MONITORING REPORT TITLE

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CONTENTS

1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

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 the obtention of 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, 2016, 2017 and, 2018.

Up to 2019, the acumulated avoided emissions have been **9´367,760.937** t CO2-e and the annual avoid emissions have been **833 007.60**t CO2-e.

1.2 Sectoral Scope and Project Type

According to VCS categories, the Madre de Dios Amazon REDD Project falls under the sectoral scope 14 Agriculture, Forestry and Other Land Use, and according to the VCS AFOLU Requirements it falls under the definition of Reduced Emissions from Deforestation and Degradation (REDD), specifically under Avoiding Unplanned Deforestation and Degradation (AUDD). This means the project is proposing activities to reduce net GHG emissions by stopping deforestation and/or degradation of degraded to mature forests that would have occurred in any forest configuration, as a result of socio-economic forces that promote alternative uses of forest land and because of the inability of institutions to control these activities, etc. In addition, the project occurs in a frontier configuration regarding as the deforestation/degradation is caused by the expansion of roads and other infrastructure into forest lands, which improves forest access and leads to an increase of encroachment by human populations, to do subsistence farming and fuel wood gathering on previously inaccessible forest lands.

In addition to this and as required by the REDD-MF Module of the applied REDD Methodology Modules, the following decision tree was used to identify the type of VCS-eligible REDD project activity:

Is the forest land expected to be converted to non-forest land in the baseline case?			
YES[8]		**NO**	
Is the land legally authorized and documented to be converted to non-forest?		Is the forest expected to degrade by fuelwood extraction or charcoal production, in the baseline case	
YES[9]	**NO**	**YES**	**NO**
Avoided planned deforestation	Avoided unplanned deforestation	Avoided forest degradation	Proposed project is not a VCS REDD[10] activity currently covered by the module framework

This project is not a grouped project

1.3 Project Proponent

Provide contact information for the project proponent(s). Copy and paste the table as needed.

Organization name	Maderacre Río Acre S.A.C (MADERACRE)
Contact person	José Luis Canchaya Toledo
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Organization name	Maderera Río Yaverija S.A.C. (MADERYJA)
Contact person	Alejandro Ji
Title	Coordinador
Address	Carretera Iñapari Iberia Km 5 Iñapari Tahuamanu- Madre de Dios
Telephone	+51 986143311
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Organization name	GREENOXX SOCIEDAD CIVIL
Contact person	Silvia Gómez Caviglia
Title	Executive Vice-President
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Email	silvia@greenoxx.com

1.4 Other Entities Involved in the Project

N/A. There are not other Entities involved in the project

1.5 Project Start Date

The project activities started to be implemented on 1st January 2009. By the end of March 2008, an agreement was signed between Greenoxx NGO and both concessions to implement the REDD Project. The project started to be effectively implemented in 2009, with the design of social plans, biodiversity studies, specific modeling and monitoring activities required for the achievement of validation according to the CCB Standard (Climate, Community and Biodiversity).

Said validation was obtained by the end of 2009, with Gold Level qualification. This date coincides also with the completion of the pavement of the Inter Oceanic Highway, a fact that completely changed the dynamic of deforestation in the area, In terms of impact, the Inter Oceanic Highway has greatly intensified the risk of deforestation and therefore the measures that project proponents have to implement to be able to combat said risk.

1.6 Project Crediting Period

- Crediting period start date: 1 January 2009.
- Crediting period end date: 31 December 2046.
- Project crediting period: 38 years.

1.7 Project Location

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

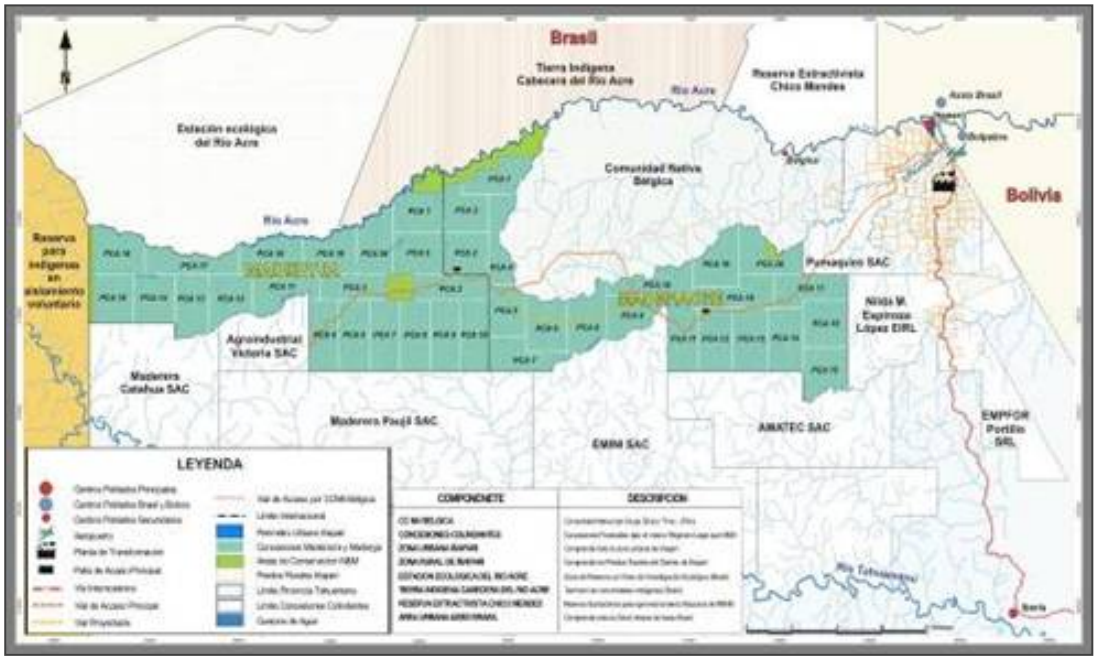


Fig. 2: Location of the Madre de Dios Amazon REDD Project and its boundaries

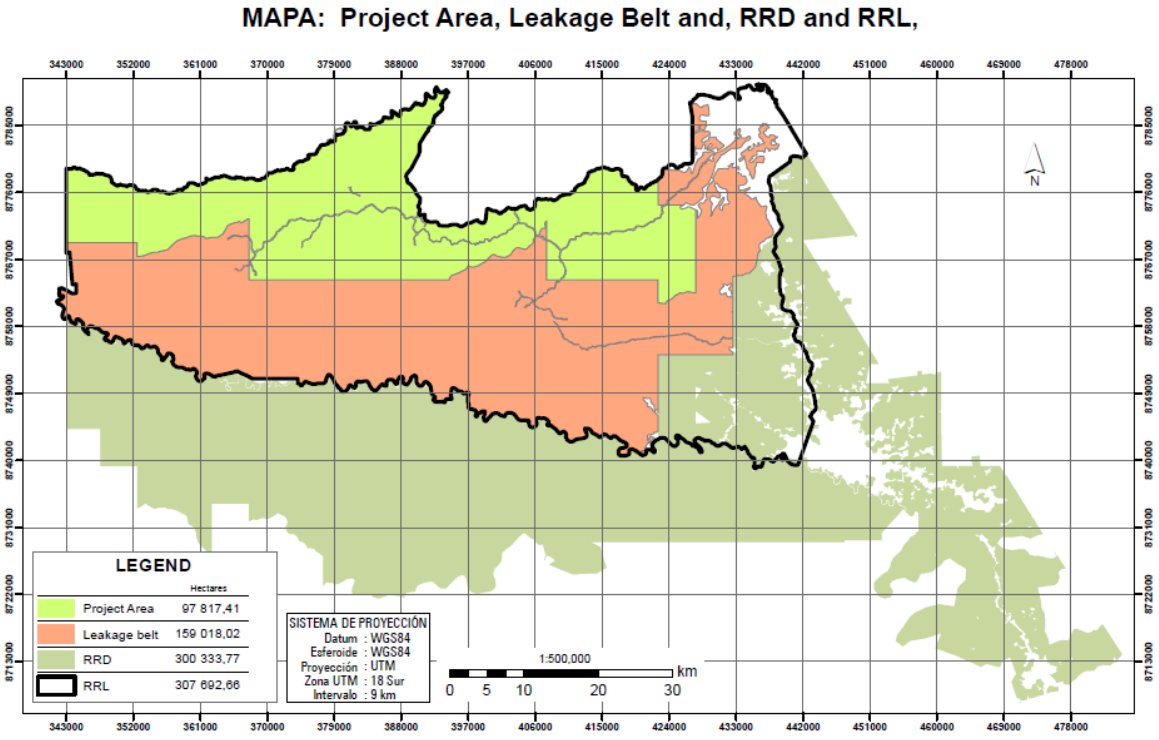


Fig. 3: Map of the Project Boundaries

In the following table, the GPS coordinates of each polygon vertex is presented:

Table 1.7-1: Polygon vertexes of the project area

Vertex	East	North
1	438521	8787582
2	446766	8774269
3	432562	8764691
4	432562	8754249
5	422557	8754249
6	422557	8746086
7	420910	8740962
8	322540	8777024
9	323813	8783623
10	333038	8790865

Total area of project, leakage belt and reference region:

Table 1.7- 2: Project Area, Leakage Belt and Reference Regions

Type	TOTAL
PA	97,817.41
LB	159,018.02
RRL	307,692.66
RRD	300,333.77

The determination of the regions detailed above was carried out taking into account the requirements of the BL-UP Module of the REDD Methodology Modules. See BL-UP module for a detailed description and explanation of the project area, leakage belt and project zone determination.

1.8 Title and Reference of Methodology

AFOLU Requirements: VCS Version 4.0

Methodology Information:

- Approved VCS Methodology VM0007
- Methodology Framework Report (REDD-MF) Version 1.5

Modules Information:

- Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools (CP-AB), v1.1
- Estimation of baseline carbon stock changes and greenhouse gas emissions from unplanned deforestation and avoinging unplanned wetland degradation (BL-UP), v3.3
- Estimation of emissions from activity shifting for avoided unplanned deforestation and avoinging unplanned wetland degradation (LK-ASU), v1.2
- Estimation of greenhouse gas emissions from biomass and peat burning (E-BPB), v1.2
- Estimation of emissions from fossil fuel combustion (E-FFC), v1.0
- Methods for monitoring of greenhouse gas emissions and removals (M-REDD), v2.2
- Methods for stratification of the project area (X-STR), v1.2

- Estimation of uncertainty for REDD project activities (X-UNC), v2.2

Tools Information:

- Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities (Approved VCS Tool VT001), v1.0
- AFOLU non-permanence risk tool, v4.0
- Tool for testing significance of GHG emissions in A/R CDM project activities (EB_31), v1.0

1.9 Participation under other GHG Programs

N/A. The project has not participated in other GHG Programs

1.10 Other Forms of Credit

N/A. The project has not other forms of credit

1.11 Sustainable Development

The project will contribute to the goverments objective of reducing deforestation. Through actions such as patrolling project areas, training or environmental education actions for the population. The year 2019, this different actions, included the friendly projects has have a progress. This can be seen in the item 3 of this report. This can be seen in the item 3 of this report.

In addition, it is part of the actions of the project concessions to follow the forest management rules of the Peruvian state and the rule imposed by the FSC, wich guarantees that the ecosystem is maintained and the biodiversity of the area is conserved. The work of monitoring biodiversity as part of the CCB standards and working wirh the communities contribute to maintain the customs of people who live in the forest and improve them with respect to forest maintenance.

2 SAFEGUARDS

2.1 No Net Harm

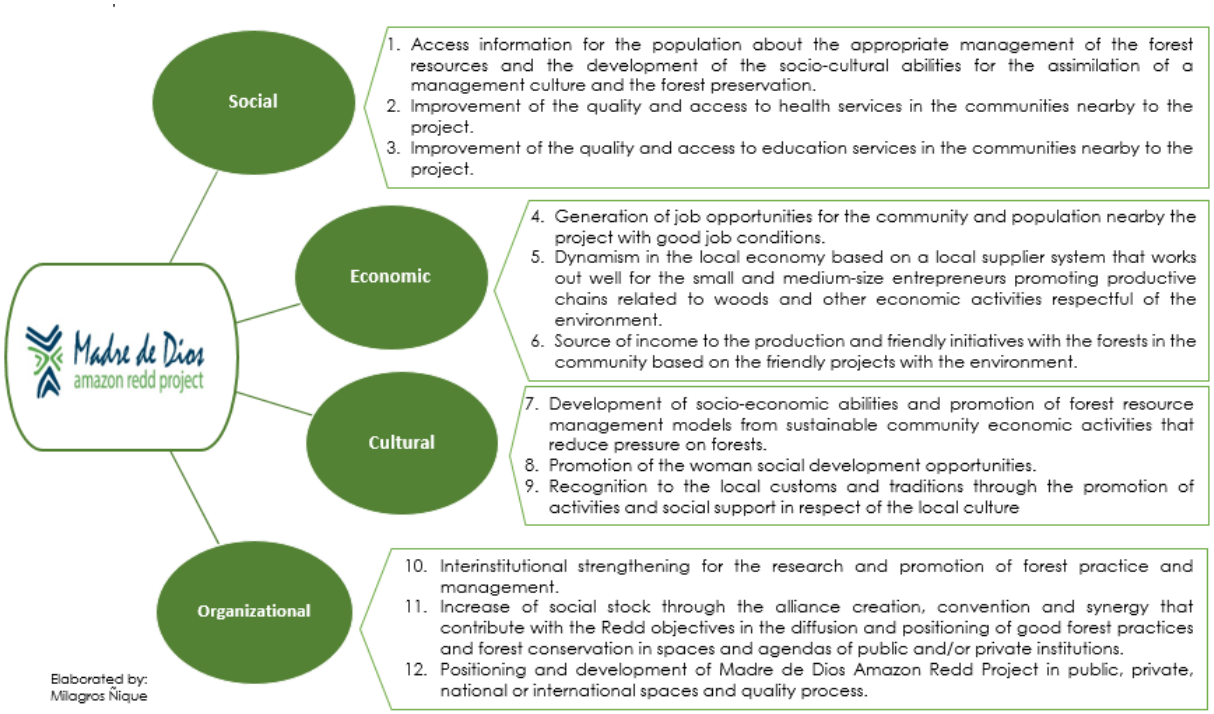
We do not identificate any potential negative environmental and socio-economic impacts. The impacts are positive.

Positive Impacts: They are indicated in table 2.1-1. The impacts are identified as positive impacts at the social level.
The project avoids negative impacts on the community or populations since:

- Maintains communication and information with localities in the social sphere.
- No social conflicts have been registered since the beginning of the project.
- The PRA studies (which evaluate the degradation potential in the population), whose last application was in 2019, show low potential for tree degradation.
- Social support activities are maintained that promote local development.

It should also be noted that under the FSC certificate, minimal impacts to resources are evaluated due to the use of forest resources. https://info.fsc.org/certificate.php?lang=SPA

Under the CCB standard, certified with which it has a project, the positive impacts are observed under the themes of Biodiversity, Climate and Community.
https://registry.verra.org/app/projectDetail/CCB/844



Positive Influence	Description of the Impact
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.	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. 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 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. 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.
2. Improving the quality of and access to health services in communities	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

Positive Influence	Description of the Impact
and localities close to the project.	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. 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. 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 in medicines. 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.
3. Improved quality and access to education services in communities and localities close to the project.	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 same way, we share the experience of harvesting with future professionals in the field, universities and educational institutions in the area. 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. 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.
4. Generation of employment opportunities for the community and population close to the project with good labor conditions.	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 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.

Positive Influence	Description of the Impact
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.	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. 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
6. Economic contribution to productive and forest-friendly initiatives in the community from environmentally friendly projects.	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. The total investment of the entire implementation in relation to the financial aspect contributed by REDD and with external sources to environmentally friendly projects since 2015 is US$ 92,656.00.
7. Development of socioeconomic capacities in the community through the socialization of exemplary forest	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. 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

Positive Influence	Description of the Impact
management processes and the promotion of forest resource management models of sustainable economic activities from community initiatives that reduce pressure on forests.	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. 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.
8. Promotion of opportunities for the social development of women in nearby communities and populations.	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. Job opportunities have been targeted to the Native Community of Bélgica providing employment opportunities to women, if applicable. 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 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.	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.

Positive Influence	Description of the Impact
10. Inter-institutional strengthening for research and promotion of forest management practices.	The possibility of increasing the Project's value chains, not only in forest management and community benefits, but also in the growth and 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.
11. Increase of social capital through the generation of alliances, agreements and synergies that contribute to the objectives of Redd in the dissemination and positioning of good forestry practices and forest conservation in spaces and agendas of public and/or private institutions.	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 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. Positioning of FSC criteria towards the native community of Bélgica.
12. Positioning and institutional	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

Positive Influence	Description of the Impact
development of Madre de Dios Amazon REDD Project in public, private, national or international spaces and quality processes.	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.

2.2 Local Stakeholder Consultation

Processes and results of the communication with the interested parties[1]

The Madre de Dios Amazon REDD Project carries out informative and participation instances within the project zone, both with the public and private sectors. These instances have been taking place since the start date of the project and have been recognized and legitimated within its social environment. During these instances, activities are reported and information is given regarding the sustainable management that is done in the project area, the forestry management standards applied, the conservation of biodiversity and the Madre de Dios Amazon REDD Project in general. The project counts with the following mechanisms of communication:

- Consultive Committee: there is a Consultive Committee (integrated by stakeholders that represent the main groups of local interest) with whom constant communication is maintained. At the same time, meetings take place twice a year minimum to share information on the project as well as the annual planning. The Consultive Committee is confirmed by the following participants: a representative from the Iñapari Mother's Club; a representative from the Belgium Native Community (Yine tribe); a representative from the Provincial Municipality of; a representative from La Colonia neighbourhood and a representative from the Educational Institute of Iñapari.
- Citizen Participation Workshops: they are understood as broader mechanisms which provide the citizens with the right to be informed and provide feedback so they can be informed, generate discussions and exchange opinions regarding the forestry operations within the project area. Its objective is to share information with stakeholders and groups of interest regarding the activities of the concessions and receive opinions, concerns and consultations. It is an open call and also to the main local institutions in the nearby areas to the project.
- Socialization and participation at events: as part of the communication and information transparency policies, the project establishes means of information to communicate the results of each harvest, the good practices in forest management and/or any other information of social interest. The following chart describes the participative activities:

Table 2.2- 1: Communication activities with the interested parties

[1] Se presenta los procesos, métodos de involucramiento de partes interesadas, participantes.

Name of the activity	Date	Procedure / Method	Participants	Results
First Citizen Participation Workshop	03/05/2019	The open call was done through radio diffusion and the delivery of invitation letters to the different public and private institutions. During the meeting an education presentation was carried out with the support of a multimedia projector and consultations and questions were encouraged among the people present.	• Forestry Concessions such as Catahua and Canales. • La Colonia Neighbourhood. • Iñapari Educational Institution • Provincial Municipality of Tahuamanu. • Provincial Subprefecture provincial of Tahuamanu.	The initiation of forestry operations for the project in 2019 was mentioned, informing about the sustainable management that the concessions are carrying out, the forestry management strategy, the certifications that it has achieved (not only FSC but also CCB and VCS) and the chain custody process among others. Diffusion of the social responsibility mechanisms as well as the project in general. A presentation was done, transmitting the commitment of the project, a brief description of the social activities and support was done. Within the consultations or feedback, one of the comments was that the institutions appreciate the support to health and education that the project is doing, as well as the improvements in labour conditions that the concessions have been doing.
First Meeting with the Consultive Committee	03/05/2019	The call was done through radio diffusion and the delivery of invitation letters to the members of the Consultive Committee, visits and telephone calls. During the meeting the expositive methodology was employed with the support of a multimedia projector, afterwards active participation took place as well as coordination with the assistants.	• Provincial Municipality of Tahuamanu • “La Colonia” Neighbourhood • Educational Institution Elena Bertha.	There were 3 members in the Consultive Committee. The diffusion of the attention procedures, tasks and objectives of the project was achieved. Opinions, suggestions and subjects of interest for the population were collected. The contribution of the committee was to continue motivating the culture and sports in Iñapari, continue with the measures to mitigate dust in the streets (the project has been taking action in this sense since 2018) and participate of the measures to keep the population safe.
Public Social Summary	08/04/2019	The diffusion of the Public Social Summary is carried out through the delivery of letters to the different public and private institutions and to the representatives of the neighbourhoods, communities and human settlements.	• Main public institutions, private companies, human settlements and rural communities in the area of social influence of the project.	20 Summaries were delivered to 20 groups of interest. The social team transmitted and explained the information of the different social activities such as timber donations, sports equipment, and the importance of the social monitoring work such as local employment and health insurance among others. The socialization of the social results for 2018 was done.

Name of the activity	Date	Procedure / Method	Participants	Results
Second Citizen Participation Workshop	10/12/2019	The open call was done through radio diffusion and the delivery of invitation letters to the different public and private institutions. During the meeting an education presentation was carried out with the support of a multimedia projector and consultations and questions were encouraged among the people present.	• Educational Institution Elena Bertha from Iñapari. • Provincial Municipality from Tahuamanu. • Human Settlement Nuevo Iñapari • Elders Association • Forest Company Catahua • Subprefecture from the Province of Tahuamanu	Information on the finalization of the forestry operations within the project area for 2019 was transmitted, informing about the sustainable development of the concessions, the forestry management strategy for the sustainability of the forest, certifications, the chain custody process, among others. The project attention instruments were diffused, also transmitting the commitment of the project. A brief explanation on the support and social activities of the project during 2019 was carried out, as well as the advance in the implementation of the environmentally friendly productive projects. The public meeting counted with 11 assistants. The feedback received suggested the continuation of the social support for the next year.
Second Meeting with the Consultive Committee	10/12/2019	The call was done through radio diffusion and the delivery of invitation letters to the members of the Consultive Committee, visits and telephone calls. During the meeting the expositive methodology was employed with the support of a multimedia projector, afterwards active participation took place as well as coordination with the assistants.	• Provincial Municipality of Tahuamanu • Iñapari Mother's Club. • Iñapari Educational Institute.	The committee meeting took place with the assistance of 3 members, achieving the diffusion of management instruments, the forestry management of the project, its tasks and objectives. Opinions, suggestions and topics of interest were received. Within the suggestions received one of them asked to consider a new call for member of the Consultive Committee.

Elaboración Propia

After the conduction of participative instances, the project evaluates the feedback received and the social changes that can occur during the forestry operation year. Each activity has its own thorough report, carried out by the social area of the project, where the verification means of the realization of said activities are shown. The suggestions received in the participations instances have not required any changes to the design of the project so far. All the same, they are considered in order to feedback the processes in the social activities. As an example, during 2020 a new call for member of the Consultive Committee will take place and the project will continue its support to the health and education areas, it will also try to participate or promote sports activities.

Besides the instances aforementioned, the representatives of the project assist to information and/or participation instances that are called by groups of interest for the social area of the project. In 2019, the project participated in some of the following activities, among others:

- Specialized regional dialogue on education for 18 year or more people.
- Public Consultation on citizen security called by the Provincial Municipality of Tahuamanu.
- Coordination meeting about National Celebrations (Provincial Municipality of Tahuamanu)
- Sectorial Assembly of the Management Committee of the Conservation Area Alto Purús - Madre de Dios Sector.
- Perception workshop on the impact of the interoceanic road after 20 years.
- Emergency meeting for the evaluation of the emergency situation in face of the forestry fires and burning.

The Madre de Dios Amazon REDD Project establishes constructive relationships with the interested parties and the nearby populations participating and being the promoter of good practices as to the forest management. Besides this, it is conscious of the reality in which it is immerse, respecting the local culture that it has learnt as a result of the entrepreneurial exercise carried out during the operational years. In this way, the trust bonds and continuous work have been fortified as the years pass, and it intends to continue building relationships in that same direction.

Communication of the monitoring results[2].

With regards to the social area, as has been mentioned before there were two instances of socialization of the results of the social work that has been carried out. The first public social summary regarding the results of the year 2019 has been distributed among 20 groups of interest. The dissemination of the public social summary has been done through the delivery of letters to the different public and private institutions and to representatives of the Neighbourhoods, Communities and Human Settlements. Afterwards, the dissemination of the public summary referred to environmental and forestry monitoring - public summary referred to social monitoring was done, among 18 representatives of different institutions from the social environment of the project.

Within the Citizen Participation Workshops, which are instances to dialogue with the community the following were presented:

- The management tasks that the project develops and the monitoring procedures during operations.
- The achievements of the project regarding its certifications and results of the audits, among which are the VCS and CCB Standards certifications are disseminated.
- The advances in the implementation of the Environmentally Friendly Productive Projects are communicated, as well as the open call for new project contests. Local media is also used for communication.

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2.3 AFOLU-Specific Safeguards

Activities that mitigate risks

The different activities of the project do not represent risks to the population or to stakeholders. On the contrary, the activities of the project help to:

- Protect the forests in the area and nearby areas.
- They are an example of sustainable forestry management.
- They are sustainable activities and replicable in order to collaborate with the population livelihood and improves the forestry management in their areas.

The above are achieved through the following actions:

- Custody and Patrolling System: the project counts with a custody and patrolling plan in order to safeguard the forest areas against potential illegal activities or threatens to the sustainable forestry management.

  The project implements an integral custody plan that includes the operation in 5 control posts strategically located in the access points, one is located in the project border and the other four in locations that permit an effective protection even to those areas adjacent to the project, incrementing their positive impact on the territory. Two people work permanently in each control post. They count with solar energy, communication equipment and boats for transport and river patrolling.
  The custody plan also contemplates the signaling of the area with informative notices, maintenance of border and milestones and both terrestrial and river patrolling in the project area and the leakage belt.
  This important protection effort contributes to the conservation of the forest area within the project area as well as in the nearby areas such as the Territorial Reserve Madre de Dios and the National Park Alto Purus, both areas are home to a great biodiversity and to indigenous tribes in voluntary isolation and initial contact.

  At the same time, terrestrial and river patrolling look for sites where illegal activities may be occurring, such as illegal logging and invasion of the forest for deforestation. The workers responsible of patrolling have the capacity to detain those activities, they report to the project administration and the corresponding complaint is presented to the competent authorities.

- PRA Study (Diagnosis through stakeholders): This study looks for the existence of a potential degradation risk within the project area caused by the deforestation agents from nearby areas such as extraction of firewood, carbon production or illegal logging. The study is carried out every two years with an in-field identification of the potential degradation through a diagnosis with the participation of the stakeholders that live in the nearby areas as well as in the whole area of influence of the project. For the year 2019 the result of this study confirmed that the Madre de Dios Amazon

REDD Project area does not have a potential degradation. This study is carried out following the procedures indicated in the Monitoring Module of the VCS Standard.

- Satellite monitoring of deforestation is carried out in the project areas as well as in the leakage belt, the results of the satellite image interpretation are validated in the field through verification visits to the sampling points.

- Environmentally Friendly Productive Projects: they are local initiatives whose objectives are related to the Madre de Dios Amazon REDD Project and are therefore identified by the project. This means that the projects have characteristics that allows them to be referents for good practices of forestry resources since they look to protect, value and/or manage the forests through activities that are sustainable from the economic and social point of view. In this sense, the project looks to promote them, advise them, facilitate and/or provide seed capital for their progress. Within the framework of this platform the main activities for 2019 were the following:
  - Timber donations for the infrastructure of rural educational institutions that represent educational projects such as the "Children's Forests" that belong to the Villa Primavera and Noaya Communities.
  - Financing of professionals for the management of support for the rural development and small farmers from the Provincial Municipality of Tahuamanu.
  - Signature of cooperation agreement with the Provincial Municipality of Tahuamanu for the development of the small farmers project.
  - Advisory to Environmentally Friendly Productive Projects.
  - Building capacity missions in handcrafts within the Belgium Native Community.

Changes in property rights

- There have been no changes in property rights and land use as to the interested parties. The project has generated no negative impacts on property rights of local groups of interest. Adjoining acts for the perimeter of the project are available which express the non-existence of controversies or conflicts related to border delimitation, as well as related to the respect of border by third parties.
- There is an agreement in place with the Belgium Native Community for the areas adjoining the indigenous community regarding the land use since 2010. There have been no controversies or negative impacts to property rights of the native community nor to other third parties or groups of interest during 2019 in the local environment. The relationship with the communities is amiable, respectful and with a total disposition for intercultural dialogue.

Direct communication processes. Monitoring

Information related to the REDD project activities, as well as the results of monitoring are presented annually in the citizen participation meetings. These instances of information and communication take place twice a year (public workshops), at the start and closure of the year, as well as other dialogue instances with the interested parties. They are very useful to

communicate the objectives and activities of the project for the current year, as well as to present the results of the monitoring, both the positive and negative impacts.

As shown before, these results are presented during participative communication instance with the interested parties:

Table 2.3-1 Communication and information activities with the interested parties

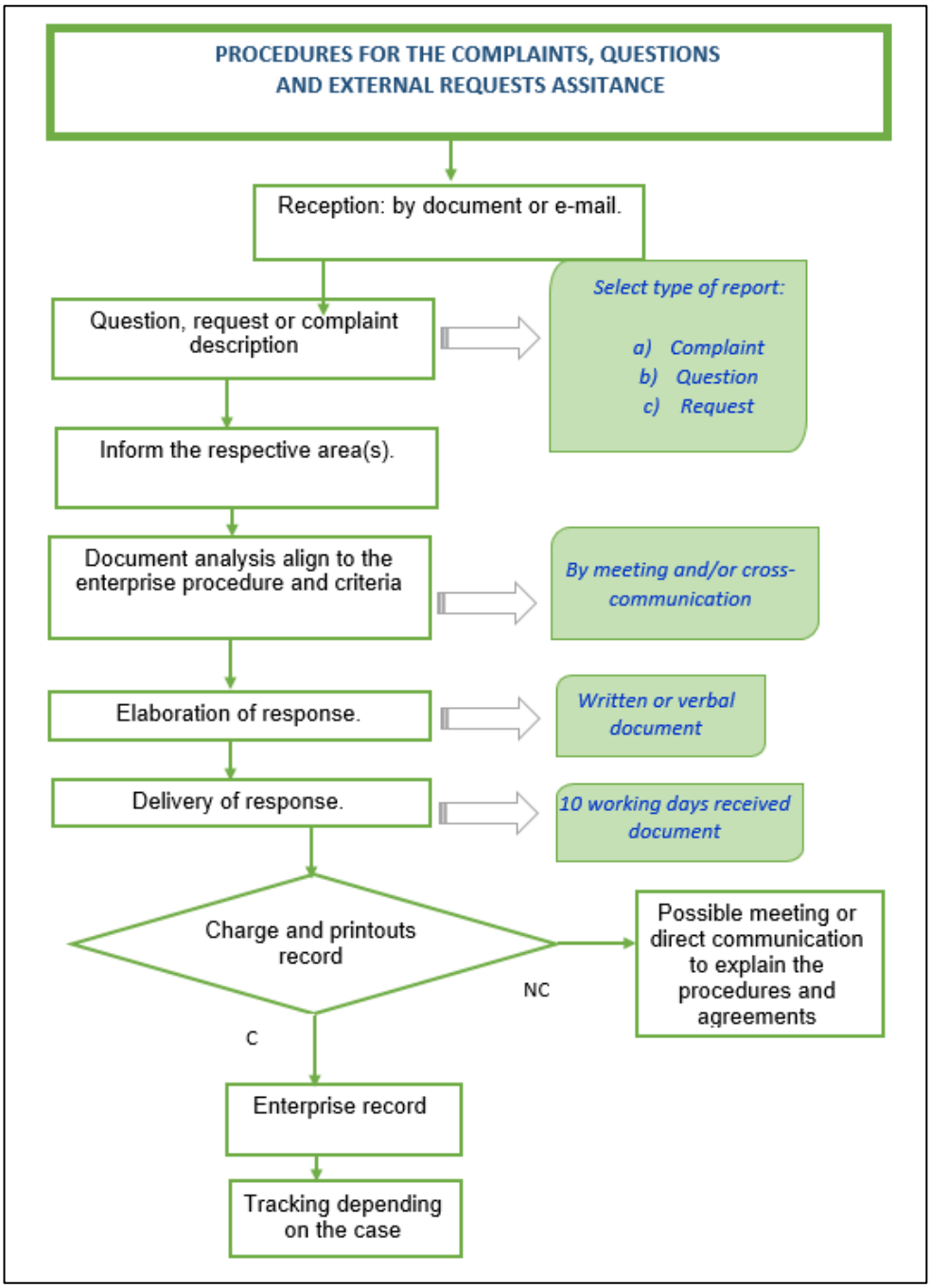
Activity	Date	Development
First public workshop	03/05/2019	Communication of the initiation of forestry operations for the project for 2019, informing on the sustainable management operations, the forest management strategy, the certifications that the project has achieved, the chain custody process, among others. Dissemination of the instruments for social responsibility management. A presentation was done, transmitting the commitment of the project, giving a brief explanation of social support and activities. At the same time, gathering the feedback already mentioned.
First meeting with the Consultive Committee	03/05/2019	Three members of the Consultive Committee assisted. Attention procedures, forestry management, tasks and objectives of the project were disseminated. Se logró difundir los procedimientos de atención, el manejo forestal, funciones y objetivos del proyecto. At the same time, the feedback already mentioned was collected.
Second public workshop	10/12/2019	Communication of the finalization of the forestry operations of the project for the year 2019, informing on the sustainable forestry management of the concessions, the forest management strategy, certifications, chain of custody, among others. The project attention instruments were transmitted, as well as the commitment of the project. A brief explanation on social support and activities during 2019 was given as well as the progress of the environmentally friendly productive projects. At the same time, the feedback already mentioned was collected.
Dissemination of the environmental and forestry monitoring public summary and social monitoring public summary	16/10/2019	The dissemination of the Public Summary of the General Forestry Management Plan for the concessions that conform the project and the Social Public Summary was done through visits to each of the more representative public or private institutions such as: National Organism of Fishery Sanitary; Villa Primavera Community; Belgium Native Community; Provincial Municipality of Tahuamanu; Catahua Forestry Company; Iñapari Health Post, among others. The Public Summary was delivered to 18 representatives from different institutions in the social environment of the project.
Social Public Summary	08/04/2019	The dissemination of the social public summary was done through the delivery of letters to the different public and private institutions and to

Activity	Date	Development
		representatives of the Neighbourhoods, Communities and Human Settlements. It was delivered to 20 groups of interest.
Second meeting with the Consultive Committee	10/12/2019	The Committee Meeting counted with the presence of 3 members achieving the dissemination of management instruments, tasks and objectives of the project. Opinions, suggestions and issues of interest for the population were collected.

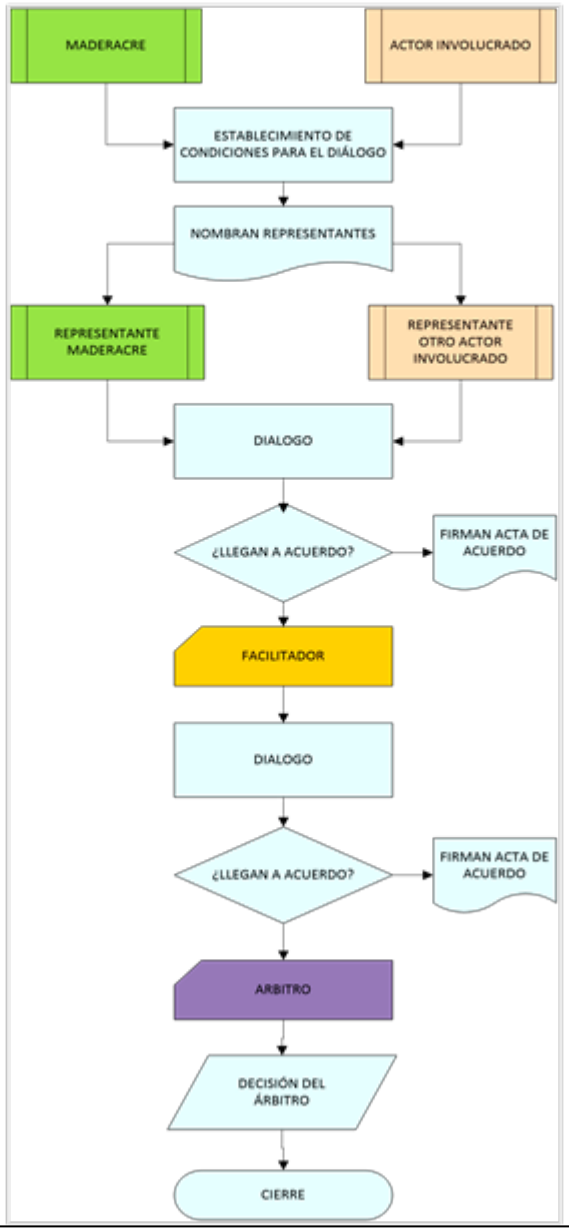
Elaboración Propia

Conflicts communication processes

During the year 2019 there were no conflicts among the interested parties. It is important to mention that the project has a procedure to attend potential conflicts, as well as complaints and request. These procedures are shown below:


PROCEDURES FOR THE COMPLAINTS, QUESTIONS AND EXTERNAL REQUESTS ASSITANCE
Reception: by document or e-mail.
Question, request or complaint description
Select type of report:
a) Complaint
b) Question
c) Request
Inform the respective area(s).
Document analysis align to the enterprise procedure and criteria
By meeting and/or cross-communication
Elaboration of response.
Written or verbal document
Delivery of response.
10 working days received document
Charge and printouts record
NC
Possible meeting or direct communication to explain the procedures and agreements
C
Enterprise record
Tracking depending on the case

FLOWCHART FOR THE CONSTRUCTIVE TRANSFORMATION AND ASSISTANCE OF POSSIBLE SOCIAL CONFLICTS



3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity[3]

Table 3.1-1 Activities carried out to attend Objective 1 of the project design

Outcome or Impact (objective 1)	Achievements during the Monitoring Period
1) Socialization and dissemination of the project objectives	• Citizen Participation Workshop – open call. 03 May, 2019. • Consultive Committee Meeting, 03 May, 2019. • Visits to the project from groups of interest, as well as to the educational projects such as "Villa Primavera Children's Forest". June, 2019. • Citizen Participation Workshop – open call. 10 December, 2019. • Consultive Committee Meeting, 10 December, 2019.
2) Identification and selection of environmentally friendly projects	The project maintains the identification of stakeholders and organizations close of each concession and updates it constantly. It already counts with 7 initiatives related to the project, which are located in 5 locations of the social environment of the project. These locations are: Belgium Native Community; Villa Primavera rural community; Noaya rural community; Nueva Esperanza and Iñapari Cercado. The initiatives are the following: • "Handcrafts for life and forest by the women of the Belgium Native Community" • "Children's Forest, The Incredible Forest of Wonders" • "Noaya Children's Forest" • "Reforestation with Shihuahuaco and agroforestry species" • "Agroforestry products and cacao" • "Forest value through Colibrí Farm" • "Opportunity Platform for bamboo for the efficient management of forestry resources in the Madre de Dios region" Currently, the projects are in different states of development. Two in design and formulation stage, four in implementation stage and one in monitoring stage. During the year 2019, some of these initiatives were identified as associated with the Provincial Municipality of Tahuamanu, and therefore a project with small farmer from Iñapari will be developed. This merger is expressed by means of a cooperation agreement for the benefit of the environmentally friendly projects.
3) Profile design of the selected projects	The profile design of the environmentally friendly projects was carried out after the first contest. The profile design is one of the first activities. These profiles are conditioned to the changes in the proposal of each project every year.
4) Capacity and ability development and of members of associations related	The development of abilities and capacities that promote the Environmentally Friendly Productive Projects refers to: • Development of capacities in handcraft design, color, cost management, quality of products, brand, slogan, communication with the tourist and resources administration

[3] There have been no activities that could affect the Project. There were no variations for this period in terms of a type of benefits, laws, regulations different from those in previous periods.

to the selected projects	in 15 artisan women from the Yine tribe through the missions and capacitation carried out by specialized professionals. • In field accompaniment and advisory of the technical personnel specific for each project. • Development of educational capacities for professors and children from the Villa Primavera and Noaya communities by means of a synergy between the Madre de Dios Amazon REDD Project and ANIA. This singerly achieved the establishment of the first Children's forest. • Advisory on agroforestry projects, specifically cocoa sowing. • Development of an agreement between the Regional Direction of Madre de Dios and Maderyja, as project proponent, to implement a regular basic education to the elders of Iñapari so that they can finish their basic studies.
5) Help with the implementation of approved projects	In order to implement the environmentally friendly projects, the following has been achieved to date: • A fund through the Fondo de las Américas, of USD 20.000 for the project Children's Forest of the Villa Primavera Community, in collaboration with ANIA NGO. • Missions from professional voluntaries in design, administration and communication areas for an equivalent of USD 3,500 each mission. During 2019 a mission orientated towards design and product took place in the Belgium Native Community in collaboration with the French NGO Planete Urgence. • During 2019 an amount of USD 6000 approximately (S/. 20 000), was invested to hire a professional team in the framework of the agreement with the Provincial Municipality of Tahuamanu. • Timber donations valued at USD 20 000 for the year 2019. • Agreements related to the social development area: - Health Agreement with the Belgium Native Community. - Education Agreement with the Belgium Native Community. - Agreement with the CLASS Health Post in Iñapari. - Agreement with the Educational Regional Direction and CEBA Dos de Mayo. - Agreement with CEBA Dos de Mayo, Maderacre (as project proponent) and the Native Belgium Community. - Association Agreement for the sustainable management of the forests between the Belgium Native Community and Maderyja (as project proponent).
6) Search for financing and/ or co-financing for the approved profiles	During the year 2019, an agreement has been signed with the Municipality of Tahuamanu, with the objective of obtaining loans (some of them non-refundable) for environmentally friendly projects.
7) Monitoring of the implemented projects	Until 2019, there is only one project which is in the monitoring stage (post) which is the Villa Primavera Children's Forest. The monitoring consists of periodical visits to the project to identify the continuation of the activities by the community as to the maintenance of the project spaces, potential needs and actions that can be taken by the program.

From a social and environmental point of view, the following activities are carried out to monitor the risk of leakage and non-permanence[4]:

- Custody and patrolling system: the project counts with a custody and patrolling plan to safeguard the forest areas and the adjoining ones, from potential illegal activities or threatens to the sustainable forestry management.
- PRA Study: the study aims at identifying the existence of a potential degradation within the project area by deforestation agents in the nearby areas, due to activities such as extraction of firewood, production of carbon or illegal logging. During 2019 the result of the study was that there was no degradation potential for the Madre de Dios Amazon REDD Project area[5].
- A satellite monitoring of deforestation is carried out within the project area and the leakage belt. The results of the interpretation of the satellite images are validated in the field by means of verification visits to the sampling points[6]
- Environmentally Friendly Productive Projects: they are local initiatives whose objectives are related to the Madre de Dios Amazon REDD Project and are therefore identified by the project. This means that the projects have characteristics that allows them to be referents for good practices of forestry resources since they look to protect, value and/or manage the forests through activities that are sustainable from the economic and social point of view. In this sense, the project gets involved with the social environment with the objective of generating positive impacts that can be replicated in local actions, promoting sustainable initiatives so that the local population improve their forestry management and do not log and/or burn the forest.
- Socialization instances to transmit the project objectives and the sustainable forestry management to the local population, as has been demonstrated in item 2.3, through citizen participation workshops y consultive committees. At the same time, the General Plan of Forestry Management has been communicated to the stakeholders explaining the importance of sustainable forestry management, quality processes that are followed by the Madre de Dios Amazon REDD Project[7].

3.2 Deviations

3.2.1 Methodology Deviations

a) 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

[4] Se menciono en el punto 2.3.

[5] Se cuenta con el Informe PRA

[6] Se cuenta con el Informe para el periodo 2019.

[7] Se cuenta con documento soporte.

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

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

Baseline Unplanned

Pr oject Unplanned

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

VM0007, Version 1.5
Sectoral Scope 14

$$Buffer_{Unplanned} = \left(\left(\Delta C_{BSL,Unplanned} - \sum_{t=1}^{t^*} \sum_{i=1}^{M} \left(E_{FC,i,t} + N_2O_{direct,i,t} \right) \right) - \left(\Delta C_{P,Unplanned} - \sum_{t=1}^{t^*} \sum_{i=1}^{M} \left(E_{FC,i,t} + N_2O_{direct,i,t} \right) \right) \right) \times Buffer\% \quad (9)$$

BSL Unplanned

P Unplanned

this is the correct equation and this equation is showed in the recently version 1.5

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

b) 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 desvation does not negatively impact the conservativeness of the quantification of GHG emission reductions, since the paramenter is not included in annual carbon calculationsand 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 emisions, as carried out following the BL-UP module.

During this monitoring period, we used field data.

Table 3.2-1 Field Data 2019

Infraestructure	Parameter	Project 2019			
		16	17	18	
Primary Road	Mead width			-	
	Length				
	Área (ha)				
Secunday Road	mean width				
	Length				
	Área (ha)				
Skid trail	length/ha muestral	5.92	8.39	7.54	Data field
	mean width	3.97	4.07	4.06	Data field-2018
Logging deck	Area (ha)				

3.2.2 Project Description Deviations

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 it affects the methodology calculation with respect to the baseline. On the contrary, interpretation has been consistent since 2012. It was decided to employ ERDAS since the technical team is very familiar with this software. It was used for the purpose of geometric and radiometric corrections, with the objective of asigning a system of coordinates to the images and improve their visual appearance in order to highlight elements and proceed to their interpretation. The team that carries out the interpretation work, employs a methodology based on visual interpretation of the elements of the landscape because it is a more certain and realistic interpretation and generates less errors than digital interpretation. Changes are registered through the observation of the elements of visual interpretation such as color, texture, tone, shape, size, spatial pattern, among others.

3.3 Grouped Projects

N/A. This project aren not a Grouped project

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	Regional Forest / Non-forest Cover Benchmark Ma
Data unit	ha
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
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 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 / 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.
Value applied	

Description of measurement methods and procedures applied	The Landsat images have the adequate resolution and they are an available tool to all public.
Purpose of Data	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.
Comments	Used in equations 3 y 8

Data / 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.
Value applied	
Description of measurement methods and procedures applied	The Landsat images have the adequate resolution and they are an available tool to all public.
Purpose of Data	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).
Comments	Used in equation 3

Data / Parameter	Ai
Data unit	Ha
Description	Total area of each stratum i.
Source of data	Landsat-8 satellite image. Sensor OLI.
Value applied	

Description of measurement methods and procedures applied	Frequency at a minimum every 10 years prior to baseline renewal. Is the same area of validation
Purpose of Data	Determination of baseline scenario
Comments	Ex-ante it is assumed that strata area will remain constant.

Data / Parameter	ARRD, 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.
Value applied	
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
Purpose of Data	Determination of baseline scenario
Comments	Monitored for purpose of baseline revisions

Data / 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 4.38
Value applied	0.49 t C t-1 d.m9
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
Calculationn method	Calculation of baseline emissions
Comments	n/a

Data / Parameter	Dj

[8] https://www.ipcc.ch/meetings/session25/doc4a4b/vol4.pdf-pag 172

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

Data unit	t d.m. m-3
Description	Basic wood density in t d.m. m-3 for species j.
Source of data	National species-specific densities. www4.congreso.gob.pe/comisiones/1999/ciencia/cd/inia/inia-p4/inia-p4.htm#TopOfPage
Value applied	
Description of measurement methods and procedures applied	Species densities have been taken from different sources of national species-specific researches being the main ones: - 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 Data	Calculation of project emissions
Comments	n/a

Data / Parameter	Dmn
Data unit	t d.m. m-3
Description	Mean wood density of commercially harvested species
Source of data	National species-specific densities. .
Value applied	
Description of measurement methods and procedures applied	Species densities have been taken from different sources of national species-specific researches being the main ones: - 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 Data	Calculation of project emissions
Comments	n/a

Data / Parameter	fj (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	B = ρ*exp(-1.499 + 2.148*Ln (DBH) + 0.207*(Ln (DBH)) ^2 – 0.0281*(Ln (DBH)) ^3) in Kg (dry)..Chavé B = 6.666 + 12.826 xH0.5 x LN (H) in Kg (dry)…palm B=47.022 Kg (dry)…bamboo
Description of measurement methods and procedures applied	Both formulas have been taken from: - 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 Data	Calculation of baseline emissions
Comments	

Data / Parameter	Carbon stock in all pools in the forest stratum
Data unit	T CO2 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	

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

Description of measurement methods and procedures applied	- 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 Data	Calculation of baseline emissions
Comments	The exact data for each stratum is found in module CP-AB.

Data / 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. CDC, UNALM, SZF, INRENA 2007.
Value applied	Clean cultivation 4% Grasslands 54% Agriculture and livestock 40% Infrastructure 2%
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 Data	Calculation of baseline emissions
Comments	n/a

Data / Parameter	Emissions by biomass burning
Data unit	T CO2 e
Description	Tons of CO2 equivalents, coming from emissions of CH4 and N2O 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 sources10
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 (CH4) and 0.2 (N2O) Agriculture Residues = 2.7 (CH4) and 0.07 (N2O).
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 Data	Calculation of baseline emissions
Comments	n/a
Data / Parameter	Emissions by biomass burning

4.2 Data and Parameters Monitored

Data / Parameter	MANFOR
Data unit	ha
Description	Total area of forests under active management mationally
Source of data	Oficial data
Description of measurement methods and procedures to be applied	National Information.
Frequency of monitoring/recording	Every five years or if verification occurs on a frequency of less than every five years
Value monitored	10553551.56
Monitoring equipment	*National information*

[10]Deforestation map of the Peruvian Amazon – 2000. MINAM (2009)

	http://geobosques.minam.gob.pe/geobosque/view/descargas.php?122345gxxe345w34gg#download
QA/QC procedures to be applied	Use national data.
Purpose of the data	Calculation of leakage
Calculation method	n/a
Comments	n/a

Data / Parameter	PROTFOR
Data unit	ha
Description	Total area of Fully protected forests nationally
Source of data	Oficial data
Description of measurement methods and procedures to be applied	National Information
Frequency of monitoring/recording	Every five years or if verification occurs on a frequency of less than every five years
Value monitored	17302483.00
Monitoring equipment	*National Information. A form of protected natural areas cut with the 2015 MINAM vegetation Map is used. Protected forest areas were recorded*
QA/QC procedures to be applied	Use national data
Purpose of the data	Calculation of leakages.
Calculation method	n/a
Comments	n/a

Data / Parameter	TOTFOR
Data unit	ha
Description	Total available national forest area
Source of data	Oficial data
Description of measurement methods and procedures to be applied	We use National information
Frequency of monitoring/recording	Every five years or if verification occurs on a frequency of less than every five years
Value monitored	17302483.00
Monitoring equipment	http://www.bosques.gob.pe/peru-pais-de-bosques *National information*
QA/QC procedures to be applied	Use national data
Purpose of the data	Calculation of leakage
Calculation method	n/a
Comments	n/a

Data / Parameter	$C_{p,LB}$
Data unit	T CO2
Description	Net greenhouse gas emissions within the leakage belt in the project case
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.

Value monitored	**234,495.73**
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 emissions
Calculation method	n/a
Comments	n/a

Data / Parameter	PRO imm
Data unit	Proportion
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 or if verification occurs on a frequency of less han every 5 years
Value monitored	0.03
Monitoring equipment	
QA/QC procedures to be applied	INEI Information. It's the last information. Censos Nacionales 2017: XII de Población, VII de Vivienda y III de Comunidades Indígenas, que se ejecutó el día 22 de octubre en el área urbana; y en el área rural, del 23 de octubre al 6 de noviembre.

Purpose of the data	Used for lakeage belt calculation
Calculation method	n/a
Comments	n/a

Data / Parameter	PRO res
Data unit	Proportion
Description	Proportion of baseline deforestation caused by population hat has been resident for M 5years
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 or if verification occurs on a frequency of less han every 5 years
Value monitored	0.04
Monitoring equipment	
QA/QC procedures to be applied	INEI Information. It's the last information. Censos Nacionales 2017: XII de Población, VII de Vivienda y III de Comunidades Indígenas, que se ejecutó el día 22 de octubre en el área urbana; y en el área rural, del 23 de octubre al 6 de noviembre.
Purpose of the data	It can be assumed that PRO res shall remain constant
Calculation method	n/a
Comments	n/a

Data / 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

$A_{def,PA,u,i,t}$

u / i	Pastures (8)	farming (9)	Infraestructure (10)	Agriculture (11)	Secundary Forest (12)	TOTAL
Hilly Forest (2)	-				-	-
Terrace Forest (3)	-	-			-	
Bamboo (4)	-	-		-	-	
Others (5)	-		-		-	
Tree swamps (6)	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-

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 / 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 See Map
Purpose of the data	• Calculation of project emissions
Calculation method	VCS module Estimation of emissions from activity shifting for avoided. The use of satellite iages to characterize forest cover through visual interpretation. Then, the vector files of the maps are generated and areas of forest types are determined.
Comments	Stratification is the same as the one used at the beginning of the term

Data / 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.
Frequency of monitoring/recording	Every year with images to report monitoring.
Value monitored	2019: 481.79 ha.
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 / 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: • 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-REDD
Frequency of monitoring/recording	Each two years, according to the methodology
Value monitored	There is no degradation in 2019
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 it is indicated a potential for degradation in the project area.
Comments	n/a

Data / Parameter	Aburn, i, t
Data unit	Ha
Description	Section 2.2.2
Source of data	Field measurements, and satellite images
Description of measurement methods and procedures to be applied	Area burnt in Stratum I at time t. There isn,t any burnt area within the project area. 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 (CH4 and N2O). 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 2019
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 / 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	Adef,LB,u,i,t
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

u / i	Pastures (8)	Farming (9)	Infraestructure (10)	Agriculture (11)	Secundary Forest (12)	TOTAL
Hilly Forest (2)	26.98	4.18	176.31	77.69	-	285.16
Terrace Forest (3)	87.97	-	14.56	65.51	-	168.04
Bamboo (4)	-	-	8.65 -	-	-	8.65
Other (5)	10.36	-	-	9.58	-	19.94
Tree Swamps (6)	-	-	-	-	-	-
TOTAL	125.31	4.18	199.52	152.78	-	481.79

	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 / 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 / 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 of monitoring/recording	Every year
Value monitored	Zero. There aren't logging decks during this period
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 and specialist personnel.
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

Data / 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 of monitoring/recording	Every monitoring report
Value monitored	Zero, there is no disturbance during this period

Monitoring equipment	Imagenes satelitaes, software sig, cartografia basica y gps
QA/QC procedures to be applied	In case there would be disturbances it is validated with gps in the field
Purpose of the data	To Know loss of forest and their emissions
Calculation method	Forest loss areas and their CO2 equivalent
Comments	Ex ante estimations of emissions from natural disturbances will be based on historic incidence of such event in the Project region.

Data / Parameter	$A_{ROAD, l, t}$
Data unit - equation	Ha . 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 of monitoring/recording	Every year
Value monitored	Zero, There arend roads during this period
Monitoring equipment	GPS and Measuring tape
QA/QC procedures to be applied	GPS was calibrated. Development of evaluation protocols or guidelines. Training of technical and specialist personnel
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
Comments	Ex-ante estimations are based on average length of roads produced per unit area due to logging in the region

Data / Parameter	$A_{RRL, forest, t}$
Data unit - equation	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 / Parameter	AP_i
Data unit - equation	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 / Parameter	$C_{DegW, i, t}$
Data unit - equation	T CO2 –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: - 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 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 / Parameter	$C_{AB\_tree\_dest,i}$
Data unit - equation	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-REDD)
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 CAB_tree_dest,i = CAB_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 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	-

Data / Parameter	$C_{BB\_tree\_dest,i}$
Data unit - equation	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 TCO2/ha Terrace forest: 106.03 TCO2/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 / Parameter	Lsk
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 (2019) Forest: 2019 (m) Hilly: 51,805.17 Terrace:
Monitoring equipment	Gps, personal field
QA/QC procedures to be applied	Development of evaluation protocols or guidelines. Training of technical and specialist personnel
Purpose of the data	Skid trail area
Calculation method	-
Comments	-

Data / 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: • 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 monitored	Forest: 2019 (m3) Hilly: 16,178.74 Terrace:
Monitoring equipment	Gps, personal field, measuring tape
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 *(D2/4)
Comments	- n/a

Data / 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><tr><td>Forest</td><td>2019</td></tr><tr><td>Hilly</td><td>4.06, 4'07 3.97</td></tr><tr><td>Terrace</td><td></td></tr></table>
Monitoring equipment	GPS, Measuring tape 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	Carbon emissions by skid trail
Calculation method	Take in field with Measuring tape the width
Comments	- n/a

Data / Parameter	C olb
Data unit	T CO_2
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 unhelpeful areas for agriculture and livestock activities.
Frequency of monitoring/recording	Every five years or verification
Value monitored	381.10
Monitoring equipment	-
QA/QC procedures to be applied	Use national data
Purpose of the data	
Calculation method	
Comments	n/a

4.3 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

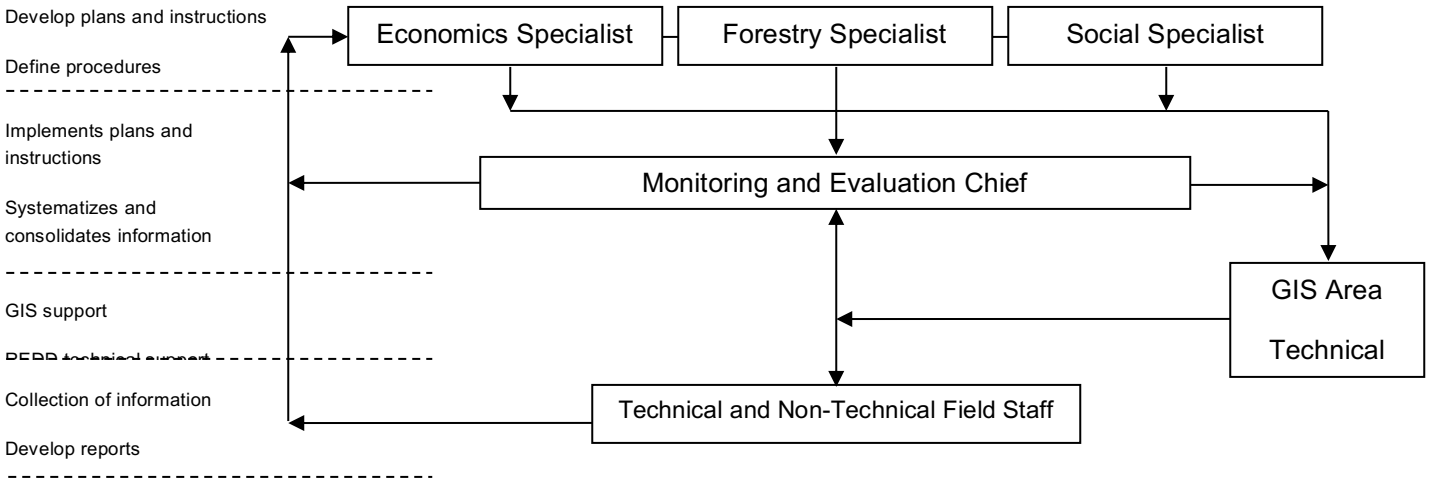
ORGANIZATIONAL STRUCTURE

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:



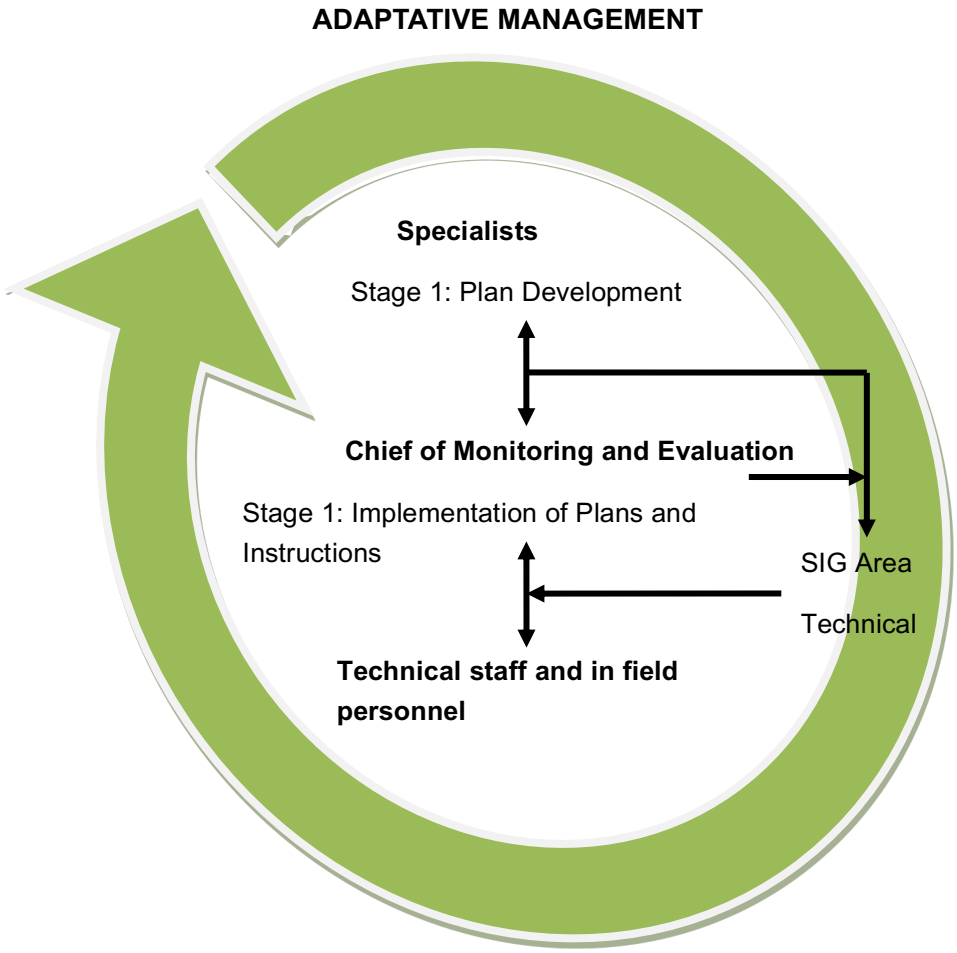
INFORMATION MANAGEMENT: DATA COLLECTION, PROCESSING AND REPORT

The project is based in the premise of the "Adaptive Management", in this sense every intervention on the forest 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.

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:



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, 2017 and 2019. If the results indicate that the project area has no pressure from this type of degradation, then it will be assumed that: $\Delta Cp,Deg,i,t = 0$. (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 $\Delta Cp,Deg,i,t = 0$ 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 ≥ 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 297.58 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.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

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 and Excel). According with the PD the project estimated the VCU in the first 10 years of the project[11].

11 The table was presented for validation according to the module with which it validated. In the following table, the nomenclature of the parameters of the statement has been updated according to the update requested in the NIR 24,October 2020. Currently the variables have been modified from: ΔC_{BSL}, unplanned to $\Delta C_{BSL-REDD}$ / from ΔC_{LK-AS}, unplanned to $\Delta C_{LK-REDD\ AS}$.unplanned and from Credd,t to CWPS REDD,t

Table 5-1-1 Net GHG emissions under the baseline scenario according to PD VCS (pg 164 in PD and Excel validated)

t	year	ΔCBSL-REDD, unplanned	ΔCp	ΔCLK-REDD-AS, unplanned	ΔCWPSREDD,t	Buffer, unplanned	VCUt
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**
11	2019	1,016,709	-	75,676	941,033	101,671	**839,362**
12	2020	1,005,070	-	74,123	930,947	100,507	**830,440**
13	2021	999,417	-	72,602	926,815	99,942	**826,873**
14	2022	965,015	-	72,961	892,055	96,502	**795,553**
15	2023	918,279	-	71,214	847,065	91,828	**755,237**
16	2024	873,208	-	69,771	803,437	87,321	**716,117**
17	2025	816,921	-	68,958	747,964	81,692	**666,272**
18	2026	697,122	-	68,265	628,856	69,712	**559,144**
19	2027	617,139	-	67,645	549,494	61,714	**487,780**
20	2028	564,248	-	66,326	497,922	56,425	**441,498**
21	2029	503,011	-	65,422	437,588	50,301	**387,287**
22	2030	533,807	-	65,439	468,368	53,381	**414,988**
23	2031	494,516	-	64,057	430,459	49,452	**381,007**
24	2032	474,989	-	63,146	411,843	47,499	**364,344**
25	2033	474,126	-	60,214	413,912	47,413	**366,500**
26	2034	463,776	-	61,135	402,641	46,378	**356,263**
27	2035	463,774	-	60,535	403,238	46,377	**356,861**
28	2036	457,464	-	58,118	399,346	45,746	**353,599**
29	2037	445,081	-	57,342	387,738	44,508	**343,230**
30	2038	394,654	-	55,188	339,466	39,465	**300,000**
31	2039	398,082	-	56,576	341,506	39,808	**301,698**
32	2040	370,389	-	54,345	316,044	37,039	**279,005**
33	2041	393,507	-	54,331	339,176	39,351	**299,825**
34	2042	413,147	-	51,720	361,427	41,315	**320,112**
35	2043	361,665	-	51,407	310,258	36,167	**274,092**
36	2044	374,314	-	51,342	322,973	37,431	**285,541**
37	2045	362,047	-	50,105	311,941	36,205	**275,737**
38	2046	355,188	-	49,719	305,469	35,519	**269,950**
Total		**27,626,600**	**-**	**2,554,466**	**25,072,135**	**2,762,660**	**22,309,475**

5.2 Project Emissions

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

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

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

Table 5.2-1(Annual)

Stratum	2019 *Cpdeg,PA,i,t*
Hilly Forest	**72,463.74**
Terrace forest	
TOTAL	**72,463.74**

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

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

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

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

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

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

Table 5.2-2

Stratum	2019 Cp,SelLog,i,t (2014-2019)	
	CLG	CLR
Hilly Forest	61,891.53	10,572.21
Terrace Forest		

CLG. Annual net project emissions arising from the logging gap
CLR Annual net project emissions arising from logging infrastructure

CLG (2019):

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

Vext:

Table 5.2-3

Vext (m3)	2019
Hilly forest	**16,178.74**
Terrace forest	
Total	**16,178.74**

Cext:

Table 5.2-4

Cext (t co2e=	**2019**
Hilly forest	**22,145.75**
Terrace forest	
total	**22,145.75**

LDF= 0.67

CLG (2019):

Table 5.2-5

Stratum	**2019**
	CLG
Hilly Forest	**61,891.53**
Terrace Forest	

CLR (2019)

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

Table 5.2-6

	CLR 2019				
	t / i	Croad	Cdecks	Cskid	Total
2019	Hilly Forest	-	-	10,572.21	10,572.21
	Terrace Forest	-	-	-	-

5.3 Leakage

ΔCWPS-REDD,LB =Deforestation area in Leakebelt for this period 2019 and during all the life project.

Table 5.3-1

	ADef,PA-i	ADef,LB-i
2009-2012	0	2693.51
2013	0	0
2014	0	16.84
2015	0	87.28
2016	0	153.21
2017	0	605.9
2018	0	689.19
2019	**0**	**481.79**
Total	**0**	**4727.72**

During the monitoring of 2019 and following the steps presented in LK-ASU module, the Next greenhouse gas emissions due to leakage are equal to:

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

Tabla 5.3-2

Year	ΔCLK-REDD-ASU-LB	ΔCLK-REDD-ASU,OLB	GHGLK,E	ΔCLK-REDD AS unplanned
2019		**220046.76**		**220046.76**

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

Where:

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

Where:

$\Delta C_{LK\text{-}ASU\text{-}LB}$	Net CO_2 emissions due to unplanned deforestation displaced from the project area to the Leakage Belt; t CO_2-e
$\Delta C_{BSL,LK,unplanned}$	Net CO_2 emissions in the baseline from unplanned deforestation in the leakage belt; t CO_2-e
$\Delta C_{P,LB}$	Net greenhouse gas emissions within the leakage belt in the project case t CO_2-e

Table 5.3-3

Year	ΔCP,LB	ΔCBSL,LK-unplanned	ΔCLK- REDD-ASU-LB
2019	**234495.73**	**661,091.00**	

.ΔCLK-REDD-ASU-LB = IF < 0, then it must be set = 0

ΔCLK-REDD-ASU-OLB

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

ALK-OLB,t	Area deforested by immigrants outside the Leakage Belt and project area under the project scenario at time t; ha
$A_{LK\text{-}IMM,t}$	Total area deforested by immigrant agents in the baseline and project scenario at time *t*; ha
$A_{LK\text{-}ACT\text{-}IMM,t}$	Area deforested by immigrants in the project area and Leakage Belt under the project scenario at time *t*; ha

Table 5.3-4

	ALK-IMM,t		
	PROPIMM	ABSL,PA-unplanned,t	Total 1
	from Step 2 LK-ASU	PDD pg 150 (2016)	Eq 7 LK-ASU
2019	**0.03**	**23,974.50**	**719.24**

Table 5.3-5

year	ALK-ACT-IMM,t			
	PROPIMM	ADef,PA-i,t	ADef,LB-i,t	Total 2
	from Step 2 LK-ASU	from M-REDD	from M-REDD	Eq 8 LK-ASU
2019 (accumulate)	**0.03**	**-**	**4,727.72**	**141.83**

ΔCLK-REDD-OLB,t = total 1 –total 2 = T CO2 , If is > 0 leakage outside the leakage has occurred

Where

ΔCLK- REDD-ASU-OLB = CoLB * ΔCLK-OLB,t

Tabla 5.3-6

	ΔALK-OLB,t (acumulativo)	ΔCLK- ASU,OLB
	Eq 9 LK-ASU	11 LK-ASU
2019	577.40	220,046.76

ΔCLK-ASU-OLB = CoLB * ΔCLK-OLB,t

COLB
381.10

GHG LK, E

Greenhouse gas emissions as a result of leakage of avoided deforestation activities; T CO2. There wasn`t in the project

5.4 Net GHG Emission Reductions and Removals

The cumulative verified GHG emission reductions and removals as of the end of the verification period are:

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)	Buffer pool allocation	VCUs eligible for issuance
Year 2019 (cumulative)	**12,436,646.00**	**1,783,526.33**	**220,046.76**	**10,433,072.90**	**1,065,311.967**	**9,367,760.937**

The verified GHG emission reductions and removals achieved in the verification period are:

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)	Buffer pool allocation	VCUs eligible for issuance
Year 2019 (annual)	**1,016,709.00**	**72,463.74**	**16,813.12**	**927,432.13**	**94,424.53**	**833, 007.60**
Total	**1,016,709.00**	**72,463.74**	**16,813.12**	**927,432.13**	**94,424.53**	**833, 007.60**

Then, this result was adjusted to account for the uncertainty analysis:

$Adjusted\_NER_{REDD} = NER_{REDD} * (100\% - NER_{REDD\_ERROR}$[12] $+ 15\%)$ *… Equation in REDD-MF, page 19*

$Adjusted\_NER_{REDD} = 10\,433{,}072.9*(100\%) = 10\,433\,072.90\ t\ CO_2\text{-}e$

A final discount due to **Permanence Risk Buffer** was made, so the final result is:

$$Buffer_{Unplanned} = \left(\frac{\left(\Delta C_{BSL,Unplanned} - \sum_{t=1}^{t^*} \sum_{i=1}^{M} \left(E_{FC,i,t} + N_2O_{direct,i,t} \right) \right)_{BSL\ Unplanned}}{\left(\Delta C_{P,Unplanned} - \sum_{t=1}^{t^*} \sum_{i=1}^{M} \left(E_{FC,i,t} + N_2O_{direct,i,t} \right) \right)_{P\ Unplanned}} \right) \times Buffer\,\% \qquad (9)$$

$Buffer_{UNPLANNED} = \Delta C_{BSLunplanned\ -0)-(}\Delta C_{Punplanned\ deforestation\ área-0)*\ Buffer…}$

$Buffer_{UNPLANNED} = ((12´436{,}646.00 - 0) - (1783{,}526.33 - 0)) * 10\% = 1\,065311.967 t\ CO_2\text{-}e.$

[12] Uncertainty exceed the 15%, is 4.91%

In this way, the total emission reductions due to project activity for the 2019 period were obtained:

VCU = (Adjusted_$NER_{REDDt)}$- Buffer total)

VCUs = 9´367,760.937[13]

VCUs annual= 833 007.60

[13] The VCU acumulate 2018 was 8 534 753.34 tco2

ATTACHED FILES :

<CALCULATIONS>

All calculations and SIG information, can be reviewed in the following worksheets, which will be available for the auditor.

EXCEL FILE

- CP Estimation 2019.28 Setiembre.
- Leakage Estimations 2019. 27 julio
- Uncertainty Analysis 2019. 15 Mayo
- VCS- Risk Report- Calculation- Tool-v4.0 28 setiembre 2019 v4
- VCUs Estimation 2019. 28 Setiembre

DATA CAMPO FILE AND MONITORING DEFORESTATION

- Info- aprovechamient-MRY-REDD2019. 01 Mayo 2020
- TALADOS*ARRASTRADOS 2019 V2* 01 Mayo 2020
- TALADOS ARRASTRADOS 2018 Y CUBICADO 2019
- TALADOS ARRASTRADOS 2019 V2.01Mayo (26-06) Excel Dinamico.
- 02.memoria_ M&M_JULIO2020.