NON-PERMANENCE RISK REPORT

CARBON EMISSIONS REDUCTION PROJECT IN THE CORRIDOR ANKENIHENY-ZAHAMENA (CAZ) PROTECTED AREA, MADAGASCAR

Document Prepared By

Conservation International Madagascar Program

Project Title	Carbon Emissions Reduction Project in the Corridor Ankeniheny-Zahamena (CAZ) Protected Area, Madagascar
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For the preparation of this non-permanence risk report, the risks of potential transient or permanent losses in carbon stocks have been assessed over a period of 100 years from the start of the current monitoring period.

1 INTERNAL RISK

Project Management		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	The CAZ project falls under the VCS AFOLU scope of Avoiding Unplanned Deforestation and is not seeking GHG credits from reforestation.	n/a
b)	The main strategy of the CAZ project for reducing deforestation is as a protected area. Threats to carbon stocks are expected to persist over the project period, as outlined in the Project Description. It is therefore expected that ongoing enforcement will be necessary.	2
c)	The management team with day to day management responsibility includes individuals with the necessary skills and experience (over 5 years) to successfully undertake all the project activities. The project proponent is the Ministry of Environment and Forests (MEF) represented by the Direction Générale des Forêts (DGF). Management of the protected area with the objective of reducing deforestation has been delegated by the DGF to Conservation International. The day-to-day management team is headed by CI Madagascar's Director of Field Projects, Bruno Rajaspera. Bruno has over 15 years experience of managing large, complex projects to protect forests and promote community management of natural resources. This includes over 5 years working to develop the carbon project at CAZ and another similar project, the Ambositra-Vondrozo Corridor, also in Madagascar's eastern rainforests. CI's regional office responsible for implementing the CAZ project, is based in Toamasina and is headed by Hantanirina Ravololonanahary. She has 13 years of experience working in the CAZ region, originally conducting research activities and then managing all CI's activities in the region. She has been the primary person responsible in the field for establishing the CAZ project and organizing all the activities leading to the creation and management of CAZ. Hantanirina's team also includes specialists responsible for community relations/ development support, community forest management, biodiversity protection and monitoring, GIS and data management. CAZ is collaboratively managed (co-managed), with village level associations and federations of these groups play an important role in implementing activities. This co-management structure will stay in place for the whole project period although the organization responsible for overall coordination (the role currently played by CI) may change during that period depending on local capacity. In addition, the team benefits from technical assistance on specific matters from experts within Conservation International, both in the Antananarivo office (support on REDD policy issues, protected area management policy/strategy, GIS and remote sensing) and in CI's HQ in Arlington Virginia (on all matters related to Reducing	0

	Deforestation, development and implementation of carbon projects).	
d)	Members of the management team are located in country and are within less than one day's travel from the project area. Community associations from people living immediately adjacent to the project area are a fundamental part of the project management structure and have specific responsibilities for implementation of project activities as described in the PD and the management plan for the protected area. Therefore the project area will be under constant surveillance for threats and natural risks to carbon stocks. Members of the management structure are within one day of travel for all the parcels of the project area.	0
e)	The management team includes individuals with significant experience in designing AFOLU projects, implementing activities to reduce deforestation and ensure monitoring reporting and verification. The management team based at CI's HQ has already been involved in bringing an avoided deforestation project in Peru to validation and verification under the VCS program. The Madagascar-based team has designed a second project in the Ambositra-Vondrozo corridor that is also seeking validation and verification under the VCS program.	-2
f)	The CAZ project is managed under an adaptive management approach and structure involving multiple stakeholders as described in the PD. An adaptive management plan for CAZ is in place. This management plan was developed through a participatory process involving the local communities, local and regional authorities and government services, civil society organizations and the Ministry of Environment and Forests. The methodology used for identifying the agents, drivers and underlying causes of deforestation was the *Open Standard for the Practice of Conservation* methodology (see https:miradi.org/openstandards), a widely used standard for adaptive conservation planning developed by the Conservation Measures Partnership, a joint venture of conservation organizations and foundations (see http:www.conservationmeasures.org). The management plan for the project includes a monitoring plan designed to provide timely data needed for project decision-making. The plan also includes an analysis of the capacity and risks associated with the project. An annual planning process involving all major stakeholders of the project is in place and provides a formal opportunity to adapt strategies and activities to changing circumstances. The end result of this annual planning process is an annual workplan that is agreed and approved by all the stakeholders involved in the management structure of the project. Implementation of the workplan is the overall responsibility of the project manager, currently CI. Monthly meetings are organized between CI, the regional forestry departments, the federations of community associations responsible for implementing activities at the local level and any contractors involved in work to support the project. These meetings provide regular opportunities to adapt planned activities based on changing circumstances. Planning of enforcement activities both by community associations and forestry staff is an important part of the ongoing adaptive management process to reduce project risks of losses in carbon stocks. To monitoring risk on an ongoing basis, CI has developed a fire alerts system that provides daily, weekly and monthly email updates showing the position of any fires detected from analysis of MODIS satellite data (https://firealerts.conservation.org). This data, combined with reports from the field is used to focus enforcement efforts in the mostly highly threatened	-2

	areas.	
Total Project Management (PM) [as applicable, (a + b + c + d + e + f)] Total may be less than zero.		**-2**

Financial Viability		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Not applicable	n/a
b)	Not applicable	n/a
c)	Not applicable	n/a
d)	A comprehensive financial model has been developed, which shows income to the project and associated expenses from December 2007 through the 30 year crediting period. During the development phase of the project (2005 -2012) funding has been provided by grants (NORAD and CI) and a forward payment for future credits by the World Bank Biocarbon Fund. In 2013 it is assumed that there will be a transition to funding provided through the sales of VCUs on the voluntary market. The model includes a full costing for all aspects of managing the project, registration of the VCUs, government tax and marketing and the assumptions and detailed amounts are shown in the various schedules included in the model. The model allows analysis of the financial performance of the project with changes to a wide range of variables, including carbon volumes, carbon price, inflation rates, etc. The model has been run for four different scenarios using carbon prices of $3, $5, $7, and $9 per VCU (see attachment narrative on Financial Model Key Assumptions) for discussion of this range of pricing assumptions. The financial models that were developed, as well as a summary comparison table, are provided as supportive information to the validators. Even in the most conservative model, which assumes an initial relatively low carbon price of $3 per tCO_{2e}, the models show that a positive annual cash flow (cash flow break-even point) is achieved as soon as significant sales of credits take place, assumed to be in 2013 and maintained thereafter. Also, cumulative cash position is positive from 2013 onwards for all the scenarios. The initial investments in the project, provided by CI on a grant basis, have been sufficient to fund the project through to 2012-2013. Due to the volume of credits generated by the project, it has significant financial resilience and would attain the break even condition even if expectations on the percentage sold were not met. Based on this analysis we are classifying the Financial Viability under section d. Under the scenarios modeled, the project generates fairly significant surpluses over the long term, allowing for future discussion about the allocation of these funds to community support, increased project activity or the creation of an endowment or trust fund to support the project in the long-term after the end of the crediting period.	0

e)	Not applicable	n/a
f)	Not applicable	n/a
g)	Not applicable	n/a
h)	During the development phase of the project, funding has been provided by NORAD and CI from both restricted and unrestricted funds. Due the potential of the project to quickly move to financial break-even, CI and other partners, including the World Bank through its purchase of an initial tranche of 430,000 credits from the initial verification are in a position to support the project until credit sales are initiated in 2013 or soon thereafter. CI's corporate financial statements (attached) provide evidence of a level of financial resources which would allow allocation of funds to the project during the transition from grant support to revenue generated by credit sales.	0
i)	Not applicable	n/a
Total Financial Viability (FV) [as applicable, ((a, b, c or d) + (e, f, g or h) + i)] Total may not be less than zero.		**0**

Opportunity Cost		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Not applicable	n/a
b)	Not applicable	n/a
c)	Not applicable	n/a
d)	Baseline activities are subsistence driven. The project has been designed to provide net positive community impacts through direct payments and community development activities. In addition, Safeguards procedures following the methodology of the World Bank's Operational Procedures 4.12 have been followed with the objective of ensuring that the project leaves no households in a poorer or more vulnerable state than prior to the project. Therefore all the payments and community development activities to be implemented through the project will be making a net positive contribution. Independent assessments of the impacts of community development activities done to date are available to the validators on request.	0
e)	Not applicable	
f)	Not applicable	
g)	Not applicable. However Conservation International, a non-profit organization, has been the main promoter of the project since project preparation activities began in January 2005 and is the delegated manager of the project until December 2014 with possibility of extension.	n/a
h)	The Project Area is made up of the CAZ protected area that is currently under provisional protected status and is expected to be legally gazetted by early 2013 at which point there will be a legally binding commitment to protect carbon	n/a

	stocks over the length of the project crediting period and over at least 100 years. The Government of Madagascar has also entered into a legal agreement for the management of the protected area with Conservation International that clearly indicates its intent to permanently gazette the protected area and ensure its protection during the crediting period.	
i)	As noted above, the process for gazetting the project area within the protected area network permanently is underway and this condition should be achieved by early 2013.	n/a
Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g or h)] Total may not be less than 0.		**0**

Project Longevity		
a)	As noted above, the project area is not yet legally protected over the entire crediting period or over the next 100 years. However this protection is expected by early 2013. The intended project longevity as stated in the Project Description is 90 years.	24-18=6
b)	Not yet applicable	n/a
Total Project Longevity (PL) May not be less than zero		**6**

Internal Risk	
Total Internal Risk (PM + FV + OC + PL) Total may not be less than zero.	**4**

2 EXTERNAL RISKS

Land Ownership and Resource Access/Impacts		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	The entire area of the CAZ project is owned by the government, the project proponent. Resource access and use rights are also owned by the government who can formally allow resource use rights by local communities on a temporary but renewable basis through “Transfer of Management” contracts. This collaborative management between the government and local stakeholders is being done in the context of the carbon project as a part of the management strategy for reducing deforestation. In the context of risk management, there is low risk since the government owns the land and retains the rights over land use decisions.	0

b)	Not applicable (see above).	n/a
c)	There are no known disputes over land tenure or ownership in the project area. No land tenure disputes were noted during the public consultation process for establishing the project (results of the public consultation meetings are available for review by the validator).	n/a
d)	There are no disputes over access/use rights that were identified through the public consultation process (results of the public consultation meetings are available for review by the validator).	n/a
e)	Not applicable	
f)	Not applicable yet although as explained above, it expected that in the near future the area will have a permanent legally protected status.	n/a
g)	Not applicable. There are no competing claims over land tenure, ownership or access/use rights.	n/a
Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e+ f)] Total may not be less than zero.		**0**

Community Engagement		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	No households live within the project area according to the public consultation and social safeguards process (e.g. see the protected area management plan and the safeguards plan). The project has been designed so that settlements are outside of the project area. Settlements close to the project area are within the leakage management zone.	n/a
b)	All households living within the Communes (an administrative unit with approximately 20-30km radius around the project area) had an opportunity to comment on plans for the project during the public consultation process (results of the public consultation meetings are available for review by the validator). Specific households that were identified as being reliant on the protected area have been identified through the process to create the protected area and their views were taken into account to design the limits and protected area rules. The households that are reliant on the forest have also been identified as part of the social safeguards process and where resource restrictions due to the project were identified as being potentially detrimental to the household, appropriate compensation measures have been identified and are expected to be implemented within the next year as outlined in the Social Safeguards Plan (Plan de Gestion Environmental et Sauvegardes Sociales) that has been provided to the validators. In addition, the majority of these households are involved in the management structure of the project through local associations that have the local management responsibility for project activities.	n/a
c)	The project generates multiple net positive impacts for the local communities that live around and may use the project area. First, as part of the project, the	-5

	communities gain official access and use rights for the forests within the project area. Second, individuals within the community forest management associations who do work related to the project receive payments and so the project is a source of revenue. Third, communities living on the forest edge benefit from small scale development projects that will be funded in the long term from part of the revenues from the GHG credits generated by the project. Two separate independent analyses on the impact of these small scale development activities concluded that these projects improve the livelihoods of households living around CAZ. Both of these analyses used a participatory approach to assess the impacts of the project activities. These reports have been made available to the project validators. The project has been designed to be compliant with the Climate, Community, and Biodiversity Standard and will be seeking validation under this standard. In addition, a social safeguards plan has been developed through a participatory approach that identifies individual households that may be negatively affected by the project due to restrictions of access to natural resources. Funding has been secured to ensure that all such households receive compensation measures that will ensure that they are no worse off due to the existence of the project. Since this social safeguard plan will ensure that no-one is worse off because of the project, all the development activities funded from the project will ensure that there is a net positive benefit on the livelihoods of the local communities living around CAZ.	
Total Community Engagement (CE) [where applicable, (a+b+c)] Total may be less than zero.		**-5**

Political Risk		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Not applicable	n/a
b)	Based on the most recent available WGI scores for Madagascar (2007-2011), the averaged score across the 6 indicators and the 5 years is -0.537. Source: http://info.worldbank.org/governance/wgi	4
c)	Not applicable	
d)	Not applicable	
e)	Not applicable	
f)	Madagascar is implementing REDD+ readiness activities as set out in the risk assessment tool. The country is part of the FCPF process although it has not yet received funding from FCPF because some FCPF donors do not recognize Madagascar's current government. An RPP has been developed however. Madagascar has also benefitted from readiness funds provided by bilateral (eg. Norad) through civil society organizations to help develop projects and methodologies that contribute to the REDD+ readiness process. AFD is also currently providing technical assistance to the National Environment Office to	-2

	support the national level Monitoring Reporting and Verification. In addition the Government requested a $42 million loan from the World Bank in 2011 that also includes a $2 million component to support REDD+ activities. The project was approved and was launched in early 2012.	
Total Political (PC) [as applicable ((a, b, c, d or e) + f)] Total may not be less than zero.		**2**

External Risk	
Total External Risk (LT + CE + PC) Total may not be less than zero.	**0**

3 NATURAL RISKS

The following natural risks were assessed for the project area: forest fires, pest and disease outbreaks, cyclones, and geological risk (earthquakes and volcanic activity). The risk rating associated with each natural event was assessed as follows:

Natural Risk – Forest Fires	
Significance	No loss is expected
Likelihood	The project area is a humid rainforest habitat. No natural fires have been recorded in this ecosystem in Madagascar because it is too wet. Natural forests in Madagascar are mostly limited to savannah habitats and even the drier forests of the west of Madagascar are often fire resistant and have long term stable boundaries that indicate that even manmade fires have little impact on them (e.g. see Kull, 2002).
Score (LS)	0
Mitigation	1

Natural Risk – Pest and Disease Outbreaks	
Significance	No loss is expected from pest or disease outbreaks.
Likelihood	No major pest or disease outbreaks leading to die off of forest have been recorded in rainforests in Madagascar. Large scale tree pest and disease outbreaks are extremely rare in tropical natural forests due to the high diversity of tree species and low densities that are typical (Nair, 2007). By contrast pest and diseases are of more concern in tropical plantations.
Score (LS)	0
Mitigation	1

Natural Risk - Cyclones	
Significance	Carbon loss from cyclones is expected to be insignificant. The majority of cyclones lose their destructive power by the time they get as far inland as the CAZ project area (World Bank, 2008). Even if they are powerful, the area of damage to forest is relatively limited. Native forest also recovers well following cyclone damage in the absence of anthropogenic threats and is a natural feature of the ecology of these forests (Birkinshaw, 2007). Even in an extremely powerful cyclone, less than 5% of carbon stocks of CAZ are likely to be lost and the loss will be transient with good recovery. For example, cyclone Hudah, one of the most powerful cyclones to damage forest in Madagascar in the last 15 years, was estimated to have damaged 3.2% of the 143,236 hectares of forests of the Masoala peninsula (Birkinshaw, 2007). However Masoala is a coastal area and therefore cyclone impact at CAZ would be expected to be much less since the cyclones power reduces over land (Birkinshaw, 2007; World Bank, 2008).
Likelihood	Cyclones are a regular occurrence in Madagascar with 3-4 cyclones typically making landfall with the island every year (World Bank, 2008). Based on usual cyclone trajectories (eg. see France Meteo website), it seems likely that a cyclone will pass through the CAZ area every 2-3 years arriving from the east. However, as noted above, the destructive power of these cyclones is likely to be considerably less than in coastal areas.
Score (LS)	2
Mitigation	1

Natural Risk – Geological risk	
Significance	**No loss is expected from geological risk**
Likelihood	Madagascar does not have any significant geological risk. Earth tremors are extremely rare and of low magnitude. Madagascar is considered to have one of the lowest earthquake disaster risks in the World (see, for example, PreventionWeb.net[1] or USGS Earthquake hazards program[2]).
Score (LS)	0
Mitigation	1

Natural Risk – Other natural risks	
Significance	No loss is expected from other natural risks

[1] http://www.preventionweb.net/english/countries/statistics/risk.php?iso=mdg

[2] http://www.earthquake.usgs.gov

Likelihood	There are no other significant natural risks likely to reduce carbon stocks in the forests of CAZ.
Score (LS)	0
Mitigation	1

Score for each natural risk applicable to the project (Determined by (LS × M)	
Fire (F)	0
Pest and Disease Outbreaks (PD)	0
Extreme Weather (W)	2
Geological Risk (G)	0
Other natural risk (ON)	0
Total Natural Risk (as applicable, F + PD + W + G + ON)	**2**

4 OVERALL NON-PERMANENCE RISK RATING AND BUFFER DETERMINATION

4.1 Overall Risk Rating

Risk Category	Rating
a) Internal Risk	4
b) External Risk	0
c) Natural Risk	2
Overall Risk Rating (a + b + c)	**6**

The overall non-permanence risk rating for the CAZ REDD project is 06. Following the AFOLU non-permanence risk tool, paragraph 2.5.2, a minimum risk rating of 10 shall apply as a risk factor to the net anthropogenic GHG emission reductions generated by the project, in order to estimate the amount of tradable VCUs.

4.2 Calculation of Total VCUs

Table 01. Summary of GHG Emissions Reductions generated through the REDD CAZ project*

Years	Estimated baseline emissions or removals (tCO_{2e})	Estimated project emissions or removals (tCO_{2e})	Estimated change in carbon stocks (tCO_{2e})	Estimated amount of buffer credits (10% risk rating) (tCO_{2e})	Estimated amount of tradable VCUs** (tCO_{2e})
2008	-1,635,559	-1,199,522	-436,037	43,604	68,389
2009	-2,350,992	-1,647,057	-703,934	70,393	169,071
2010	-3,021,084	-2,003,282	-1,017,802	101,780	321,087
2011	-3,475,947	-2,196,997	-1,278,950	127,895	468,293
2012	-3,623,939	-2,220,095	-1,403,843	140,384	552,620
2013	-3,918,130	-1,830,994	-2,087,135	208,714	1,119,429
2014	-3,581,367	-1,398,306	-2,183,061	218,306	1,274,960
2015	-3,069,579	-958,047	-2,111,532	211,153	1,312,121
2016	-3,016,742	-710,983	-2,305,759	230,576	1,500,196
2017	-3,039,837	-482,514	-2,557,323	255,732	1,725,022
Total	30,733,174	14,647,797	16,085,377	1,608,538	8,511,191

* Ex-ante estimates are for the baseline period (2007–2018)

**Estimates in the last column include ex-ante assumptions about leakage and reductions in non-CO_2 emissions, therefore they are not equal to the difference between columns 5 and 4 of Table 1. See VM Table 36 of the VCS PD.

References cited

Birkinshaw 2007. The Effects of Cyclone Hudah on the Forest of Masoala Peninsula, Madagascar. Madagascar Conservation and Development 2(1): 17-20.

Kull C. 2002. Madagascar's Burning: The persistent conflict over fire. Environment (44):3

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