1 INTERNAL RISK

Project Management		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Species planted (where applicable) associated with more than 25% of the stocks on which GHG credits have previously been issued are not native or proven to be adapted to the same or similar agro-ecological zone(s) in which the project is located.	NA
b)	Ongoing enforcement to prevent encroachment by outside actors is required to protect more than 50% of stocks on which GHG credits have previously been issued.	2
c)	Management team does not include individuals with significant experience in all skills necessary to successfully undertake all project activities (ie, any area of required experience is not covered by at least one individual with at least 5 years experience in the area).	NA
d)	Management team is located more than a day of travel from the project site, considering all parcels or polygons in the project area.	2
e)	***Mitigation*****:** *Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting (eg, individuals who have successfully managed projects through validation, verification and issuance of GHG credits) under the VCS Program or other approved GHG programs.*	−2
f)	***Mitigation*****:** *Adaptive management plan in place.*	−2
Total Project Management (PM) [as applicable, (a + b + c + d + e + f)] Total may be less than zero.		**0**

a) The project activities do not include planting as discussed further in PD Section 5.1.1 so this criterion does not apply to the project.

b) Drivers of deforestation include threats from immigration agricultural frontier, development of new roads, logging, oil and other sources as presented throughout this PD. These drivers threaten the entire project area.

c) This criterion is not applicable because CIMA has extensive experience in managing PNCAZ and has been extremely successful in its programs to date as evidenced by INRENA's (SERNANP's) decision to sign a 20-year management contract with CIMA. Each member of the management team has more than five years of experience in their respective professional or technical positions. The skills from a broad team of expert collaborators complement CIMA's capabilities. Cross training and succession planning ensure the team's success even if members move on to other positions. PD Section 1.3.1 provides more detail on CIMA's experience, skills and its collaborators.

d) CIMA employs approximately 100 professionals, technicians, and park guards located in five offices and 18 guard posts and centers. PD Map 1.1 illustrates the park-guard posts and other CIMA infrastructure. CIMA heads the park-management activities from its field offices in Tarapoto, Tocache, Contamana, and Aguaytia. CIMA's Headquarters in Lima oversees the activities of all field offices and coordinates directly with the relevant offices of the national government. Decentralizing activities into the field offices allows CIMA to hire individuals from the different regions that surround the project area, promoting greater knowledge of, and better, interactions with, local and regional communities and governments. Decentralization also allows CIMA to tailor programs and communications to reflect the needs of the communities and reduce travel times. The size and geography of the project area makes it impossible for Management Team members or park guards to be in every location in the project area within a day without using a helicopter.

e) The project team includes experts in AFOLU projects and carbon projects. David Shoch is a forester with over fifteen years experience in forest biomass carbon measurement and monitoring, and forest growth and yield modeling. David's professional experience providing technical support to carbon projects has involved work assignments throughout North America, Latin America, Africa and Eastern Europe. He has contributed authorship on seminal publications including the Voluntary Carbon Standard and IPCC Supplementary Methods and Good Practice Guidance for Land-use, Land-use Change and Forestry (LULUCF) (IPCC 2006) Activities, and contributed to the development of the CCBA standard. David was a core contributor to the Avoided Deforestation Partners REDD methodology, approved by the VCS in December 2010, and was a contributing author on the GOFC GOLD sourcebook on REDD MRV methods.

Prior to his present position as Director of Forestry and Technical Services at TerraCarbon, David served with The Nature Conservancy's Climate Science Team and with Winrock International. David holds a Master of Forestry degree from the Duke University Nicholas School of the Environment and a BA in Biology from the University of Richmond. He has been a member of the Society of American Foresters since 1997. The TerraCarbon team is committed to the PNCAZ project and will continue to provide technical support as needed. Mr. Shoch's resume is included at the end of this assessment.

Christina Magerkurth has extensive experience in carbon projects using numerous protocols including VCS. She has worked on the development, documentation, validation and verification of carbon offset projects in a variety of sectors for over 8 years. She provides essential support in ensuring the project documentation and evidence is and continues to be in conformance with all VCS and CCBA requirements. Ms. Magerkurth is part of the Field Museum team which is dedicated to the continued success of the PNCAZ REDD Project. Her resume is provided at the end of this assessment.

f) The Field Museum, CIMA, and USAID developed the Index of Conservation Compatibility (ICC) as a planning and monitoring tool (Pequeño 2007). The ICC guides management activities and measures success or failure, based on geo-referenced information gathered in the field and synthesized onto maps. The ICC is a composite measure of cultural assets, quality of human life, threats to cultural and biological diversity, operational (on the ground) and institutional mechanisms, and biological diversity. The index has six levels, each denoting an incremental state of conservation success and providing a recipe for reaching the next level. Holding the ICC together is a system of information management that allows CIMA to scale across geography and across levels of organization. Because the ICC is spatially based, the tool successfully depicts the heterogeneity of a site, showing areas of progress and areas of setbacks.

The ICC is a results framework and evaluation scheme that integrates across disparate activities, keeps a sharp focus on the vision of intact wilderness with sustainable livelihoods, and guides planning for maximum efficiency of limited resources on a large landscape. The ICC capitalizes on the capacity of GIS to integrate field-collected data to reflect the management status of lands inside and outside the park. This framework is instrumental in guiding and organizing the project's activities: it shows different levels of progress in different sections of the landscape and allows CIMA to react quickly to new threats and assets.

Further details on the ICC are provided in the PD Section 1.13.5.2.

Financial Viability		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Project cash flow breakeven point is greater than 10 years from the current risk assessment	NA
b)	Project cash flow breakeven point is between 7 and up to 10 years from the current risk assessment	NA
c)	Project cash flow breakeven point between 4 and up to 7 years from the current risk assessment	NA
d)	Project cash flow breakeven point is less than 4 years from the current risk assessment	0
e)	Project has secured less than 15% of funding needed to cover the total cash out before the project reaches breakeven	NA
f)	Project has secured 15% to less than 40% of funding needed to cover the total cash out required before the project reaches breakeven	NA
g)	Project has secured 40% to less than 80% of funding needed to cover the total cash out required before the project reaches breakeven	NA
h)	Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven	0
i)	***Mitigation***: *Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven*	NA
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**

d) and h) Please refer to the financial plan for the breakeven analysis and description of funders to date. Due to the project's aggressive pursuit of bridge funding while developing the REDD project, it has been able to secure all of the funding needed to cover cash out prior to the sale of credits and the breakeven point is less than four years from the risk assessment.

Opportunity Cost		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	NPV from the most profitable alternative land use activity is expected to be at least 100% more than that associated with project activities; or where baseline activities are subsistence-driven, net positive community impacts are not demonstrated	NA
b)	NPV from the most profitable alternative land use activity is expected to be between 50% and up to100% more than from project activities	NA
c)	NPV from the most profitable alternative land use activity is expected to be between 20% and up to 50% more than from project activities	NA
d)	NPV from the most profitable alternative land use activity is expected to be between 20% more than and up to 20% less than from project activities; or where baseline activities are subsistence-driven, net positive community impacts are demonstrated	0
e)	NPV from project activities is expected to be between 20% and up to 50% more profitable than the most profitable alternative land use activity	NA
f)	NPV from project activities is expected to be at least 50% more profitable than the most profitable alternative land use activity	NA
g)	***Mitigation***: *Project proponent is a non-profit organization*	-2
h)	***Mitigation***: *Project is protected by legally binding commitment (see Section 2.2.4) to continue management practices that protect the credited carbon stocks over the length of the project crediting period*	-2
i)	***Mitigation***: *Project is protected by legally binding commitment (see Section 2.2.4) to continue management practices that protect the credited carbon stocks over at least 100 years*	NA
Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g + h or i)] Total may not be less than 0.		**[0-2-2=-4],** **0**

d) Baseline activities in this project are subsistence driven. Net positive community impacts are demonstrated in Section 6.1 of the PD.

g) CIMA is a non-profit organization created to manage PNCAZ.

h) CIMA's management contract is a binding legal agreement for a 20 year period which covers the length of the crediting period. The contract is discussed further in PD Section 1.12.

Project Longevity		
a)	Without a legal agreement or requirement to continue the management practice	NA
b)	With a legal agreement or requirement to continue the management practice	=30-(60/2)= 0
Total Project Longevity (PL) May not be less than zero		**0**

The project lifetime is likely greater than 60 years because the project area is a legally recognized national park and the government has shown a commitment to ensuring it continues to be privately managed and protected. The Natural Protected Area Law (Ley Nº 26834: Ley de Áreas Naturales Protegidas (publicada el 4 de julio de 1997)) states that all protected natural areas represent the nation's heritage and must be protected in their natural state in perpetuity.

CIMA has been able to renew its management contract each renewal period to date since 2002 as described in PD Section 1.11. CIMA expects to be able to renew its contract when the current one expires. Both CIMA and the government have agreed that a portion of the revenue obtained from the sale of carbon credits will be used to establish an endowment for the park's protection as outlined in Section 2.5.3. This endowment will fund CIMA's or any other future management contract holder's park protection activities and will also ensure the longevity of the park protection activities.

While the project longevity is likely much greater than 60 years, this represents two renewals of the contract which is quite conservative.

Internal Risk	
Total Internal Risk (PM + FV + OC + PL) (0+0+0+0) Total may not be less than zero.	**0**

2 EXTERNAL RISKS

Land Ownership and Resource Access/Use Rights		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Ownership and resource access/use rights are held by same entity(s)	NA
b)	Ownership and resource access/use rights are held by different entity(s) (eg, land is government owned and the project proponent holds a lease or concession)	2
c)	In more than 5% of the project area, there exist disputes over land tenure or	NA

	ownership	
d)	There exist disputes over access/use rights (or overlapping rights)	5
e)	***Mitigation***: *Project area is protected by legally binding commitment (eg, a conservation easement or protected area) to continue management practices that protect carbon stocks over the length of the project crediting period*	-2
f)	***Mitigation***: *Where disputes over land tenure, ownership or access/use rights exist, documented evidence is provided that projects have implemented activities to resolve the disputes or clarify overlapping claims*	-2
Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e+ f)] = (2+5-2-2) Total may not be less than zero.		**3**

b) As discussed in PD Sections 1.12.1, the federal government of Peru owns the land in the project area and has signed a 20 year management contract with CIMA.

d) and f) As discussed in PD Section 1.10.4, when the project began only one area inside the park continues to be incompatible with conservation: an estimated 220 hectare, cattle ranch on the southwest corner of the park that had not been detected when the park was established. Once it was detected, the cattle rancher was asked to leave the park (Carta Multiple Nº 002-2006-INRENA-IANP-PNCAZ/J) since he did not own the land. In a response letter, the rancher offered not to expand his operations and to help keep watch for illegal uses of land within the park (Carta de respuesta y compromise del 18 de febrero de 2007), since he was there prior to the development of the Park. CIMA and SERNANP agreed to this proposal under those terms. The land cleared for ranching is deforested in both the baseline and project scenarios, so it does not impact the carbon accounting. The 21 private land owners within the park have signed agreements not to deforest their property, although these areas also are not included in the project area. These areas comprise much less than 5% of the project area.

e) The project area is a national park whose boundaries are defined by legislation. CIMA has a legally binding management contract for the entire 20 year crediting period.

Community Engagement		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Less than 50 percent of households living within the project area who are reliant on the project area, have been consulted	NA
b)	Less than 20 percent of households living within 20 km of the project boundary outside the project area, and who are reliant on the project area, have been consulted	NA
c)	***Mitigation***: *The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the*	-5

	project area	
Total Community Engagement (CE) [where applicable, (a+b+c)] Total may be less than zero.		**-5**

a) There are no legal households living within the project area reliant on the project area so this criterion is not applicable.

b) More than 20 percent of the households living within 20km of the project boundary outside the project area who are reliant on the project area have been consulted to determine what project activities will be most beneficial and how the project impacts them. The details of the participatory rural appraisals that have been conducted as part of the project are provided in PD Sections 1.10.1-1.10.4, 6 and 7. The money generated from selling carbon credits will be used to expand these appraisals and communicate more directly regarding REDD and the carbon offset project process. To date, the appraisals have focused on how the communities use the project area, how they wish to use the project area and what project activities would best assist the communities achieve their goals.

c) The project generates net positive impacts on the communities as demonstrated in Section 6.1.

Political Risk		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Governance score of less than -0.79	NA
b)	Governance score of -0.79 to less than -0.32	NA
c)	Governance score of -0.32 to less than 0.19	2
d)	Governance score of 0.19 to less than 0.82	NA
e)	Governance score of 0.82 or higher	NA
f)	***Mitigation***: *Country is implementing REDD+ Readiness or other activities, as set out in this Section 2.3.3.*	-2
Total Political (PC) [as applicable ((a, b, c, d or e) + f)] (2-2) Total may not be less than zero.		**0**

b) A governance score was calculated for Peru using the average Governance Scores across the six indicators of the World Bank Institute's Worldwide Governance Indicators, averaged across the last five years' data. The calculation is presented in an attachment to this analysis and the mean was -0.315.

f) The mitigation discount is allowed for this project because Peru has a Designated National Authority under the CDM, MINAM (formerly Consejo Nacional del Ambiente (CONAM)), and at least one registered CDM reforestation project. The project was registered on November 16, 2009 and is located in Piura, Peru.

External Risk

Total External Risk (LT + CE + PC) (3-5+0)=-2 Total may not be less than zero.	**0**

3 NATURAL RISKS

Extreme Weather	
Significance	Minor (5% to less than 25% loss of carbon stocks)
Likelihood	Every 10 to less than 25 years
Score (LS)	2
Mitigation	None

Geologic	
Significance	Insignificant (less than 5% loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event)
Likelihood	Every 10 to less than 25 years
Score (LS)	1
Mitigation	None

Fire	
Significance	Insignificant (less than 5% loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event)
Likelihood	Every 50 to less than 100 years
Score (LS)	0
Mitigation	None
Disease and Pests	
Significance	Insignificant (less than 5% loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event)
Likelihood	Every 50 to less than 100 years
Score (LS)	0
Mitigation	None

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)	1
Other natural risk (ON)	NA
Total Natural Risk (as applicable, F + PD + W + G + ON)	**3**

No indices or reports exist documenting the frequency of natural disasters in the park. PNCAZ and the buffer zone are unlikely to suffer large-scale natural disasters like fires, earthquakes, and floods except in localized, small areas like the eroded red hills not included in the project due to their unsuitability for habitation. In the buffer zone, burning of small agricultural plots is a common activity for renewing crop areas, although these fires tend not to spread because of the high moisture in surrounding vegetation and high annual rainfall. This evaluation is based on the San Martin Risk Assessment (WFP-PREDES-MIMDES. 2007) and the Proposal for Micro – ZEE Shamboyacu (CIMA 2012), which serve as representative proxies for the park and buffer zone.

However, most of the project area is un-fragmented forest, with few areas of bordering pasture/non-forest, thus limited proximity to source areas of anthropogenic fire. A study[1] in the Brazilian Amazon documented a relationship between fire incidence and distance from forest edge, with decreasing fire return intervals with increasing distance from edge. Emissions resulting from forest fires depend on the extent and condition of fuel sources, with initial burns averaging 8% loss of total biomass stocks, and subsequent more severe burns, with higher, drier fuel loads, resulting in losses of up to 45% of original stocks[2], thus far less than complete combustion in the burned areas.

PNCAZ encompasses an area covered largely by Andean forests that are blanketed with mist part of the year and are sufficiently humid to escape natural fires. Nevertheless, the exposed mountain crests formed by acidic hard rock are covered with plants with high concentrations of chemical compounds like polyphenolics. These crests are vulnerable to fires from lightning strikes, especially during extreme dry periods.

Steep hills are also vulnerable to landslides (Alverson et al. 2001). The steepest areas are along the fault lines, making these areas most susceptible to landslides. Risk of landslides resulting in reversals is low. Per module M-MON, "For unplanned deforestation the sum of $A_{DistPA,q,i,t}$ shall be equal to the area of overlap between the delineated area of the disturbance and the summed area of unplanned deforestation in the project area ($A_{BSL,PA,unplanned,t}$), summed to the year in which the disturbance occurred." Thus emissions from natural disturbance that are accounted for are only those taking place in the area of projected deforestation in the baseline. Because the baseline incorporates topographic features (elevation) in the spatial modeling, which assign higher probabilities of deforestation in lower elevation,

[1]Cochrane M.A.& Laurance W.F., 2002. Fire as a large-scale edge effect in Amazonian forests, Journal Of Tropical Ecology, 18:311-325.

[2]Cochrane M.A., Alencar A., Schulze M.D., Souza C.M., Nepstad D.C., Lefebvre P. & Davidson E.A., 1999. Positive feedbacks in the fire dynamic of closed canopy tropical forests, Science, 284(5421):1832-1835.

Cochrane M.A.& Schulze M.D., 1999. Fire as a recurrent event in tropical forests of the eastern Amazon: Effects on forest structure, biomass, and species composition, Biotropica, 31(1):2-16.

more level areas suitable for settlement and agriculture, risk of landslides (that tend to occur on higher elevation, steeper sites less suitable for settlement and agriculture) that produce reversals in project accounting is expected to be low.

An earthquake, fire, or landslide in these areas would not affect more than 5% of the project's carbon stocks and would happen every 50 to 100 years.

There is little documented evidence of pest or disease outbreaks in the region. The forests of the project area have a high diversity of tree species, and like other diverse tropical forests, are not known to be subject to catastrophic disturbance by insect pests or forest diseases. It is assumed that less than 5% of carbon stocks will be affected by such an outbreak and the frequency will be every 50 to 100 years.

Frequency of blowdowns created through extreme weather events is expected to be low. Recurrence intervals for large blow down disturbances in the western Amazon have been estimated at 27,000 years[3].

No other natural risks have been identified for this project area. No mitigation strategies are being implemented to address the natural risks so no discounts are applied. It should be noted that the large scale of the project area in part mitigates the potential impact, at the project scale, of natural disturbances, as it is highly unlikely that any natural disturbance would affect more than 10% of the project area stocks.

4 OVERALL NON-PERMANENCE RISK RATING AND BUFFER DETERMINATION

4.1 Overall Risk Rating

Risk Category	Rating
a) Internal Risk	0
b) External Risk	0
c) Natural Risk	3
Overall Risk Rating (a + b + c)	**3**

Per the Tool, the project will use the minimum risk rating of 10.

4.2 Calculation of Total VCUs

The project will allocate 10% of its credits for the AFOLU Buffer Pool.

Please see ex ante calculations in PD Sections 1.7 and 3.4 for the projected credits and the Carbon Monitoring Report for the calculations associated with each monitoring event.

[3]Espírito-Santo, F.D.B.; Keller, M.; Braswell, B.; Nelson, B.W.; Frolking, S.; Vicente, G. 2010. Storm intensity and old-growth forest disturbances in the Amazon region. Geophysical Research Letters. 37, L11403, doi:10.1029/2010GL043146.