



**Verified Carbon
Standard**

Non-Permanence Risk Report



Document Prepared by Terra Global Capital, LLC

Contact Information info@terraglobalcapital.com

Project Title	Kulera Landscape REDD+ Program for Co-Managed Protected Areas, Malawi
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Prepared By	Terra Global Capital, LLC
Contact	325 27th Street Unit 745 Oakland, CA 94612 USA info@terraglobalcapital.com

CONTENTS

1	INTERNAL RISK	3
1.1	Project Management.....	3
1.2	Financial Viability.....	5
1.3	Opportunity Cost.....	5
1.4	Project Longevity.....	6
2	EXTERNAL RISK.....	8
2.1	Land Tenure and Resource Access Impacts.....	8
2.2	Community Engagement	9
2.3	Political Risk.....	9
3	NATURAL RISK.....	11
3.1	Fire Significance	11
3.2	Fire Likelihood.....	11
3.3	Fire Score.....	12
3.4	Extreme Weather Significance.....	13
3.5	Extreme Weather Likelihood	15
3.6	Extreme Weather Score	16
3.7	Pest and Disease Outbreaks.....	17
3.8	Geologic Risk	17
3.9	Other Natural Risks	18
4	OVERALL NON-PERMANENCE RISK RATING AND BUFFER DETERMINATION ..	19
4.1	Overall Risk Rating.....	19
4.2	Calculation of Total VCUs	20
5	WORKS CITED	21

1 INTERNAL RISK

1.1 Project Management

Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	For the carbon stocks that generate GHG credits, there are no non-native species planted. For leakage mitigation and livelihoods, there are species planted in woodlots and agroforestry systems. These are all native or adapted to the same agro-ecological zone as the project. See VCS PD Sections “Creating Alternative Sources of Fuelwood Through Agroforestry and Farm Woodlots Management.” Tree species include <i>Senna spp.</i>, <i>Acaciaspp.</i>, and <i>Albeziasspp.</i> Also promoted by the Project is the planting of <i>Faidherbia albida</i> in agroforestry systems. Nothing has changed since the PD validation and MR1 verification, no non-native species are promoted.	0
b)	The Project Area is inside a Protected Area and communities have not and do not live the Protected Area boundaries. The protected area managers (DNPW/AP) work together with the communities living around the protected area through co-management to reduce deforestation in the Project Area. Since agents of deforestation include communities around the Project Area in the Project Zone, ongoing enforcement to prevent encroachment by outside actors is required to protect more than 50% of stocks.	2
c)	The project management team consists of people in the Department of Parks and Wildlife, Nyika-Vwaza Association (NVA), and Nkhotakota Wildlife Reserve Association (NAWIRA), Terra Global and Africa Parks (for Nkhotakota Park Management). The key individuals in each of these organizations and their relevant experience is included in Section 2.4.2 of the Monitoring Report 2. This team is highly experienced in the skills needed to implement the project activities and complete the monitoring and quantification requirements under the VCS and CCB.	0
d)	The Project implementers are based in Malawi with offices in Lilongwe and in/and around the Project Areas. The Association have offices near each of their protected areas and have extensions into the field through the Zone Natural Resources Committees (ZNRCS) and Natural Resource Committees (NRCs). Terra Global has a Local Project Coordinator that is based in Lilongwe and who travels to the Project Zones regularly.	0
e)	Mitigation: Terra Global who is part of the management team consists of individuals who have deep experience in the development of numerous	-2

	REDD+ GHG methodologies, tools, projects, and programs, Terra Global has the following relevant experience:	
	Scope	Description
	Methodology/Tools	VCS - VM0006 - Methodology for Carbon Accounting for Mosaic and Land Projects, v2.2
	Methodology/Tools	VCS - VT0005 Tool for measuring above ground live forest biomass using re
	Methodology/Tools	VCS - VT0006 Tool for Calculating LULC Transitions & Defor Rates Using I Sensing Images
	Methodology/Tools	ACR - Voluntary Emission Reductions in Rice Management Systems
	Methodology/Tools	ACR - Greenhouse Gas Emission Reductions from Compost Additions to Gra
	Methodology/Tools	Avoided Conversion of Grasslands and Shrublands to Crop Production
	Grouped Project	VCS -1168 - Kulera Landscape REDD+ Program for Co-Managed Protected
	Grouped Project/ JNR Baseline	VCS - 1848 Korea - Myanmar Joint - Bago District REDD+ Program, with N Sanctuary Myanmar
	Grouped Project	VCS - 1381 - HIMA (Hifadhi ya Misitua ya Asili ya jamii) REDD+ Program
	Project/Programs	VCS - 2071 - Cocomacia Community Redd+ Program, Choco/Antioquia Colo
	Jurisdictional REDD+	Carbon Fund - Congo - Brazzaville ERP
	Grouped Project	VCS - 2298 - Consejos Comunitarios Del Pacifico Valle Del Cauca Program Cauca, Colombia
	Project/Programs	VCS - 904 Reduced Emissions from Defor. & Degradation in Community Meanchey, Cambodia
	Project/Programs	ACR - Low Emission Rice Credits
	Jurisdictional REDD+	Nesting-based quota allocation procedure for REDD+ initiatives in Guatemala
	Boards/Advisory	Verra Program Advisory Group
	Boards/Advisory	JNR Stakeholder Group
	Boards/Advisory	Private Sector observer on behalf for IETA to the FCPF
	Boards/Advisory	Steering Committee member on Climate Action Reserve's Mexico Forestry W
	Other - Technical	Carbon Fund Methodological Framework Contributor
	Other - Technical	REDD+ SES - World's first Audit
	Other - Technical	UNFCCC Roster of Technical Experts
	Other - Technical	First Technical Annex of REDD + of the Republic of Argentina
	Other - Technical	Recommendations for the use of tree models to estimate national forest bioma uncertainty
	Supporting documents for these will be provided upon request	
f)	Mitigation: Based on the results that are generated and measured during the monitoring period the program has identified changes to make during the next period. These have been documented in the process defined in the CCB	-2

	monitoring plan under Section 1.7 and included in the report Kulera Adaptive Management Report (Listing in the Annex of the Monitoring Report)	
Total Project Management (PM) [as applicable, (a + b + c + d + e + f)] Total may be less than zero.		-2

1.2 Financial Viability

Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Not Applicable	
b)	Not Applicable	
c)	Not Applicable	
d)	The project has already broken even and has been funding its operations with carbon revenue since 2015. See Kulera Financial Forecast as of August 31 2019 v1-0 (listed in the Annex of the Monitoring Report), and supporting documentation for details.	0
e)		0
f)	Not Applicable	
g)	Not Applicable	
h)	The project has secured funding for operations with carbon revenue for at least the next 3 years and shows all signed for being able to monetize credits to finance on-going operations. See Kulera Financial Forecast as of August 31 2019 v1-0 (listed in the Annex of the Monitoring Report), and supporting documentation for details.	
i)	Not Applicable	
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

1.3 Opportunity Cost

Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Not Applicable	
b)	Not Applicable	

c)	Not Applicable	
d)	This is an avoided unplanned deforestation project, where the baseline activities are primarily subsistence driven (see VCS PD section “Underlying Drivers of Deforestation and Degradation”). This remains the case for this monitoring period. This project shows positive community benefits. Please see the Monitoring Report 2 for community positive impacts.	0
e)	Not Applicable	
f)	Not Applicable	
g)	Not Applicable	
h)	Mitigation: This project has a legally binding agreement in place that protects credited carbon stocks during the crediting period (see REDD+ Agreement)	-2
i)	Not Applicable	0
Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g + h or i)] Total may be less than 0.		-2

1.4 Project Longevity

Project Longevity		
Q	Does the project have a legally binding agreement that covers at least a 100-year period from the project start date?	No
Q	What is the project Longevity in years?	60
Q	Legal Agreement or requirement to continue management practice? The Project Areas are governed by the National Parks and Wildlife Act, CAP 66.07 (1992), as amended, and the Regulations Game Act, CAP 66.03. These laws provide for the establishment of national parks, preservation of animals, vegetation, and objects of special interest in national parks. Thus, there is the legal requirement to preserve vegetation. Local communities, via their Community Associations, who have traditionally been responsible for past deforestation, have signed legally binding Cooperative Management (“co-management”) agreements with the Government of Malawi, through the Department of National Parks and Wildlife (DNPW) for Nyika and Vwaza and	Yes

	Africa Parks for Nkhotakota. These agreements obligate the Association and its member communities (who cover all communities within 5km of the project areas borders) to comply with provisions of the protected areas' approved management plans; as well as to ensure compliance with such laws on the part of the public in general. The co-management agreements are automatically renewed every 3 years unless otherwise terminated by either party. All agreements are in force. Further the Associations have signed a REDD+ Agreement, with DNPW and Terra, that specifically states that the Associations and their member communities "For a period of 30 years beyond the Crediting Period, a period sufficient to minimize the risk of the Project according to the VCS non-permanence risk tool, agrees to implement those management practices necessary to maintain carbon stocks on which GHG credits have previously been issued during the Crediting Period." Also, see Section 8.12 of the REDD+ Agreement, which defines the "Term: The term of this Agreement shall be the longer of the Crediting Period or the Project Longevity period from the Project Start Date ("Term")." Since the DNPW and the Community Associations are Project Proponents and through the VCS Deed of Registration agree that the information submitted is correct and the longevity is stated as 60 years, this provides evidence that the right of use is secure for the full 60 year longevity period. The agreement that the government of Malawi has signed to contract Africa Parks to manage Nkhotakota obligates them to protect forest cover in the PA and to work through communities in a co-management legal structure.	
b)	With legal agreement or requirement to continue the management practice	$30-(60/2)=0$
Total Project Longevity (PL) May not be less than zero.		0

1.4.1 Total Internal Risk

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

2 EXTERNAL RISK

2.1 Land Tenure and Resource Access Impacts

Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
	Are the ownership and resource access/use rights held by the same of different entities	Same
a)	The Project Areas are located in three different Protected Areas in the Northern and Central Regions in Malawi: Nyika National Park, Vwaza Marsh Wildlife Reserve, and Nkhotakota Wildlife Reserve. The government of Malawi owns the Project Area and can grant access and use rights. The government, through co-management agreements together with the communities manage the protected areas and are provided access to within 5km inside the Project Area. Thus, the Project Areas are both owned and managed by the same entity, the DNPW. Africa Parks manages Nkhotakota, but ownership remains that governments and use rights are granted to the Associations.	0
b)	Not Applicable	
c)	No disputes over land tenure or ownership exist in the Project Area. For reference: The Parks and their borders are established by the DNPW per National Park and Wildlife Act, CAP 66.07, 1992 and the Game Act, CAP 66.03. This authorizes the DPNW to manage parks and game reserves and their associated boundaries. DNPW Director Brighton Kumchedwa, has confirmed that there have not been, and that there are no plans to change the boundaries of the protected areas. Based on information provided by the Director, Brighton Kumchedwa, of the DNPW directly on this question the following detail was provided: <i>Sometimes there is confusion because of the boundary fence in some cases does not exactly follow the actual park boundary. For the area referred to as being “encroached” it a result of the boundary fence shifting but not shifting the park boundary. As a point of correction, if there should be a case where there was interest in moving the park boundary inside as a result of encroachment, the park boundary cannot easily be moved. And based on what Blessings Mwale provided from the Park Manager, if there would be a new boundary, it only becomes official after it is approved by Parliament and Gazetted</i>	0
d)	Not Applicable	0
e)	Not Applicable	

f)	Mitigation: The protected area will be protected in perpetuity by Malawi law and the REDD+ Agreement only covers the longevity period which is longer than the crediting period.	-2
g)	Not Applicable	0
Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e+ f + g)] Total may not be less than zero.		0

2.2 Community Engagement

Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	Not Applicable	
b)	This risk factor seeks to capture the completeness of community engagement by measuring % of communities consulted that live within 20km of the project area <u>AND</u> who are reliant on the Project Area resources. In defining the communities who are reliant on the Project Area we apply the definition of the Project Zone in accordance with the new definition in CCB 3.1, Where “Project Zone’ is defined as the area encompassing the project area in which project activities that directly <u>affect land and associated resources</u>, including activities such as those related to provision of alternative livelihoods and community development, are implemented.” In the case of the Kulera Project, based on PRAs and cost distance analysis which assessed the mobility of deforestation agents, the area around the Project Area where communities are reliant on the Project Area and who are impacted by Project Actions was demonstrated to be 5km of the border of the Project Areas. Given that the Project Actions are conducted by the NAWIRA and NVA associations with all communities included within 5km of the part boundaries in accordance with their constitutions, these communities are not only consulted on a regular basis, but they are part of the implementation of the Program.	0
c)	Mitigation: The Project has been designed from the start as a Project that generates positive social benefits. Please see the CCB PD and Monitoring Reports and 1 and 2 for details.	-5
Total Community Engagement (CE) [where applicable, (a+b+c)] Total may be less than zero.		-5

2.3 Political Risk

Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating																																																
a)	Not Applicable																																																	
b)	Malawi's average score for WB indicators for the 5 years prior to the end of this monitoring period (2015 to 2019) is -0.46, which is based on the risk tool has a risk rating of 4. <table><tr><th>Series Name</th><th>2015 [YR2015]</th><th>2016 [YR2016]</th><th>2017 [YR2017]</th><th>2018 [YR2018]</th><th>2019 [YR2019]</th></tr><tr><td>Control of Corruption: Estimate</td><td>(0.767)</td><td>(0.757)</td><td>(0.659)</td><td>(0.745)</td><td>(0.781)</td></tr><tr><td>Government Effectiveness: Estimate</td><td>(0.666)</td><td>(0.726)</td><td>(0.660)</td><td>(0.729)</td><td>(0.749)</td></tr><tr><td>Political Stability and Absence of Violence/Terrorism: Estimate</td><td>0.032</td><td>(0.113)</td><td>(0.251)</td><td>(0.423)</td><td>(0.267)</td></tr><tr><td>Regulatory Quality: Estimate</td><td>(0.818)</td><td>(0.845)</td><td>(0.748)</td><td>(0.677)</td><td>(0.701)</td></tr><tr><td>Rule of Law: Estimate</td><td>(0.307)</td><td>(0.375)</td><td>(0.370)</td><td>(0.380)</td><td>(0.331)</td></tr><tr><td>Voice and Accountability: Estimate</td><td>(0.004)</td><td>(0.029)</td><td>(0.030)</td><td>(0.058)</td><td>(0.095)</td></tr><tr><td></td><td></td><td></td><td></td><td>Avg</td><td>(0.468)</td></tr></table> Data from database: Worldwide Governance Indicators Last Updated: 09/28/2020	Series Name	2015 [YR2015]	2016 [YR2016]	2017 [YR2017]	2018 [YR2018]	2019 [YR2019]	Control of Corruption: Estimate	(0.767)	(0.757)	(0.659)	(0.745)	(0.781)	Government Effectiveness: Estimate	(0.666)	(0.726)	(0.660)	(0.729)	(0.749)	Political Stability and Absence of Violence/Terrorism: Estimate	0.032	(0.113)	(0.251)	(0.423)	(0.267)	Regulatory Quality: Estimate	(0.818)	(0.845)	(0.748)	(0.677)	(0.701)	Rule of Law: Estimate	(0.307)	(0.375)	(0.370)	(0.380)	(0.331)	Voice and Accountability: Estimate	(0.004)	(0.029)	(0.030)	(0.058)	(0.095)					Avg	(0.468)	4
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c)	Not Applicable																																																	
d)	Not Applicable																																																	
e)	Not Applicable																																																	
	Mitigation: Malawi has received over the last number years, direct support from USAID for development of their national REDD strategy and National Forest Reference Emission Level. Under the USAID funded Protecting Ecosystems and Restoring Forests in Malawi (PERFORM) activity, in 2019 they submitted their FREL to UNFCCC. In addition, the US Forest Services has support Malawi with a large biodiversity monitoring program. During 2014 and 2015, Malawi received support from UNREDD to begin development of their national REDD+ roadmap which included producing the following outputs: • Output1: Institutional Context Analysis and Stakeholder engagement and participation strategy • Output 2: Corruption Risk Assessment	-2																																																

	• Output 3: Review of Legal and Policy Environment • Output 4: NFMS Roadmap • Output 5: Knowledge Sharing and Awareness Raising Malawi has an active and effective DNA and while they have not registered and A/R project under the CDM they have numerous cookstove projects which each related to the country's ability to address the main driver of deforestation.	
Total Political (PC) [as applicable ((a, b, c, d or e) + f)] Total may not be less than zero.		2

2.3.1 Total External Risks

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

3 NATURAL RISK

This portion of the template has been re-organized by type of natural risk to facilitates a more efficient review. For each type natural the section includes the explanation of significance, likelihood, and mitigation measures.

3.1 Fire Significance

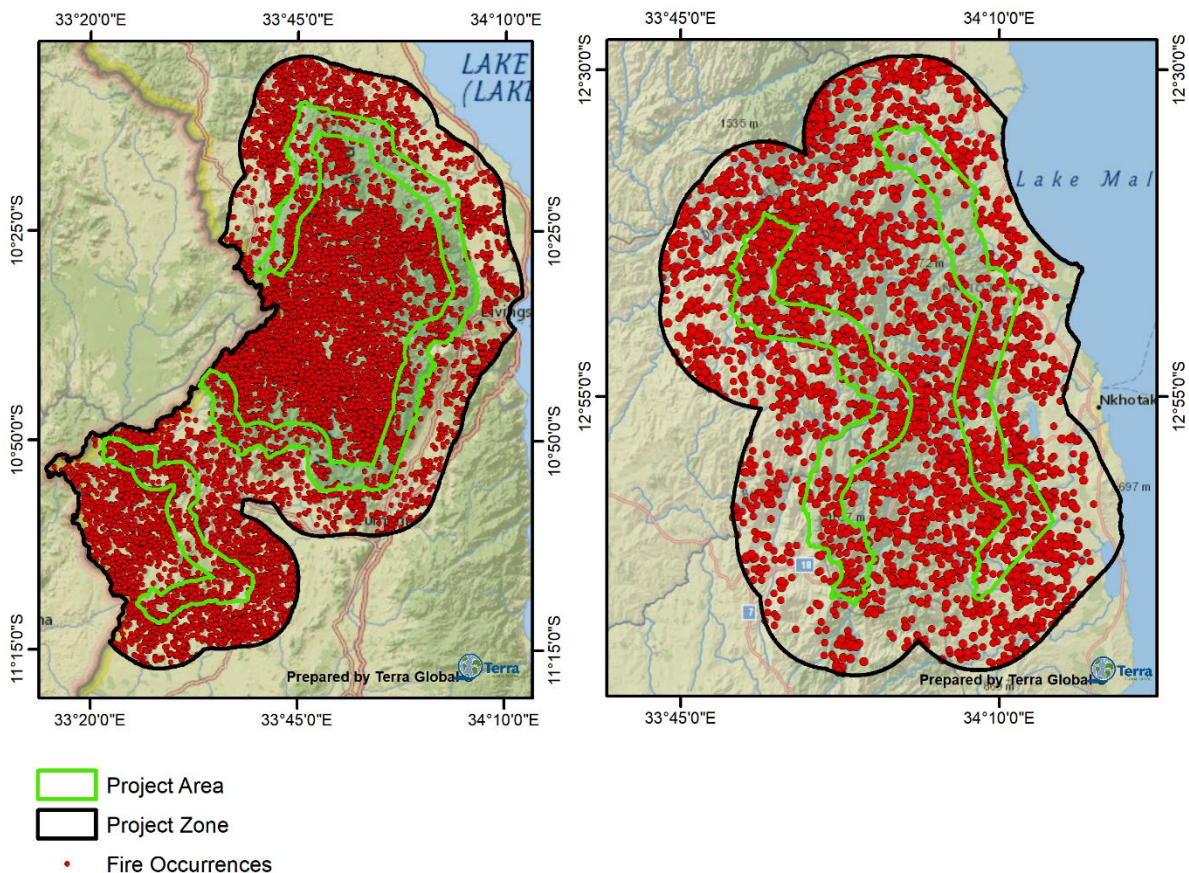
The area affected by fires does not mean that the trees were completely damaged. Depending upon the age and species many times fire does not destroy the trees only the understory and some of the trees recovered (Foli, 2011). The forest floor in the Project Area contains a minimal amount of fuel load, thus minimizing the damage from fire, which supports the significance rating of "minor." Since no evidence of huge forest loss due to fire in the natural forests is known to have occurred in the Project Area, and given the small area that has actually burned in the entire country, the loss occurring from fire was assumed to be minor. It was also observed during the remote sensing and land-use classification, at this monitoring period, that some areas which appeared burned in the remote data were still forests. Indicating the fires, while occurring, often leave forests standing.

3.2 Fire Likelihood

Fire return interval was detected using MODIS MCD14ML and shows that fires are found in forests and non-forest areas (MODIS, 2019) (Map 1). Between 2001 and 2019, the average number of fire events of 76 per year. Malawi's forests are naturally fire-adapted ecosystems. Fires are sometimes used to clear land in customary landscape management activities, including hunting, pasture management, and land preparation for agriculture. However, at present, there is no approach available to reliably differentiate between fires driven by anthropogenic activities and those that occur naturally in Malawi.

The area affected by fires as measured, as this monitoring period, increased due to the prolonged dry spells in some years. A general trend of increasing mean annual temperatures and a decline in mean annual rainfall has been observed in Malawi, which can be attributed to forest loss potentially due to wildfire (Foli, 2011). The fire season usually starts at the end of the dry period before the onset of the rains which usually arrive in November.

Given the frequency of fires, the likelihood assessment is "Less than every 10 years".



Map 1. Fire occurrences between 2001 - 2019. Only points with a reported 70% or greater confidence shown. (Source: Terra Global 2020)

3.3 Fire Score

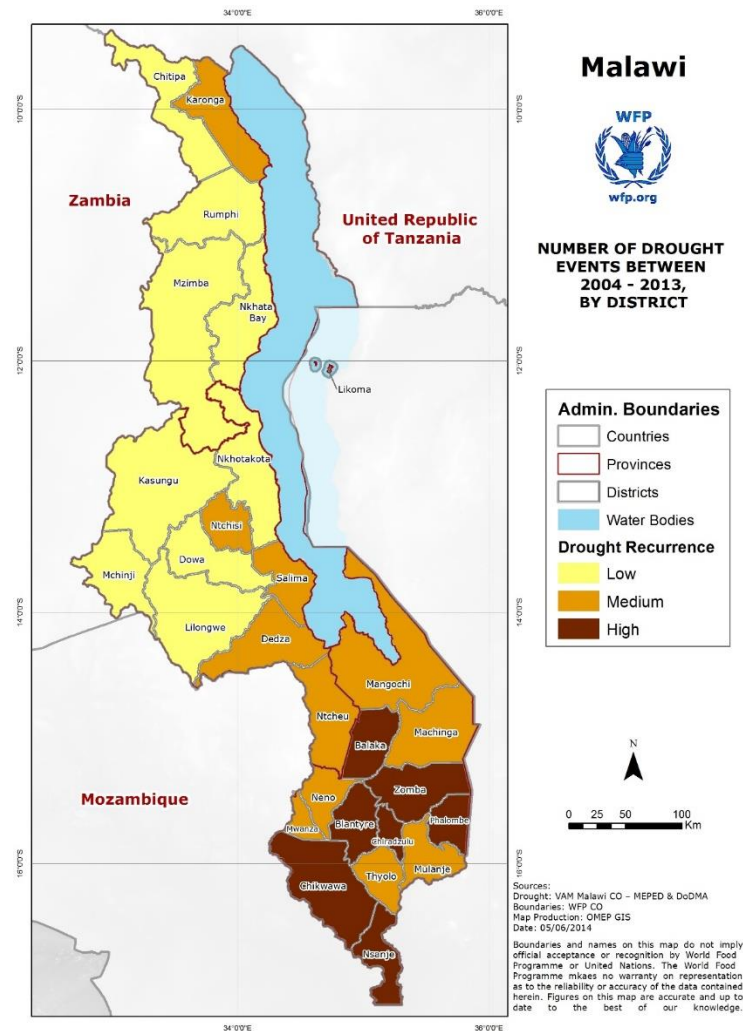
Significance	Minor
Likelihood	Less than every 10 years
Score (LS)	5
Mitigation	0.50
Combined Score	2.50

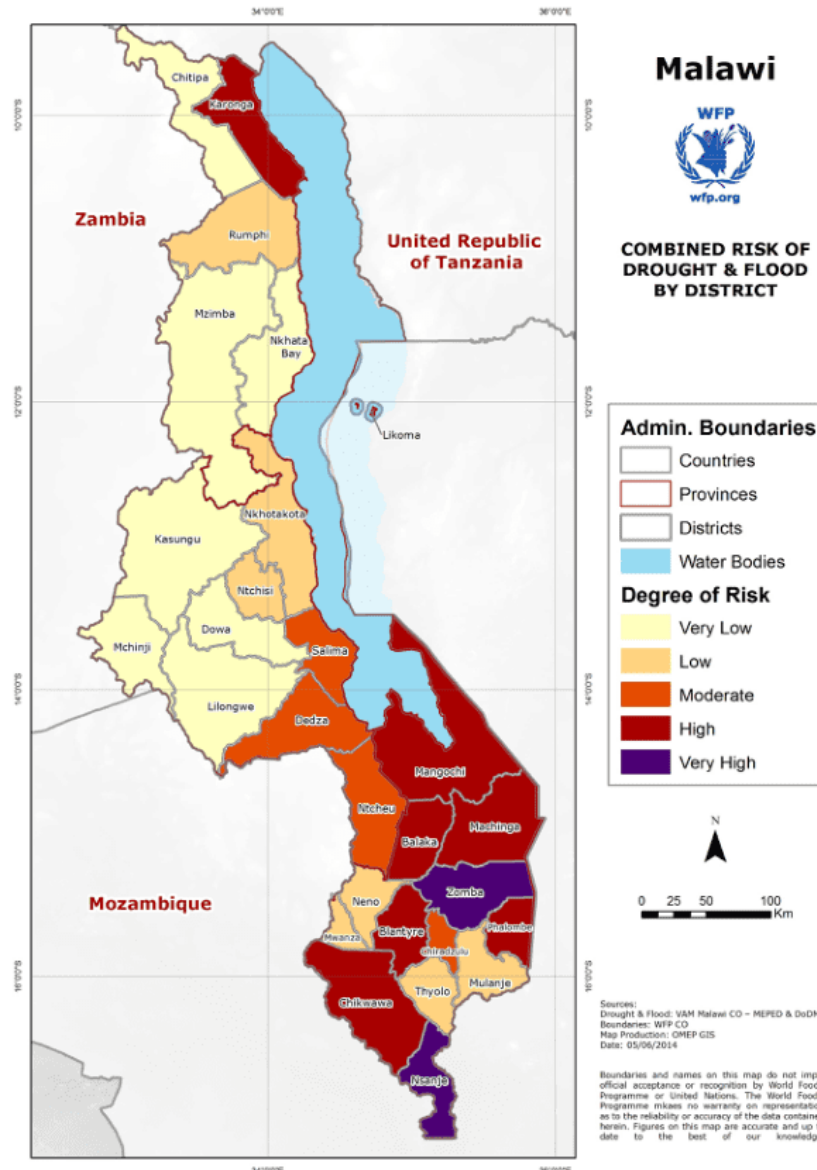
3.3.1 Fire Mitigation

The project implements several activities that seek to reduce the risk of fire. These include on-going community awareness on the impact of fire, creation of fire management plans, construction of fire breaks and controlled burns. These all reduce the risk of fire as well as the significance of fire in the Project Areas. While the Project does implement these fire risk reduction measures, the quality of the monitoring data on these activities is not adequate to demonstrate that the Program is “effectively containing natural risk”. Thus, only a mitigation score of 0.50 was taken.

3.4 Extreme Weather Significance

The natural ecosystem, including the forests in the Project Area are well adapted to handle seasonal weather patterns. Incidences of droughts have not been linked to direct loss of forests such as death of trees, and floods that could impact the Project Areas would have limited impact of forest cover as it would be isolated to damage near river edges. However, there can be a secondary risk to Project Area carbon stocks in cases where drought or floods damage food and cash crops of the communities in the Project Zone. This would force them to buy food placing demands on their already limited financial resources. This can cause the incentive for the illegal extraction of forest resources in the Project Areas to increase thus putting pressure on carbon stocks. It is not possible to quantify the secondary impact of increased deforestation pressure due to the Project communities’ crops being damaged by drought or floods. To be conservative, it is assumed that this increased pressure could impact 5% of the carbon stocks already credited.





Map 3. Combined Risk of Drought and Flood by District (World Food Program, 2020)

3.5 Extreme Weather Likelihood

The Project Area is exposed to a range of extreme weather events that can impact carbon stocks, including dry spells, seasonal droughts, intense precipitation, river flooding and flash floods. These events erode soils, damage crops, and can lead to loss of livelihoods for the communities in the Project Zone. Climate models predicts that the frequency of heavy rainfall events is expected to increase by 20 percent by 2090 and higher temperatures and more hot days are likely to increase. Droughts and floods, the most severe of these hazards, have increased in frequency, intensity, and magnitude over the past twenty years, with dire consequences on food and water security, water quality, energy resources, and sustainable livelihoods of the most rural communities.

The number of weather-related disaster events in Malawi as a whole has been increasing since 1974, and the country has experienced more than 40 disasters between 1970 and 2006 (USAID, 2019), or about 1 per year. But the Project Areas are located in areas with lower than average risk for droughts/poor growing season (**Error! Reference source not found.**). And the risk of combined drought and flood in the Project Area are also lower than Malawi as a whole (**Error! Reference source not found.**). Only a small portion of the Project Area where Nyika's northeast border is at Karonga is a medium risk. While the likelihood for extreme weather to impact the Project Areas is low compared to other places in Malawi, it is still estimated to be likely to occur less than every 10 years.

3.6 Extreme Weather Score

Significance	Minor
Likelihood	Less than every 10 years
Score (LS)	5
Mitigation	0.25
Combine Score	1.25

3.6.1 Extreme Weather Mitigation

While the occurrence of extreme weather events itself cannot be mitigated, the program implements several activities that support the communities in adapting to climate change and provide better defenses to droughts. The Project proponent has proven history of effectively mitigating the natural risk of extreme weather, as there is no way to contain the risk of Extreme Weather. Mitigation of extreme weather includes:

1. **Conserving Natural forests** - The conservation of natural forests avoids carbon emissions, reducing the global risk of extreme weather through climate change. The loss of these forests would cause significant soil loss through erosion.
2. **Tree planting** - The promotion of tree planting helps remove carbon dioxide from the air, reducing the global risk of extreme weather through climate change.
3. **Erosion control** – promotion of planting of woodlots in degraded agriculture areas. Woodlots are promoted in non-forest areas that have been degraded these are usually found in poor soils, and steep slopes that have already seen top soil erosion, or these areas will erode if not mitigated.
4. **Soil Conservation / Mudslide Avoidance**. In Malawi the most extreme weather events include drought and floods. Community Associations discuss not cutting trees upslope of villages to avoid mudslides. Open discussions about mudslides and soil conservation became a common topic at NRC meetings after the floods in April 2019.
5. **Climate Smart Agriculture and Continual Crop Improvements** – The Project Proponents work with a local NGO Total LandCare who helps source the materials and seeds/cutting for drought tolerance and mitigation. Materials for drought mitigation include treadle pumps for irrigation during the dry season. TLC also sources drought

resistant crops varieties and seeds, over the monitoring period TLC has sourced improved varieties of cassava and procured treadle pumps. Other agriculture improvements include crop diversification, and away from rainfed corn, adoption of soil conservation practices making crops more resilience to reduced water, and promotion of agroforestry systems that enhance soil and reduce impacts of floods.

Each of these activities strengthens the communities' ability to adapt (reduce the risk) of droughts and floods. Since the Program both implements and has data demonstrating the adoption of these mitigation measures by communities (see Monitoring Report section on Community Impacts 4.1.1.), the mitigation score of 0.25 was taken.

3.7 Pest and Disease Outbreaks

Significance	No Loss
Likelihood	0
Score (LS)	0
Mitigation	0
Combined Score	0

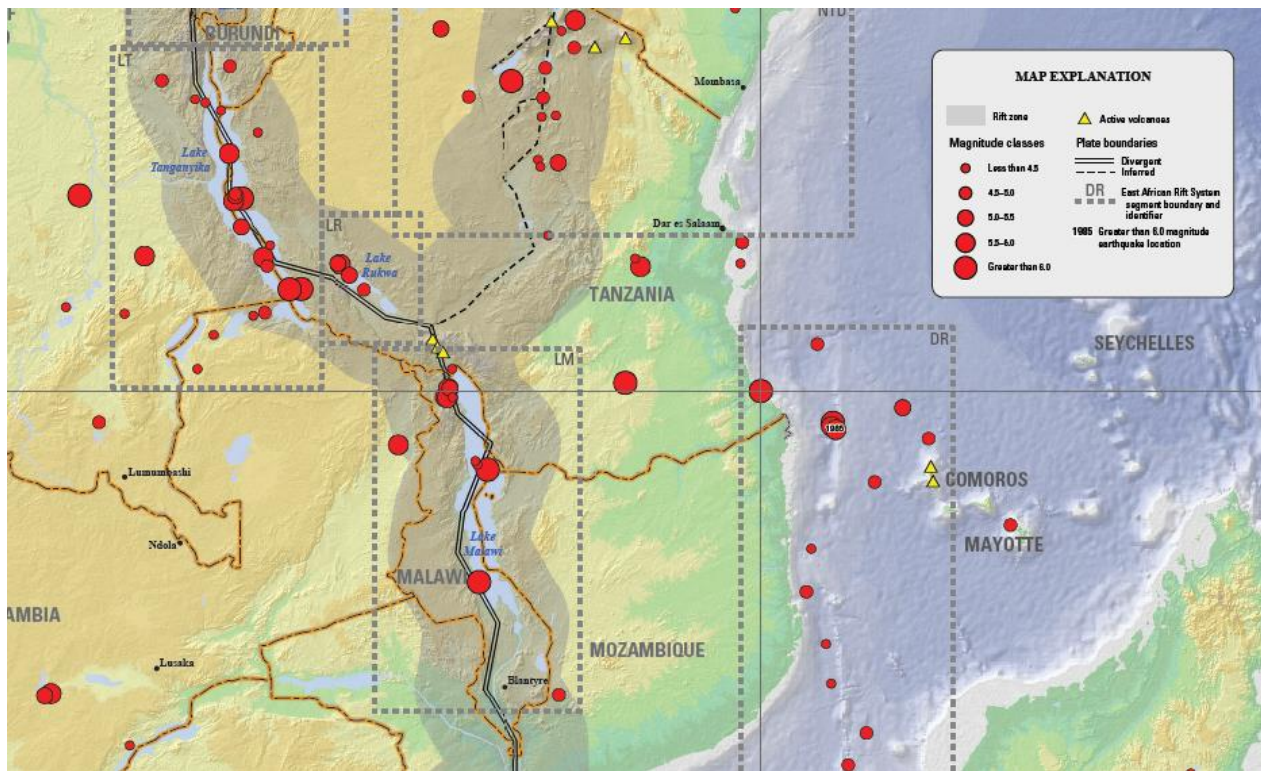
The Project Area is mixed natural forest, making the ecosystem itself less vulnerable to loss from diseases and pests. The existence of pest and insects has been recognized in one study by FAO (FAO, Forest Health & Biosecurity Working Papers OVERVIEW OF FOREST PESTS., 2007). However, at present, forest pests and diseases have not been reported as threat to forests in Malawi (FAO, Forest Resource Assessment of Malawi. Food and Agriculture Organization of the United Nations, 2010).

3.8 Geologic Risk

Significance	No Loss
Likelihood	0
Score (LS)	0
Mitigation	0
Combine Score	0

The Project Area is situated in the region subject to minimal risk of loss due to earthquakes or volcanos. The risk of loss of trees from earthquakes is low given the low anticipated strength of potential earthquakes. Over the last 113 years, only 4 earthquakes over 3.5 have been reported in the country, and only one was near the Project Area (Map 4). The 1989 Malawi earthquake, magnitude 6.6, occurred on March 10, 1989 in central Malawi. No loss of forest cover has been found to be linked to this seismic event. The volcanic activity in the vicinity of the Project Area is

non-existent, and there are no active volcanoes in the region. Based on this data, the geographic risk of loss of carbon stocks in the Project Area is zero.



Map 4. Earthquakes in Malawi - 1900 -2013 (Gavin P. Hayes et al, 2014)

3.9 Other Natural Risks

There are no other risks that is present in the Project Area that may impact the accumulated carbon stocks.

3.9.1 Total Natural Risk

Risk Category Factors		LS Score	Mitigation	Risk Rating
a)	Fire (F)	5	0.50	2.50
b)	Pest and Disease Outbreaks (PD)	0		0.00
c)	Extreme Weather (W)	5	0.25	1.25
d)	Geological Risk (G)	0		0.00
e)	Other natural risk (ON1)			0.00
f)	Other natural risk (ON2)			0.00
g)	Other natural risk (ON3)			0.00
Total Natural Risk [F + PD + W + G + ON]				3.75

4 OVERALL NON-PERMANENCE RISK RATING AND BUFFER DETERMINATION

4.1 Overall Risk Rating

Risk Category	Rating
Internal risk	0.00
External risk	0.00
Natural Risk	3.75
Overall risk rating (a + b + c)	10

4.2 Calculation of Total VCUs

The buffer credits to the deposited into the non-permanence risk pool based on carbon stock related reductions and removals for the monitoring period is calculated as follows:

MR#	YEAR	Validated Baseline - Project Area	Ex-Post Project Emissions	Leakage Emissions	GHG from improved cookstoves	GHG from Emission sources	NER	Risk Buffer	Buffer	VCU
		[tCO ₂ e]	[tCO ₂ e]	[tCO ₂ e]	[tCO ₂ e]	[tCO ₂ e]	[tCO ₂ e]	[%]	[tCO ₂ e]	[tCO ₂ e]
MR2	2013	(451,949)	(65,592)	-	-	-	386,357	10%	(38,636)	347,722
MR2	2014	(470,044)	(67,651)	-	-	-	402,394	10%	(40,239)	362,155
MR2	2015	(482,514)	(69,709)	-	-	-	412,804	10%	(41,280)	371,524
MR2	2016	(496,197)	(71,768)	-	-	-	424,429	10%	(42,443)	381,986
MR2	2017	(518,748)	(73,827)	-	-	-	444,920	10%	(44,492)	400,428
MR2	2018	(531,187)	(75,886)	-	-	-	455,300	10%	(45,530)	409,770
TOTAL MR2		(2,950,638)	(424,433)	-	-	-	2,526,205		(252,621)	2,273,585

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