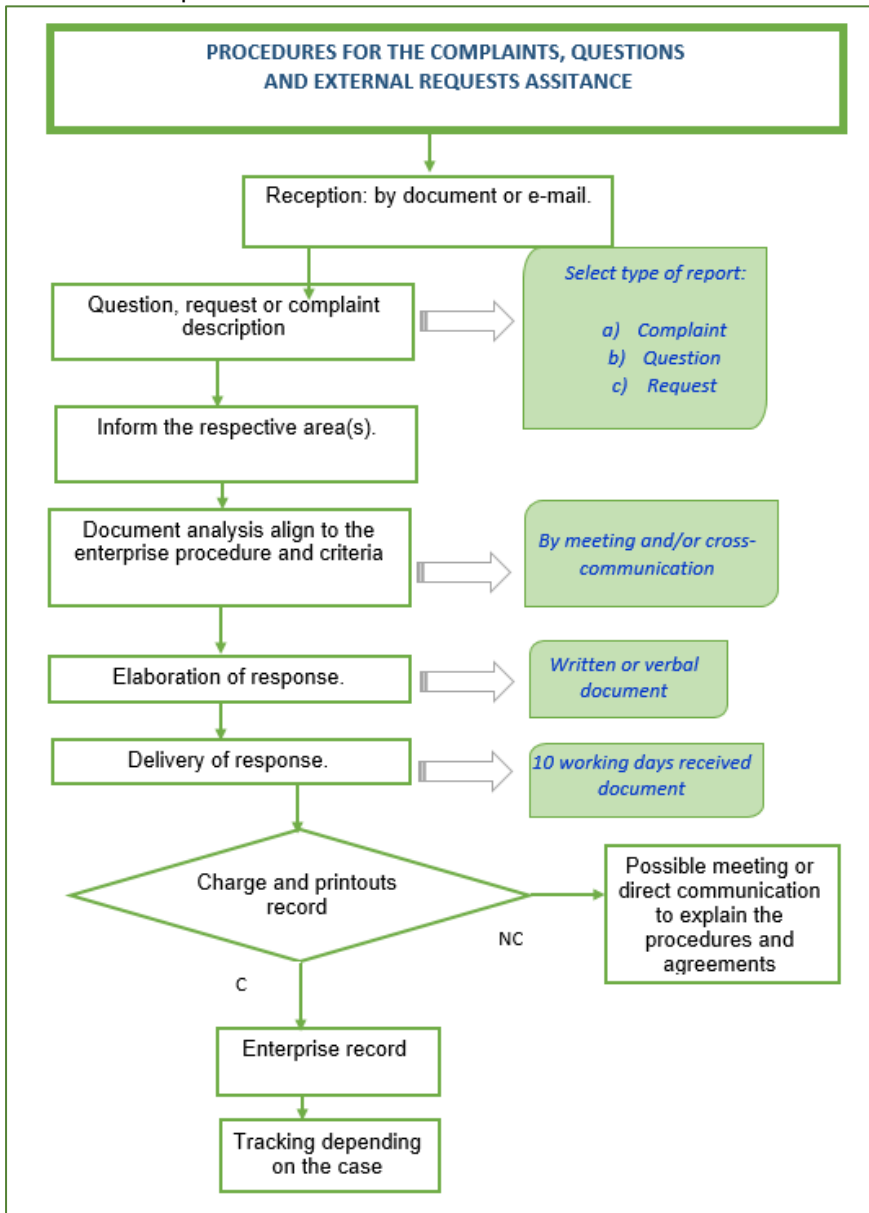
NOTE: All activities, talks, project implementation are recorded in the activity or report record formats; public events or activities, through photographic records; inter-institutional alliances, through agreements, minutes or electronic media, in general all processes of implementation of activities are recorded by the Project.

4.1.2. Local Stakeholder Participation (CM1.2)

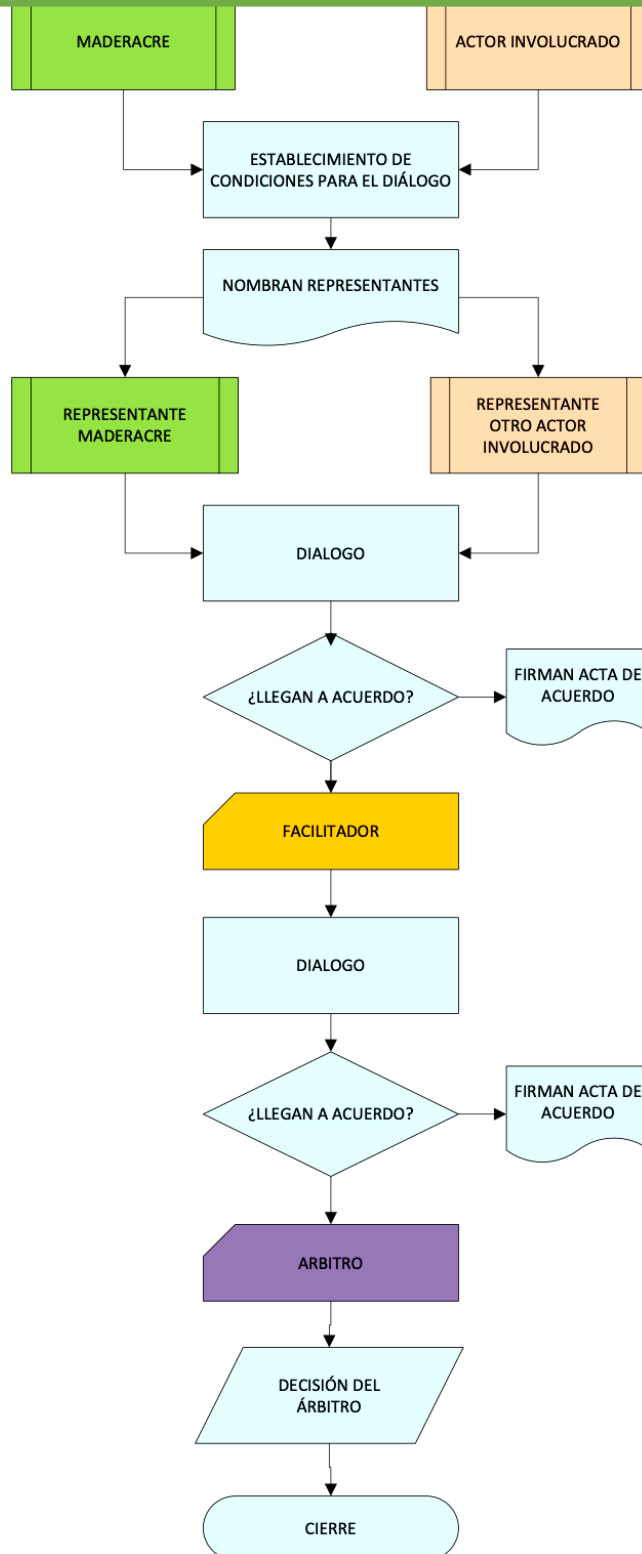
There has been no change in project design during the current monitoring period.

4.1.3. Conflicts and Grievances (CM1.3)

In the period 2014 - 2018, there have been no complaints about the Project. However, it is worth mentioning that the concessions handle procedures for handling complaints. Likewise, if the case arises and a social conflict arises, the procedure for dealing with conflicts is executed. The procedures mentioned are presented below:



FLOWCHART FOR THE CONSTRUCTIVE TRANSFORMATION AND ASSISTANCE OF POSSIBLE SOCIAL CONFLICTS



4.2 Offsite Community Impacts

4.2.1. Mitigation of Negative Impacts on Offsite Communities (CM2.2)

Table 4-2: Mitigation Measures for Negative Impacts on External Communities

Verified Risk	Possible negative impact of external communities	Mitigation measures	Control results and status as of 2018
<p>The flow of migration increases as a result of knowing the existence of a project that can use the workforce or take measures for social investment.</p>	<p>Unsustainable activities for forests such as illegal logging and related activities.</p>	<ul style="list-style-type: none"> • Media and participation with the population for the promotion of good forest management and REDD objectives. The activities can be visualized in item 1.1. of the table of positive impacts on the community. • Diagnosis of degradation potential by communities external to the project through the PRA Study, carried out in this period in 2015, 2017 and 2019. • Establishment of control or surveillance posts at strategic points within each concession. • Implementation of environment-friendly projects from the community according to forest-friendly production systems as references for forest management models. 	<ul style="list-style-type: none"> • Execution of 17 activities to disseminate REDD objectives. • The result and conclusion of the latest PRA studies have been that the social environment studied lacks potential for degradation or pressure on forests. • The control booths are: <ul style="list-style-type: none"> • PV Shingo: With land access, located in Carretera Iñapari – Maderacre Concession (UMT: 422977-8774048) • PV. Bélgica: With terrestrial access, located in Carretera Iñapari - Santa Marta towards NC Bélgica (UTM: 427034-8783897) • PV Amatec: With land access, located in Carretera Chilina - Sector AMATEC (UTM: 432559-8756508) • PV. Luchador: With fluvial access by the river Tahuamanu - Sector Luchador Ravine (UTM: 389889-8751533) • PV. Caldero: With fluvial access by the river Tahuamanu - Sector Caldero (UTM: 417630-8742571)

			<ul style="list-style-type: none"> Promotion of 07 projects between 2015 and 2018 that allow the good management or conservation of 100 ha of forests (primary and secondary) that are managed by the program in a sustainable way as a result of the promotion of REDD objectives in the community with environmentally friendly projects).
	<p>High Job Expectations and Job Offer related to The flow of migration increases as a result of knowing the existence of a project that can use the workforce or take measures for social investment.</p>	<ul style="list-style-type: none"> Local job offer program according to project capacity, skills and occupational safety. The Project seeks to attract local personnel by being prioritized in the selection processes of each concession. Timely and accurate media about the job offer through radio, graphic communication or signs. There is 01 training plan for each concession. 	<ul style="list-style-type: none"> In the 2014-2018 period, a total of 217 permanent workers from the Tahuamanu area (social scope of the project) and 231 from the Madre de Dios region. During the training sessions that have been carried out, training and talks have been held on labor rights, knowledge of insurance and tickets.
<p>The increase in the flow of cars through the interoceanic highway, as well as through roads, due to the operation of the project.</p>	<p>Possible disagreements in the establishment of limits with the concessions or owners adjacent to the project. related to the increase in the flow of cars through the interoceanic highway, as well as through roads, due to the operation of the project.</p>	<ul style="list-style-type: none"> Establishment of boundary Meetings with neighbors, if necessary Permanent communication and good relations. 	<ul style="list-style-type: none"> Signature in agreement with the owners or adjacent to the project. Current and signed boundary minutes.
	<p>External signposting of routes of use and transit that have not been shared or disseminated with</p>	<ul style="list-style-type: none"> Training plan on signposting and road safety with transporters and staff in general. 	<ul style="list-style-type: none"> Training on signposting for transporters and collaborators.

	<p>stakeholders. Related to the increase in the flow of cars through the interoceanic highway, as well as through roads, due to the operation of the project.</p>	<ul style="list-style-type: none"> • Sensitization and training for third parties (contractors) for good use and less impact on the road entering the concessions (the contracts with transporters specify to respect the indicators and principles of FSC and also to have all the safety implements and comply with prohibitions on driving in rainy seasons and not go at excessive speed). The work regulations and an induction are given to each driver and to all sub-contractors. Signs were also implemented within the concession such as “dangerous curve”, “ascent”, “descent”. All company personnel in the forest area are trained in issues of reduced impact harvesting and chain of custody where they are explained the issue of transporters, with less impact, no traffic in rainy seasons, etc. Signs have been posted with messages aimed at road safety, with messages such as “stop”, “reduce speed” and “dangerous curve”. Contracts with suppliers also specify compliance with operation manuals and regulations, and requires compliance with the corresponding traffic rules. • Socialization of protocols in the community to deal with requests, complaints, 	<ul style="list-style-type: none"> • Performance of 03 socializations in the community, at least once a year, to share the processes that the company handles for their requests, complaints or information to be exchanged between the community and the company.
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		non-routine company activities and conflict transformation.	
The entry of foreign people with cultural practices and expressions that differ from localities.	Possible lack of treatment and awareness of respect for local culture by project workers who violate the principle of interculturality and respect for local populations. Possibility of Social Conflicts. related to the entry of foreign people with cultural practices and expressions that differ from localities.	<ul style="list-style-type: none"> • Training on induction and code of conduct towards the community where they express the principles of interculturality and respect for local populations, for all employees of the company and the project. • Ongoing review and training of workers, contractors and population in general about the relationship with community protocols. • Protocol of attention and transformation of conflicts. • Constant communication and good relations with the communities. 	<ul style="list-style-type: none"> • All workers have been trained with the induction of social responsibility and the principle of interculturality. • All workers participate and are trained in the code of conduct towards the community and protocols of respect for the community. • Performance of 03 socializations in the community at least per year to share the processes that the company handles for their requests, complaints or information to be exchanged between the community and the company.
	Possibility that workers do not know the protocols and procedures of proper forest management and certified criteria in their respective areas of work.	<ul style="list-style-type: none"> • Annual training plan. • Workers and contractors are trained every year. Likewise, monitoring is carried out, the protocol for conflict resolution, code of conduct towards communities, FSC and CCB criteria have been socialized. • Training for forest collaborators and custodians on Indigenous Peoples in Voluntary Isolation Situations (PIACI). 	<ul style="list-style-type: none"> • All workers have been trained with the induction of social responsibility and the principle of interculturality. • All workers have been trained at least 01 training per year in FSC criteria, CCB and REDD projects. • Since 2017, PIACI training has been provided to collaborators mainly in forests.
The increase in the demand for supervision, control	Demands or social situations that do not have procedures with an effective and	<ul style="list-style-type: none"> • There are protocols and mechanisms for efficient and effective action in the 	<ul style="list-style-type: none"> • The procedures are: Protocols of Complaints and

<p>and coordination actions by public institutions that could generate an additional workload or an overflow of installed capacity.</p>	<p>efficient scope to meet requests, or influential external social processes. Related to the demands and demands of support and social assistance of the population and the increase in the demand for supervision, control and coordination actions by public institutions that could generate an additional workload or an overflow of installed capacity.</p>	<p>face of possible external contexts or events that merit the presence of the concession.</p> <ul style="list-style-type: none"> • A summary of the General Plan for Forest Management and Social Monitoring is disseminated. • There is institutional mail. • There is participation in spaces for concertation and consultation with public institutions. 	<p>Suggestions, Protocol of Information for Non-Routine Operations, Protocol of Constructive Transformation of Conflicts.</p> <ul style="list-style-type: none"> • The results of social monitoring have been socialized during 2016 - 2017 and 2018 • Two meetings are held annually with the REDD Consultative Committee (At the beginning and end of the harvest season).
<p>Other related risks</p>	<p>External factors such as natural hazards affecting the social welfare of the population.</p>	<ul style="list-style-type: none"> • The community of Bélgica was also part of the flooding that occurred on February 16, 2016, so the project helped with road cleaning, construction of pontoons to maintain access to the community. It also helped with the cleaning of the community; repair of the electrical installation. The Project provided support to the Community in the installation of electrical service to improve the living conditions of the villagers and especially that of young students. 	<p>The Project, through each concession, has the willingness to collaborate with the community to be part of the promotion of their welfare and has often been the institution that has responded with social support in emergency situations such as major accidents in the population, emergency transfers, floods or other related either at the request of the population or by organizational initiative. The Project represents the most important actor in the promotion of the socioeconomic development of the town of Iñapari.</p>
	<p>Absence of productive and socio-environmental initiatives in the management of forest resources that prevent forest degradation in the communities close</p>	<ul style="list-style-type: none"> • Implementation of the Productive projects with the environment program that supports families and communities in undertaking sustainable activities with good management of forest 	<ul style="list-style-type: none"> • 07 environmentally friendly projects currently being advised by the program. • 01 project fully implemented "Forest

	<p>to the project. Related to the increase in the demand for supervision, control and coordination actions by public institutions that could generate an additional workload or an overflow of installed capacity.</p>	<p>resources with 02 processes of identification of initiatives, one in 2015 and the second in 2018.</p> <ul style="list-style-type: none"> • Development of talks and activities to disseminate REDD objectives. • Institutional articulation to promote REDD objectives and good forest management practices. 	<p>for Children of Villa Primavera”; 04 projects under implementation; 02 projects in design representing good management of forest resources of 100 ha of forests.</p> <ul style="list-style-type: none"> • 17 activities to disseminate REDD objectives. • As of 2018, third party funding funds of \$ 25,470 dollars and project investment, in general this measure is \$50,900 dollars. <p>As of 2018, technical contribution of professionals in socio-environmental projects, forest management, ecotourism, business plan, environmental education (BONI methodology), administration, design and communications.</p>
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4.3 Community Impact Monitoring

4.3.1 Monitoring Results (CM3.1)

The social activities, the projects from the social management of each concession, and the social projects have been monitored by means of various indicators that allow knowing and evaluating the positive impacts of the project. The results of the monitoring in the period 2014 - 2018 are presented below

Table 4-3: Social Monitoring of Project 2014 -2016

N°	Indicator	Year 2014	Year 2015	Year 2016
1	% of local workers compared to outsiders	41%	43%	38%
2	% of direct workers who have access to the ESSALUD system.	100%	100%	100%
3	% of workers who have accessed a training opportunity during the year.	19%	23%	45%
4	No. of training activities carried out by the company	27	25	34

5	N° of hours allocated to staff training (hours per average worker)	27.20	42.50	5.0
6	N° of workers who have complete and adequate personal protective equipment to carry out their tasks	100%	100%	100%
7	N° of institutions in which Maderacre has a formally appointed representative	12	11	4
8	% of local suppliers compared to national suppliers	60%	56%	45%
9	% of amounts paid to local suppliers compared to national suppliers	64%	59%	47%
10	N° of suppliers adopting at least one positive practice promoted by the company in the area of social responsibility	10	-	1
11	N° of Activities carried out in the framework of the Community development program, to the sawmill and concession	0	11	1
12	Number of agreements signed or ratified with local educational institutions	1	1	1
13	N° of agreements signed or ratified with public or private universities/institutions	1	1	0
14	N° of investigations carried out in the framework of agreements with universities/institutions	2	6	0
15	N° of publications produced, giving an account of the main research results	1	0	0
16	No. of written dissemination or promotional materials produced	2	6	7
17	% of Stakeholders trained in Action Protocols	75%	80%	75%
18	% of Collaborators (with a year or more of seniority) who improved their quality of life in the last year	35%	49%	49%
19	Amount of Budget allocated to the Social Responsibility Area	S/. 50,000.00	S/. 32,830.00	S/. 32,830.00
20	Number of Conflicts resolved	0	0	0
21	Number of conflicts registered	0	0	0
22	Number of Stakeholder Meetings held during the harvest season	3	4	2
23	Number of mechanisms that promote among collaborators and contractors, respect and harmonious relations with the NC.	2	1	2
24	Number of mechanisms where FSC principles and criteria are disseminated	3	3	3
25	Number of activities carried out within the framework of the company's Communications Plan	3	5	1
26	% beneficiaries of NC BÉLGICA under the Community Development Support Program	100%	100%	100%
27	% Number of beneficiaries of INAPARI within the framework of the Community Development Support Program.	187	1270	98
28	Number of meetings of the Consultative Committee in support of community development	2	2	2

Since 2017, some indicators have been modified in order to evaluate the impacts from new activities developed by each concession and the project.

Table 4-4: Social Monitoring of Project 2017-2018

N°	Indicator	Year 2017	Year 2018
1	% of local workers with respect to the foreign ones	30%	28%
2	% of local women workers compared to total women.	18%	23%
3	% of direct workers who have access to the ESSALUD system	100%	100%
4	% of workers who have had access to health and safety training developed by the company.	100%	100%
5	N°. of trainings in forestry, good practices, skills and topics of labor interest.	89	19
6	N° of activities and/or training for the promotion of healthy living, labor rights, families and recreation with collaborators in the framework of social welfare.	20	18
7	N°. of hours allocated to staff training (hours per average worker)	4.9	4
8	% of workers who have complete and adequate personal protective equipment to carry out their tasks	100%	100%
9	% of activities for the improvement or monitoring of working conditions and services of the collaborator	2	8
10	General satisfaction level of the year of the services rendered towards the collaborator	Regular	Regular
11	% of Collaborators (with one year or more of seniority) who improved their quality of life and family in the last year.	96%	96%
12	N° of activities that promote respect and recognition of the local culture and neighboring communities.	33	43
13	% of local suppliers compare to national suppliers	35%	37%
14	% of expenditures on suppliers over the company's total expenditures	54%	54%
15	N°. of activities promoting good practices, respect for local culture and other institutional values with suppliers	3	3
16	N° of actions and/or activities for the contribution and promotion of social development within the framework of the Community Development program.	3	7
17	N° of agreements signed and in force with institutions or social organizations for education, environment and social development.	6	7
18	N°. of Social Conflicts registered	0	0
19	N°. of Social Conflicts Resolved	0	0
20	N° of informative and/or participative activities such as meetings, workshops, socializations or other with interest groups of the population.	4	11
21	N°. of beneficiaries of the area of social influence by the programs and activities of RS.	114	180
22	N° of beneficiaries of the NC Bélgica for the programs and activities of RS of Maderacre.	80	120

23	N° of women beneficiaries of the various communities by the programs and activities of RS	85	110
24	N° of organizations, families or communities with sustainable projects that receive technical or economic support from the company.	4	6
25	N° of events or organisms in which Maderacre participates for the promotion of the academic, socio-environmental and/or institutional development of the forest sector.	7	7
26	N° of research and/or publications carried out within the framework of inter-institutional or other agreements.	3	2
27	N° of diffusions of materials elaborated for the information of activities, procedures and others related to CSR.	3	3
28	Amount of monthly Maderacre social investment.	S/. 37,000.00	S/. 37,000.00

4.4 Optional Criterion: Capacity Building (CM4)

- Accommodate the needs of the communities.

The project has developed social programs according to a preliminary diagnosis and constant communication with neighboring localities through the Consultative Committee and Citizen Participation Workshops. The main needs are employment supply, health and education; therefore, the Project and each concession manage selection of local labor, hiring of local suppliers, agreements with the Iñapari Health post, agreements with Iñapari educational institutions and projects in the area of capacity development. Then, the program of environmentally friendly projects establishes the propitious space to promote local economic activities that can achieve development opportunities such as tourism, agriculture, reforestation, etc. with the proper management of forest resources.

- Reach a wide range of groups.

The Project processes of participation and communication are not only with the adjacent localities to the Project, not only the population groups are identified, but also associations, committees and social base organizations. In addition to the central city of Iñapari, the following are invited to the citizen participation workshops: the Club of Mothers of Iñapari, Villa Primavera, and Community of Naoya, with whom they have a friendly project, among others.

- Reach women and increase their participation.

Each concession maintains as a policy the hiring of local labor which allows the participation of women. Currently, there are women collaborators, with a minimum target of 5%. The participation of women is promoted in an information and participation space, such as the citizen participation workshop held annually. In addition, the handicrafts project has been promoted and implemented with the women of the Native Community of Bélgica since 2015, thus strengthening their social capacities.

- Increase community participation in project implementation.

Community participation in the execution of the Project is carried out in the following activities and actions of the Project:

- Citizen Participation Workshops every year.
- Consultative Committee.
- Training and dissemination talks on the Madre de Dios Amazon Redd Project.
- Local initiatives such as environmentally friendly projects.

- Collaborators from Iñapari and nearby towns.
- Local suppliers with whom the Project has established commercial links making possible its commercial and competitive growth.

4.5 Optional Criterion: Best Practices in Community Involvement

4.5.1 Local Customs (CM5.1)

The Project activities are related to local social, economic and cultural activities, mainly because there is a relationship between forest harvesting and local economic activities. In addition:

- The main economic activities at the local level are forestry and commercial. This last activity has been increased by the presence of the Project and the commercial dynamics generated by both concessions in the area, either by the acquisition of services related to forestry activity, logistic services, transport, food goods, etc. The commercial growth generated by the Project is in accordance with the commercial capacity and the local businesses that exist in the area and the Project has been promoting them since the beginning of operations.
- All project activities are informed in the spaces of communication and information with the community, such as: informative workshops, consultative committee, local radio space, public diffusion “face to face” and participation meetings, as the case may be.
- The social activities of the Project are planned according to the characteristics and needs of the population; that is to say, processes of identification or social diagnosis are carried out that improve decision making.
- The local culture is a reference of the local activities, both concessions participate and are part of local socio-cultural activities, promoting the respect of the local culture. Each concession has a “Code of Conduct” towards the workers that establishes norms of respect with the communities, their customs, traditions, expressions, etc.
- Productive and environmentally friendly projects are promoted by the Project and they arise from the identification of local economic and social initiatives such as agroforestry production, ecotourism, handicrafts, environmental education and reforestation. These activities are, in turn, related to the use of forests.

4.5.2 Community Employment Opportunities (CM5.2)

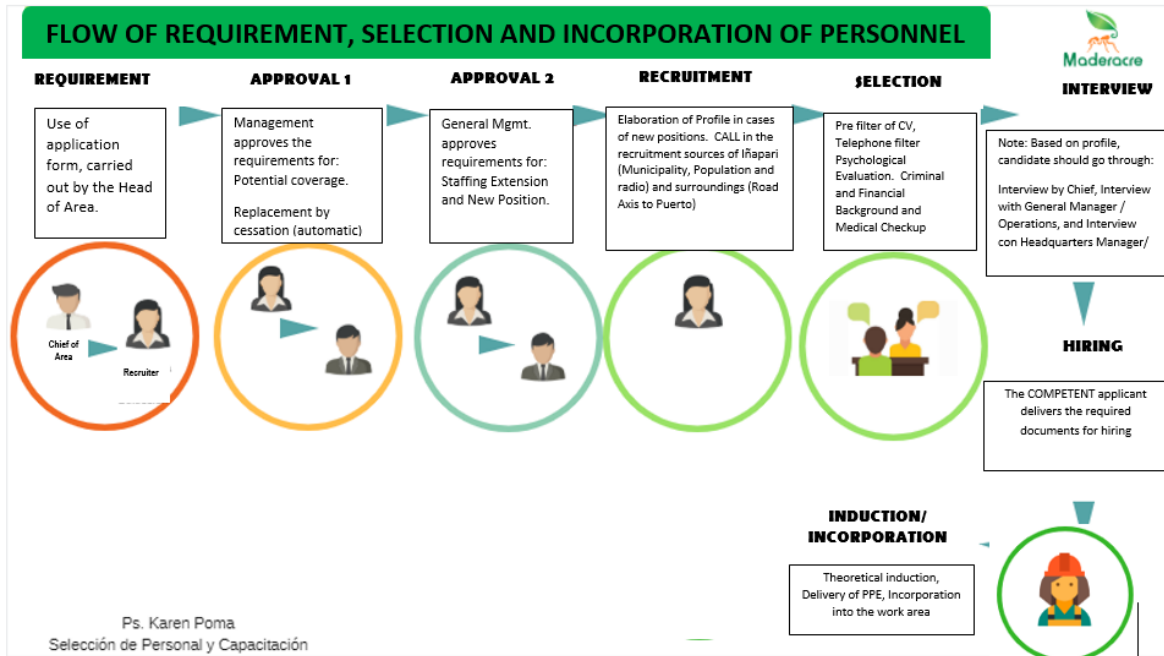
The Project, through the concessions, has maintained its policy of “Hiring local labor” which is a business line of both Maderacre and Maderyja. This policy makes it possible to prioritize people in the community who are looking for work and who have the profile that each company is looking for among its workers, whether they are from the Native Community of Bélgica or the general population of Iñapari and surrounding areas. The policy in each concession is stipulated as follows:

Project policy:

“Access to opportunities: technical training - productive for young people, mainly in relation to the job opportunities offered by forestry in the area”.

Next, the processes for the selection of personnel where communications are made on the local radio, posters or announcements to representatives of the communities to inform them that the Project and

the companies require labor. The job opportunities offered follow a profile design of the position (according to skills, abilities, academic training, etc.) that, depending on the case, can be a position for men or women, the evaluations are equal for both genders and men are not prioritized over women, the selection criterion is for capacity development. If this is the case, the project promotes the labor participation of women through the same local communication channels mentioned above. This step corresponds to the recruitment stage. The procedure is represented as follows:



The selection processes are carried out by the administrative areas of each company. All jobs prioritize local areas. If the vacancy is not filled due to profile characteristics, priority is given to the nearest zones and the region of Madre de Dios.

4.5.3 Relevant Laws and Regulations Related to Worker’s Rights (CM5.3)

The rules and laws for the benefit of workers' rights in the framework of the project are:

- Law N°25129, our staff receives the equivalent of 10% of the legal minimum income for the concept of family allowance.
- Law No. 27735 in accordance with Law No. 29351, the granting of two gratuities (national holidays and Christmas). Article 2: Holiday rest; Leave with remunerations; Rest or leave established by Social Security regulations and which give rise to the payment of subsidies; Rest for work accidents that are remunerated or paid with social security subsidies.
- Law of consolidation of social benefits, Legislative Decree No. 688, in accordance with Law No. 26645 and Law No. 29549 all personnel of our Company have a Life Insurance that is activated in the third month and the SCTR that is activated immediately, this being a collective insurance so that you can insure your partner or spouse and children (Article 321 of the Civil Code).
- S.D. N°001-97-TR Law on Compensation for Time of Service
- Law No. 30807, Paternity Leave.
- Constant training in Occupational Safety and Health.

- Socialization of the protocols of Convention 87 and 98 in which Peru is registered.

The dissemination of labor rights and explanation of ballot procedures are explained in the Staff inductions or trainings scheduled during the year.

4.5.4 Occupational Safety Assessment (CM5.4)

Assessment of the risks to workers' health and safety that have arisen due to the implementation of the Project.

The following describes the health risks to workers that have been identified for each activity in the implementation of the Project:

FOREST CENSUS: Activity that allows us to quantify and classify an area for forest exploitation, according to the level of development of the trees in a) harvestable; b) seedbeds and c) future harvest.

MONITORING: Activity that allows us to verify the work carried out by the Forest Census and evaluate certain parameters of the species of interest.

PATROLLING – BOUNDARY MARKING: Activity that shows the boundaries of the forest management unit (FMU), the subdivision of cut plots (PC) and support roads through the opening of trails in the forest. The physical delimitation allows us to: a) map the physical aspects of the area; b) carry out the forest census; and c) guide the team during operations in the forest.

ROAD CONSTRUCTION:

Activity in which the layout and location of forest roads, storage yards and bridges in the PC are defined. The correct planning of these activities will allow the reduction of extraction distances and optimization of traffic during the dragging of logs to yards and transport to the processing center.

Table 4-5: Assessment of risks to the safety and health of workers

General Risks	Precautionary measures	Verifiers
To remain without support in case of disorientation or accident in the forest	The tasks must be executed in team, minimum of two people.	- List of the number of people in the brigades that are in forest.
	Establish an action plan for the operation (timetables, maps, transport and equipment)	- Find out if the support team knows the details of the action plan.
Fall of branches when evaluating trees	Train collaborators and guide them on risks before executing the work.	No. of accident occurrences and risk situations.
Diverse accidents, due to unfavorable weather	Evaluate the risks and paralyze the operation, if necessary.	No. of accident occurrences and risk situations.

General Risks	Precautionary measures	Verifiers
(windstorms, rain, mud, etc.).	Train employees regarding first aid.	% of employees trained.
Natural accidents in forest work: poisonous animals, obstacles (branches, dry logs (quirumas), lianas, stumps).	Prior orientation to employees about the risks of the operation.	- % of employees using PPE correctly. - Third-party report on the behavior of collaborators.
	Use of PPE	- Emergency plan.
Handling of cutting tools (machetes, axes).	Cut lianas by making movements in the opposite direction to the body.	- Evolution of the number of accidents with cutting tools.
	Be careful when sharpening cutting tools.	- Observe the behavior of employees during activities.
	In teamwork, define a safe distance between collaborators.	
Perforation by dry logs (quirumas)	Cutting of vegetation must be done at 1m height.	- Height of the dry logs (driquirumas).

Assessment of the risks encountered during logging and dragging operations

LOGGING: The logging operation consists in the cutting down or felling of the trees selected for their use, using special techniques of directed cutting; the load preparation consists in the cutting of the tree into logs to be dragged according to the load capacity of the machine and the topography of the land. During this activity the pollarding and weeding (cut through) of the tree is carried out. In most of the operations of exploitation in natural forests of the Amazonia, the felling is executed with chainsaws, which requires special techniques to diminish the risks of accidents to the executing team, waste of raw material and damages to the environment. Undoubtedly, logging is considered the most dangerous activity in forest management.

DRAGGING: Dragging roads are transects or correctly marked trails that connect the harvestable trees to the collection yards. The design of the dragging roads allows the orientation of the assistant of the forest tractor operator, increasing productivity in the dragging activity and minimizing damage to the forest. The design of the roads must take into account certain criteria so that the dragging is well executed.

Table 4-6: Assessment of the risks found during logging and dragging operations

General Risks	Precautionary measures	Verifiers
Accidents due to inexperience in the execution of the activity and use of the equipment.	Train collaborators before executing the work.	No. of accident occurrences and risk situations.
Diverse accidents, due to unfavorable weather (windstorms, rain, mud, etc.).	Evaluate the risks and paralyze the operation, if necessary.	% of employees trained.
	Train employees in first aid care.	
Diverse accidents, intrinsic to working in the forest.		

General Risks	Precautionary measures	Verifiers
Poisonous animals, obstacles, fall of branches, fall due to uneven terrain.	Eliminate all shrubs and palm trees with thorns that are within the range of 1m.	Verify the presence of obstacles and dangers in the work area. Evaluate communication during operation.
	Define good communication (gestures and/or sound).	
	Use of suitable PPE (helmet, hearing protector, visual protector, gloves, etc.).	Verify that the PPE is complete and in good condition.
	Prior guidance to collaborators about the risks of the operation in the forest.	
Handling of cutting tools	Cut lianas by making movements in the opposite direction to the body.	- Evolution of the number of accidents with cutting tools.
	Be careful when sharpening cutting tools.	- Observe the behavior of employees during activities.
	In teamwork, define a safe distance between collaborators.	
Accidents caused by overlapping operations (felling, road projection, dragging, etc.).	Plan safety intervals between operations and signaling.	- Programming of equipment and operations without overlapping.
	Define safety limits between operations. In the case of felling, the brigades must be at least 200 m away from each other.	
Crushing of the operator during cutting.	Do not stand on the log during cutting.	- Audit the orientation of the collaborators and constant monitoring of the risks of the logging.
	Avoid cutting under hanging branches.	
	Avoid pollarding trees above 1.50m above ground level.	- Observe the position of the operator during operation.
	Do not pass under logs when cutting.	
Fall of the felled tree in the opposite direction to that planned.	Evaluation of the direction of fall.	No. of accident occurrences and risk situations.
	Building escape routes.	Evaluate the behavior of the operator during the operation.
Felling of trees not considered in the use.	Attention redoubled with those trees affected by felling.	No. of accident occurrences and risk situations. Verify the presence of obstacles and dangers in the work area.
Accidents caused by the own use and wear of the chainsaw	Keep the safety elements in good condition (idler, brake, throttle lock, etc.)	Check the state of the safety elements.

General Risks	Precautionary measures	Verifiers
(absence or failure of safety elements)		Warn operators of the risks of using chainsaws with safety elements in poor condition.
Accidents when escaping after cutting down trees (cuts, falls, etc.)	Switch off the chainsaw when travelling over distances of more than 10m.	Verify the practice of safety procedures in logging brigades.
	Presence of the helper with the operator during the operation to facilitate communication.	
	After the fall cut, the operator must turn off the chainsaw, remove the hearing protector and lift the visor from the helmet.	Check the distance between team members during the cutting operation.
Accident with operator or helper while moving between trees.	Do not walk with the saw in operation.	Verify the practice of safety procedures in cutting brigades.
Accidents caused by rebounding wedges during operation.	Guidance on correct positioning of wedges.	Check wedge positioning.
Accidents caused by the rebound of the log due to cracks.	Use directional cutting techniques, with special care on inclined and finned trees.	Audit cutting techniques during the operation.

Assessment of the risks found during loading operations

The loading operation consists of loading the logs with the help of a front-loader-type tractor with pincers on platform trucks to be transported to the transformation center or main yard (churampa).

Table 4-7: Assessment of the risks found during loading operations

General Risks	Precautionary measures	Verifiers
Diverse accidents, due to unfavorable weather (windstorms, rain, mud, etc.).	Evaluate the risks and paralyze the operation, if necessary.	No. of accident occurrences and risk situations.
	Train employees in first aid.	% of employees trained.
Traffic accidents (hit-and-run, collisions, etc.)	Avoid overloading the machines (prevent the machine from steepening)	Evolution of the number of accidents with vehicles and machines.
	Do not climb the log pile with the machine.	
	Remove debris inside the yard, keep the yard clean.	Evaluation of the brigade's procedure during operation.

General Risks	Precautionary measures	Verifiers
	Do not rest near machines.	
Accidents due to inexperience in the execution of the activity and use of the equipment.	Train collaborators before executing the work.	No. of accident occurrences and risk situations. % of employees trained.
Accidents caused by the own use and wear of the chainsaw (absence or failure of safety elements)	Keep the safety elements in good condition (idler, brake, throttle lock, etc.)	Check the state of the safety elements. Warn operators of the risks of using chainsaws with safety elements in poor condition.
Diverse accidents, due to unfavorable weather (windstorms, rain, mud, etc.).	Evaluate the risks and paralyze the operation if necessary.	No. of accident occurrences and risk situations.
	Train employees in first aid care.	% of employees trained..
Traffic accidents (hit-and-run, collisions, etc.)	Avoid overloading the machines (prevent the machine from steepening)	Evolution of the number of accidents with vehicles and machines. Evaluation of the brigade's procedure during operation.
	Do not climb the log pile with the machine.	Audible signal during the maneuver.
	Constantly check the brake system of the loader.	
	Machines equipped with recoil sirens and horns.	Observe the distance between the machine and people.
	Maintain a safe distance limit from machines.	

General Risks	Precautionary measures	Verifiers
	Do not walk behind the loader when it is in operation. One must be visible to the operator of the loader.	
Crumbling of the load on the lorries	The base of the load must be secured.	Evolution of the number of accidents with vehicles and machines. Evaluation of the brigade's procedure during operation.
	Chains and tension ropes or cables (Picuro) in good condition shall be used	Evaluation of the brigade's procedure during operation.
	The loader shall help to tighten the chains, ensuring that the load does not crumble.	

Evaluation of the risks found during log transport.

Transport is the operation that consists in transporting logs from storage yards to a main yard (churampa) or to the industry yard, using trucks. It is an activity that requires strict control of the drivers, since they must respect the rules stipulated by the company.

Table 4-8: Evaluation of the risks found during log transport.

General Risks	Precautionary measures	Verifiers
Accidents with lumber transport trucks (hit-and-run, collisions, etc.)	Keep lights on during transport.	Evaluation of the condition of vehicles, equipment and driver behavior.
	Modernization of the vehicle fleet and continuous maintenance	Existence of logs along the road.
	Limit the speed to what is required by the company (45 km/h).	
	Give preference to smaller vehicles (vans, motorcycles)	Evolution of the number of accidents.
	Removing logs that fall on the road.	

General Risks	Precautionary measures	Verifiers
	Do not walk when the road is wet. Training and guidance to drivers on the risks of the activity and precautionary measures to be taken.	Third party account of the transport.
	In case of breakdown of a vehicle, use safety cones.	Evaluate compliance with the rules stipulated by the company.
Log falls	Loads must be well secured with chains and tension ropes or cables.	Verification of vehicles and driver behavior during transport.
Fall of trees on the sides of the road	Trees with a potential risk of falling onto the road should be cut down.	Verify the presence of trees with potential to fall along the road.

Activities and/or procedures implemented to inform workers about risks and how to minimize them.

The activities are as follows:

- **PREPARATION OF THE IPERC OF FOREST ACTIVITIES:** The preparation of the IPERC aims to identify the hazards and associated risks so that it can quantify and assess the level of risk to propose precautionary control measures to such risks. The methodology carried out was to accompany the collaborator to his daily activities and together with him, to elaborate the legal document. In this way, the information gathered is more detailed.
- **TRAINING AND COACHING:** As part of our responsibility, a training plan for our collaborators was elaborated with the objective of a safe work. The methodology that was implemented is on-site training, it is carried out in the camp in the forest and a written evaluation is recorded to evidence the understanding of it.
- **FIVE-MINUTE TALKS FOR STARTING THE TASK:** Its objective is the attention and concentration of the collaborators of the activities that they will carry out in a safe way and the awareness of the same ones before a fatal consequence for ignoring some procedure of security. All the forest activities have identified dangers associated with risks that can result in serious contingencies and that is why they receive their daily talk at the beginning of work.
- **OCCUPATIONAL HEALTH AND SAFETY PROCEDURE IN FOREST MANAGEMENT OPERATIONS:** The objective of the SSO procedure in Forest Management Operations is to inform collaborators of the dangers to associated risks they are exposed to, and at the same time to implement control measures to minimize the risks. It is very important that all activities in Forest Management operations are carried out in a safe manner.

Evidences:

<p>Five-minute talks before starting work:</p>	<p>Continuous training regarding Occupational Safety and Health</p>
	
<p>Effective supervision in the activities entrusted to our collaborators.</p>	
	
	

5 BIODIVERSITY

5.1 Net Positive Biodiversity Impacts

5.1.1 Biodiversity Changes (B1.1, B2.3)

It is demonstrated that the project's actions have been positive because they have guaranteed the ecological integrity in the forest concessions which has allowed, in turn, to protect the biodiversity in the area of the project. In other words, the project has ensured that the 97,817.4 ha of forest maintains its ecological functions and that sustainable forest management is developed in these areas for a period of more than 10 years.

Deforestation was halted, during the period there was no deforestation within the PA and 1552.43 ha in the initial Leakage Area of 159,018 ha.²⁶ The educational workshops for the local population, the implementation of friendly projects and joint work agreements, have managed to protect the biodiversity levels of this area.

This is possible thanks to the implementation of the following activities:

- Control and surveillance that allows constant monitoring in the project area to detect illegal activities.
- Training workshops mainly on topics of reduced impact harvesting (AIR), silvicultural management (usable trees, trees for future harvesting, seedlings, etc.).
- Design of the operational plan for each annual cutting plot, as well as the prohibition of wildlife hunting, restricted passage through areas of high conservation value.
 - Protection of 50 m of fiscal strip in rivers and open streams during harvesting.
 - Continuous biological monitoring of Flora and Fauna to identify the status of the populations during the course of the project.
- Positive impacts in the area as described in the PDD, due to sustainable and low impact forest management. All actions are carried out under low impact standards and according to FSC principles. Camps, roads, log yards, trails, use of machinery and equipment etc.:
 - Reduce the size of the camp site to a maximum of 0.25 ha, but always bearing in mind that all the needs of the people who will live there are covered.
 - Allow the construction of only 2 camp sites per PCA (annual harvest plot).
 - Construct camping sites in areas with reduced slope.
 - Construct roads with a low degree of slope and affecting as little as possible the watercourses.
 - Stimulate the development of secondary vegetation in adjacent areas to cover the soil and reduce erosion.
 - Implement a selective harvesting method with reduced impact: Cut trees considering techniques and criteria to safeguard the integrity of the workers, reduce impacts to the biological and physical environment and reduce wood waste due to errors in the cutting points.
 - Definition and protection of natural areas of high conservation value.

²⁶ Projected 14, 281 ha accumulated by 2018 PDD page 151

As a result of these measures, the protection of high conservation value habitats and species of flora and fauna is also guaranteed and, consequently, the maintenance of the biodiversity conditions of the project area.

All these activities will result in a positive benefit for biodiversity, bearing in mind that without the project the pressure on the area would increase, bringing with it continuous deforestation and forest degradation, fragmenting habitats and isolating populations of flora and fauna, as well as the interruption of ecological processes.

On the other hand, the parameters established in PDD page 176 were evaluated with respect to the quantification of impacts on biodiversity by the implementation of the project. Following the guidelines set out in the PDD, the values were calculated considering the intensity and spatial scale of the impact for a scenario with the presence of the project, obtaining the following results:

Table 5-1: Matrix for quantification of impacts on biodiversity in the Project area

Biophysical Component	Impact	Intensity of impact	Scale of impact	Total value	Remarks	
Native flora	Reduction of the loss and degradation of the genetic variability of timber species	2	2	2		
	Minimize the risk of extinction of local populations of timber species currently listed in Appendix II and III of CITES and other species that are gaining commercial importance within the region.	3	2	2.5		
	Minimize total loss of vegetation cover due to deforestation caused by invaders of human settlements, shifts to agriculture and pasture for cattle ranching.	3	3	3	The scale of impact is considered broad considering the size of the project area and the effectiveness of the control systems that have kept invasive events to zero.	
	Minimize the risk of alterations in the process of regeneration of natural forests due to the invasion of the area by illegal loggers.	3	2	2.5		
	Reduction of the increase in the rate of forest pests due to changes in the microclimate due to the reduction of deforestation and the conservation of fauna controlling species.	2	2	2		
	SUB TOTAL		13	11	12	

Wildlife	Reduction of loss and degradation of genetic variability and local extinction of wildlife species	3	3	3	There have been no reported cases of hunting or impacts on sites of importance for wildlife, this makes the intensity of the impact to be high. While this is obtained at the level of the entire project area, its scale will reflect a high value.
	Minimize habitat and site loss and degradation	2	2	2	
	Minimize the risk of loss of forest connectivity	2	2	2	
	SUB TOTAL	7	7	7	
Weather	Reduction of the alteration of temperature levels in microclimates due to the greater conservation of forest areas that reduces the direct exposure of solar rays to the soil.	2	2	2	
	SUB TOTAL	2	2	2	
Air	Reduction of smoke and dust emissions into the air due to the proper handling of machinery and the reduction of emissions due to the absence of burning practices thanks to the implementation of an adequate control system.	2	2	2	
	SUB TOTAL	2	2	2	
Landscape	Conservation of the landscape due to the implementation of the reduction of the impact of logging by forestry operations, the prohibition of burning within logging operations, as well as the implementation of an adequate control system avoiding invasion for change to agriculture and livestock.	3	3	3	An increase in the intensity and positive scale of the impact is justified because forest degradation levels are low and this occurs at the level of the entire project area.
	SUB TOTAL	3	3	3	
Soil	Soil conservation, reduction of erosion, compaction and pollution through proper handling of machinery, fuels and application of reduced impact practices.	2	2	2	
	SUB TOTAL	2	2	2	

Water	Conservation of water, reduction of sedimentation and contamination of water thanks to an adequate handling of machinery, fuels and the application of practices of reduced impact.	2	2	2	
	SUB TOTAL	2	2	2	
TOTAL		31	29	30	

The results obtained indicate that the impacts generated by the project on biodiversity continue to be positive in comparison to a scenario with the absence of the same. This is a consequence of the actions implemented: continuous training of personnel regarding the care of the environment, handling of machinery and fuels, prohibition of burning and hunting of wild fauna, harvesting operations carried out implementing reduced impact techniques and in a precautionary manner, effective custody system, etc.

Impacts on off-site biodiversity

The proposed activities to assess off-site biodiversity conditions have been focused on raising awareness among local people about the proper management of forest resources and their conservation. Although it is true that these activities have a much longer time horizon than presented in this report, the results obtained would indicate that, in the current conditions, the negative impacts due to the implementation of the project continue to be positive and that these values have not decreased but have been maintained over time.

These results were obtained from the evaluation of the parameters established in the PDD

Table 5-2: Matrix for quantification of negative impacts Out-side the Project area

Biophysical Component	Impact	Intensity of impact	Scale of impact	Total value
Native flora	Reduction of the loss and degradation of the genetic variability of timber species	2	2	2
	Reduction in the likelihood of extinction of local populations of timber species that are currently gaining commercial importance within the region due to illegal logging.	1	2	1.5
	Minimize the rate of deforestation due to the total loss of vegetation cover within private lands for the installation of changes towards agriculture, permanent agriculture and pasture for cattle ranching.	1	2	1.5
	Reduction in the risk of invasions in intact or residual forests containing exotic grain species and other herbaceous species.	1	2	1.5
	Reduction of the increase in the rate of forest pests due to changes in the microclimate.	1	1	1

	Loss and degradation of the genetic variability of timber species caused by deforestation of forests by private owners for the installation of new land use systems outside the project area, within the framework of this implementation.	-1	-1	-1
	SUB TOTAL	5	8	6.5
Wildlife	Reduction of loss and degradation of genetic variability and local extinction of wildlife species	2	2	2
	Minimize the risk of extinction of local wildlife species	1	2	1.5
	Reduction of loss and degradation of critical wildlife habitats and sites	1	2	1.5
	Reduction of the loss and degradation of ichthyofaunal habitats	1	1	1
	Reducing fragmentation and loss of forest connectivity	1	2	1.5
	Loss and degradation of habitats and critical wildlife sites caused by deforestation and forest degradation within private properties for the installation of new land use systems within the framework of the implementation of the REDD Project.	-1	-1	-1
	Changes in feeding patterns and habitat use of some wildlife species.	-1	-1	-1
	SUB TOTAL	4	7	5.5
Weather	Reduction of the levels of temperature change in certain sectors caused by the reduction in the extension and distribution area of soils with direct exposure to solar rays.	1	1	1
	SUB TOTAL	1	1	1
Air	Reduction of smoke and dust pollution levels in the air due to the reduction in the installation of agricultural systems, livestock and the annual burning of new forest areas and pastures for cattle ranching.	1	1	1
	Emissions of smoke and dust into the air from the entry of inputs into industrial processes for the installation of land use systems as part of project implementation.	-1	-2	-1.5
	SUB TOTAL	0	-1	-0.5
Landscape	Reduction of landscape degradation caused by forest fragmentation.	1	1	1
	Reduction of degradation due to the absence of burning practices for the installation of new land use systems.	1	2	1.5

	Degradation of the landscape by the installation of plants for the industrial processing of inputs for the installation of land use systems in the framework of project implementation.	-1	-1	-1
	Increase in noise pollution levels due to productive activities and industrial processing that will be installed within the framework of project implementation.	-1	-1	-1
	SUB TOTAL	0	1	0.5
Soil	Reduction of soil degradation by reducing deforestation for the installation of inadequate agricultural management and cattle ranching systems.	1	1	1
	Soil degradation due to erosion, compaction and contamination caused by the implementation of land use systems that implies changes in forest cover within the framework of project implementation.	-1	-1	-1
	SUB TOTAL	0	0	0
Water	Reduction of water pollution by eroded sediments, fertilizers and pesticides carried out by currents resulting from reduced deforestation for the installation of an inadequate agricultural management and livestock system.	2	2	2
	Water pollution due to the increase of eroded sediments, nutrients, fertilizers and pesticides carried out by streams as a result of the installation of new land use systems within the framework of the project implementation.	-1	-1	-1
	Water pollution by dumping waste from transformation processes in the industrial facility as part of Project implementation.	-1	-1	-1
	SUB TOTAL	0	0	0
TOTAL		10	16	13

5.1.2 Impacts of Non-native Species (B1.2)

No non-native species is used in the project since the management implemented in the project is based on the management of native species without considering plantations of exotic or introduced species.

5.1.3 Threatened Species (B1.3)

The activities developed in the project have allowed the populations of species considered as threatened to be maintained in a good state of conservation. The conservation measures and results for the period are presented below:

Table 5-3: Protection measures in place

Species	Protection measures in place	Results period 2014-2018
Cedar	Management based on silvicultural variables appropriate to the species and application of reduced impact harvesting techniques to safeguard sufficient individuals to allow the species to maintain a healthy population and thus fulfill its ecological roles in the ecosystem.	Although the species is part of the species of interest for management, it maintains a high number of remaining individuals, which represent 98.9% of the population.
Mahogany	Management based on silvicultural variables appropriate to the species and application of reduced impact harvesting techniques to safeguard sufficient individuals to allow the species to maintain a healthy population and thus fulfill its ecological roles in the ecosystem.	Although the species is part of the species of interest for management, it maintains a high number of remaining individuals, which represent 96.9% of the population.
Caspi milk	Management based on silvicultural variables appropriate to the species and application of reduced impact harvesting techniques to safeguard sufficient individuals to allow the species to maintain a healthy population and thus fulfill its ecological roles in the ecosystem.	The species is not considered within the management plan of the area.

Ojé	Management based on silvicultural variables appropriate to the species and application of reduced impact harvesting techniques to safeguard sufficient individuals to allow the species to maintain a healthy population and thus fulfill its ecological roles in the ecosystem.	This species has not yet been considered within the commercial species portfolio of the project.
Flag Bear	Hunting has been banned. Access to the area is guarded. Sites of importance to wildlife are protected.	No hunting events reported. No AVCs affected by the use are reported.
Yangunturo	Hunting has been banned. Access to the area is guarded. Sites of importance to wildlife are protected	No hunting events reported. No AVCs affected by the use are reported.
Coto mono	Hunting has been banned. Access to the area is guarded. Sites of importance to wildlife are protected	No hunting events reported. No AVCs affected by the use are reported.
Otorongo	Hunting has been banned. Access to the area is guarded. Sites of importance to wildlife are protected	No hunting events reported. No AVCs affected by the use are reported.
Sachavaca	Hunting has been banned. Access to the area is guarded. Sites of importance to wildlife are protected	No hunting events reported. No AVCs affected by the use are reported.
Grey squirrel	Hunting has been banned. Access to the area is guarded. Sites of importance to wildlife are protected	No hunting events reported. No AVCs affected by the use are reported.
Pava campanilla	Hunting has been banned. Access to the area is guarded. Sites of importance to wildlife are protected	No hunting events reported. No AVCs affected by the use are reported.
Paujil	Hunting has been banned. Access to the area is guarded. Sites of importance to wildlife are protected	No hunting events reported. No AVCs affected by the use are reported.

green-winged macaw	Hunting has been banned. Access to the area is guarded. Sites of importance to wildlife are protected	No hunting events reported. No AVCs affected by the use are reported.
Red macaw	Hunting has been banned. Access to the area is guarded. Sites of importance to wildlife are protected	No hunting events reported. No AVCs affected by the use are reported.

It will be demonstrated in the field and with information if required by the auditor.

5.1.4 Invasive Species (B1.4)

No invasive species have been introduced since the management implemented in the project is based on the management of native species by natural regeneration.

5.1.5 GMO Exclusion (B1.5)

The use of GMO has not been carried out.

5.2 Offsite Biodiversity Impacts

5.2.1 Negative Offsite Biodiversity Impact Mitigation (B2.2)

Document any actions taken during the monitoring period to mitigate potential or actual negative impacts of off-site biodiversity as a result of Project activities. Clearly identify the impact and mitigation action.

Table 5-4: Biodiversity Impacts

Negative actions	Mitigation actions	Report
The loss and degradation of the genetic variability of timber species caused by deforestation by private landowners for the installation of new land-use systems outside the REDD Project area, as part of its implementation.	Implement a support scheme for the design and development of environmentally friendly projects in communities located in the project area	The project has as one of its objectives the strengthening of existing initiatives and the development of productive projects for efficient land use or ecological projects. While such projects may involve a change in land use, this objective will be oriented towards the implementation of low-impact systems and to reduce deforestation and forest degradation in communities or sectors located outside the project area. It is intended that the rate of deforestation or degradation when implementing the project is lower than that projected in the

		model. In this sense, priority will be given to those projects that use less land area for the production of benefits (hectares / dollars used earned).
Loss and degradation of habitats and critical sites for wildlife, such as “collpas”, beds, fruit trees and caves or tree hollows, as a consequence of deforestation on private properties for the installation of new land use systems within the framework of the implementation of the REDD Project	Implement a support scheme for the design and development of environmentally friendly projects in communities located in the project area	It is expected that reducing deforestation will contribute to conserving sites of importance for wildlife.
If the implementation of land use systems under the REDD Project involves the installation of agricultural crops, they could generate changes in the food patterns and habitat use of some wildlife species with greater adaptability to changes in their habitats. This is because there are some wildlife species that feed on agricultural crops and tend to increase their populations in areas surrounding such crop cover. Among these species, the most frequent and those reported to exist inside and outside the project area are: majaz (Agouti paca), añuje (Dasyprocta spp.), wild rabbit (Sylvilagus brasiliensis), sajino (Tayassu tajacu), huangana (Tayassu pecari), etc.	If the productive projects to be implemented within the framework of the REDD project involve the installation of agricultural crops, priority will be given to the installation of those crops that involve a permanent and diversified agroforestry system and whose species are not of great interest to wildlife.	No projects have been installed that contemplate the use of crops of interest to wildlife. No agricultural crops have been installed within the framework of the REDD Project.
Emission of smoke and dust into the air through the installation of industries processing the inputs of the installed land use systems, within the framework of the implementation of the REDD Project.	If productive projects to be implemented outside the project area involve the installation of plants or industries, priority will be given to the installation of those that show a lower impact on air emissions compared to similar systems or through the use of modern technologies.	No industries or processing centers have been installed under the program of environmentally friendly projects promoted by the REDD Project.
Increase in noise pollution levels due to the productive activities and processing industries that will be installed	If the productive projects to be implemented outside the project area involve the installation of plants or	No industries or processing centers have been installed under the program of environmentally friendly

within the framework of the implementation of the REDD Project.	industries, priority will be given to the installation of those that show a lower impact on the environment due to noise emissions, compared to similar systems or through the use of modern technologies.	projects promoted by the REDD Project.
Soil degradation due to erosion, compaction and pollution caused by the implementation of land use systems involving changes in forest cover.	If productive projects to be implemented outside the project area involve changes in land cover, priority will be given to the installation of those systems that minimize changes in forest cover, that involve the installation of agroforestry systems, as well as those that involve the recovery of degraded areas.	Priority has been given to projects involving the establishment of agroforestry systems.
Water pollution due to the increase of eroded sediments, nutrients, fertilizers and pesticides transported by the currents by the installation of new land use systems within the framework of the implementation of the REDD Project.	Priority will be given to productive projects that involve the installation of industries or agroforestry systems that involve waste management or treatment measures, wastewater, and those that do not involve the use of highly toxic inputs that are difficult to decompose, such as pesticides and/or herbicides.	Priority has been given to projects that involve the establishment of agroforestry systems with limitations in the use of highly toxic agrochemicals. No industries or processing centers have been installed within the framework of environmentally friendly projects.
Water pollution from the dumping of waste from industrial transformation processes installed as part of the implementation of the REDD Project.	Priority will be given to productive projects that consider the installation of industries or processing plants that contemplate waste management or treatment measures, wastewater, and those that do not consider the use of highly toxic inputs that are difficult to decompose.	No industries or processing centers have been installed within the framework of environmentally friendly projects.

5.3 Biodiversity Impact Monitoring

5.3.1 Biodiversity Monitoring Results (B3.1)

The Biodiversity Monitoring Plan described in the PDD has been developed in item E.4.1 page 191. The results of the monitoring carried out in this verification period 2014 - 2018 are presented in table N° 5-5.

The state of the wild fauna is monitored every five years; these evaluations are carried out by specialists independent of the project. The objective of these evaluations is to know the state of the

wild fauna populations and thus be able to infer the level of impact that the management that is being implemented in the project area is causing on this component.

Although wildlife assessments cover all species that can be sighted, the Project has decided to only consider and report medium and large primates as indicator species of ecosystem health, since their populations are good indicators of the level of impact by direct hunting or by alteration of their habitats and at the same time they are easy to identify and account for during the assessments, unlike birds or other types of fauna, which are good indicators but difficult to evaluate.

In addition, the Project has planned annual monitoring focused primarily on primate and other species as seen in the table above and in the CCB indicator report.

The periodicity of some parameters was changed mainly for their practicality and to eliminate others that were not relevant for the study of the impact of the activities on flora and fauna. The following table shows the periodicity proposed in the PDD and that which has been carried out during these verification periods.

Table 5-5: Implementation of the Monitoring Plan using Wildlife as indicators

Activity	Indicator	Activities as of year 2018	Current status of activities as of 2014-2018 and results
Fauna indicators that reflect the effects of timber extraction operations: <i>Ateles chamek</i> , <i>Sciurus spadiceus</i> , <i>Sciurus spp.</i> , bird family (<i>Furnariidae</i> , <i>Thamnophilidae</i> , <i>Formicariidae</i> and <i>Picidae</i>) / Every 5 years	Population density or N° of <i>Ateles chamek</i> sightings in Forest Management Units.	An annual monitoring is carried out to know the presence of fauna species indicating good health of the ecosystem. These activities are carried out by the Project team. Every 5 years, the Project commissions an independent specialist to carry out a more in-depth evaluation of the fauna in order to know the state of its populations. During forest censuses and harvesting, the presence of HCVs is identified, these areas are protected and harvesting is excluded, which contributes to mitigating the impacts on the fauna and its habitats.	Within the Madre de Dios REDD project area, the intensity of <i>Ateles chamek</i> sightings is 3.7 ind/10km (1.18-7.29). This represents a good population density for a forest that is under forest exploitation.
Wildlife indicators that reflect the impact of illegal hunting activities: <i>Alouatta seniculus</i> , <i>Cebus apala</i>	Population density or N° of sightings of <i>Alouatta seniculus</i> and <i>Cebus apella</i> in the Forest Management Units.	Hunting is prohibited within the project area. Five Control Booths have been established that control access to the project area and restrict access to hunters. Patrols are carried out along the limits of the project area. Signs have been placed to inform of the prohibition of hunting and other illegal activities.	Within the project area, the intensity of sightings of <i>Alouatta seniculus</i> and <i>Cebus apella</i> was 2.03 ind/10km (0.67-3.23) and 3.28 ind/10km (1.01-8.77) respectively. This represents a good species density for a forest that is subject to logging operations. The easy observation of wild fauna species and in particular of species that are generally subject to hunting pressure in other places and whose populations are sensitive to anthropogenic activities, indicate that there is no hunting in the area and that forestry activities are not affecting their populations.

Activity	Indicator	Activities as of year 2018	Current status of activities as of 2014-2018 and results
Species to be protected: <i>Cedrela odorata</i> , <i>Swietenia macrophylla</i> , <i>Galactodendron utilisima</i> , <i>Ficus anthelmintica</i> , <i>Myrmecophaga tridactyla</i> , <i>Priodontes maximum</i> , <i>Alouatta seniculus</i> , <i>Panthera onca</i> , <i>Tapirus terrestris</i> , <i>Sciurus sanborni/ignitus</i> , <i>Pipile cumanensis</i> , <i>Mitu tuberosum</i> , <i>Ara chloropterus</i> , <i>Ara macao</i>	% of remaining seedlings and trees of <i>Swietenia macrophylla</i> post-harvest. % of Remaining seedlings and trees of <i>Cedrela odorata</i> post-harvest. No. of hunting events for protected wildlife species.	The Project implements a polycyclic management system based on the natural regeneration of the forest, in this framework implements a selective use of reduced impact. producing a scheme of "Productive Conservation" of the forests. Only the harvesting of trees above the DMC is allowed and with a harvest intensity that allows the natural regeneration of the intervened species. Hunting is prohibited within the project area. Five Control Booths have been established that control access to the project area and restrict access to hunters. Patrols are carried out along the limits of the project area. Signs have been placed to inform of the prohibition of hunting and other illegal activities.	During the 2014-2018 period, the percentage of post-harvest remnants of <i>Swietenia macrophylla</i> was 96.9%. For <i>Cedrela odorata</i> it was 98.9%. This amount of remnants in each species, added to the individuals of diameter classes less than 10 cm of DAP, assure the population's health, as well as the fulfillment of their ecological functions in the Forest Management Units. During 2014-2018, there were no recorded or reported hunting events within the project area.

Table 5-6: Updating the periodicity of the evaluated parameters for each biodiversity monitoring report²⁷

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
Abundance of potentially harvestable trees/specie/ha (N° of harvestable trees by specie in a determined area)	annual	annual		
Total abundance/specie/diametric class/ha (total number of individuals by specie in a determined area, arranged by diametric class)	annual		Discarded. They do not present relevant information for the REDD project objectives. These are indicators which are employed to identify the wood potential of the forest and it is employed for the forestry management operations.	
Total abundance/specie/ha (total number of individuals by specie in a determined area)	annual		Discarded. They do not present relevant information for the REDD project objectives. These are indicators which are employed to identify the wood potential of the forest and it is employed for the forestry management operations.	
Frequency/ha (existence or absence of a specie within a determined sub-plot)	annual		Discarded. They do not present relevant information for the REDD project	

²⁷ All the indicators of the management plan are available if required.

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
Dominance of harvestable trees/specie/ha (area occupied by the harvestable trees of each specie within a certain area)	annual		objectives. These are indicators which are employed to identify the wood potential of the forest and it is employed for the forestry management operations as primary input for the calculation of the Importance Value of a certain specie with the objective of getting to know its weight in the forestry species population and therefore determine its viability for management.	
Total dominance/specie/diametric class/ha (area occupied by each specie, arranged by diametric class within a certain area)	annual			
Total dominancy/specie/ha (area occupied by each specie within a certain area)	annual			
Capacity of the forest of increasing the number of trees as a result of the survival and growth of the juvenile individuals. (Number of individuals that surpasses the minimum limit of a determined diametric class annually)	annual	annual		
Mortality/specie/ha. (N° of dead individuals within a certain period of time and area)	annual	annual		
Current sociological position. (Height of individuals/class of height)	annual		Discarded. It does not present relevant information for the REDD project objectives. It is an indicator which is employed to know the vertical structure of the forest with the objective of acquiring complementary information for the decision-making process about wood species.	Dynamics and structure report (PPM)
Annual growth. (Comparison of DAP2-DAP1 in random individuals)	annual	biannual		Growth rate report (AP)

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
N° of native fauna sights/specie (measures the annual evolution of native fauna sights within the exploitation areas)	annual	annual		
Area deforested by buildings (Ha).	annual	annual		Annual environmental monitoring report of forest operations
Watercourses affected by roads. (N°/PCA)	annual	annual		Annual environmental monitoring report of forest operations
Area impacted by tree felling. Efficiency of directed felling	annual	annual		Annual environmental monitoring report of forest operations
Trees (DAP > 10 cm) damaged by the use of trees. (N° of individuals affected/ tree harvested)	annual	annual		Annual environmental monitoring report of forest operations
N° of affected individuals/interest species/harvested tree (DBH >10cm)	annual		Discarded. They do not present relevant information for the REDD project objectives. The loss of carbon due to management collateral damage is represented in our calculations by the factor LDF (0.67 TnC/m3). These indicators are only applicable to our sustainable management project.	
N° of affected seeding trees/harvested tree	annual			
N° of affected trees of future harvest/harvested tree	annual			
N° of affected trees/dragging tree (DBH >10cm / injuries by a blow or friction)	annual			
Drainage that leads to watercourses within the PCA. (N° of drains in each PCA)	annual	annual		Annual environmental monitoring report of forest operations
Extraction of non-wood products (N° products)	annual	annual		Annual environmental monitoring report of forest operations
N° of the identified non-wood resources N° of the non-wood resources that were inventoried	annual	annual		
Volume extracted annually. (m3)	annual	annual		Annual environmental monitoring report of forest operations

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
Extraction efficiency and census quality. (Extracted volume / censored volume / PCA)	annual		Discarded. They do not present relevant information for the REDD project objectives. The information is only applicable to our sustainable forest management project.	Annual environmental monitoring report of forest operations
% of decreasing de non-working days per activity (efficacy in the logistics and planning of the infield work)	Quarterly		Discarded. They do not present relevant information for the REDD project objectives. The information is only applicable to our sustainable forest management project.	
Unit costs (commercial census, logging, trawling and transport) (cost/m3/activity/month)	biannual	annual		Cost center annual report
Evaluation of any use by the people living in the camping sites of water from water courses.	Once a year	Once a year		
Measurement of the erosion degree. Set up of sampling plots in camping sites, roads and paths areas, felling and cutting up areas, wood extraction areas, as well as in areas without any kind of intervention as a tester.	Once a year after the rainy season		Discarded. Since the natural forest cover is maintained the soil erosion is negligible.	
Number of sick people.	Once a month	Once a month		
Measurement of roads, wood storage sites and camping site sizes in sampling points.	Once a year during the dry season			
Evaluation of selected water courses. Number of felled trees in the river edges.	Once a year	Once a year		

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
Number of contact points of the forestry canopy over the roads	Once a year during the dry season	Once a year during the dry season		
New and unresolved RNCs. (Closed RNCs)	annual	annual		Annual environmental monitoring report of forest operations
Evaluation of the DFFS/OSINFOR. (Regulation of the entity)	annual	annual		Annual environmental monitoring report of forest operations
Census: Ha/year	annual		Discarded. They do not present relevant information for the REDD project objectives. The information is only applicable to our sustainable forest management project.	Annual environmental monitoring report of forest operations
Census: number of species counted	annual		Discarded. They do not present relevant information for the REDD project objectives. The information is only applicable to our sustainable forest management project.	Annual environmental monitoring report of forest operations
Census: cost/census/ha	annual	annual		Cost center annual report
Census: cost/census/m3	annual	annual		Cost center annual report
Points of deforested areas. Evaluation of satellite images (once a year) – invasions	Once a year	Annual or period		Monitoring Report on Deforestation and Degradation
Random evaluation of machinery used in forestry operations	Once a year	annual		Annual environmental monitoring report of forest operations
Public events and workers drinking alcohol within the area (N°)	Once a year		Discarded. They do not present relevant information for the REDD project objectives. The information is only applicable to our sustainable forest management project.	Annual social monitoring report

Component	Periodicity in the PDD	Current Periodicity	Justification	Source
Camp area: Evaluate if the site is adequate and the existence of a platform	annual	annual		Annual environmental monitoring report of forest operations
Machinery maintenance: Random evaluation.	annual	annual		Annual environmental monitoring report of forest operations
Roads: verify that they are closed during the rainy season	1 time per event	annual		Annual environmental monitoring report of forest operations
Temporary roads: Verify that the roads are closed.	once a year in the dry season	annual		Annual environmental monitoring report of forest operations
Illegal exploitation: record of volume and species	annual	annual		Annual environmental monitoring report of forest operations
Security booths. (N° of monitoring posts in the access to the project area	annual	annual		Annual environmental monitoring report of forest operations
Wildlife (Primates): Ateles chamek - Population density	annual	quinquennial	New. This indicator is incorporated because it is necessary to monitor the health of wildlife populations that are key indicators under low impact management operations, no hunting and therefore for the ecosystem's health	Wildlife Assessment Report
Nesting sites and presence of collpas affected by the activities. N° of places	annual	annual		Annual environmental monitoring report of forest operations
Illegal hunting	Once a month	annual		Annual environmental monitoring report of forest operations

5.4 Criterion: Native Species Use (B4)

Only native species are used

5.5 Optional Criterion: Water and Soil Resource Enhancement

5.5.1 Water and Soil Enhancement Activities (B5.1)

All water courses within the Project area, from the largest to the smallest are considered for the planning of the use. A buffer zone of 25 meters on both sides of rivers and open gorges has been defined as a protected area and clearly marked on the planning maps of harvesting activities. Through this specific action, the protection of water courses in the project area is guaranteed.

Measures to prevent the alteration of watercourses by forest operations and the contamination of water courses by the usual anthropogenic activities at camp sites are also indicated in the General Forest Management Plan, the Forest Operations Manual and the Regulation of Forest Management Practices. In this period, the measures determined to prevent the alteration of the water courses have been executed (taken from Table 53 of the PDD. Item E.3.3):

- In the case of large streams or open ravines, trees that are within 25 m from the edge of the stream cannot be cut. In the case of small streams, the selected method will minimize the risk of trees falling on these water courses, thus avoiding impacts on water courses.
- Training has been provided for all personnel regarding the forest management plan and the forest operations regulations.
- Fuel and lubricants have not been recharged near water courses and the machinery has not been washed in the water courses.
- Transportation on rainy days has been avoided (water pollution-turbidity)

- Accurate regulations have been established for the handling of fuels, lubricants and other toxic substances, as well as for the repair of machinery

Consequently, the quality of water for the communities around the project area is assured.

The project has determined a list of measures to be carried out with the objective of avoiding soil erosion and degradation and ensuring the sustainable management of this important natural resource. The measures considered and implemented were:

- To avoid erosion when establishing the camps, areas with a low degree of slope were selected. Suitable areas to be cleared were determined based on the size of the camp to be built, leveling, construction of channels to remove the water, and reforestation with native species in areas free of construction if necessary.
- The efficient construction of roads was planned in order to minimize the area to be affected. Technical definitions have been taken into account for the construction.
- Road construction was related to the degree of slope. The roads have been maintained and during the rainy season they have been closed. The roads, bridges and culverts have been adequately designed to prevent erosion.
- The establishment of natural regeneration in the exposed and unused areas has been stimulated.
- The method of selective harvesting and directed felling has been carried out, which prevents the trees from falling on mounds and, consequently, causing the elimination of the earth.
- The soil has been protected, leaving biomass of trees felled, as much as possible.
- Harvesting operations in areas with a high degree of slope have been limited.
- Establishment of precise regulations for the handling of fuels, lubricants and other toxic substances, as well as for the repair of machinery.
- Training courses for all personnel regarding the forest management plan and the forest operations regulations.

As a consequence of the implementation of these measures, it has been possible to minimize the impact of operations on the entire area worked and its monitoring serves to improve field operations. The following table shows in detail the monitoring carried out for both components, as well as the landscape component that gives us an overview of the impacts on forest cover due to the activities carried out in the project area.

5.5.2 Activity Benefits (B5.2)

Table 5-7: Activities related to the management of water and soil resources

Activity	Indicator	Current status - Activities carried out in the period 2014-2018
Landscape: conservation of landscape due to the implementation of the reduction of impacts produced by harvesting operations, absence of fire and an adequate control system.	FSC Annual Audit Approved	Maderacre and Maderyja have passed the FSC audits for the period 2014-2018, which implies that within the Madre de Dios REDD project all forestry operations are being executed according to criteria of reduced impact, burning is prohibited and there is a system of adequate control and functioning.
Soil: soil conservation, reduction of erosion, compaction and contamination due to proper handling of machinery, fuels, etc.	No. deviations in dragging roads. N° of fuel spills on the ground	During the 2010 period, there were no deviations in the dragging path or spillage of fuel registered in the soil.
Water: water conservation, reduction of sedimentation and water pollution due to proper handling of machinery, fuels, etc.	N° of blocked water courses N° of fuel spills in the water	Within the Madre de Dios REDD Project, During the period 2014-2018, there was obstruction of seasonal water courses and low flow. There were no spills of fuel in the water.

6 ADDITIONAL PROJECT IMPLEMENTATION INFORMATION

A continuación, se presenta una relación de documentos que proveen información sobre las actividades de monitoreo del proyecto:

Documento	Indicador Estándar CCB
Concession contracts	G5. Land Tenure
General plan for forest management	G5. Land Tenure G6. Legal Status G7. Adaptive Management for Sustainability CL4. Adapting to Climate Change and Climate Variability B5. Water and Soil Resource Enhancement
Operational Plans 2014 - 2018	G5. Land Tenure G6. Legal Status G7. Adaptive Management for Sustainability CL4. Adapting to Climate Change and Climate Variability B5. Water and Soil Resource Enhancement
AVC Identification study	G7. Adaptive Management for Sustainability
Manual of forest management practices	CL4. Adapting to Climate Change and Climate Variability B5. Water and Soil Resource Enhancement
Forest management operations regulation	CL4. Adapting to Climate Change and Climate Variability B5. Water and Soil Resource Enhancement
Anthropological Protocol of Action in cas of PIACI	CM5 Mejores practicas con respect a las comunidades
PDD REDD	G2 Proyecciones de línea base G3 Objetivos y viabilidad del Project
VCS Monitoring Reports 2014-2018 Monitoring Reports on deforestation 2014-2018- Excel files. PRA 2015 y 2017	CL1/CL2 Positive climatic impacts CL3 Monitoring of climate impact
Protocol for the transformation of conflicts	CM1 Net positive benefits to the community. Community involvement CM5 Best practices with respect to the community
Social Monitoring	CM1 net positive benefits to the community CM2 Positive net community impacts CM3 Monitoring of community impacts
Fiendly Project excecution reports	CM2 Positive net community impacts CM3 Monitoring of community impacts
Timeline of environmentally friendly projects	CM2 Positive net community impacts CM3 Monitoring of community impacts

Agreement with stakeholders	CM5 Best practices with respect to communities CM2 Positive net community impacts CM4 Capacity building
Public summary of PGMF	G8. Knowledge Dissemination
Training report	CM4 Capacity building
Workshop report on citizen participation and advisory committee	CM4 Capacity building
Report of volunteer missions planete urgence 2018	CM4 Capacity building CM2 Positive net community impacts
Social management plans 2014 2018	CM5 Best practices with respect to communities

7 ADDITIONAL PROJECT IMPACT INFORMATION

A continuación, se presenta una relación de documentos que proveen información sobre las actividades de monitoreo del proyecto:

Documento	Indicador Estándar CCB
Methodological guide for monitoring degradation in forest operations	G7. Adaptive Management for Sustainability
Monitoring reports of degradation of forest operations (2014 – 2018)	G7. Adaptive Management for Sustainability CL4. Adapting to Climate Change and Climate Variability B1. Net Positive Biodiversity Impacts B3. Biodiversity Impact Monitoring B5. Water and Soil Resource Enhancement
Forest utilization Report 2014-2018	B1. Net Positive Biodiversity Impacts B3. Biodiversity Impact Monitoring
Monitoring of AVC 2014-2018	G7. Adaptive Management for Sustainability B1. Net Positive Biodiversity Impacts B3. Biodiversity Impact Monitoring
Guide for the monitoring of wildlife	G7. Adaptive Management for Sustainability
Wildlife monitoring reports	G7. Adaptive Management for Sustainability B1. Net Positive Biodiversity Impacts B3. Biodiversity Impact Monitoring
Report of the deforestation calculation 2014-2018	B1. Net Positive Biodiversity Impacts
Public Summary of monitoring results	G8. Knowledge Dissemination
Resumen public de monitoreo social	G8. Knowledge Dissemination