SOIL CARBON IMPROVEMENT PROJECT THROUGH GRASSLAND MANAGEMENT, IN SOUTH AFRICA

Project title	Soil Carbon Improvement Project through Grassland Management, in South Africa
Project ID	2710
Monitoring period	01-July-2018 to 31-December-2022 (inclusive of both the dates)
Original date of issue	26-June-2024
Most recent date of issue	20-September-2025
Version	05
VCS Standard Version	VCS Standard version 4.7
Prepared by	WeAct Pty Ltd.

CONTENTS

PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The project activity is dedicated towards removal of GHG from atmosphere by implementing sustainable grazing management and controlled burning over multiple grasslands in the host country South Africa. The project has been designated as a 'Grouped Project' and plans to increase the number of project instances over the period. The first instance includes four land areas Kwazulu Natal (KZN, 6785.4 ha), Eastern Cape (EC, 70737.5 ha), MPL (3773.5 ha) and "Free State" (10654.3 ha) and this first instance aims to recover around 91,950.6 ha of land degraded by unrestricted grazing & uncontrolled fire through the implementation of planned rotational grazing and controlled burning.

Totally, 91,950.6 ha of degraded grassland have been managed sustainably by fence building and planned burning. There are two main restoration measures followed in the project during this monitoring period. Throughout the monitoring period of 01-July-2018 – 31-December-2022, the first project instance split pastures using fencing in order to increase the number of pastures, decrease the days grazed, and increase the overall animal density per unit area on the properties and implemented planned burning.

Start date of the project activity is considered as: 01-July-2018 as per para 3.8 of the VCS standard 4.7. The project start date reflects the completion of fence construction and the first participating ranch began practicing the improved grazing that comprises the project activity. Other participating ranches under this 1st instance completed fence construction and started improved grazing practices in different dates in the month of July 2018 as mentioned below.

Strata No.	Ranch Name	Project Implementation dates
Strata 1	Bennidale Trust	05-July-2018
Strata 2	DavMar Agri	23-July-2018
Strata 3	Petrus Jacobus Loots	15-July-2018
Strata 4	Tillietudlum Nature Reserve	12-July-2018
Strata 5	KZN Crane Foundation	01-July-2018
Strata 6	Bergplaats Irene Properties (Pty) Ltd	10-July-2018
Strata 7	Ken Dorning Family Trust	16-July-2018
Strata 8	Field and Stream Pty Ltd	15-July-2018
Strata 9	Allandale Trust	17-July-2018
Strata 10	Riverdene Farming Co	15-July-2018
Strata 11	Longacres CC	22-July-2018
Strata 12	Tandjiesberg Trust	01-July-2018
Strata 13	Thorncliff Trust	07-July-2018
Strata 14	The Fairfield Trust	01-July-2018
Strata 15	Donovale Farming Company (Pty) Ltd	11-July-2018
Strata 16	Blaauwater Trust	31-July-2018
Strata 17	R J Combrink & Seun Familie Trust	19-July-2018
Strata 18	Kleinfontein Trust	15-July-2018
Strata 19	Kleinfontein Trust	12-July-2018
Strata 20	Giel Beukes Aandele Trust	29-July-2018
Strata 21	The Waterfall Trust	02-July-2018
Strata 22	Die Triangle Trust	15-July-2018

This is the 1st verification under VCS. The current monitoring period is considered from 01-July-2018 to 31-December-2022 (includes both the dates) which is part of the 1st renewable crediting period from 01-July-2018 to 30-June-2038' (includes both the dates).

Total GHG reduction and removals generated in this monitoring period is 984,784.82 tCO_2e, without buffer, (calculated value to be referred in the ER sheet).

Project development and implementation schedule of this project is listed as follows:

Year	Milestone (s) in the project's development and implementation
2018	• Trainings conducted by EWT on sustainable grassland management • July 2018: Project participants with the help of EWT finished fence building to start rotational grazing and controlled burning. • November-December: Woody biomass Survey and measurement, Field monitoring, by project participants • Burning data gathering and collating by project participants and maintain the project record • Fertilizer record and Livestock census by project participants & maintain the project record.
2019	• Introduction of the project activities to WeAct. • Field visit and initial due-diligence of the project by WeAct with the CMEs • Decision to support the project under the Carbon mechanism so that initiatives undertaken up by the NGOs are extended and positive impacts can be achieved in the long run. Preparatory work started. • November-December: Woody biomass Survey and measurement, Field monitoring, by project participants • Burning data gathering and collating by project participants & the Biodiversity Company and maintain the project record • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2020	• Introduction of Bahori for conducting a participatory rural appraisal • Bahori started communication with the NGOs and ground teams, primary & secondary data review etc. • Preparatory work for Site visit and stakeholders consultations post the pandemic lock down phase. • Completion of detailed project report by WeAct • November-December: Woody biomass Survey and measurement, Field monitoring, by project participants • Burning data gathering and collating by project participants & the Biodiversity Company and maintain the project record • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2021	• Initial information and partial data gathering by Bahori with the help of the NGOs • Consultation rounds and workshops with landowners by Bahori • Process started for contracting and documentary engagement of landowners by WeAct • Data review and VCS PD development by WeAct • Start of VCS Project cycle by WeAct and in parallel continuation of PRA etc.

	• November-December: Woody biomass Survey and measurement, Field monitoring, by project participants • Burning data gathering and collating by project participants & the Biodiversity Company and maintain the project record • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2022	• Review of VERRA comments by WeAct on initial submission • Achieved VCS listing of the project by WeAct. • Continuation of PRA assessment to finalize the overall project design, boundary, baseline scenario etc. Multiple site visits to interact with farmers and collect data • Primary survey to collect both baseline and project specific data from the landowners • Closure of the PRA assessment and submission of Report • 01-July-2022 to 05-July-2022: Validation site visit was conducted • July-December 2022: Woody biomass Survey and measurement, Field monitoring, soil collection and laboratory analysis by Biodiversity Company • Burning data gathering and collating by project participants & the Biodiversity Company and reporting to WeAct • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2023	• Worked on review comments from VVB and VERRA • Multiple site visits to interact with farmers and collect data • Woody biomass Survey and measurement, Field monitoring, soil collection and laboratory analysis by Biodiversity Company • Burning data gathering and collating by project participants & the Biodiversity Company and reporting to WeAct • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2024	• 13-July-2024: Project registered • Preparation of Monitoring report • Multiple site visit to conduct questionnaire survey, interview, data gathering with the stakeholders • 19-September-2024 to 29-September-2024: Verification site visit was conducted • Woody biomass Survey and measurement, Field monitoring, soil collection and laboratory analysis by Biodiversity Company • Burning data gathering and collating by project participants & the Biodiversity Company and reporting to WeAct • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2025	• 20-February-2025: MR submitted to VERRA • Review comments from VERRA and VVB

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	08-February-2023	VCS	4K Earth Science	-
verification	01-July-2018 to 31-December-2022	VCS	4K Earth Science	Four years five months

1.3 Sectoral Scope and Project Type

Sectoral scope	VCS sectoral scope 14 "Agriculture, Forestry and Other Land Use (AFOLU)"
AFOLU project category[1]	Agricultural Land Management (ALM)
Project activity type	Improved Grassland Management (IGM)

1.4 Project Proponent

Organization name	WeAct Pty Ltd
Contact person	Satish Duvvuru
Title	Director
Address	5/663 Victoria Street, Abbotsford, Victoria 3067, Australia
Telephone	+61-409 135 580
Email	satish@weact.com.au

1.5 Other Entities Involved in the Project

Organization name	Endangered Wildlife Trust
Role in the project	Co-ordinating Management Entities (Grazing land management)
Contact person	Pieter Botha
Title	Resource Extension Officer
Address	Postnet Suite # 027 and 28 Austin Road AH, Midrand, 1685, Gauteng, South Africa
Telephone	+27 82 4456439

[1] *See Appendix 1 of the* VCS Standard

Email	pieterb@ewt.org.za

1.6 Project Start Date

Project start date	01-July-2018
Justification	As per para 3.8 of the VCS standard 4.7 "The project start date of an AFOLU project is the date on which activities that led to the generation of GHG emission reductions or removals are implemented" The project start date reflects the completion of fence construction and the first ranch participating in the project began grazing livestock using the improved grazing practices that comprises the project activity

1.7 Project Crediting Period

Crediting period	☐ Seven years, twice renewable ☐ Ten years, fixed ☒ Other, the AFOLU project activity applied renewable crediting period. Thus, the 1st crediting period is 20 years (As described in para 3.9.3 of VCS standard 4.7, the initial project crediting period shall be a minimum of 20 years up to a maximum of 100 years, which may be renewed at most four times, with a total project crediting period not to exceed 100 years.)
Start and end date of first or fixed crediting period	01-July-2018 to 30-June-2038 (inclusive of both the dates)

1.8 Project Location

The grouped project activity is expected to have expansion in the large grassland area (Latitude: -28.816641 S, Longitude: 29.529621 E) in the host country the Republic of South Africa (RSA). Currently only one instance (i.e. Instance 1) is included under the Grouped project activity, hence this version of the MR includes only the 1st instance of the Grouped Project activity, which is demonstrated as follows:

Instance 1:

Project Area: Mpumalanga : (Chrissiesmeer, Dullstroom)

The Drakensberg escarpment divides Mpumalanga into a westerly half consisting mainly of high-altitude grassland called the Highveld and an eastern half situated in low-altitude subtropical Lowveld/Bushveld, mostly savanna habitat.

The project area covers an area of approximately 3773.5 hectares.

Strata	Area (ha)	Latitude	Longitude
Strata 20	2195.2	-26.201488 to -26.250672	30.217979 to 30.189974
		-26.36329 to -26.396028	30.155981 to 30.121895
		-26.329176 to -26.371242	30.246507 to 30.208441
		-26.368185 to -26.426543	30.317539 to 30.257818
Strata 17	837.1	-25.51345 to -25.54784	30.180731 to 30.123595
		-25.565237 to -25.572458	30.133469 to 30.102696
Strata 8	741.3	-25.408883 to -25.4499	30.036536 to 29.978677

Project Area: Eastern Cape (Graaf Reniet, Middelburg)

Eastern Cape is the second largest province in South Africa. Eastern Cape is predominantly mountainous. It includes the southern spur of the Drakensberg.

The project area covers an area of approximately 70,737.5 hectares.

Strata	Area (ha)	Latitude	Longitude
Strata 2	6772.9	-31.9834 to -31.9084	24.3929 to 24.447
Strata 3	4319.8	-31.9354 to -31.8635	24.7916 to 24.9397
Strata 6	4915.8	-31.8036 to -31.698	24.6808 to 24.7856
Strata 9	8643.7	-32.1338 to -32.0107	24.5805 to 24.7836
Strata 10	2860.4	-31.965 to -31.8981	24.4739 to 24.5501
Strata 11	9034.3	-32.5299 to -32.7284	24.6009 to 24.6988
Strata 13	5717.2	-31.9236 to -31.8018	25.1401 to 25.2866
Strata 14	3768.0	-31.62 to -31.5425	25.1276 to 25.2572
Strata 16	6640.8	-31.9071 to -31.7801	24.7687 to 24.8989
Strata 22	18064.5	-32.8068 to -32.5653	24.3328 to 24.5414

Project Area: Kwazulu Natal (Kokstad, Umgeni, Impendle, NottinghamRd)

KwaZulu-Natal is generally hilly or mountainous, especially along its western border. The land rises from the coast to more than 11,000 feet (3,300 metres)[2] along the Drakensberg Escarpment on that border.

The project area covers an area of approximately 6785.4 hectares.

Strata	Area (ha)	Latitude	Longitude
Strata 7	2549.9	-29.991207 to -30.019095	29.229899 to 29.189508
		-30.043222 to -30.091697	29.239223 to 29.191039
		-30.105269 to -30.138253	29.334582 to 29.28106

[2] https://www.britannica.com/place/KwaZulu-Natal

Strata 4	1612.1	-29.59403 to -29.650789	29.969122 to 29.912047
Strata 5	353.6	-29.318722 to -29.352838	30.027205 to 29.994672
Strata 1	183.8	-29.502993 to -29.518424	30.533334 to 30.499104
Strata 15	236.7	-29.518424 to -29.526738	30.525115 to 30.499104
		-29.558473 to -29.558473	30.499104 to 30.499104
Strata 18	1849.3	-28.493004 to -28.535639	29.723485 to 29.627229
		-28.535267 to -28.543149	29.679797 to 29.668397

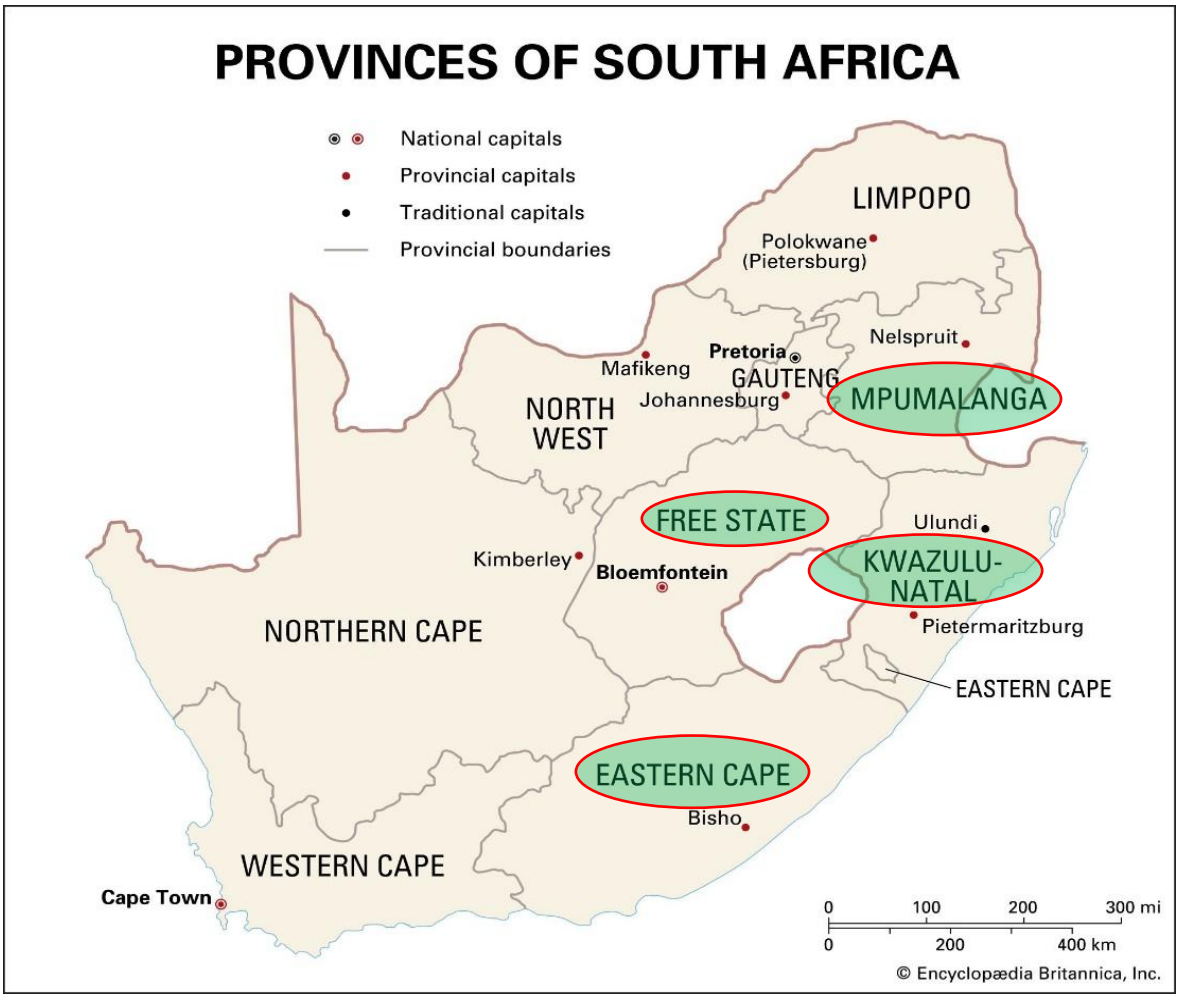
Project Area : Free state Province (Harrismith)

The province is located on the Highveld, a plateau rising to elevations of 6,000 feet (1,800 m) in the east and sloping to about 4,000 feet (1,200 m)[3] in the west.

The project area covers an area of approximately 10654.3 hectares.

Strata	Area (ha)	Latitude	Longitude
Strata 12	2315.3	-28.259019 to -28.287255	29.442933 to 29.411458
		-28.081194 to -28.13577	29.522369 to 29.464966
		-28.1941 to -28.258617	29.358083 to 29.306049
Strata 21	454.3	-28.277209 to -28.299471	29.428432 to 29.381385
Strata 19	7884.7	28.360958 to -28.413637	29.280076 to 29.244803
		-28.084136 to -28.116167	29.145692 to 29.088771
		-28.053116 to -28.151029	29.233364 to 29.186858
		-27.996706 to -28.051083	29.287381 to 29.251955
		-28.090088 to -28.148456	29.280675 to 29.248736

[3] https://www.britannica.com/place/Free-State



1.9 Title and Reference of Methodology

Type (methodology, tool or module)	Reference ID, if applicable	Title	Version
Methodology	VM0026	Sustainable Grassland Management,	1.1[4]
Tool	CDM A/R methodological tool (EB 58 annex 15)	Calculation of the number of sample plots for measurements within A/R CDM project activities.	2.1.0[5]
Tool	AR-TOOL14	Estimation of Carbon Stocks and Change in Carbon Stocks of Trees and Shrubs in A/R CDM Project Activities	4.2[6]

[4] https://verra.org/methodologies/vm0026-methodology-for-sustainable-grassland-management-sgm-v1-0/

[5] https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-03-v2.1.0.pdf

[6] https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v4.1.pdf

Tool	-	VCS AFOLU Non-Permanence Risk Tool	4.0[7]
Tool	CDM A/R methodological tool (EB 85 annex 22)	Estimation of Carbon Stocks and Change in Carbon Stocks of Trees and Shrubs in A/R CDM Project Activities	4.2[8]

1.10 Double Counting and Participation under Other GHG Programs

1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes ☒ No

1.10.2 Registration in Other GHG Programs

Was the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the *VCS Program Definitions* for definitions of emissions trading program and binding emission limit.

☐ Yes ☒ No

1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the *VCS Program Definitions* for definition of GHG-related environmental credit system.

☐ Yes ☒ No

1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

[7] https://verra.org/wp-content/uploads/2019/09/AFOLU_Non-Permanence_Risk-Tool_v4.0.pdf and further clarification https://verra.org/wp-content/uploads/2025/02/Clarification-to-Verra-Program-Rules-and-Requirements-AFOLU-NPRT-v4.pdf

[8] https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v4.2.pdf

1.12 Sustainable Development Contributions

This is the 1st monitoring period of 1st instance, comprising of 22 ranches of this group project activity. During the initial monitoring period, project activities were implemented to contribute to all of the sustainable development goals referenced below. Due to the early stage of the project, not all sustainable development goals were able to quantitatively measure progress. In upcoming monitoring periods, the sustainable development goals of Clean Water and Sanitation (Goal 6) and Life on Land (Goal 15)[9] will utilize field surveys to capture quantitative changes from 2nd monitoring period. Through the 1st project instance, the sustainable development goals of "No poverty" (SDG1), "Zero hunger" (SDG2), Quality education (SDG4) and Climate Action (SDG13) achieved measurable progress as project activities prevented the release of 984,784.82 tCO_2e into the atmosphere during the project's first 4.5 years of operations. Evidence of measurable progress towards achieving referenced sustainable development goals is found in the file "2018-2022 Verification Emissions & Removals Calculations" This file has been provided to the VVB for review.

As outlined in the validated Project Description Document, the Project continues to contribute to the following sustainable development goals:

SDG1 No Poverty - Local herders live by grazing, so the grassland ecosystem will have a great impact on their traditional livelihood. Since the implementation of the project, local herdsmen are directly affected by the implementation of the project through increased employment opportunities, family income, training and education opportunities etc. This provides an overall positive impact and alignment with this goal Women and vulnerable people who come from the poorest local households were not only provided with equal opportunities but also consciously ensured that they can be part of the project.

SDG2 Zero hunger – The project is directly involved with the cattle raising in an area with low levels of rainfall. By having this project, the land benefits in terms of a higher grasslands yield, thus a higher production of sustainably-sourced meat. This provides an overall positive impact and alignment with this goal.

SDG6 Clean water and sanitation – By restoring grasslands, the topsoil's health improves which allows infiltration48 and recharges groundwater, preventing runoffs, an increase in evapotranspiration and reduce regional desertification[10]. This indirectly impacts regional humidity and water sources at the location and downstream.

SDG13 Climate action – The project's main objective is the sequestration of carbon through the implementation of regenerative grazing practices.

[9] PP has done "Yearly Stakeholder Survey" for qualitative monitoring of this parameter. PP would like to clarify that biodiversity impacts or related effects are generally macroscopic; the changes are expected over the period of time rather than short span like 3-4 years. Therefore, PP shall initiate such survey during the next monitoring cycle; whereas this SDG holds a significant importance at the overall project level hence reported from the first monitoring period itself.

[10] https://carboncowboys.org/images/related_research/pdfs/AMP_grazing_improves_water_infiltration_in_Canadian_grassland_soils.pdf

SDG15 Life on land – The project can improve the quality and quantity of the grassland vegetation and provide more habitat for wild animals to enhance biodiversity conservation by scientific grazing and burning.

The actual contributions achieved during the current monitoring period are described under the table below.

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
1)	1.1	User defined indicator under SDG 1.1: Strengthen financial conditions of local herder to reduce risk of low income vulnerability against the poverty line, according to national definitions	Implemented activities to increase	Direct local employment. Total 128 people employed among them 15 herdsmen are locally employed and more than 113 people are associated with this project at shared responsibility level attributed to this project activity. Thus, total contribution claim till the current monitoring period is considered as 128. This contribution is distributed as 107 (men)+21(women).	Overall Contribution: 128 resources employed. This is the first verification cycle, hence overall contribution is equal to the current contribution reported. [15 dedicated herdsmen are locally employed and more than 113 people are associated with this project at shared responsibility level attributed to this project activity, thus total contribution claim till the current monitoring period is considered as 128, i.e.107 (men)+21(women)]. Whereas overall employment expected to grow and achieve across various functionality estimated as 500. Thus, the contribution over the project lifetime has been expected to be 500 people which will be locally sourced in various functions of the project activity since the beginning. This includes both admin, skilled and unskilled workers. However, all these resources will be added into the project with time as the project grows with instances. Therefore, at the current monitoring period the current contribution & overall contribution is limited to 128 only.

2)	2.4	User defined indicator under SDG 2.4: sustainable fodder production systems and implement sustainable grassland management practices that increase productivity and production of healthy livestock, that help maintain ecosystems adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality Additional reference indicator: 2.4.1 Proportion of land area under productive and sustainable practices.	Implemented activities to increase	Current contribution: 91,950.6 hectare. This is the current area impacted by productive and sustainable practices under this grouped project. The project instance includes practices which is directly involved with the cattle raising in an area with low levels of rainfall. By having this project activity, the land benefits in terms of a higher grasslands yield, thus a higher production of sustainably-sourced meat. This provides an overall positive impact and alignment with this goal.	Overall Contribution: is equal to the current contribution which is 91,950.6 hectares.[11] However, this land coverage will increase as more instanced to be added under the project activity; however the same is currently not estimated & reported. Overall attributes: The project is directly involved with the livestock raising in an area with low levels of rainfall. By having this project, the land benefits in terms of a higher grasslands yield, thus a higher production of sustainably-sourced meat. This provides an overall positive impact and alignment with this goal.

[11] For this monitoring period PP has qualitatively monitored this parameter by "Yearly Stakeholder Survey" which is submitted to VVB. PP will initiate detail survey on this parameter during the next monitoring cycle

	4.0	Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Additional reference indicator considered is: 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development	Implemented activities to increase	Current contribution is accounted as: 271 training sessions. A. At community level: (i) 194 trainings during the current Monitoring period (ii) Regular/ periodic trainings on sustainable grassland management imparted which sufficiently covers the project region. Contributed to exposure and awareness of climate change, sustainable development, health, and nutrition well-being, through informal training on these topics and related to the sustainable grassland management practice. B. At team level: (i) 77 trainings during the current Monitoring period (ii) Such trainings help bringing both qualitative employment for staff as well as helps gaining continuous and lifelong learning opportunities for all.	Overall contribution & attributes: Overall contribution achieved so far (i.e. over lifetime) is equal to current contribution reported under VCS verifications so far, which is 271 trainings. All these trainings are contributing to community-level exposure and awareness of climate change, sustainable development, health, and nutrition well-being of livestock, through informal training on these topics. The staff training includes both technical and managerial based learnings on sustainable grassland management and livestock health. As the project proceeds (2030 and beyond) all the learners shall acquire more knowledge and skills on best practices leading to sustainable developments.

3		6 : Clean water and sanitation Additional reference target indicator considered is: 6.6: Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Implemented activities to increase	No change in water related ecosystem during the current contribution phase as no such water bodies are disturbed or altered during at the project level.. Rational: By restoring grasslands, the topsoil's health improves which allows infiltration and recharges groundwater, preventing runoffs, an increase in evapotranspiration and reduce regional desertification. This indirectly impacts regional humidity and water sources at the location and downstream. Thus, project started helping protection and restoration of water ecosystems. However, no changes specifically measured during this monitoring period, hence outcome is not reported in quantified or absolute term.	Overall contribution: to be achieved over the project lifetime. However, as on the current monitoring period overall contribution is limited to all the water ecosystems available with the respective landowners within the project boundary. Baseline soil organic matter and bulk density are only indicators to date, no additional changes are able to be measured at early stages of the project. Water quality and biodiversity surveys are planned for upcoming monitoring periods.
4)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	During the initial monitoring period of 2018-2022, project activities have prevented the release of 984,784.82 tonnes of CO2 into the atmosphere.	overall contribution over the lifetime of the project is expected to be more than 44,29,631 tCO2e reduction. However, the same will be achieved over the upcoming monitoring periods of the project.

5)	15	Life on land Additional reference target indicator considered is: 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity	Implemented activities to increase	Current Contribution is equal to: (i) 91,950.6 ha of grassland area (ii) 58781 livestock The project activity improves the quality and quantity of the grassland vegetation and provide more habitat for wild animals to enhance biodiversity conservation by scientific grazing and burning. At present, all the livestock counted across the landowners are included under this contribution, also the area with vegetation is considered under this contribution. However, during the current monitoring period no specific changes or scenarios were measured[12] for other elements such as threatened species, migratory species etc., which can be included in future.	Overall contribution: is equivalent to the current contribution reported. The Changes in natural habitat or other parameters of the biodiversity etc. are currently not measured at early stages of the project. However, Biodiversity surveys are planned for upcoming monitoring periods and overall contributions will be added across the lifetime of the project.

[12] For this monitoring period PP has qualitatively monitored this parameter by "Yearly Stakeholder Survey" which is submitted to VVB. From MP2, this parameter will monitor by detail Biodiversity survey. Biodiversity survey has not conducted for this monitoring period because of early project stage.

1.13 Commercially Sensitive Information

Commercially sensitive information must be excluded from the public version of the Monitoring Report. All commercially sensitive information listed in Appendix 1.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

Stakeholder Identification	The stakeholder's identification starts by listing all the people or groups who might have an influence over or be impacted by the project. The local village committees and village officials were considered as the key informants and focus groups who know best about the local residents. 1) Local residents around project area At the beginning, the project provided short-term work such as fence building but also the long-term work such as the grassland security for local residents around project area, which will increase their household income. Secondly, local herdsmen are directly affected by the implementation of the project due to sustainable management of grassland. Thirdly, the project restored the degraded grassland and improved their living environment. These residents can be divided into the following categories: Ranch owner the ownership of grassland belongs to the ranch owner. Therefore, ranch owner that own the grassland has been identified as the prime stakeholders. Local herders Local herders live by grazing, so the grassland ecosystem will have a great impact on their traditional livelihood. Since the implementation of the project carries out sustainable

	management of grassland, local herdsmen are directly affected by the implementation of the project. Also, the project restored the degraded grassland and guided them to graze reasonably. Grassland coordinator Grassland coordinator will protect and manage the grassland under the guidance of the project proponent and the EWT and Conservation outcomes. Tourism companies The grassland ecosystem in the project zone is seriously degraded, which is not conducive to the sustainable development of tourism. After the successful implementation of the project, the restored grassland is beneficial to rebuild local pleasant and beautiful ecological system which has higher ecological aesthetic value of tour and sightseeing. Therefore, the project will generate a certain degree of impact for all tourism companies within or outside the project zone. The results of identified stakeholders has been publicly announced on VCS website as part of the PD which can be accessed by everyone in case there is any other person who may consider themselves as one of the project's stakeholders, they can directly contact the project owner for consultation.
Legal or customary tenure/access rights	Implementing SGM is a completely voluntary activity and ranches participating are free to choose whether they take part or not. All the project participants under the project activity are deeded landowners. So, not applicable
Stakeholder diversity and changes over time	Project activity targets the ranch owners who were practicing continuous grazing and uncontrolled burning in their grazing land from historical past. 1st project instance covers 22 ranch land in different regions of South Africa. Therefore, there is no changes in the beneficiaries over time.

Expected changes in well-being	1. Direct local employment : Local herders live by grazing, so the grassland ecosystem will have a great impact on their traditional livelihood. Since the implementation of the project, local herdsmen are directly affected by the implementation of the project through increased employment opportunities, family income, training and education opportunities etc. 2. Food security and improved nutrition : sustainable fodder production systems and implement sustainable grassland management practices that increase productivity and production of healthy livestock. Thus, the project yields higher production of sustainably sourced meat which provides an overall positive impact 3. Sustainable use of rangeland and its resources, which increases fodder availability for livestock throughout the year provides more security and a financial saving to the farmers. 4. Financial benefit from carbon revenue share 5. Project activity have prevented the release of 984,784.82 tonnes of CO_2 into the atmosphere during the current monitoring period.
Location of stakeholders	Project activity targets the ranch owners who were practicing continuous grazing and uncontrolled burning in their grazing land from historical past. 1st project instance covers 22 ranch land in Eastern Cape, MPL, FS and KZN of South Africa
Location of resources	Project activity has been implemented on grazing land of Eastern Cape, MPL, FS and KZN of South Africa.

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	In order to have an ongoing communication and consultation between the CME and stakeholder, CME take quarterly feedback and inputs from stakeholders and adapt management accordingly. The CME has also placed a grievance register along with the phone number of contact person at the site office in each of villages, wherein, the stakeholders can put down his/her feedback and the same if found genuine will be addressed. However, there was no grievance related input[13] has been reported within this monitoring period. Therefore, no action was required to undertake.
Date(s) of stakeholder consultation	A series of stakeholder consultation meetings were conducted in each project sites. Please refer Appendix 2 for detail dates.
Communication of monitored results	The results of monitoring, continue to be communicated with local stakeholders through annual letters and group calls. These communications serve to provide project updates to the stakeholders while also inviting questions or feedback.
Consultation records	Documentation of stakeholder consultations[14] is meticulously maintained, and ongoing communication primarily occurs through physical meeting facilitated by dedicated extension teams apart from phone calls , email etc.
Stakeholder input	The project proponent will take due account of all input received during the local stakeholder consultation and through ongoing communications such as the grievance redress procedure, and either update the project design or justify why updates were not appropriate (VCS Standard 3.18.9). No design changes were made or deemed necessary as there were no comments submitted to the project proponent.

2.1.3 Free, Prior, and Informed Consent

Consent	Project participants i.e. the livestock owners are informed of the project activity and terms, and they provide letters of interest

[13] Please refer Bi-annual 'Policy review statement'

[14] Please refer 'stakeholder consultation report', PRA report.

	prior to moving forward with signing contracts with project proponent. The project proponent provides the project participant with a project implementation contract for their review. Project partners (EWT and conservation Outcomes) have acted on behalf of participants. If a project participant leases land, the landowner is notified and asked to sign a statement ensuring their intent and resources to keep land grasslands and managed for improved soil health. As such, all project participants are informed and must sign documents as evidence of consent. A series of meetings were conducted, please refer Appendix 2, to share the key objectives of the project and to assure that there will be no impact on the property rights of the project participants due to the implementation of the project activity. Therefore, it can be concluded that project implementation will not impact local stakeholder's property rights without free, prior and informed consent. During the on-going FPIC process, there were no special issues or conflicts raised pertaining to informed consent of IPs, LCs, and customary rights holders..
Outcome of FPIC	The dedicated FPIC process included but was not limited to: - Project details are present on project website. - Dedicated grievance process available for stakeholders - Constant communication available - Project implementation contract is available with project participants for their review There is no impact on the property rights of the project participants due to the implementation of the project activity. Therefore, it can be concluded that project implementation will not impact local stakeholder's property rights without free, prior and informed consent[15]. Addition of new instances will also be based upon Free, Prior, and Informed Consent (FPIC)."

2.1.4 Grievance Redress Procedure

Grievances received	Resolution and outcome

[15] An official Declaration has been submitted by PP

There was no grievance related input has been reported within this monitoring period	Not Applicable

2.1.5 Public Comments

Summary of comments received	Actions taken
Project has not received any comments during the public comment period. Link for the same has been provided	This project was open for public comment from 03/03/2022 to 02/04/2022. https://registry.verra.org/app/projectDetail/VCS/2710.

2.2 Risks to Stakeholders and the Environment

2.2.1 Management Experience

PP and the CME are well experienced in project design or implementation and management of similar project activities and engaging communities.

WeAct Pty Ltd is an Australian registered company operating under an Australian Financial Services Licence (AFSL No. 425488). WeAct Pty Ltd was established in 2009, WeAct trades the global carbon markets. WeAct manage a diverse portfolio of carbon offset projects to service the global market needs. Their key markets include Australia, India, Europe, Korea, Mexico, Colombia and South Africa. WeAct is the project developer here for the sustainable grassland management through rotational grazing and planned burning project. All financial and project development risk will be taken care by WeAct.

Ranch owners are the owners of the land and the project partners helps in managing the documentation and survey work under the guidance of WeAct.

Satish Duvvuru – is a co-founder and director of WeAct. His passion towards nature and the environment has driven him to work on climate change. Over the past 10 years he has worked on renewable energy, methane recovery and other sustainable development projects. He is currently involved in developing afforestation projects which will convert thousands of hectares of barren land into self-sufficient organic farms. Satish holds a Bachelors of Engineering degree from Andhra University. He has also got wide experience in developing REDD+ projects in Papua New Guinea before. He has developed more than 30 projects under CDM and VERRA in India and other African nations.

Vivek Dugar - is a co-founder and director of WeAct. He has worked in the field of climate change and has been developing emission reduction projects for the past 15 years. With experience in forestry, renewable energy, energy efficiency and other carbon abatement projects, he has been involved in over one hundred CDM projects and has worked on projects in more than twenty countries across the world. Vivek holds a Masters of Finance from Monash University.

Lloyd Vas - Head of Carbon Trading, WeAct , has been trading carbon since 2008. His career goal is to help build the global carbon market by being directly responsible for the investment in and trading of over one hundred million tonnes of carbon. Prior to joining WeAct, Lloyd was a founder and general manager of Carbon Market Institute in Melbourne and prior to that he worked on the carbon trading desk of Camco Clean Energy in London and Beijing. Lloyd holds a Masters of Finance from Aston Business School.

2.2.2 Risk assessment

	Risk identified	Mitigation or preventative measure(s) taken
Natural and human-induced risks to stakeholders' wellbeing	"No risk identified"[16]	SGM is a completely voluntary activity and participating ranches are free to choose whether they take part or not. Moreover, sustainable use of rangeland and its resources, which increases fodder availability for livestock throughout the year provides more security and a financial saving to the farmers.
Risks to stakeholder participation	"No risk identified"	SGM is a completely voluntary activity and participating ranches are free to choose whether they take part or not.
Working conditions	"No risk identified"	Each project participant i.e. ranch owner follows "Basic Conditions of Employment Act, 1997 (No. 75 of 1997)" and Occupational Health and Safety Act, 1993 (No. 85 of 1993).
Safety of women and girls	"No risk identified"	Each project participant i.e. ranch owner follows Employment Equity Act, 1998 (No. 55 of 1998). The project proponents promote equal opportunities and fair treatment for all employees, irrespective of race, gender, or disability.
Safety of minority and marginalized groups, including children	"No risk identified"	Each project participant i.e. ranch owner follows Employment Equity Act, 1998 (No. 55 of 1998).

[16] PP has developed internal policies to address any risk if identified as associated with the project activity. Also, the practice of regular monitoring and review has been adopted to ensure mitigation of any such risk, if arises.

		The project proponents promote equal opportunities and fair treatment for all employees, irrespective of race, gender, or disability.
Pollutants (air, noise, discharges to water, generation of waste, and release of hazardous materials and chemical pesticides and fertilizers)	"No risk identified"	The project is involved with sustainable grassland management. There is no release of pollutants (air, noise, discharges to water, generation of waste, and release of hazardous materials and chemical pesticides and fertilizers) Moreover, Improved land cover is predicted to influence water quality and quantity of rivers and springs in the programme areas. Grass species that have disappeared from the landscape due to degradation have reappeared in the rangelands, increasing the biodiversity of these grasslands.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

	Risks identified	Mitigation or preventative measure(s) taken[17]
Discrimination	"No risk identified"	PP believes that discrimination in all its forms (gender, race, religion, sexual orientation, or other habits) have no place within the organisation
Sexual harassment	"No risk identified"	PP believes that sexual harassment and assault have no place within the organization
Gender equity in labor and work	"No risk identified"	PP believes that equal pay for equal work in all its forms (gender, race, religion, sexual orientation, or other habits).
Forced labor	"No risk identified"	PP supports diversity, inclusion, and equity with attention to vulnerable populations, including women and female children. PP prohibits any form of discrimination, harassment, or assault, all being grounds for dismissal of employment, termination of the contract, an immediate discreet investigation of

[17] As demonstrated in the table, there is no such risk identified at the project level. However, PP has developed internal policies to address any risk if arises in due course of the project operation. Also, these policies are inclusive of various aspects related to human rights and other associated attributes for both staff, workers, stakeholders, third parties etc. Additionally, the practice of regular monitoring and review has been adopted to ensure mitigation of any such risk, if arises.

		the reported incident, and where warranted, reports to the applicable authorities
Child labor	"No risk identified"	PP abides by the labour laws in the countries where it operates and contract individuals, the project proponent, and implementing partners welcome any beneficiary who requests project services and is committed to the stated terms and conditions of project participation. The project does not use forced labor
Human trafficking	"No risk identified"	PP abides by the labour laws in the countries where it operates and contract individuals, the project proponent, and implementing partners welcome any beneficiary who requests project services and is committed to the stated terms and conditions of project participation. The project does not use victims of human trafficking

2.3.2 Human Rights

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	Not required as no specific risk identified. As per the Core Labour Conventions of the International Labour Organisation (ILO), PP, respects, and works with the elimination of all forms of forced or compulsory labour, the effective abolition of child labour, minimum age convention, the right to organize, and the elimination of discrimination in respect of paid positions and occupation. Due care was taken to abide with above throughout the monitoring period and no complaint was received in connection with dereliction of rights of the staff working for the PP in the said project. As already prescribed under the footnote #11, PP has adopted policy measures to periodically review any potential risks and address the same.

2.3.3 Indigenous Peoples and Cultural Heritage

Risks identified	Mitigation(s) or preventative measure taken
No risk identified	The project activity is only specific to sustainable practices for grassland across the project boundary; thus does not involve in the belief, behaviour, tradition of the indigenous people and cultural heritage of the region,

	hence no risk identified so far and hence no specific measures required. Whereas, this project directly empower ranchland owner to sustainable use of rangeland and its resources, which increases fodder availability for livestock throughout the year provides more security and a financial saving to the indigenous communities in different regions of South Africa. Also, as already prescribed under the footnote #11, PP has adopted policy measures to periodically review any potential risks and address the same.

2.3.4 Property Rights

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	Project does not involve any requirement related to rights and ownership of property. There are specific agreements with landowners and FPICs are executed. Thus, it can be confirmed that no property rights are transferred or infringed upon by the implementation of rangeland management and associated project activities.

2.3.5 Benefit Sharing

Summary of the benefit sharing plan	The amount of any carbon revenue that arise from the project is mutually derived by PP and Project participants. PP and project participants agreed that their respective percentage of shares in the ownership of, right and title to and interest in any carbon credits that may be issued to the project, net of any deductions of carbon credits that may be levied in terms of the rules and / or the applicable law are as follows 1) Project participants: 45% share of issued carbon credit 2) PP: 45% share of issued carbon credit The parties further agreed that the Coordinating Entity is entitled a fee for performance of the project services as provided for in the agreement, which fee shall be 10% of the carbon revenue derived from sales of the issued carbon credit.. **Stakeholders does not re-negotiated or opted out of the plan during the** current **monitoring period. There are no changes to the benefit-sharing plan.**

Benefit sharing during the monitoring period	1) Project participants: 45% share of issued carbon credit 2) PP: 45% share of issued carbon credit **3)** Coordinating entity: 10% share of issued carbon credit.

2.4 Ecosystem Health

	Risk identified	Mitigation or preventative measure(s) taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	No risk has been identified at project level. The introduction of rotational grazing and the implementation of planned burning has allowed the rest areas to recover, and the grass biomass and species diversity has increased. Grass species that have disappeared from the landscape due to degradation have reappeared in the rangelands, increasing the biodiversity of these grasslands. Forage quality is increasing as well as palatability of available grass species. However, as already prescribed under the footnote #11, PP has adopted policy measures to periodically review any potential risks and to address the same.
Soil degradation and soil erosion	No risk identified	No specific risks identified at project level, hence no mitigation measures are adopted. Whereas, it is envisaged that the project implementation should improve the soil's water infiltration rate and capacity and reduce run-off and erosion, which is already a preventive action associated with the project activity.
Water consumption and stress	No risk identified	No specific risks identified at project level, hence no mitigation measures are adopted. Whereas, it is envisaged that the project is involved with sustainable grassland management. Improved land cover is predicted to influence water quality and quantity of rivers and springs in the programme areas. Thus, project is already associated with preventive actions towards water ecosystem.

2.4.1 Rare, Threatened, and Endangered species

Species or habitat	As can be verified from the KML files of the project area, followed by third party reports, the project is not located in or adjacent to habitats for rare, threatened, or endangered species. Hence no specific risk identified. However, as already prescribed under the footnote #11, PP has adopted policy measures to periodically review any potential risks and to address the same.
Areas needed for habitat connectivity	Not applicable for this project activity. The project activity is implemented across the landowners within their existing grasslands without specific area with habitat connectivity.

	Risks identified	Mitigation or preventative measure(s) taken
Habitats for rare, threatened, and endangered species	"No risk identified	The project is not located in or adjacent to habitats for rare, threatened, or endangered species
Areas for habitat connectivity	NA	NA

2.4.2 Introduction of species

Species introduced	Classification	Justification for use	Adverse effects and mitigation
The project is involved with sustainable grassland management through rotational grazing in existing land areas across the landowners. Therefore, there is no introduction of species.	N/A	N/A	N/A

Existing invasive species	Mitigation measures to prevent the spread or continued existence of invasive species
Campuloclinium macrocephalum, Acacia sp., Agave sisalana, Ailanthus altissima etc.	Mitigation measures like bush thinning, brush packing and removal of invasive alien plants in the parts of the rangelands. Brush packing involves pruning branches in areas that are bush encroached and packing the branches over bare patches. The bush thinning allows for better sun penetration and reduces competition from encroaching woody species on the herbaceous stratum. The branches that have been pruned from the tree is use on bare patches of soil to create

	a micro-climate which enables regrowth of grass and mitigates soil run off that may lead to erosion.

	Risks identified	Mitigation or preventative measure(s) taken
Invasive species	"No risk identified"	All preventive measures taken as described under the table above.

2.4.3 Ecosystem conversion

	Risks identified	Mitigation or preventative measure(s) taken
Ecosystem conversion	The project is involved with sustainable grassland management through rotational grazing. The project area was not cleared of existing ecosystem which can be evidenced from LULC report[18].	NA

[18] LULC report has been submitted to VVB

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project activity is dedicated towards removal of GHG from atmosphere by implementing sustainable grazing management and controlled burning over multiple grasslands in the host country South Africa. The project has been designated as a 'Grouped Project' and plans to increase the number of project instances over the period. The first instance includes four land areas Kwazulu Natal (KZN, 6785.4 ha), Eastern Cape (EC, 70737.5 ha), MPL (3773.5 ha) and "Free State" (10654.3 ha). Throughout the initial monitoring period of 01-July-2018 to 31-December-2022, this first instance aims to recover around 91,950.6 ha of land degraded by unrestricted grazing & uncontrolled fire through the implementation of planned rotational grazing and controlled burning. No additional project instances added during the current monitoring period.

Totally, 91,950.6 ha of degraded grassland have been managed sustainably by fence building and planned burning. There are two main restoration measures as followed in the project during this monitoring period. Throughout the monitoring period of 01-July-2018 – 31-December-2022, the first project instance split pastures using fencing in order to increase the number of pastures, decrease the days grazed, and increase the overall animal density per unit area on the properties and implemented planned burning

Start date of the project activity is considered as: 01-July-2018 as per para 3.8 of the VCS standard 4.7. The project start date reflects the completion of fence construction and the first participating ranch began practicing the improved grazing that comprises the project activity. Other participating ranches under this 1st instance completed fence construction and started improved grazing practices in different dates in the month of July 2018 as mentioned below.

Start date of project activity for different ranches are as follows :

Ranch Names	Project Implementation dates
Bennidale Trust	05-July-2018
DavMar Agri	23-July-2018
Petrus Jacobus Loots	15-July-2018
Tillietudlum Nature Reserve	12-July-2018
KZN Crane Foundation	01-July-2018
Bergplaats Irene Properties (Pty) Ltd	10-July-2018
Ken Dorning Family Trust	16-July-2018

Field and Stream Pty Ltd	15-July-2018
Allandale Trust	17-July-2018
Riverdene Farming Co	15-July-2018
Longacres CC	22-July-2018
Tandjiesberg Trust	01-July-2018
Thorncliff Trust	07-July-2018
The Fairfield Trust	01-July-2018
Donovale Farming Company (Pty) Ltd	11-July-2018
Blaauwater Trust	31-July-2018
R J Combrink & Seun Familie Trust	19-July-2018
Kleinfontein Trust, KZN	15-July-2018
Kleinfontein Trust, FS	12-July-2018
Giel Beukes Aandele Trust	29-July-2018
The Waterfall Trust	02-July-2018
Die Triangle Trust	15-July-2018

Project implementation schedule/ status is listed as follows:

Year	Milestone (s) in the project's implementation
2018	• Trainings conducted by EWT on sustainable grassland management • July 2018: Project participants with the help of EWT finished fence building to start rotational grazing and controlled burning. • November-December: Woody biomass Survey and measurement, Field monitoring, by project participants • Burning data gathering and collating by project participants and maintain the project record • Fertilizer record and Livestock census by project participants & maintain the project record.
2019	• Introduction of the project activities to WeAct. • Field visit and initial due-diligence of the project by WeAct with the CMEs • Decision to support the project under the Carbon mechanism so that initiatives undertaken up by the NGOs are extended and positive impacts can be achieved in the long run. Preparatory work started. • November-December: Woody biomass Survey and measurement, Field monitoring, by project participants

	• Burning data gathering and collating by project participants & the Biodiversity Company and maintain the project record • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2020	• Introduction of Bahori for conducting a participatory rural appraisal • Bahori started communication with the NGOs and ground teams, primary & secondary data review etc. • Preparatory work for Site visit and stakeholders consultations post the pandemic lock down phase. • Completion of detailed project report by WeAct • November-December: Woody biomass Survey and measurement, Field monitoring, by project participants • Burning data gathering and collating by project participants & the Biodiversity Company and maintain the project record • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2021	• Initial information and partial data gathering by Bahori with the help of the NGOs • Consultation rounds and workshops with landowners by Bahori • Process started for contracting and documentary engagement of landowners by WeAct • Data review and VCS PD development by WeAct • Start of VCS Project cycle by WeAct and in parallel continuation of PRA etc. • November-December: Woody biomass Survey and measurement, Field monitoring, by project participants • Burning data gathering and collating by project participants & the Biodiversity Company and maintain the project record • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2022	• Review of VERRA comments by WeAct on initial submission • Achieved VCS listing of the project by WeAct. • Continuation of PRA assessment to finalize the overall project design, boundary, baseline scenario etc. Multiple site visits to interact with farmers and collect data • Primary survey to collect both baseline and project specific data from the landowners • Closure of the PRA assessment and submission of Report • 01-July-2022 to 05-July-2022: Validation site visit was conducted • July-December 2022: Woody biomass Survey and measurement, Field monitoring, soil collection and laboratory analysis by Biodiversity Company • Burning data gathering and collating by project participants & the Biodiversity Company and reporting to WeAct • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2023	• Worked on review comments from VVB and VERRA • Multiple site visits to interact with farmers and collect data

	• Woody biomass Survey and measurement, Field monitoring, soil collection and laboratory analysis by Biodiversity Company • Burning data gathering and collating by project participants & the Biodiversity Company and reporting to WeAct • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2024	• 13-July-2024: Project registered • Started working on Monitoring report • Multiple site visit to conduct questionnaire survey, interview with the stakeholders • 19-September-2024 to 29-September-2024: Verification site visit was conducted • Woody biomass Survey and measurement, Field monitoring, soil collection and laboratory analysis by Biodiversity Company • Burning data gathering and collating by project participants & the Biodiversity Company and reporting to WeAct • Fertilizer record and Livestock census by project participants & maintain the project record and reporting to WeAct.
2025	• 20-February-2025: MR submitted to VERRA • Review comments from VERRA and VVB

Please refer "Appendix 3" for strata wise project implementation details like technique/ method applied in rotational grazing and planned burning, frequency and area coverage of the same.

Implementation schedule consists of geographical location, schedule of grazing, livestock number, days of grazing is available in individual ranch owners' declaration[19] which has been submitted to VVB for verification. A sample copy of the same has been attached as Appendix 4.

The project's permanence risk is mitigated by signing legal contract to keep the land as grassland and managed for improved soil health throughout the lifetime of the project.

During the current monitoring period, no incident or event occurred, that could affect GHG emissions reduction and approved monitoring plan.

3.2 Deviations

3.2.1 Methodology Deviations

The project did not apply any methodology deviations.

3.2.2 Project Description Deviations

The project did not apply any project description deviations.

3.3 Grouped Projects

No new project instances are included in this monitoring period.

[19] Declaration from project participants.has been submitted

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	GWP_{N2O}
Data unit	t CO_2e/t N_2O
Description	Global-warming potential for N_2O
Source of data	IPCC AR5
Value applied	265
Justification of choice of data or description of measurement methods and procedures applied	Default value
Purpose of Data	Determination of baseline and project emissions
Comments	*NA*

Data / Parameter	EF_{Nfert}
Data unit	kg N_2O-N/kg N applied
Description	N_2O emission factor for synthetic N fertilizer use
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories
Value applied	0.01
Justification of choice of data or description of measurement methods and procedures applied	Default value
Purpose of Data	Calculation of baseline emissions Calculation of project emissions
Comments	

Data / Parameter	$M_{SNi,b}$
Data unit	t fertilizer
Description	Mass of synthetic N fertilizer type i applied in baseline year b
Source of data	Documented management records
Value applied	Please refer ER sheet ("Fertilizer_baseline") E 10 to E31, F10 to F31, G10 to G31, H10 to H31, I10 to I31
Justification of choice of data or description of measurement methods and procedures applied	Mass of synthetic fertilizer were obtained based on fertilizer application in each ranch in the project area year prior to the project start date during the baseline period.
Purpose of Data	Calculation of baseline emissions
Comments	NA

Data / Parameter	$NC_{SNi,b}$
Data unit	g N/g fertilizer
Description	Nitrogen content of synthetic N fertilizer type i applied in baseline year b
Source of data	Manufacturer product label
Value applied	LAN : 0.28 Urea : 0.468
Justification of choice of data or description of measurement methods and procedures applied	Value obtained from the product description stated by the manufacturer on the product label.
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	$Frac_{GAS,F}$
Data unit	kg N volatilized/kg N applied
Description	Fraction of synthetic N fertilizer that volatilizes as NH_3 and NO_x

Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories
Value applied	0.11
Justification of choice of data or description of measurement methods and procedures applied	Default value from 2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Volume 4, Chapter 11), Table 11.3
Purpose of Data	Calculation of baseline emissions
Comments	NA

Data / Parameter	$A_{B,b}$
Data unit	Ha
Description	Area burned in baseline year b
Source of data	Documented management record
Value applied	Please refer ER sheet ("Burning_baseline") E9 to E30, F9 to F30, G9 to G30, H9 to H30, I9 to I30
Justification of choice of data or description of measurement methods and procedures applied	Area burned in each year during the baseline period based on documented fire management records averaged over the five year period prior to the project start date.
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	$M_{B,b}$
Data unit	t biomass dm/ha
Description	Aboveground biomass in terms of dry matter burned in baseline year b
Source of data	Documented management records
Value applied	Refer ER sheet ("Burning_baseline") J9 to J30, K9 to K30, L9 to L30, M9 to M30, N9 to N30
Justification of choice of data or description of	Aboveground biomass burned under baseline based on documented fire management records averaged over the baseline period.

measurement methods and procedures applied	
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	C_f
Data unit	t dry matter burnt/t biomass
Description	Combustion factor
Source of data	IPCC 2006 volume 4 : Agriculture, Forestry and Other Land Use, Table 2.6, Chapter 2
Value applied	0.35
Justification of choice of data or description of measurement methods and procedures applied	Default value
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	EF_{CH4}
Data unit	g CH_4/kg dry matter burnt
Description	CH_4 emission factor for biomass burning
Source of data	IPCC Guidelines for National Greenhouse Gas Inventories (Table 2.6, Chapter 2, Volume 4)
Value applied	2.3
Justification of choice of data or description of measurement methods and procedures applied	Default value
Purpose of Data	Calculation of baseline emissions, and Calculation of project emissions
Comments	-

Data / Parameter	GWP_{CH4}
Data unit	t CO_2e/t CH_4
Description	Global-warming potential for CH_4
Source of data	VCS Standard (Version 4.2)
Value applied	28
Justification of choice of data or description of measurement methods and procedures applied	Default values
Purpose of Data	Calculation of baseline and project emissions
Comments	-

Data / Parameter	$P_{l,b}$
Data unit	Head
Description	Population of grazing livestock type l, in baseline year b
Source of data	Documented management records
Value applied	Refer ER Sheet "BE_PE_CH4 Emission_Livestock" F8 to F73
Justification of choice of data or description of measurement methods and procedures applied	Population of grazing livestock must be based on documented management records, averaged over the baseline period.
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	$W_{l,b}$
Data unit	kg
Description	Average weight of livestock l, in baseline year b
Source of data	Average weights based on IPCC 2006 (Table 10 A2)
Value applied	Cattle: 300 Sheep: 45 Other cattle: 275
Justification of choice of data or description of	Average weights has been considered from default data of South Africa from IPCC 2006 (Table 10 A2)

measurement methods and procedures applied	
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	EF_l
Data unit	kg CH_4/(head * year)
Description	Enteric CH_4 emission factor per head of livestock type l per year
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories s (Table 10.10 & 10.11, Chapter 10, Volume 4)
Value applied	Cattle : 46 Sheep :5 Other cattle : 31
Justification of choice of data or description of measurement methods and procedures applied	The default value recommended by the 2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Table 10.10 or 10.11, Chapter 10, Volume 4).
Purpose of Data	Calculation of baseline and project emissions
Comments	-

Data / Parameter	$Days_{l,b}$
Data unit	Days
Description	Grazing days for livestock type l in baseline year b
Source of data	Sample surveys/ PRA study
Value applied	365
Justification of choice of data or description of measurement methods and procedures applied	During the baseline period livestock are conservatively assumed to graze all days of the year.
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	$H_{l,b}$
Data unit	Hours
Description	Average grazing hours for livestock type l per day during the grazing season in baseline year b
Source of data	PRA study (Page 3 of the PRA study report)
Value applied	8
Justification of choice of data or description of measurement methods and procedures applied	During the baseline period livestock are conservatively assumed to graze 8 hours/ day
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	$A_{B,j,s}$
Data unit	Ha
Description	Area of trees and shrubs under baseline, for species j in stratum s
Source of data	Documented management records
Value applied	Please refer ER sheet ("BR_woody perennials") 2013 : G10 to G109 2014 :K10 to K109 2015 : R10 to R109 2016 :Y10 to Y109 2017 : AF10 to AF109
Justification of choice of data or description of measurement methods and procedures applied	Area of trees and shrubs under the baseline scenario has been obtained from a field survey before the project start date.
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	CF_j
Data unit	t C/t dm
Description	Carbon fraction for species j
Source of data	Default values in the CDM A/R Methodological Tool for Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities

Value applied	0.5
Justification of choice of data or description of measurement methods and procedures applied	Default value
Purpose of Data	Calculation of baseline and project emissions
Comments	-

Data / Parameter	$G_{AB,B,j,s}$
Data unit	t dm/ha
Description	Average annual increase in existing aboveground woody biomass of species j in stratum s, under baseline
Source of data	Measured
Value applied	Refer ER sheet ("BR_woody perennials") 2014 : N10 to N109 2015 : U10 to U109 2016 :AB10 to AB109 2017: AI10 to AI109
Justification of choice of data or description of measurement methods and procedures applied	A 100m X 2m belt transect was used for the woody transects (Van Rooyen et al., 2013; Smit, 2014). Plot size differed depending on woody density. Very densely populated plots had smaller plot sizes, which made sampling more manageable and more efficient All woody plants rooted, within the transect, were identified and their diameter at breast height (DBH), area of each species was measured and recorded. Tree and stem densities were determined from the number of trees and stems in each subplots and extrapolated[20] to hectares. As per CDM tool I for Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities.
Purpose of Data	Calculation of baseline emissions
Comments	All woody plants rooted, within the transect, were identified and their diameter at breast height (DBH), area of each species were measured and recorded. Tree and stem densities were determined from the number of trees and stems in subplots and extrapolated to hectares.

[20] A belt transect uses series of quadrat to sample a strip or belt of vegetation along the transect line. In this method, the transect line is laid out across the area to be surveyed and a quadrat is placed on the first marked point on the line. A number of quadrats were studied to acquire reasonable data to realise different analytic and synthetic characters of the plant community. All quadrats are sampled along the way down the transect line, at each marked point on the line. Thus, it covers 1 ha land in each of the sampling plot.

	For multi-stem species DBH will be calculated as [DBH = ($\sqrt{d1^2 + d2^2 + d3^2 + d4^2}$)], where d1, d2, d3 etc. are each stem's DBH value

Data / Parameter	EF $_{3,PRP, CPP}$
Data unit	kg N_2O-N/kg N input
Description	N_2O emission factor for cattle (dairy, non-dairy and buffalo), poultry and pigs manure and urine deposited on of applied to grassland
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
Value applied	0.002
Justification of choice of data or description of measurement methods and procedures applied	The default value recommended by the 2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Table 11.1, Chapter 11, Volume 4) of IPCC good practice guidance for AFOLU have been followed. Since the project area belongs to dry climate the default factor is 0.002.
Purpose of Data	Calculation of baseline emissions Calculation of project emissions
Comments	-

Data / Parameter	EF $_{3,PRP, SO}$
Data unit	kg N_2O-N/kg N input
Description	N_2O emission factor for sheep and other animals' manure and urine deposited on of applied to grassland
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
Value applied	0.003
Justification of choice of data or description of measurement methods and procedures applied	The default value recommended by the 2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Table 11.1, Chapter 11, Volume 4) have been followed.
Purpose of Data	Calculation of baseline emissions Calculation of project emissions
Comments	-

Data / Parameter	$N_{ex,l}$
Data unit	kg N deposited/(t livestock mass * day)
Description	Nitrogen excretion of livestock type l
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
Value applied	Cattle: 0.44 Sheep:0.32 Other cattle : 0.45
Justification of choice of data or description of measurement methods and procedures applied	The default value recommended by the 2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Table 10.19, Chapter 10, Volume 4)
Purpose of Data	Calculation of baseline emissions Calculation of project emissions
Comments	-

Data / Parameter	$Frac_{GAS,MD}$
Data unit	kg N volatilized/kg of N deposited
Description	Fraction of volatilization from manure and urine deposited by grazing animals as NH_3 and NO_x
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
Value applied	0.212
Justification of choice of data or description of measurement methods and procedures applied	The default value recommended by the 2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. As the project activitiy is not involve with the manure management system, so Table 8A.1, Chapter 11, Volume 4 are adopted.
Purpose of Data	Calculation of baseline emissions Calculation of project emissions
Comments	-

Data / Parameter	$EF_{l,M}$
Data unit	kg CH_4/ (head * year)
Description	CH_4 emission factor from manure of livestock type *l*
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
Value applied	0.6
Justification of choice of data or description of measurement methods and procedures applied	The default value recommended by the 2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Table 10.14, Chapter 10, Volume 4 has been applied
Purpose of Data	Calculation of baseline emissions Calculation of project emissions
Comments	-

Data / Parameter	$SOC_{s,baseline}$
Data unit	tonnes C/ ha
Description	Baseline soil organic carbon stock in the top 30 cm soil layer in stratum s
Source of data	Third party soil analysis data[21] gathered from peer reviewed literature which has been verified by "The Biodiversity Company"
Value applied	8.5 (for conservative approach highest values has been considered, Please refer ER sheet "Soil analysis data_baseline" for more detail)
Justification of choice of data or description of measurement methods and procedures applied	Option 2 was applied to estimate project removals due to changes in SOC The baseline SOC stock of 8.5 tC/ha was established by using a mix of published research and field sampling by The Biodiversity Company - Tier 2 and Tier 3. Tier 2 – TBC reviewed national and regional studies on grassland soil in South Africa. These studies provided reference values for

[21] Report from The Biodiversity Company has been provided to VVB for validation and verification

	SOC levels and other variables required for SOC estimations expected under similar land conditions. Tier 3 – TBC also collected soil samples from 22 degraded plots within and around the project area. For each sample, they measured bulk density, SOC content, and % rock content. These data were then rendered with assessment that combined with (i) published literature and (ii) interpreted values for degraded land conditions to build a quantitative baseline database. The $SOC_{S,Baseline}$ was the data taken from 2017-2018, which is less than two years prior to the project start time. The organic carbon, bulk density and sand-gravel ratio (percentage of rocks larger than 2mm, roots, and other dead residues with a diameter in the top 30 cm of soil) of soil samples were considered and SOC stocks were calculated following equation 45 of VM0026. The baseline SOC stock was established by using a mix of published research and field sampling - Tier 2 and Tier 3. TBC collected soil samples from degraded plots within and around the project area. For each sample, they measured bulk density, SOC content, and % rock content. These data were then rendered with assessment that combined with (i) published literature and (ii) interpreted values for degraded land conditions to build a quantitative baseline database. Soil data for baseline was reviewed from national and regional studies [22,23] on grassland soil in South Africa. These studies provided reference values for SOC levels and other variables required for SOC estimations expected under similar land conditions Therefore, it can be concluded that nationally approved standard method was used to measure SOC of the soil samples.
Purpose of Data	Calculation of baseline emissions
Comments	At the time of VCS project development, PP had access to two sets of baseline SOC data, viz. (i) results from sample surveys conducted by EWT for internal analysis (across 43 sample strata, can be referred in the project DPR) and (ii) publicly available data from literature review (which was sourced from different research

[22] Department of Environmental Affairs, 2019. Identification and mapping of soils rich in organic carbon in South Africa as a climate change mitigation option. Department of Environmental Affairs, Pretoria, South Africa.

[23] Odebiri, O, Mutanga, O, Odindi J and R Naicker, 2022. Modelling soil organic carbon stock distribution across different land-uses in South Africa: A remote sensing and deep learning approach. ISPRS Journal of Photogrammetry and Remote Sensing Volume 188, June 2022, Pages 351-362.

	including Agricultural Research Council (ARC) along with field sampling and analysis which was further reviewed by "The Biodiversity Company". However, the sampling survey was not taken up for any third-party review and certification, hence this survey was considered as internal assessment whereas literature reviewed value along with field sampling data was identified as more credible as well as more conservative value, hence applied as the baseline result. Thus, baseline carbon stock measurement is the combination of tier 2 and tier 3 data. By combining Tier 2 and Tier 3 data, project can achieve greater accuracy and confidence in its soil carbon stock change estimates, hence sampling survey related approach, calculations, etc. are not applicable. However, this will not affect the accuracy or conservativeness of estimated GHG benefits as mentioned. The estimated GHG benefit unlikely to have significant effect since highest value for baseline soil organic carbon stock has been considered to calculate the SOC change over the project scenario. As the highest SOC data has been considered, the change between baseline and project SOC stocks could appear to be lower, reducing estimated emissions removals and increasing the conservativeness of estimated GHG benefits.

Data / Parameter	EF_{N20}
Data unit	g N_2O/kg dry matter burnt
Description	N_2O emission factor for biomass burning
Source of data	IPCC Guidelines for National Greenhouse Gas Inventories (Table 2.5, Chapter 2, Volume 4)
Value applied	0.21
Justification of choice of data or description of measurement methods and procedures applied	Default value from IPCC Guidelines for National Greenhouse Gas Inventories (Table 2.5, Chapter 2, Volume 4)
Purpose of Data	Calculation of baseline and project emissions
Comments	-

Data / Parameter	*F*
Data unit	Year
Description	SOC monitoring frequency
Source of data	Project records
Value applied	5 years
Justification of choice of data or description of measurement methods and procedures applied	Where the project applies option 2 to directly measure SOC, the frequency of SOC measurements must be at least once every five years.
Purpose of Data	Calculation of Project emissions
Comments	-

4.2 Data and Parameters Monitored

Data / Parameter	$M_{SNi,t}$
Data unit	t fertilizer
Description	Mass of synthetic N fertilizer type i applied in year t
Source of data	Project records
Description of measurement methods and procedures to be applied	The mass has been recorded just after the application of synthetic N fertilizer for each fertilizer type applied for each year.
Frequency of monitoring/recording	Each application of fertilizer during year t
Value monitored	Refer ER sheet ("Fertilizer_project") E9 to E30 F9 to F30 G9 to G30 H9 to H30 I9 to I30
Monitoring equipment	None
QA/QC procedures to be applied	Guidelines provided in IPCC, 2003 Chapter 5 or IPCC, 2000 Chapter 8 will be followed
Purpose of data	Calculation of project emissions

Calculation method	Measured directly
Comments	

Data / Parameter	NC $_{SNi,p}$
Data unit	g N/g fertilizer
Description	Nitrogen content of synthetic N fertilizer type i applied under project
Source of data	Manufacturer product label or other manufacturer data
Description of measurement methods and procedures to be applied	The nitrogen content must be recorded for each synthetic N fertilizer type i that has been applied in the baseline scenario or project. The value must be obtained from the product description stated by the manufacturer on the product label.
Frequency of monitoring/recording	Each application during project crediting period in year t
Value monitored	Refer ER sheet ("Fertilizer_project") J9 to J30
Monitoring equipment	-
QA/QC procedures to be applied	Guidelines provided in IPCC, 2003 Chapter 5 or IPCC, 2000 Chapter 8 will be followed
Purpose of data	Calculation of project emissions
Calculation method	Measured directly
Comments	-

Data / Parameter	$A_{B,t}$
Data unit	Ha
Description	Area burnt in year t during the project crediting period
Source of data	Project records
Description of measurement methods and procedures to be applied	Measure and record the area burnt after the fire occurrence

Frequency of monitoring/recording	Each burning activity in year t during project crediting period
Value monitored	Refer ER sheet (“Burning_project”) 2018 : E9 to E30 2019: F9 to F30 2020: G9 to G30 2021: H9 to H30 2022: I9 to I30
Monitoring equipment	-
QA/QC procedures to be applied	Where the difference between the recorded burnt area and the new reading is more than 10 percent, reasons for the difference must be discussed with the person responsible for taking both measurements, and if necessary, the burnt area will be re-measured.
Purpose of data	Calculation of project emissions
Calculation method	-
Comments	-

Data / Parameter	$M_{B,t}$
Data unit	t biomass/ha
Description	Aboveground biomass burnt, excluding litter and dead wood under project in year t.
Source of data	Project records
Description of measurement methods and procedures to be applied	Measure the aboveground biomass of grassland before and after the fire management for at least three plots (1m*1m). The difference of the aboveground biomass is the aboveground biomass burnt.
Frequency of monitoring/recording	Each burning activity in year t during the project crediting period
Value monitored	Refer ER sheet (“Burning_project”) 2018 : J9 to J30 2019: K9 to K30

	2020: L9 to L30 2021: M9 to M30 2022: N9 to N30 Refer project database
Monitoring equipment	
QA/QC procedures to be applied	A sufficient number of plots for sampling $M_{B,t}$ will be used to ensure that a precision of 15 percent at the 95 percent confidence level is attained. Guidance provided in IPCC, 2003 chapter 5 or IPCC, 2000 chapter 8 will be applied and guidance on sampling methods and QA/QC procedures will be adopted.
Purpose of data	Calculation of project emissions
Calculation method	
Comments	-

Data / Parameter	$P_{l,t}$
Data unit	Head
Description	Population of livestock typel under project in year t
Source of data	Project records
Description of measurement methods and procedures to be applied	Record numbers of grazing livestock by type. The sample size of household number must ensure that a precision of 15 percent at the 95 percent confidence level is attained. The value must be based on the grazing numbers; annual or seasonal average population of grazing livestock by type
Frequency of monitoring/recording	Annually
Value monitored	Refer ER sheet ("BE_PE_CH4 emission_Livestock") 2018 : G8 to G73 2019: H8 to H73 2020: I8 to I73 2021: J8 to J73 2022: K8 to K73 Refer project database
Monitoring equipment	NA

QA/QC procedures to be applied	Guidance provided in IPCC, 2003 chapter 5 or IPCC, 2000 chapter 8 is applied
Purpose of data	Calculation of project emissions
Calculation method	
Comments	-

Data / Parameter	$W_{l,p}$
Data unit	kg
Description	Average weight of livestock under project
Source of data	Average weights has been considered from IPCC 2006 (Table 10 A2)
Description of measurement methods and procedures to be applied	-
Frequency of monitoring/recording	Average weights based on IPCC 2006 (Table 10 A2)
Value monitored	Cattle : 300 Sheep:45 Other Cattle : 275
Monitoring equipment	-
QA/QC procedures to be applied	Average weights has been considered from IPCC 2006 (Table 10 A2).
Purpose of data	Calculation of project emissions
Calculation method	Not calculated
Comments	-

Data / Parameter	Days $_{l,t}$
Data unit	Days
Description	Grazing days of livestock in year t under project
Source of data	Project records
Description of measurement methods and procedures to be applied	Record the grazing days in year t. All livestock are conservatively assumed to graze for 365 days per year under the project scenario

Frequency of monitoring/recording	No monitoring: 365 will be applied
Value monitored	365
Monitoring equipment	
QA/QC procedures to be applied	Crosscheck with previous records and reconduct the survey if there is a significant change observed
Purpose of data	Calculation of project emissions
Calculation method	Not calculated
Comments	-

Data / Parameter	$H_{l,t}$
Data unit	Hours
Description	Average grazing hours for livestock type l per day during the grazing season in year t
Source of data	PRA study (page number 3, 37 & 38 of the PRA report)
Description of measurement methods and procedures to be applied	Ground team of the project proponent will visit all the project participant every year to investigate the project situation
Frequency of monitoring/ recording	Annually
Value monitored	8
Monitoring equipment	N/A
QA/QC procedures to be applied	Guidance provided in IPCC, 2003 chapter 5 or IPCC, 2000 chapter 8 is applied
Purpose of data	Calculation of project emissions
Calculation method	-

Data / Parameter	$G_{AB,\ j,s,t}$
Data unit	t dm/ha

Description	Average increase in existing aboveground woody biomass of species j, in stratum s, under project for year t.
Source of data	Project records
Description of measurement methods and procedures to be applied	A 100m X 2m belt transect was used for the woody transects (Van Rooyen et al., 2013; Smit, 2014). Plot size differed depending on woody density. Very densely populated plots had smaller plot sizes, which made sampling more manageable and more efficient All woody plants rooted, within the transect, were identified and their diameter at breast height (DBH), area of each species was measured and recorded. Tree and stem densities were determined from the number of trees and stems in subplots and extrapolated to hectares. As per CDM tool I for Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities.
Frequency of monitoring/recording	At the end of every monitoring period
Value monitored	Refer ER sheet ("PR_woody perennials") 2018: AL10 TO AL147 2019 : AE10 to AE147 2020 : X10 to X147 2021 :Q10 to Q147 2022: J10 to J147
Monitoring equipment	Measuring tape
QA/QC procedures to be applied	Quality control/quality assurance (QA/QC) procedures prescribed under national forest inventory will be applied.
Purpose of data	Calculation of project emissions
Calculation method	All woody plants rooted, within the transect, were identified and their diameter at breast height (DBH), area of each species were measured and recorded. Tree and stem densities were determined from the number of trees and stems in subplots and extrapolated to hectares. For multistem species DBH will be calculated as [DBH = $(\sqrt{d1^2 + d2^2 + d3^2 + d4^2})$], where d1,d2,d3 etc are each stem's DBH value
Comments	-

Data / Parameter	$A_{P,j,s,t}$
Data unit	Ha
Description	Area of trees and shrubs of species j in stratum s under project in year t
Source of data	Project records
Description of measurement methods and procedures to be applied	
Frequency of monitoring/recording	Annually
Value monitored	Refer ER sheet Refer ER sheet ("PR_woody perennials") 2018: AI10 TO AI147 2019 : AB10 to AB147 2020 : U10 to U147 2021 :N10 to N147 2022: G10 to G147
Monitoring equipment	Field based GPS
QA/QC procedures to be applied	Where the difference between the recorded area of trees and shrubs and the new reading is more than 10 percent, reasons for the difference must be discussed with the staff responsible for taking both measurements, and if necessary, the area of trees and shrubs should be re-measured.
Purpose of data	Calculation of project emissions/ removals
Calculation method	Field based GPS measurement
Comments	-

Data / Parameter	$PA_{m\,G,s,t}$
Data unit	Ha
Description	Project areas of grassland with management practice mG in stratum s in year t

Source of data	Project records
Description of measurement methods and procedures to be applied	Record the area of grassland with management practice mG in stratum s
Frequency of monitoring/recording	Record the area and management practice just after the management practice has taken place and report annually
Value monitored	Please refer ER sheet ("Project removal_SOC") C11 to 116
Monitoring equipment	-
QA/QC procedures to be applied	Crosscheck with previous records and satellite images
Purpose of data	Calculation of project emissions
Calculation method	Not calculated
Comments	-

Data / Parameter	$SOC_{mG,s,i,t}$
Data unit	g C/kg soil
Description	SOC stock in the top 30 cm of soil (or greater depth if required) for management practice mG, stratum s (or greater depth if desired), sampling site i
Source of data	Project records (Sampling and testing has been done for all 22 strata)
Description of measurement methods and procedures to be applied	Option 2 is applied to estimate project removals due to changes in SOC, following the procedures for the sampling and measurement of soil properties, including bulk density and organic carbon concentrations, that are outlined in Option 2 in Section 8.2.8 to determine the value of SOC s , The General Guidelines for Sampling and Surveys for SmallScale CDM Project Activities has been followed to determine the sampling procedures and the sample size. The sample Soil Organic Carbon (SOC) was measured using the chromic acid wet-oxidation method (Walkley and Black, 1934). A 30 cm soil depth approach of the identified diagnostic horizons was used on the estimation of SOC stock (SOCs, Mg C/ha) by

	adding up the SOC content of the soil layers following the respective equation by Qiu et al., (2015)
Frequency of monitoring/recording	At least once every five years
Value monitored	Refer ER sheet ("soil analysis data_*Project*") K11-133
Monitoring equipment	Laboratory analysis The sample Soil Organic Carbon (SOC) was measured using the chromic acid wet-oxidation method (Walkley and Black, 1934). A 30 cm soil depth approach of the identified diagnostic horizons was used on the estimation of SOC stock (SOCs, Mg C/ha) by adding up the SOC content of the soil layers following the respective equation by Qiu et al., (2015)
QA/QC procedures to be applied	The collection of soil samples for measuring SOC will be carried by suitably trained staff. The measurement of SOC will be carried out by a laboratory that can demonstrate adherence to the principles of good laboratory practices,
Purpose of data	Calculation of project removals
Calculation method	Laboratory analysis
Comments	-

Data / Parameter	$BD_{mG,s,i,t}$
Data unit	g soil/cm^3
Description	Soil bulk density in the top 30 cm of soil (or greater depth if required) for management practice mG, stratum s (or greater depth if desired), sampling site i
Source of data	Project record
Description of measurement methods and procedures to be applied	Laboratory analysis Three replicates of undisturbed core samples were also collected from each identified representative diagnostic horizon in the profiles for the determination of the soil bulk density
Frequency of monitoring/recording	At least once every five years

Value monitored	Refer ER sheet Refer ER sheet ("soil analysis data_*Project*") L11 -133
Monitoring equipment	Soil auger, electronic scale, rubber hammer, oven and dryer.
QA/QC procedures to be applied	The collection of soil samples for measuring soil bulk density will be carried by suitably trained staff. The measurement of soil bulk density will be carried out by a laboratory that can demonstrate adherence to the principles of good laboratory practices,
Purpose of data	Calculation of project removals
Calculation method	Laboratory method
Comments	-

Data / Parameter	$FC_{mG,s,i,t}$
Data unit	percent
Description	Percentage of rocks with a diameter larger than 2mm, roots, and other dead residues in the top 30 cm of soil (or greater depth if desired), for management practice mG, stratum s, sampling site i
Source of data	Project record
Description of measurement methods and procedures to be applied	Laboratory analysis
Frequency of monitoring/recording	At least once every five years
Value monitored	Refer ER sheet Refer ER sheet *("soil analysis data_Project")* M11 – M133,
Monitoring equipment	soil auger, electronic scale, sieve
QA/QC procedures to be applied	The collection of soil samples for measuring $FC_{mG,s,i,t}$ will be carried by suitably trained staff. The measurement of soil bulk density will be carried out by a laboratory that can demonstrate adherence to the principles of good laboratory practices
Purpose of data	Calculation of project removals
Calculation method	Laboratory method

Comments	-

Data / Parameter	Depth
Data unit	cm
Description	Total soil depth, for calculating grassland SOC stock in the top 30 cm of soil (or greater depth if required)
Source of data	Project records
Description of measurement methods and procedures to be applied	The value for soil depth must be consistent with the measurements taken. Soil properties must be measured to the full depth of affected soil layers. Where the full depth of affected soil layers is not known, a minimum depth of 30 cm must be applied.
Frequency of monitoring/recording	Recorded with each measurement taken
Value monitored	Refer ER Sheet Refer ER sheet ("soil analysis data_Project") J11 - 133
Monitoring equipment	Measuring tape
QA/QC procedures to be applied	
Purpose of data	Calculation of project removals
Calculation method	None
Comments	-

4.3 Monitoring Plan

The purpose of this monitoring plan is to set forth the GHG Information System as the operational and logistical plan to gather, record, analyze, and manage the data and records necessary to quantify and report GHG emissions and removals relevant to the project (including leakage). All data from the project will be archived electronically and kept for at least two years after the end of the crediting period in a secure and retrievable manner. For the current monitoring period (01-July-2018 to 31-December-2022), there is no deviation from the original registered monitoring plan.

The monitoring plan features the following main components.

- Monitoring of grazing and burning schedule, livestock numbers and movements using Livestock owners report has been used to establish that Planned Rotational grazing has been successfully implemented.
- Monitoring of burning events using ranch owners report to establish that controlled burning has been successfully implemented.
- Monitoring of fence condition, fertilizer application using ranch owners report/ survey.
- Above ground vegetation cover and composition, biomass quantification has been monitored yearly
- Soil sampling and soil analysis has been conducted with a frequency of every 5 years to monitor the change in soil carbon (CO2 removals).
- The impacts of the project on communities and key groups (herders, elders, gender classes, and the poor) has been measured through focus groups and household surveys.

Methods for measuring, recording, storing, aggregating, collating, and reporting data and parameters.

The data acquisition, recording, compiling, and analyzing responsibilities is summarized below. Soil sampling and analysis has been done by Soils Analysis Laboratory following the nationally accepted methodology.

Livestock owner/ farmers are provided an Excel spreadsheet template to track relevant information on yearly/ 6 monthly and 3 monthly basis for fertilizer uses, burning events, woody biomass data, livestock detail for project emission and removal accounting. This data includes size of pastures, number of days grazed, and herd numbers, fertilizer uses, burning events, woody biomass data. Bahori Consulting Pty Ltd. compile data and stores all raw documentation digitally. Baseline and project emissions (nitrogen fertilizer use, and all grazing animal methane emissions) are also tracked through a data form template provided to livestock owner/ farmers that is then collated into spreadsheets.

2. Monitoring process

As per the registered monitoring plan, if there is a change to the project boundary, the applicability conditions should be re-assessed for the changed project area. Therefore, the overall monitoring process is as follows:

i) Monitor the applicability conditions listed in methodology

As mentioned in Section 3.2, the methodology VM0026/Version 1.1 “Sustainable Grassland Management” is applicable under the following conditions:

- The project area is grassland at the start of the project. The project area is land that is degraded at the start of the project and degradation will continue in the baseline scenario on the basis that degradation drivers or pressures are still present in the

baseline scenario. The procedures outlined the latest version of the CDM Tool for Identification of Degraded or Degrading Lands for Consideration in Implementing CDM A/R Project Activities must be used to determine both that the land is degraded at the start of the project and that in the baseline scenario the land will continue to degrade.

- The project area is subject to livestock grazing, burning, and/or nitrogen fertilization in the baseline scenario.
- In the baseline scenario, more than 95 percent of animal dung from grazing animals deposited on grassland is allowed to lie as is, and is not managed, and in the project scenario no more than 5 percent of the animal dung from grazing animals within the project area is managed with alternative manure management systems.

Step 1: Monitoring of boundary

The coordinate of the project boundary has been measured and managed strictly in accordance with regulations and saved in GIS files. Boundary information such as original records, stored in both electronic and printed archive with the project owner, and participants kept a backup. Files are saved at least two years after the end of the crediting period.

In order to obtain valid and reliable boundary information, monitoring team used the GPS or other verifiable methods to verify the project boundary. Determine the actual boundaries of grassland/ veld. . For this monitoring period, the actual project boundary is same as the boundary in the project design.

Therefore, it can be concluded that for the current monitoring period, there is no change in the project boundary.

Step 2: Monitor the applicability conditions

The procedures outlined the latest version of the CDM Tool for Identification of Degraded or Degrading Lands for Consideration in Implementing CDM A/R Project Activities (See 3.1.2) has been used to prove that the project area is grassland at the start of the project, which has been classified as “degraded”, through participatory rural appraisal in the baseline scenario.

Through questionnaire surveys and interviews confirmed that animal manure treatment is same in both baseline and project scenario.

Reassessment of applicability condition has not done as there is no change in the project boundary during the current monitoring period. Also there is no Non-conformance of the applicability condition found during the current monitoring period.

Monitoring of Project Implementation[24]

A record of the grazing agents (e.g., herder households) involved the project.

- The project proponent recorded each ranch involved in the sustainable grassland management project. including the current situation of Grassland: area, type, grassland degradation area and degree, existing livestock species and quantity.
- Each ranch has been Identified through their name, location of their land, and date of entering into the agreement etc are recorded.

A record of the geographic location of the project area for all areas of grassland.

- The geodetic coordinates of the project area has been recorded and archived. This has been achieved by using geo-referenced spatial data (e.g., maps, GIS datasets).

A record of grassland management

- The grassland management plan, together with a record of the project implementation (both grazing and burning) plan are available for the current monitoring period.
- Subsidies received by each ranch in the project area due to sustainable management measures.

Recording of Data and Parameters Monitored

The following parameters are recorded and monitored during this monitoring period (01-July 2018 to 31-December-2022). When applying the equations provided in this methodology (VM0026/Version 1.1) for the ex-ante calculation of net anthropogenic GHG removals by sinks, the project proponent has been provided transparent estimations for the parameters that are monitored during the monitoring period. These estimates are based on measured or existing published data where possible and the project proponent applied a conservative approach: that is, if different values for a parameter are equally plausible, a value that does not lead to over-estimation of net anthropogenic GHG removals by sinks has been selected.

The project will maintain a record tracking the list of,

- Grazing agents involved with the project
  - Each veld maintained the record with their name, location of their land, and date of entering into the agreement and term of the agreement.
- Geographic location of the project area for all areas of grassland

[24] Declaration from project participants regarding Project implementation for each stratum has been provided to VVB for verification and technique/ method, area coverage, frequency of rotational grazing and planned burning for each strata has been provided in Appendix 3.

- The geodetic coordinates of all participating ranch owner has been provided at verification for current project instances

➢ Records of grassland management

- Prior to signing agreement with project proponent and acceptance into the project, each participant submits a sustainable grazing plan. Upon approval of the plan, agreements are signed. For this monitoring period, the first project instances have available sustainable grazing plans.
- Annually each grazing agent submits a grazing plan

➢ For the estimate of annual emissions from the use of synthetic fertilizers, the following parameters has been recorded at each application during this monitoring period:

- Mass and type of synthetic N fertilizer applied;
- Nitrogen content of synthetic N fertilizer applied.

➢ For the estimate of annual CH4 emissions from enteric fermentation,

- Population of livestock type l and
- grazing days of livestock type l has been recorded annually during this current monitoring period.

➢ For the estimate of annual CH_4 and N_2O emissions due to possible burning of biomass for SGM, the following parameters have been recorded and reported at each event, during this current monitoring period.

- Area burned;
- Aboveground biomass burned, excluding litter and dead wood.

➢ To estimate project removals due to changes in SOC, the following parameters are monitored in the year 2022 after five years of project start date. The soil sampling, handling and storage, processing and measurement, and quality control procedures implemented in soil organic carbon analysis that followed nationally approved standard.

- SOC content;
- Soil bulk density;
- Percentage of rocks with a diameter larger than 2mm, roots and other dead residues;

As mentioned in Section 4.2, the project uses direct measurement approach (Option 2) to determine the project removals due to changes in SOC, and the sampling procedures were designed such that the statistical significance of soil carbon stock changes between the

baseline carbon stock and the carbon stock in year t can be determined with a 95 percent confidence interval. The Guidelines for sampling and surveys for CDM project activities and programmes of activities was followed to determine the sampling procedure and sample size.

- To estimate project removals due to changes in woody perennials, the following parameters has been monitored yearly during this current monitoring period.
    - Area of species
    - Number of trees
    - DBH of each species

Monitoring team has distributed questionnaire template to each participating veld and collect all the relevant information by simple interview. Below monitoring schedule have been followed for the current monitoring period (01-July-2018 to 31-December-2022)

Parameters/ Activities	Monitoring methods applied	Date/ frequency of monitoring/recording
Project area	GIS mapping	2022
Grazing Days	Project record kept with project participant i.e., livestock owner.	Annually from 2018, (For this monitoring period : 2018-2022)
Grazing hours	Project record kept with project participant i.e., livestock owner	Annually from 2018, (For this monitoring period : 2018-2022)
Project areas of grassland with management practice[25]	Project record kept with project participant i.e., livestock owner	Annually from 2018, (For this monitoring period : 2018-2022)
geographic location of the project area	using geo-referenced spatial data GIS datasets).	2022
Management plan	Questionnaire, interview, field survey	Annually from 2018, (For this monitoring period : 2018-2022)

[25] Details of rotational grazing and control burning has been included in Appendix 3

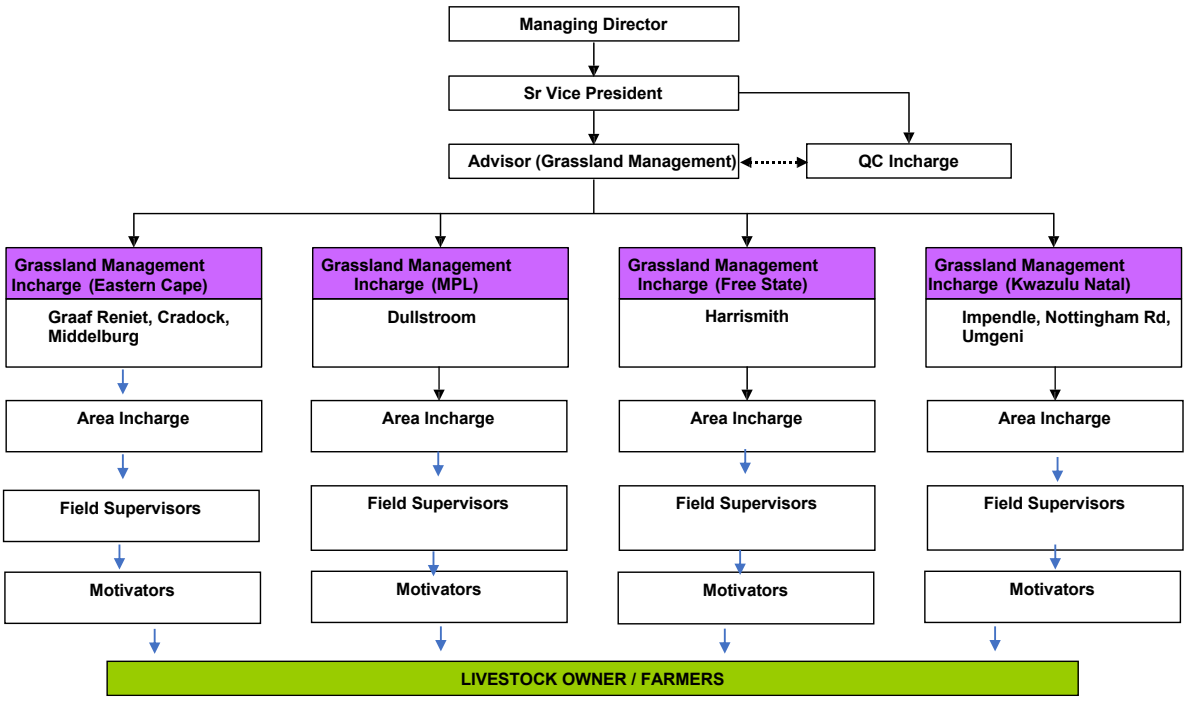
Fertilizer use	Questionnaire, project record	Annually from 2018, (For this monitoring period : 2018-2022)
Livestock population	Project record,	Annually from 2018, (For this monitoring period : 2018-2022)
Burning	Project record, interview	Annually from 2018, (For this monitoring period : 2018-2022)
Soil sampling & testing	Field sampling and laboratory analysis	July, August, September, October, November, December, 2022. Exact date of sampling has been provided in section "sampling framework" and ERR sheet
Above ground woody biomass	Field sampling	October – December, every Year, from 2018 (For this monitoring period : 2018-2022).
Total number of employments	Working contract, payment record	Every year, from 2018 (For this monitoring period : 2018-2022)
Total number of people improved livelihoods or income generated as a result of project activities	Working contracts and payment records Questionnaire and interview Training records	Every year, from 2018 (For this monitoring period : 2018-2022)
Total number of people who have improved skills and/or knowledge resulting from training provided as part of project activities	Training records Questionnaire and interview	Every year, from 2018 (For this monitoring period : 2018-2022)

Operation and management structure, responsibilities and competencies

The monitoring of project activities, consequences of these for vegetation and soils, project impacts on biodiversity, and changes in key social variables will be administered and coordinated by a joint carbon project task force, spearheaded by WeAct Pty Ltd. personnel.

The project activity is dedicated towards removal of GHG from atmosphere by implementing sustainable grazing management and controlled burning over multiple grasslands in the host country 'South Africa'. The past over grazing and uncontrolled fire has depleted soil organic matter, greatly reduced perennial vegetation cover and the potential production of forage for livestock.

The project proponent along with EWT and conservation Outcomes, hired local communities (monitoring staff and auditing staff) for daily supervision and data management during the project implementation while office manager oversees the whole working group. The structure of the monitoring group is as follows:



Responsibilities:

S. No	Designation	Responsibility & Authorities
1	Advisor (Grassland Management)	He is overall responsible for grassland management activities
2	Grassland Management Incharge	Ensure implementation of guidelines and processes in grassland management and to visit sites periodically.
3.	Area In charge	• Counselling the farmers regarding implementation of integrated grassland management • Joint verification of land and papers with EWT representative and to obtain evidence that the land is degraded.
4	Field Supervisor	• Keeping the record of grazing pattern, • Maintaining and updating the project database (fertilizer, burning, woody perennials) register regularly • Reporting veld under rest etc
5	Motivator	• Identifying and motivating the farmers for integrated grassland management • Collecting Title deed from farmers for documentation / financing purpose • Ensuring proper rotational grazing activity by farmers/ herder

The Endangered Wildlife Trust (EWT) is a leading conservation NGO and Public Benefit Organisation protecting Africa's biodiversity since 1973. EWT have more than 100 experts working across southern and East Africa. The 'Endangered Wildlife Trust' continues to play a support role (Co-ordinating management entity) in the effective implementation and monitoring of the proposed project i.e. planned rotational grazing practices and controlled fire, as opposed to repeated, permanent grazing simultaneously on all grazing lands and uncontrolled burning sites. EWT also provides the workshops and training applicable to the project participants to support their efforts in improving soil health and sequestering carbon

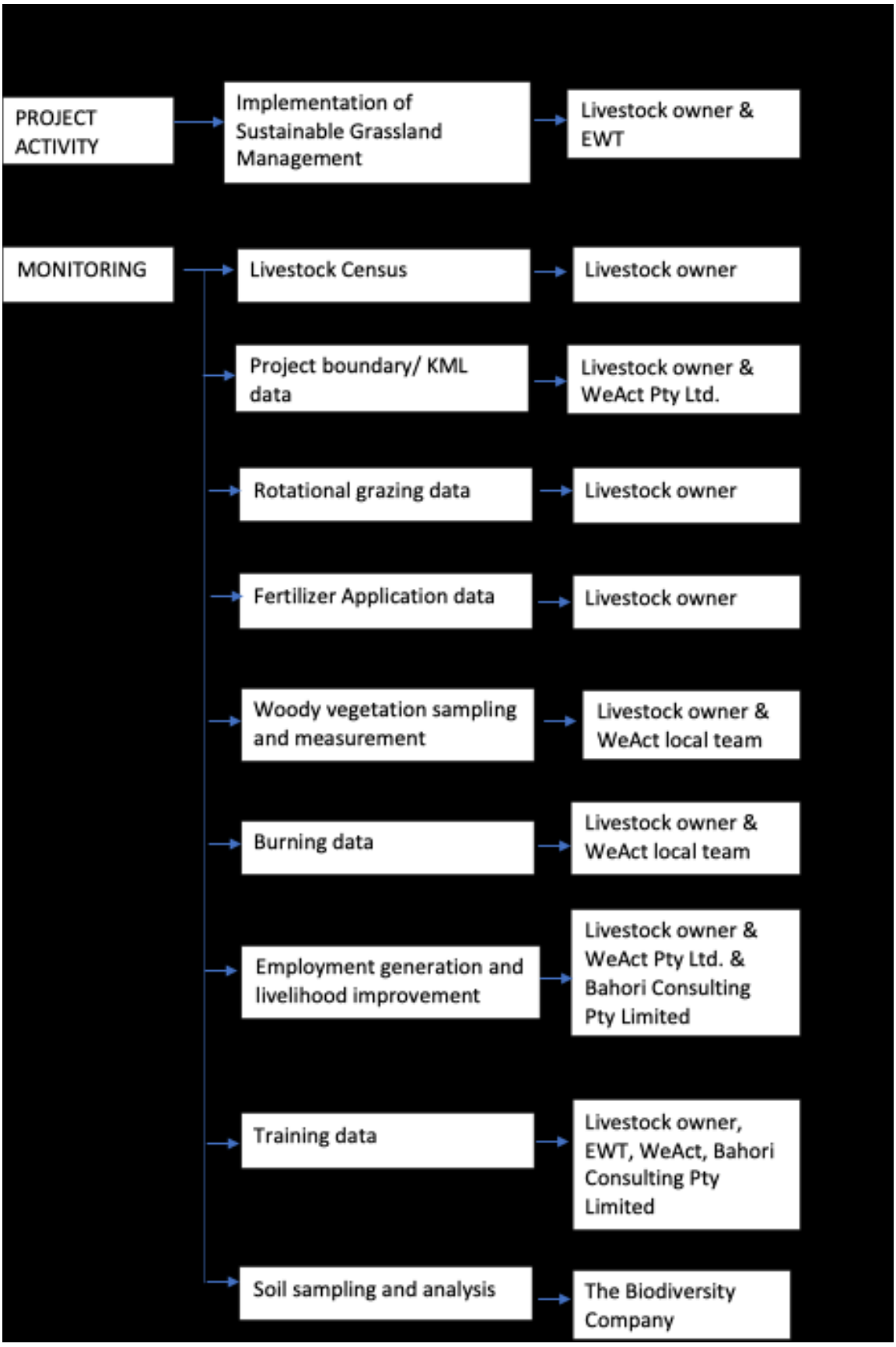
Conservation Outcomes is a non-profit organisation provide support to land that is being developed and managed for biodiversity conservation outside of traditional state protected areas. The focus of the organisation is on securing remnant biodiversity, ecological integrity and resilience whilst contributing to poverty alleviation and meaningful socio-economic development in rural southern Africa through the development of the conservation and wildlife sector. The current land areas under the study have also been supported by the Conservation Outcomes to create awareness and motivate people to adopt sustainable practices. Conservation outcomes

also provides the workshops and training applicable to the project participants to support their efforts in improving soil health and sequestering carbon

The Biodiversity Company provide biodiversity specialist services. The team has working experience across South Africa and also west, central and southern Africa, working with national and international standards. In the current project activity, they conducted a field soil survey, and monitoring of Soil Organic Carbon (SOC) and other parameters along with baseline and project vegetation survey.

Hylton Allison Bahori Consulting (Pty) Limited provide the services for conducting stakeholder consultation, and all the baseline and monitoring services.

Organisation	Responsibilities
The Biodiversity Company	Soil sampling, woody biomass inventory, burning
Endangered Wildlife Trust	Training on SGM, technology of Rotational grazing
Conservation Outcomes	Training on SGM, technology of Rotational grazing
Hylton Allison Bahori Consulting (Pty) Limited	Stakeholder consultation, support of all baseline and monitoring services
Livestock owner	Implementation of SGM, Livestock census, fertilizer application data, rotational grazing data, burning and woody biomass monitoring, keeping employment generation and livelihood record
WeAct Pty limited	mapping of the project boundary, keeping employment generation and livelihood record, collecting and collating the data from CME, project participants, Biodiversity Company and all other third party involved in the project, all activities related to carbon credit


PROJECT ACTIVITY
Implementation of Sustainable Grassland Management
Livestock owner & EWT
MONITORING
Livestock Census
Livestock owner
Project boundary/ KML data
Livestock owner & WeAct Pty Ltd.
Rotational grazing data
Livestock owner
Fertilizer Application data
Livestock owner
Woody vegetation sampling and measurement
Livestock owner & WeAct local team
Burning data
Livestock owner & WeAct local team
Employment generation and livelihood improvement
Livestock owner & WeAct Pty Ltd. & Bahori Consulting Pty Limited
Training data
Livestock owner, EWT, WeAct, Bahori Consulting Pty Limited
Soil sampling and analysis
The Biodiversity Company

Sampling Design and Stratification

According to the methodology (VM0026/Version 1.1), four main requirements was met before the stratified sampling is chosen:

- Population has been stratified in advance of the sampling.

  The project area was stratified before sampling.

- Classes are exhaustive and mutually exclusive (i.e., all elements of the population must fall into exactly one class).

  For the project, classes were determined by each ranch within project boundary (see below Table for details), which are exhaustive and mutually exclusive and all elements of the population fell into exactly one class.

- Classes must differ in the attribute or property under study, otherwise there is no gain in precision over simple random sampling.

  The grazing situation in the project area of each ranch is basically the same, but the climatic condition of each ranch is different, which has a certain impact on the accumulation of soil carbon. For the project, based on the ranch the project ex ante strata are listed in the following table.

  All the participating ranches adopted, rotational grazing and burning control as the management practice in July 2018. In addition, different ranch is having different vegetation coverage and types, so their effects on soil carbon accumulation are also different. The growth status of grassland vegetation is different in each ranches, which has a certain impact on the accumulation of soil carbon. Therefore, for the project, the stratification is based on the each ranch i.e. ranch level.

- Selection of items to represent each class (i.e., the sample drawn from each class) must be random.

  To avoid subjective choice of plot locations, the sample plots will be located systematically with a random start. This will be accomplished with the help of a GPS in the field. The geographical position (GPS coordinate) of each plot will be recorded and archived. It is to be ensured that the sampling plots are distributed randomly, and as evenly spread as possible.

Sampling framework

Sampling procedures were designed such that the statistical significance of soil carbon stock changes between the baseline carbon stock and the carbon stock in time t can be determined with a 95 percent confidence interval. The minimum necessary sample size for each stratum was evaluated using the 'CDM Tool for the Calculation of the number of sample plots for measurements within A/R CDM project activities' as prescribed by VM0026.

Number of sample plots required for estimation of biomass stocks within the project boundary is calculated iteratively. In the first iteration, the number of sample plots for the project area is calculated as:

$$n = \frac{N \times tval^2 \times (\sum_i w_i \times s_i).^2}{N \times E^2 + tval^2 \times \sum_i w_i \times s_i.^2}$$

n	Number of sample plots required for estimation of biomass stocks within the project boundary; dimensionless
n_i	Number of sample plots allocated to stratum i; dimensionless
N	Total number of possible sample plots within the project boundary (i.e. the sampling space or the population); dimensionless
t_{val}	Two-sided Studentís t-value, at infinite degrees of freedom, for the required confidence level; dimensionless
W_i	Relative weight of the area of stratum i (i.e. the area of the stratum i divided by the project area); dimensionless
S_i	Estimated standard deviation of biomass stock in stratum i; t d.m. (or t d.m. ha-1)
E	Acceptable margin of error (i.e. one-half the confidence interval) in estimation of biomass stock within the project boundary; t d.m. (or t d.m. ha-1), i.e. in the units used for i s
i	1, 2, 3, …. biomass stock estimation strata within the project boundary

The mean SOC and the standard deviation of SOC was estimated from a preliminary sample and calculated the mean value and standard deviation of the biomass stock in each strata which were used to calculate the final number of sample sites based on the sample.

The calculated sample size is 41 by using a precision of 15 percent at the 95 percent confidence level, considering the large area of the project boundary, the actual sample size has been increased into 123 by tripling the individual sample size of each stratum with a minimum number of 3. For some regions, the sample size is 18. Preliminary data were used to calculate the sample size and establish baseline SOC under VM0026 v.1.1. Please refer to Sample Size Calculation Table for details.

Strata No.	Veld Name	Region	Area (ha)	Calculated sample size	Actual sample size
Strata 1	Bennidale Trust	Kwazulu Natal	183.8	1.0	3
Strata 2	DavMar Agri	Eastern Cape	6772.9	3.0	9
Strata 3	Petrus Jacobus Loots	Eastern Cape	4319.8	2.0	6
Strata 4	Tillietudlum Nature Reserve	Kwazulu Natal	1612.1	1.0	3

Strata 5	KZN Crane Foundation	Kwazulu Natal	353.6	1.0	3
Strata 6	Bergplaats Irene Properties (Pty) Ltd	Eastern Cape	4915.8	2.0	6
Strata 7	Ken Dorning Family Trust	Kwazulu Natal	2549.9	1.0	3
Strata 8	Field and Stream Pty Ltd	MPL	741.3	1.0	3
Strata 9	Allandale Trust	Eastern Cape	8643.7	3.0	9
Strata 10	Riverdene Farming Co	Eastern Cape	2860.4	1.0	3
Strata 11	Longacres CC	Eastern Cape	9034.3	3.0	9
Strata 12	Tandjiesberg Trust	Free State	2315.3	1.0	3
Strata 13	Thorncliff Trust	Eastern Cape	5717.2	2.0	6
Strata 14	The Fairfield Trust	Eastern Cape	3768.0	2.0	6
Strata 15	Donovale Farming Company (Pty) Ltd	Kwazulu Natal	236.7	1.0	3
Strata 16	Blaauwater Trust	Eastern Cape	6640.8	3.0	9
Strata 17	R J Combrink & Seun Familie Trust	MPL	837.1	1.0	3
Strata 18	Kleinfontein Trust	Kwazulu Natal	1849.3	1.0	3
Strata 19	Kleinfontein Trust	Free State	7884.7	3.0	9
Strata 20	Giel Beukes Aandele Trust	MPL	2195.2	1.0	3
Strata 21	The Waterfall Trust	Free State	454.3	1.0	3
Strata 22	Die Triangle Trust	Eastern Cape	18064.5	6.0	18
Total			91,950.6	41	123

Location of the Sampling sites with sampling dates:

Strata No.	Veld Name	No. of sampling plot	Sampling Plot	Sampling Date	Latitude	Longitude
1	Bennidale Trust	3	1	05/10/22	-29.516928	30.506045
			2	05/10/22	-29.517728	30.506845
			3	30/11/22	-29.506900	30.508054
2	DavMar Agri	9	1	27/09/22	-31.957990	24.409640
			2	27/09/22	-31.954220	24.405430
			3	27/09/22	-31.862780	24.675780

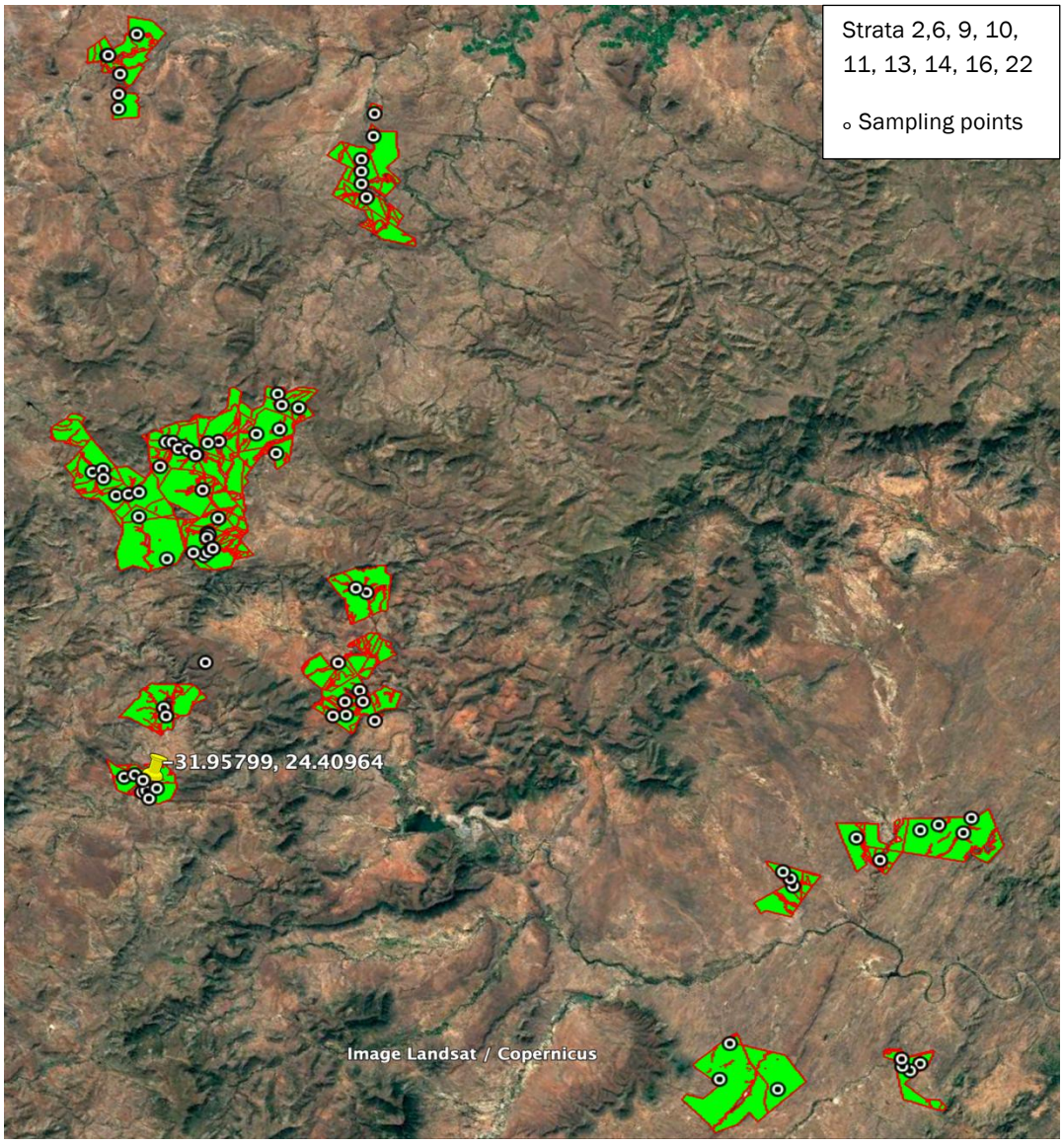
			4	27/09/22	-31.964210	24.402150
			5	28/09/22	-31.950110	24.419180
			6	28/09/22	-31.817850	24.707000
			7	12/12/22	-31.965990	24.417640
			8	12/12/22	-31.940200	24.420830
			9	12/12/22	-31.932230	24.412320
3	Petrus Jacobus Loots	6	1	28/09/22	-31.896800	24.878640
			2	28/09/22	-31.905660	24.850270
			3	28/09/22	-31.886910	24.906270
			4	13/12/22	-31.902910	24.912380
			5	13/12/22	-31.877800	24.916460
			6	13/12/22	-31.879060	24.860820
4	Tillietudlum Nature Reserve	3	1	04/10/22	-29.635210	29.918111
			2	04/10/22	-29.648210	29.934784
			3	04/10/22	-29.656210	29.934864
5	KZN Crane Foundation	3	1	06/10/22	-29.331546	30.011490
			2	06/10/22	-29.344850	30.003532
			3	06/10/22	-29.352850	30.004332
6	Bergplaats Irene Properties (Pty) Ltd	6	1	29/09/22	-31.755640	24.731350
			2	29/09/22	-31.787700	24.718240
			3	29/09/22	-31.797920	24.726080
			4	29/09/22	-31.768350	24.730220
			5	29/09/22	-31.763640	24.739350
			6	29/09/22	-31.805920	24.734080
7	Ken Dorning Family Trust	3	1	28/11/22	-30.001690	29.213320
			2	28/11/22	-30.001700	29.212900
			3	28/11/22	-30.076810	29.211210
8		3	1	06/12/22	-25.411970	30.024653

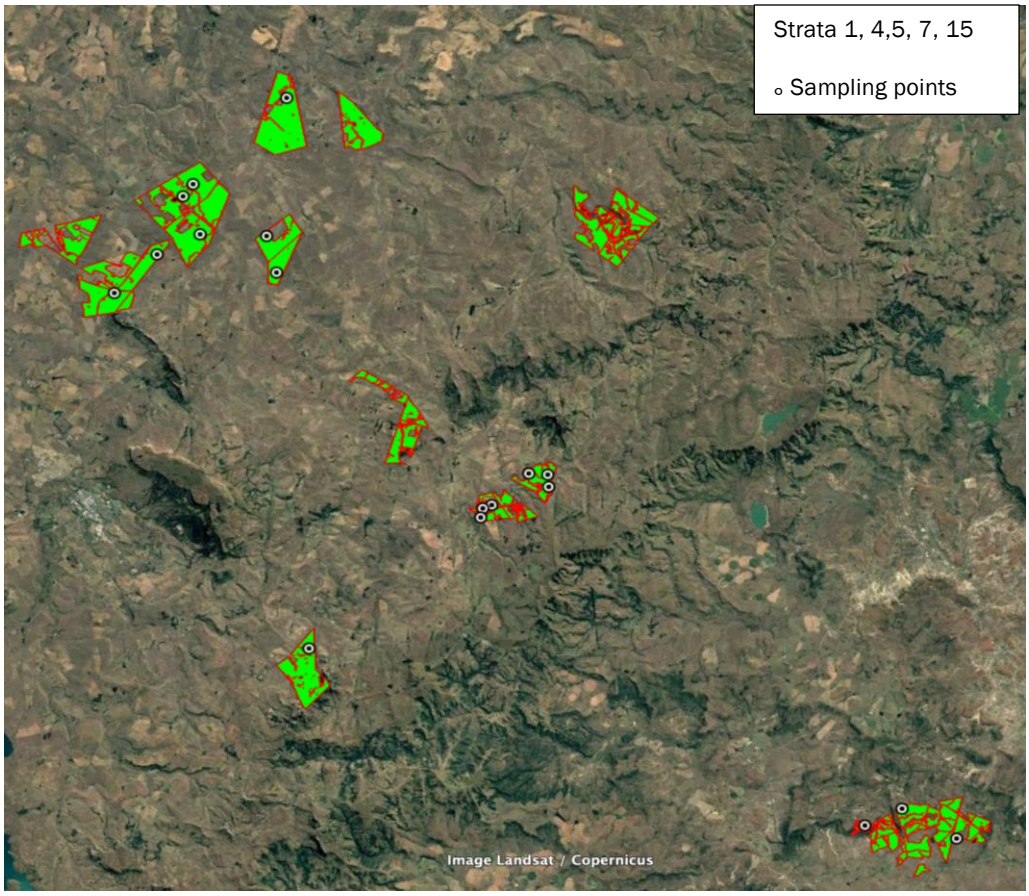
	Field and Stream Pty Ltd,		2	06/12/22	-25.439490	30.011978
			3	06/12/22	-25.440290	30.012778
9	Allandale Trust	9	1	28/09/22	-32.083430	24.591580
			2	28/09/22	-32.094430	24.599580
			3	28/09/22	-32.052130	24.745630
			4	28/09/22	-32.086860	24.613830
			5	28/09/22	-32.102390	24.623670
			6	28/09/22	-32.062020	24.653100
			7	28/09/22	-32.040960	24.744620
			8	28/09/22	-32.122030	24.608830
			9	28/09/22	-32.094210	24.634030
10	Riverdene Farming Co,	3	1	29/09/22	-31.938820	24.502400
			2	29/09/22	-31.946820	24.582400
			3	29/09/22	-31.932910	24.510090
11	Longacres CC,	9	1	26/09/22	-32.687320	24.801290
			2	26/09/22	-32.628230	24.726100
			3	27/09/22	-32.559550	24.657000
			4	27/09/22	-32.687060	24.821960
			5	27/09/22	-32.565400	24.650360
			6	27/09/22	-32.661770	24.796790
			7	27/09/22	-32.549720	24.660800
			8	14/12/22	-32.596890	24.737760
			9	14/12/22	-32.648580	24.780940
12	Tandjiesberg Trust	3	1	06/10/22	-28.266930	29.424500
			2	06/10/22	-28.268350	29.437261
			3	06/10/22	-28.276320	29.437395
13	Thorncliff Trust	6	1	28/09/22	-31.846520	25.192280
			2	28/09/22	-31.840310	25.205830

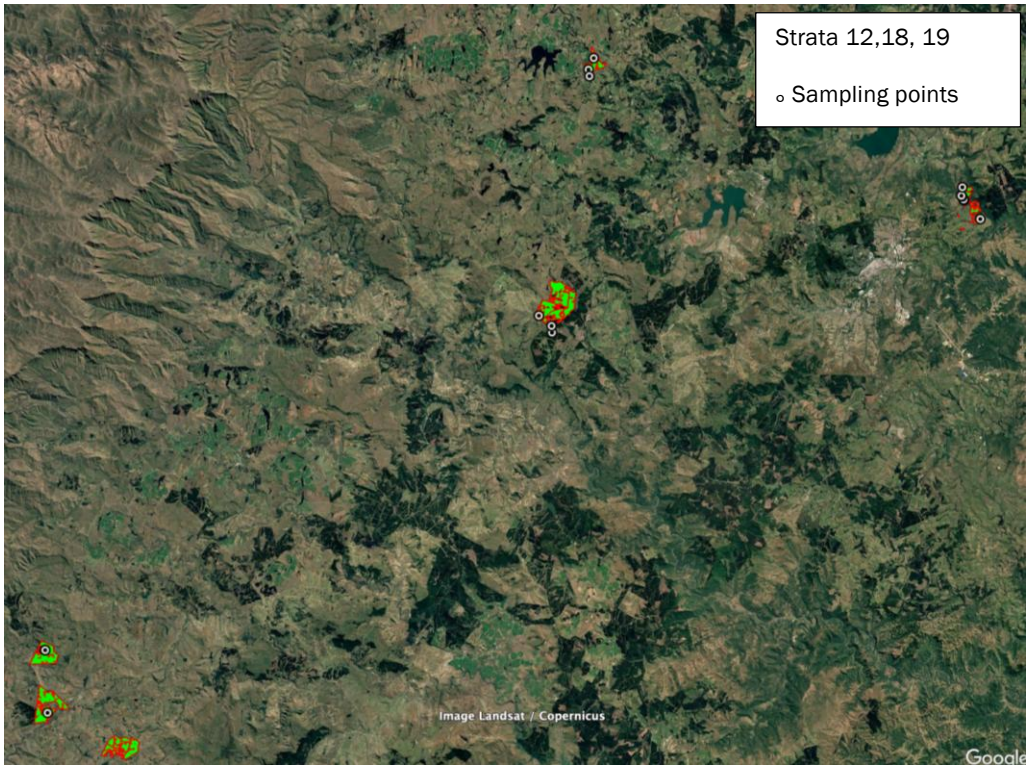
			3	28/09/22	-31.834290	25.219040
			4	11/12/22	-31.833190	25.250970
			5	11/12/22	-31.822890	25.276520
			6	11/12/22	-31.857620	25.179790
14	The Fairfield Trust,	6	1	29/09/22	-31.562340	25.196310
			2	29/09/22	-31.591470	25.160020
			3	29/09/22	-31.598630	25.144220
			4	29/09/22	-31.577390	25.235800
			5	12/12/22	-31.582850	25.183100
			6	12/12/22	-31.563340	25.197310
15	Donovale Farming Company (Pty) Ltd,	3	1	05/10/22	-29.545812	30.530593
			2	05/10/22	-29.521362	30.508845
			3	30/11/22	-29.522462	30.509645
16	Blaauwater Trust	9	1	29/09/22	-31.810560	24.806870
			2	29/09/22	-31.821400	24.807770
			3	29/09/22	-31.837040	24.806470
			4	29/09/22	-31.836610	24.805300
			5	29/09/22	-31.850230	24.832710
			6	29/09/22	-31.818690	24.803300
			7	13/12/22	-31.827700	24.807040
			8	13/12/22	-31.804970	24.803860
			9	13/12/22	-31.841385	24.825149
17	R J Combrink & Seun Familie Trust	3	1	05/10/22	-25.526330	30.171675
			2	05/10/22	-25.535440	30.155661
			3	05/10/22	-25.570520	30.109363
18	Kleinfontein Trust	3	1	13/07/22	-28.507757	29.637820
			2	24/08/22	-28.519320	29.699630
			3	24/08/22	-28.498010	29.663720

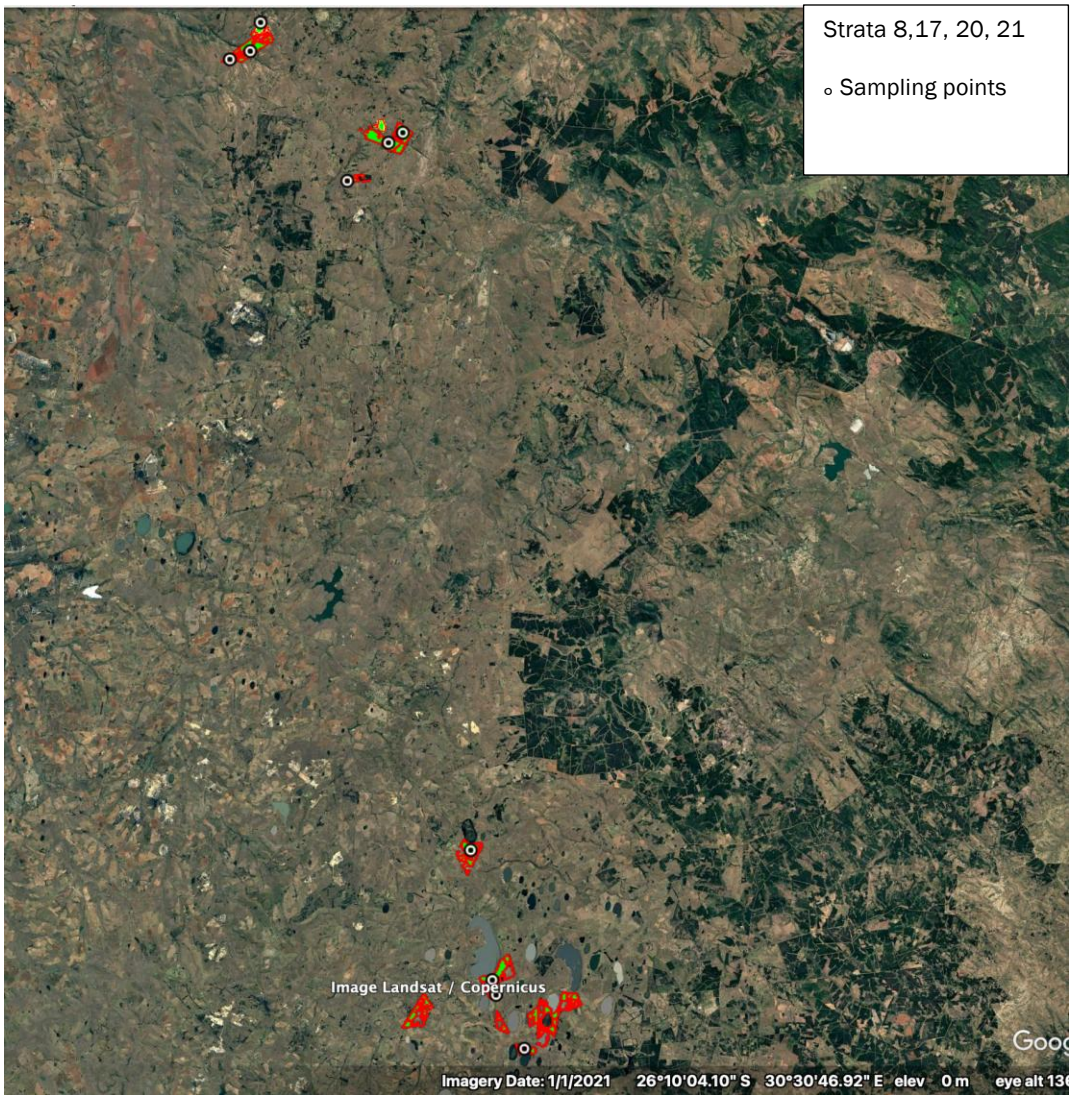
19	Kleinfontein Trust	9	1	22/08/22	-28.013680	29.276530
			2	22/08/22	-28.103160	29.257180
			3	22/08/22	-28.127330	29.262320
			4	22/08/22	-28.099720	29.212260
			5	22/08/22	-28.373590	29.268340
			6	22/08/22	-28.111350	29.182280
			7	22/08/22	-28.135023	29.151714
			8	22/08/22	-28.074330	29.202350
			9	22/08/22	-28.066720	29.209650
20	Giel Beukes Aandele Trust	3	1	15/07/22	-26.357306	30.216320
			2	15/07/22	-26.421140	30.254150
			3	25/08/22	-26.367421	30.226340
21	The Waterfall Trust	3	1	12/07/22	-28.293996	29.390119
			2	12/07/22	-28.288132	29.391919
			3	12/07/22	-28.286286	29.398119
22	Die Triangle Trust	18	1	22/08/22	-31.893140	24.699070
			2	22/08/22	-31.895170	24.705020
			3	22/08/22	-31.887280	24.724500
			4	22/08/22	-31.811580	24.773520
			5	22/08/22	-31.859970	24.770720
			6	22/08/22	-31.896220	24.711800
			7	22/08/22	-31.887240	24.720490
			8	22/08/22	-31.885650	24.725900
			9	22/08/22	-31.897630	24.711800
			10	22/08/22	-31.882640	24.696730
			11	22/08/22	-31.887330	24.747880
			12	22/08/22	-32.749290	24.508620
			13	22/08/22	-32.763500	24.521120

			14	22/08/22	-32.758320	24.507850
			15	22/08/22	-32.652000	24.416020
			16	22/08/22	-32.744970	24.516340
			17	06/12/22	-32.596420	24.396090
			18	06/12/22	-32.587830	24.441380




Strata 1, 4,5, 7, 15
Sampling points
Image Landsat / Copernicus


Strata 12,18, 19
Sampling points
Image Landsat / Copernicus
Google



The mean SOC and the standard deviation of SOC was estimated from a preliminary sample, and calculated the mean value and standard deviation of the SOC stock in each strata which were used to calculate the final number of sample sites based on the sample.

Monitoring frequency

The monitoring of the project implementation will take place at least every five years after the project registration in order to ensure the continuity of the benefits. Periodic verification and quantitative monitoring of the project will take place at least every five years.

Data management

All data collected as part of monitoring is archived electronically. All information should be stored by the technology department of the project owner and all the material has a physical copy for backup. And all data collected shall be archived for a period of at least two years after the end of the last crediting period of the project activity.

QA/QC procedures

The following QA/QC procedures has been followed:

1) Training has been provided to the livestock owner / farmer to guarantee the implementation of the monitoring plan, all the relevant staff is obliged to take the training course before the operation starts;

2) The monitoring team will checked the monitoring equipment regularly to make sure their normal operation before each monitoring activities;

3) Sampling points are based upon the stratified random method and defined by the pre-sampling study design. Individual “strata” comprise project boundaries.

4) Sampling personnel are are suitably trained staff and are familiar with local conditions, soils, and flora and be able to extract intact soil samples, preserve all sample material, and label all samples clearly and correctly. Sampling procedures were designed such that the statistical significance of soil carbon stock changes between the baseline carbon stock and the carbon stock in time t can be determined with a 95 percent confidence interval.

5) The measurement of soil samples has been carried out by a laboratory that can demonstrate adherence to the principles of good laboratory practices. Total 123 samples from 22 strata has been used to ensure that a precision of 15 percent at the 95 percent confidence level is attained (though, the calculated sample size is 41 by using a precision of 15 percent at the 95 percent confidence level considering the large area of the project boundary, the actual sample size has been increased into 123 by tripling the individual sample size of each stratum with a minimum number of 3.) Three replicates of undisturbed core samples were also collected from each identified representative diagnostic horizon in the profiles for the determination of the soil analysis.

6) All soil samples need to be backed up. If there is a problem with the testing equipment or the data is abnormal, retest the corresponding soil sample.

Procedure for handling internal audit and addressing non-conformities:

Collecting reliable field data is an important step in quality assurance. The personnel involved in the project monitoring and in the measurement of carbon pools are fully trained in data collection and analysis. In order to ensure consistency in field monitoring and measurements, the team members are made aware of all procedure of conducting survey, data collection etc. The monitoring and data collection documents lists names of all personnel and their responsibility. The quality of field data collection was verified by undertaking random checks, including their remeasurements by a senior member of the monitoring team.

Data arrives from multiple field crews and sources (different satellite images), and such data faces some risk of error in reporting and converting into spreadsheet databases. Data checking protocols devised at three levels – supervisors of field crews, Ranch owner, EWT. Multiple personnel within the project check data and calculations to ensure transparency and internal auditing. Evidence for project activities that reduce greenhouse gas removals are reviewed and cross-checked with supervisors of field crews, ranch managers per guidelines provided in VCS AFOLU Requirements.

Specifically, all raw field data and satellite images are gathered and maintained by WeAct Pty Limited. Copies of raw data stored online (currently in Microsoft SharePoint) and shared with all partners. Data analyses submitted as reports to appropriate supervisory personnel, who consult with specialists to confirm if monitoring results reconcile with on-the ground knowledge.

In the case of discrepancies, project leaders meet to discuss the scope of the problem, evaluate solutions, and decide a course of action. However, there is no discrepancies found for this monitoring period.

Applicability condition

In case any non-conformance of the applicability conditions, the expert group will evaluate the situation and submit the deviation or change to the methodology to Verra for approval. However, there is no discrepancies found for this monitoring period

Monitoring

If there are non-conformances founded , expert group will ask the monitoring team to take necessary compensation measures (redo some of the monitoring activities or calculation) until all the non-conformances been corrected. If the registered monitoring plan is unable to be implemented, or the monitoring would permanently deviate from the applied methodologies, or the other applied methodological regulatory documents, the project participants shall describe the nature and extent of the non-conforming monitoring in a revised monitoring plan and will submit to Verra to request a change of the monitoring plan. There are no non-conformances founded for this monitoring period.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

5.1.1 Baseline N_2O emissions due to fertilizer use

Baseline N_2O emissions due to fertilizer use equals baseline direct N_2O emission plus indirect N_2O emission, as described using the following:

$BE_{N2OSN,b} = GWP_{N2O} \times (BE_{D,N2OSN,b} + BE_{ID,N2OSN,b})$ ———— Eq. : 1		
$BE_{N2OSN,b}$	(t CO_2e)	Baseline N_2O emissions due to fertilizer use in baseline year b
$BE_{D,N2OSN,b}$	(t N_2O)	Baseline direct N_2O emissions from synthetic nitrogen fertilizer use in baseline year b
$BE_{ID,N2OSN,b}$	(t N_2O)	Baseline indirect N_2O emissions from synthetic nitrogen fertilizer use in baseline year b,
GWP_{N2O}	t CO_2e/t N_2O	Global-warming potential for N_2O

1) **Baseline direct N_2O emissions from synthetic nitrogen fertilizer use**

Baseline direct N_2O emissions from synthetic fertilizer use in year b calculated as following

$BE_{D,N2OSN,b} = F_{SN,b} \times EF_{Nfert} \times 44/28$ ———— Eq. : 2		
$BE_{D,N2OSN,b}$	(t N_2O)	Baseline direct N_2O emissions from synthetic nitrogen fertilizer use in baseline year b
$F_{SN,b}$	(t N)	Annual amount of synthetic fertilizer N applied to grassland soils in baseline year b, adjusted for volatilization as NH_3 and NOx
EF_{Nfert}	kg N_2O-N/kg N applied	N_2O emission factor for synthetic N fertilizer use
44/28		Conversion of N_2O-N to N_2O

$F_{SN,b} = \sum_{i=1}^{I} M_{SNi,b} \times NC_{SNi,b} \times (1 - Frac_{GAS,F})$ ———— Eq. : 3		
$F_{SN,b}$	(t N)	Annual amount of synthetic fertilizer N applied to grassland soils in baseline yearb, adjusted for volatilization as NH_3 & NOx
$M_{SNi,b}$	(t fertilizer)	Mass of synthetic N fertilizer type i applied in baseline year b
$NC_{SNi,b}$	(g N/g fertilizer)	Nitrogen content of synthetic N fertilizer type i applied in baseline year b
$Frac_{GAS,F}$	(kg N volatilized/kg N applied)	Fraction of synthetic N fertilizer that volatilizes as NH_3 and NOx
I		Index of synthetic N fertilizer types

2) **Baseline indirect N_2O emissions from synthetic nitrogen fertilizer use**

Indirect N_2O emissions from leaching and runoff has been excluded from the project boundary, following guidance in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 11, because, annual precipitation is less than annual potential evapotranspiration in the project region.

5.1.2 Baseline emissions due to the use of N-fixing specie

According to the methodology (VM0026/Version 1.1), N_2O emissions due to the use of N-fixing species in the baseline are excluded.

5.1.3 Baseline emissions due to burning of biomas

The baseline emissions due to burning of biomass, $BE_{BB,b}$, include CH_4 emissions from biomass burning plus N_2O emissions from biomass burning in baseline year b, as described using the following:

$BE_{BB,b} = BE_{CH4BB,b} + BB_{N2OBB,b}$ ———— Eq. : (5)		
$BE_{BB,b}$	(t CO_2e)	Baseline GHG emissions from biomass burning in baseline year b
$BE_{CH4BB,b}$	(t CO_2e)	Baseline CH_4 emissions from biomass burning in baseline year b
$BB_{N2OBB,b}$	(t CO_2e)	Baseline N_2O emissions from biomass burning in baseline year b

1) **CH_4 emissions from biomass burning :**

CH_4 emissions from biomass burning in baseline year b must be calculated using the following:

$BE_{CH4,BB,b} = \frac{A_{B,b} \times M_{B,b} \times C_f \times EF_{CH4} \times GWP_{CH4}}{1000}$ ————Eq. : (6)		
$BE_{CH4,BB,b}$	(t CO_2e)	Baseline CH_4 emissions from biomass burning in baseline year b
$A_{B,b}$	(ha)	Area burned in baseline year b
$M_{B,b}$	(t biomass/ha)	Aboveground biomass burned in baseline year b
C_f	(t dry matter burnt/t biomass)	Combustion factor
EF_{CH4}	(g CH_4/kg dry matter burnt)	CH_4 emission factor for biomass burning
GWP_{CH4}	(t CO_2e/t CH_4)	Global-warming potential for CH_4

2) **N_2O emissions from biomass burning:**

N_2O emissions from biomass burning in baseline year b calculated using the following:

$BE_{N2O,BB,b} = \frac{A_{B,b} \times M_{B,b} \times C_f \times EF_{N2O} \times GWP_{N2O}}{1000}$ ———— Eq. : (7)		
$BE_{N2OBB,b}$	(t CO_2e)	Baseline CH_4 emissions from biomass burning in baseline year b
$A_{B,b}$	(ha)	Area burned in baseline year b
$M_{B,b}$	(t biomass/ha)	Aboveground biomass burned in baseline year b
C_f	(t dry matter burnt/t biomass)	Combustion factor

EF_{N2O}	(g CH_4/kg dry matter burnt)	N_2O emission factor for biomass burning
GWP_{N2O}	(t CO_2e/t CH_4)	Global-warming potential forN_2O

5.1.4 Baseline emissions due to enteric fermentationn

Baseline CH_4 emissions from enteric fermentation has been calculated following

$BE_{CH4EF,b} = \frac{GWP_{CH4} \times \sum_{l=1}^{L} P_{l,b} \times EF_l \times Days_{l,b}}{1000 \times 365}$ ——— Eq. : (8)		
$BE_{CH4,EF,b}$	(t CO_2e)	Baseline CH_4 emissions from enteric fermentation in baseline year b
GWP_{CH4}	(t CO_2e/t CH_4)	Global-warming potential for CH_4
$P_{l,b}$	(head)	Population of grazing livestock type l, in baseline year b
l		Index of livestock type
EF_l	kg CH_4/(head*year)	Enteric CH_4 emission factor per head of livestock type l per year
Days $_{l,b}$	(days	Grazing days inside the project area for each livestock type l in baseline year b

5.1.5 Baseline N_2O and CH_4 emissions due to manure management

Baseline emissions from manure management include N_2O and CH_4 emissions from manure and urine deposited on grassland soil during the grazing season.

$BE_{GHG_{MD},b} = BE_{N_2O_{MD,b}} + BE_{CH_{4_{MD,b}}}$ ———Eq. : (9)		
$BE_{GHG_{MD},b}$	t CO_2e	Baseline GHG emissions from manure management in baseline year *b*
$BE_{N_2O_{MD,b}}$	t CO_2e	Baseline N_2O emissions from manure and urine deposited on grassland soil in baseline year b
$BE_{CH_{4_{MD,b}}}$	t CO_2e	Baseline CH_4 emissions from manure and urine deposited on grassland soil in baseline year b

1) Baseline N_2O emissions from manure management

$BE_{N2O_{MD,b}} = GWP_{N2O} \times (BE_{D,N2O_{MD,b}} + BE_{ID,N2O_{MD,b}})$ ————Eq. : (10)		
$BE_{N2O_{MD,b}}$	t CO_2e	Baseline N_2O emissions from manure and urine deposited on grassland soil in baseline year b
GWP_{N2O}	t CO_2e/ t N_2O	Global-warming potential for N_2O
$BE_{D,N2O_{MD,b}}$	t N_2O	Direct N_2O emissions from manure and urine deposited on grassland soil during the grazing season in baseline year *b*
$BE_{ID,N2O_{MD,b}}$	t N_2O	Indirect N_2O emissions from manure and urine deposited on grassland soil during the grazing season in the baseline year b

2) Baseline direct N_2O emissions from manure and urine deposited on grassland soils

Baseline direct N_2O emissions from manure and urine deposited on grassland soil are calculated using the following:

$$BE_{D,N2O_{MD},b} = \sum_{l1=1}^{L1} F_{MD,l1,b} \times EF_{3,PRP,CPP} \times 44/28$$ ——— Eq. (11)		
And/ or $$BE_{D,N2O_{MD},b} = \sum_{l2=1}^{L2} F_{MD,l2,b} \times EF_{3,PRP,SO} \times 44/28$$ ——— Eq. (12)		
$BE_{D,N2O_{MD},b}$	t N_2O	Baseline N_2O emissions from manure and urine deposited on grassland soil in baseline year b
$F_{MD,l1,b}$	t N	Annual amount of nitrogen in cattle, poultry and pigs manure and urine deposited on grassland soil during the grazing season in baseline year b, adjusted for volatilization as NH_3 and NO_X
$EF_{3,PRP,CPP}$	kg N_2O-N/kg N input)	N_2O emission factor for cattle, poultry and pigs manure and urine deposited on grassland soil during the grazing season
$F_{MD,l2,b}$	t N	Annual amount of nitrogen in sheep and other animals manure and urine deposited on grassland soil during the grazing season in baseline year b, adjusted for volatilization as NH_3 and NO_X
$EF_{3,PRP,SO}$	kg N_2O-N/kg N input)	N_2O emission factor for sheep and other animals manure and urine deposited on grassland soil during the grazing season (kg N_2O-N/kg N input)
L1		Index of livestock cattle, poultry and pigs
L2		Index of livestock sheep and other animals

$F_{MD,l1,b}$ and $F_{MD,l2,b}$ must be calculated using the following equation for livestock type l

$$F_{MD,l,b} = \frac{P_{l,b} \times Nex_l \times H_{l,b} \times Days_{l,b} \times (1 - Frac_{GAS,MD}}{1000_a \times 24 \times 1000_b}$$ ——— Eq. (13)		
$F_{MD,l,b}$	t N	Annual amount of manure and urine deposited on grassland soil from livestock type *l* during the grazing season in baseline year b, adjusted for volatilization as NH_3 and NO_x
$P_{l,b}$	Head	Population of livestock type *l* in baseline year *b*
$W_{l,b}$	kg livestock mass/head	Average weight of livestock type *l* in baseline year *b*
N_{exl}	kg N deposited/(t livestock mass*day	Nitrogen excretion of livestock type *l*
1000_a		Conversion factor for t livestock mass to kg livestock mass
$H_{l.b}$	hour	Average grazing hours per day for livestock type *l* in baseline year *b*
24		Conversion factor for days to hours
$Days_{l,b}$	days	Grazing days for livestock type*l*inside the project area in baseline year *b* (
1000_b		Conversion factor for tonnes N to kg t N

$Frac_{GAS,MD}$	(kg N volatilized/kg of N deposited)	Fraction of volatilization from manure and urine deposited by grazing animals as NH_3 and NO_x
L		Index of grazing livestock types

3) Baseline indirect N_2O emissions from manure and urine deposited on grassland soils

According to the Methodology (VM0026/Version 1.1) as the annual precipitation of the project area is less than annual potential evapotranspiration, so, indirect N2O emissions from leaching and runoff can be excluded.

4) CH_4 emissions from manure management

Baseline CH_4 emissions from manure management are calculated using the following:

$$BE_{CH4_{MD},b} = \frac{GWP_{CH4} \times \sum_{l=1}^{I} EF_{lM} \times p_{l,b} \times H_{l,b} \times Days_{l,b}}{1000 \times 365 \times 24} \quad \text{——— Eq. (15)}$$

EF_{lM}	kg CH_4/(head*year	CH_4 emission factor from manure of livestock type I
$Pl_{,b}$	Head	Population of grazing livestock type I, in baseline year b
$H_{l,b}$	hour	Average grazing hours per day for livestock type I in baseline year b
$Days_{l,b}$	Days	Grazing days for livestock type I inside the project area in baseline b
1000		Conversion factor for t CH_4 to kg CH_4
365		Conversion factor for years to days
24		Conversion factor for days to hours

5.1.6 Baseline CO_2 emissions due to the use of fossil fuels for grassland management

According to the Participatory Rural Appraisal (PRA) Report, there was no grassland management in baseline scenario, thus did not involve agricultural / other machinery. So, baseline CO_2 emissions due to the use of fossil fuels for grassland management is considered to be 0 tCO2e

5.1.7 Baseline emission removals from existing woody perennials

Baseline removals by existing woody perennials in baseline year b ($BRWP_b$) has been calculated using the following:

$$BRWP_B = \sum_{j=1}^{J} \Delta C_{BG,j} - \Delta C_{BL,j} \quad \text{——— Eq. : (17)}$$

$BRWP_B$	(t CO_2)	Baseline removals from existing woody perennials in baseline year b
$\Delta C_{BG,j}$	(t CO_2)	Average annual increase in carbon stocks of existing woody biomass for species j, under the baseline scenario
$\Delta C_{BL,j}$	(t CO_2)	Average annual loss of carbon stocks of existing woody biomass for species j, under the baseline scenario
J		Index of species

The average annual increase in carbon stocks in existing live woody biomass for each species must be calculated using the following:

$$\Delta C_{BG,j} = \sum_{s=1}^{S} A_{B,j,s} \times G_{B,j,s} \times CF_j \times 44/12 \quad \text{——— Eq. : (18)}$$

$\Delta C_{BG,j}$	(t CO_2)	Average annual increase in carbon stocks of existing woody biomass for species j, under the baseline scenario
$A_{B,j,s}$	(ha)	Area of species j in stratum s under the baseline scenario
$G_{B,j,s}$	(t dm/(ha)	Average annual increase in existing woody biomass of species j in stratum s, under the baseline scenario
CF_j	(t C/t dm)	Carbon fraction for species j
S		Index of stratum
44/12		Ratio of molecular weights of CO_2 and C

The volume estimation were performed using generic volume allometric equations which accounts for the heterogeneity of tree diversity across the landscape. The above ground biomass in woody vegetation has been predicted using equation from Kuyah et al. (2012)[26].

Above Ground Biomass (AGB in kg) = AGB = 0.091*dbh^2.472

Average annual increase in existing woody biomass has been calculated by difference between tree biomass at time t2 and t1. Please refer to ERR for detailed calculation. The average annual increase in existing live woody biomass stocks for each species in a vegetation class in a stratum has been calculated from:

$G_{B,j,s} = G_{AB,B,j,s}$ ——— Eq. : (19)[27]		
$G_{B,j,s}$	(t dm/ha)	Average annual increase in existing woody biomass of species j in stratum s, under the baseline scenario
$G_{AB,B,j,s}$	(tdm aboveground biomass/ha)	Average annual increase in existing above-ground woody biomass of species j in stratum s

5.1.8 Baseline emission removals due to changes in soil organic carbon

Since the applicability conditions limit the project to land that is degraded and is continuing to degrade, it can be conservatively assumed that the changes in SOC in the baseline scenario is zero. Therefore:

BRS = 0

BRS = Baseline removals due to changes in SOC under the baseline scenario (t CO2e)

5.1.9 BASELINE EMISSIONS AND REMOVALS

[26] Kuyah, S., Dietz, J., Muthuri, C., Jamnadass, R., Mwangi, P., Coe, R., et al. (2012). Allometric equations for estimating biomass in agricultural landscapes: I. Aboveground biomass. Agric. Ecosyst. Environ. 158, 216–224. doi: 10.1016/j.agee.2012.05.011.

[27] Below ground biomass has not included as carbon pool in the project boundary. Therefore, as specified by the methodology the term (1+Rj) has been removed from the equation 19

The emissions and removals in baseline year b are given by:

$BE_b = BE_{N2OSN,b} + BEBB_{,b} + BE_{CH4EF,b} + BE_{GHGMD,b} - BRWP_b$ ———Eq. : (21)		
BE_b	(t CO_2e)	Baseline emissions and removals in year b
$BE_{N2OSN,b}$	(t CO_2e)	Baseline N_2O emissions due to fertilizer use in baseline year b
$BEBB_{,b}$	(t CO_2e)	Baseline GHG emissions from biomass burning in baseline year b
$BE_{CH4EF,b}$	(t CO_2e)	Baseline CH_4 emissions from enteric fermentation in baseline year b
$BE_{GHGMD,b}$	(t CO_2e)	Baseline GHG emissions from manure management in baseline year b
$BRWP_b$	(t CO_2e	Baseline removals from existing woody perennials in baseline year b

Baseline average annual GHG emissions/ removals is summarized in the following table, please refer to ER spreadsheet for detailed calculation.

[28]$BE_{N2OSN,b}$	$BE_{BB\ b}$	$BE_{CH4,EF,b}$	$BE_{GHGMD,b}$	$BRWP_b$	BE_b
498.00	263.69	29847.11	10225.13	7988.91	32845.02

5.2 Project Emissions

5.2.1 Project N_2O emissions due to fertilizer use

Project N_2O emissions due to fertilizer use equals the sum of project direct and indirect N2O emissions, as described using the following:

$PE_{N2OSN,t} = GWP_{N2O} \times (PE_{D,N2OSN,t} + PE_{ID,N2OSN,t})$ —— Eq. (22)		
$PE_{N2OSN,t}$	(t CO_2e)	Project N_2O emissions due to fertilizer use in year t
$PE_{D,N2OSN,t}$	(t N_2O)	Project direct N_2O emissions from synthetic nitrogen fertilizer use in year t
$PE_{ID,N2OSN,t}$	(t N_2O)	Project indirect N_2O emissions from synthetic nitrogen fertilizer use in year t,
GWP_{N2O}	t CO_2e/t N_2O	Global-warming potential for N_2O

1) **Project direct N_2O emissions from synthetic nitrogen fertilizer use:**

Project direct N_2O emissions from synthetic fertilizer use in year t calculated as following

$PE_{D,N2OSN,t} = F_{SN,t} \times EF_{Nfert} \times 44/28$ ——— Eq. : (23)		
$PE_{D,N2OSN,t}$	(t N_2O)	Baseline direct N_2O emissions from synthetic nitrogen fertilizer use in year t
$F_{SN,t}$	(t N)	Annual amount of synthetic fertilizer N applied to grassland soils in year t, adjusted for volatilization as NH_3 and NOx

[28] Baseline nitrogen fertilization (LAN & Urea) has been sourced from the project database which is the actual amount of fertilization used by each ranch.

EF_{Nfert}	kg N_2O-N/kg N applied	N_2O emission factor for synthetic N fertilizer use
44/28		Conversion of N_2O-N to N_2O

$F_{SN,t} = \sum_{i=1}^{I} M_{SNi,t} \times NC_{SNi,t} \times (1 - Frac_{GAS,F})$ ——— Eq. : (24)		
$F_{SN,t}$	(t N)	Annual amount of synthetic fertilizer N applied to grassland soils in year t, adjusted for volatilization as NH_3 and NOx
$M_{SNi,t}$	(t fertilizer)	Mass of synthetic N fertilizer type i applied in year t
$NC_{SNi,t}$	(g N/g fertilizer)	Nitrogen content of synthetic N fertilizer type i applied in year t
$Frac_{GAS,F}$	(kg N volatilized/kg N applied)	Fraction of synthetic N fertilizer that volatilizes as NH_3 and NOx
I		Index of synthetic N fertilizer types

2) **Project indirect N_2O emissions from synthetic nitrogen fertilizer use**

Indirect N2O emissions from leaching and runoff has been excluded from the project boundary, following guidance in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 11, because, annual precipitation is less than annual potential evapotranspiration in the project region.

5.2.2 Project emissions due to the use of N-fixing species

According to the Project Design, the project did not involve seeding of N-fixing species on the degraded grassland. Thus, emission from this source neglected.

5.2.3 Project emissions due to burning of biomass

The project GHG emissions equals CH_4 emissions from biomass burning plus N_2O emissions from biomass burning under the project, as described using the following:

$PE_{GHGBB,b} = PE_{CH4BB,t} + PE_{N2OBB,t}$ ——— Eq. : (28)		
$BE_{GHGBB,t}$	(t CO2e)	Project GHG emissions from biomass burning in year t
$BE_{CH4BB,t}$	(t CO2e)	Project CH4 emissions from biomass burning in year t
$BB_{N2OBB,t}$	(t CO2e)	Project N2O emissions from biomass burning in year t

1) **CH_4 emissions from biomass burning under project:**

CH_4 emissions from biomass burning in year t must be calculated using the following:

$PE_{CH4,BB,t} = \frac{A_{B,t} \times M_{B,t} \times C_f \times EF_{CH4} \times GWP_{CH4}}{1000}$ ——— Eq. : (29)		
$BE_{CH4,BB,t}$	(t CO2e)	Project CH4 emissions from biomass burning in year t
$A_{B,t}$	(ha)	Area burned in year t
$M_{B,t}$	(t biomass/ha)	Aboveground biomass burned in year t

C_f	(t dry matter burnt/t biomass)	Combustion factor
EF_{CH4}	(g CH4/kg dry matter burnt)	CH4 emission factor for biomass burning
GWP_{CH4}	(t CO2e/t CH4)	Global-warming potential for CH4

2) **N_2O emissions from biomass burning under project:**

N_2O emissions from biomass burning in baseline year b must be calculated using the following:

$PE_{N20,BB,t} = \frac{A_{B,t} \times M_{B,t} \times C_f \times EF_{N2O} \times GWP_{N2O}}{1000}$ ——— Eq.; (30)		
$BE_{N20BB,b}$	(t CO_2e)	Project CH_4 emissions from biomass burning in year t
$A_{B,t}$	ha)	Area burned in year t
$M_{B,t}$	t biomass/ha	Aboveground biomass burned in year t
C_f	t dry matter burnt/t biomass	Combustion factor
EF_{N20}	g CH4/kg dry matter burnt	N_2O emission factor for biomass burning
GWP_{N20}	t CO_2e/t CH_4	Global-warming potential forN_2O

5.2.4 Project methane emissions due to enteric fermentation

Project CH_4 emissions from enteric fermentation has been calculated following

$PE_{CH4EF,t} = \frac{GWP_{CH4} \times \sum_{l=1}^{L} P_{l,t} \times EF_l \times Days_{l,t}}{1000 \times 365}$ ——— Eq. : (31)		
$BE_{CH4,EF,t}$	(t CO_2e)	Project CH_4 emissions from enteric fermentation in baseline year b
GWP_{CH4}	(t CO_2e/t CH_4)	Global-warming potential for CH_4
$P_{l,t}$	(head)	Population of grazing livestock type l, in project year t
l		Index of livestock type
EF_l	kg CH_4/(head*year	Enteric CH_4 emission factor per head of livestock type l per year
Days $_{l,t}$	(days	Grazing days inside the project area for each livestock type l in project year t

5.2.5 Project N_2O and CH_4 emissions due to manure management

The Project emissions from manure management include N_2O and CH_4 emissions from manure and urine deposited on grassland soil during the grazing season.

$PE_{GHG_{MD},t} = PE_{N_2O_{MD},t} + PE_{CH_{4MD},t}$ —— Eq. (32)		
$PE_{GHG_{MD},t}$	t CO_2e	Project GHG emissions from manure management in year t
$PE_{N_2O_{MD},t}$	t CO_2e	Project N_2O emissions from manure and urine deposited on grassland soil in year t
$PE_{CH_{4MD},t}$	t CO_2e	Project CH_4 emissions from manure and urine deposited on grassland soil in year t

1) Project N_2O emissions from manure management

$\mathbf{PE_{N2O_{MD,t}} = GWP_{N2O} \times (PE_{D,N2O_{MD,t}} + PE_{ID,N2O_{MD,t}}) - - - - - Eq.(33)}$		
$PE_{N2O_{MD,t}}$	t CO_2e	Project N_2O emissions from manure and urine deposited on grassland soil in year t
GWP_{N2O}	t CO_2e/ t N_2O	Global-warming potential for N_2O
$PE_{D,N2O_{MD,t}}$	t N_2O	Project direct N_2O emissions from manure and urine deposited on grassland soil during the grazing season in year t
$PE_{ID,N2O_{MD,t}}$	t N_2O	Project indirect N2O emissions from manure and urine deposited on grassland soil during the grazing season in the year t

2) Project direct N_2O emissions from manure and urine deposited on grassland soils

Project direct N_2O emissions from manure and urine deposited on grassland soil are calculated using the following:

$\boldsymbol{PE_{D,N2O_{MD,t}} = \sum_{l1=1}^{L1} F_{MD,l1,t} \times EF_{3,PRP,CPP} \times 44/28}$ ——— Eq. (34)		
And/ or $\boldsymbol{PE_{D,N2O_{MD,t}} = \sum_{l2=1}^{L2} F_{MD,l2,t} \times EF_{3,PRP,SO} \times 44/28}$ ——— Eq. (35)		
$PE_{D,N2O_{MD,t}}$	t N_2O	Project direct N_2O emissions from manure and urine deposited on grassland soil in baseline year b
$F_{MD,l1,t}$	t N	Annual amount of nitrogen in cattle, poultry and pigs manure and urine deposited on grassland soil during the grazing season in year t, adjusted for volatilization as NH3 and NO_X
$EF_{3,PRP,CPP}$	kg N_2O-N/kg N input)	N_2O emission factor for cattle, poultry and pigs manure and urine deposited on grassland soil during the grazing season
$F_{MD,l2,t}$	t N	Annual amount of nitrogen in sheep and other animals manure and urine deposited on grassland soil during the grazing season in year t, adjusted for volatilization as NH_3 and NO_X
$EF_{3,PRP,SO}$	kg N_2O-N/kg N input)	N_2O emission factor for sheep and other animals manure and urine deposited on grassland soil during the grazing season (kg N_2O-N/kg N input)
L1		Index of livestock cattle, poultry and pigs
L2		Index of livestock sheep and other animals

$F_{MD,l1,t}$ and $F_{MD,l2,t}$ must be calculated using the following equation for livestock type I

$$\boldsymbol{F_{MD,l,t} = \frac{P_{l,t} \times Nex_l \times H_{l,t} \times Days_{l,t} \times (1 - Frac_{GAS,MD}}{1000_a \times 24 \times 1000_b}}$$ ——— Eq. (36)

$F_{MD,l,t}$	t N	Annual amount of manure and urine deposited on grassland soil from livestock type *l* during the grazing season in year t, adjusted for volatilization as NH3 and NOx
$P_{l.t}$	Head	Population of livestock type *l* in year *t*
$W_{l,t}$	kg livestock mass/head	Average weight of livestock type *l* in year *t*
Nex_l	kg N deposited/(t livestock mass*day	Nitrogen excretion of livestock type *l*
1000_a		Conversion factor for t livestock mass to kg livestock mass
$H_{l.t}$	(hour)	Average grazing hours per day for livestock type *l* in year *t*
24		Conversion factor for days to hours
$Days_{l,t}$	days)	Grazing days for livestock type*l*inside the project area in year *t*
1000_b		Conversion factor for tonnes N to kg t N
$Frac_{GAS,MD}$	kg N volatilized/kg of N deposited	Fraction of volatilization from manure and urine deposited by grazing animals as NH_3 and NOx
L		Index of grazing livestock types

3) Project indirect N_2O emissions from manure and urine deposited on grassland soils

According to the Methodology (VM0026/Version 1.1),as the annual precipitation of the project area is less than annual potential evapotranspiration, so, indirect N_2O emissions from leaching and runoff can be excluded.

4) CH_4 emissions from manure management

Baseline CH_4 emissions from manure management are calculated using the following:

$$PE_{CH4_{MD},t} = \frac{GWP_{CH4} \times \sum_{l=1}^{l} EF_{lM} \times p_{l,t} \times H_{l,t} \times Days_{l,t}}{1000 \times 365 \times 24} \quad \text{Eq. (38)}$$

$PE_{CH4_{MD},t}$	t CO_2e	Project CH_4 emissions from manure and urine deposited on grassland soil in year t
$PI_{,bt}$	head	Population of grazing livestock type I, in year t
EF_{lM}	kg CH_4/(head*year	CH_4 emission factor from manure of of livestock type *l*
$H_{l,t}$	hour	Average grazing hours per day for livestock type I in year t
$Days_{l,t}$	days	Grazing days for livestock type I inside the project area in year t
1000		Conversion factor for t CH_4 to kg CH_4
365		Conversion factor for years to days
24		Conversion factor for days to hours

5.2.6 Project CO_2 emissions due to the use of fossil fuels

The project activity is associated with grazing management and controlled burning which is not required use of any fossil fuel. Therefore, emission from fossil fuel use considered 0 tCO_2

5.2.7 Project removals from existing woody perennials

Project removals by existing woody perennials in project year t ($PRWP_t$) has been calculated using the following:

$PRWP_t = \sum_{j=1}^{J} \Delta C_{PG,j,t} - \Delta C_{PL,j,t}$ ——— Eq. : (40)		
$PRWP_t$	(t CO2)	Project average net change in carbon stocks of existing woody biomass in year t
$\Delta C_{PG,j,t}$	(t CO2)	Project average increase in carbon stocks of existing woody biomass for species j, in year t
$\Delta C_{PL,j,t}$	(t CO_2)	Project average loss in carbon stocks of existing woody biomass for species j, in year t
J		Index of species

The average annual increase in carbon stocks in existing live woody biomass for each species must be calculated using the following:

$\Delta C_{PG,j,t} = \sum_{s=1}^{S} A_{P,j,s,t} \times G_{P,j,s,t} \times CF_j \times 44/12$ ——— Eq. : (41)		
$\Delta C_{PG,j,t}$	*(t CO_2)*	Project average increase in carbon stocks of existing woody biomass for species j, for year t
$A_{P,j,s,t}$	(ha)	Area of species j in stratum s under project in year t
$G_{P,j,s,t}$	(t dm/(ha)	Project average increase in existing woody biomass for species j in grassland management stratum s in year t
CF_j	(t C/t dm)	Carbon fraction for species j
S		Index of stratum
44/12		Ratio of molecular weights of CO2 and C

Estimation of changes in tree biomass

To estimate the carbon stock in tree biomass at a given point in time, the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities AR-TOOL14 Version 04.2" was used.

Step 1 : Volume Estimation
The volume estimation were performed using generic volume allometric equations which accounts for the heterogeneity of tree diversity across the landscape. The above ground biomass in woody vegetation has been predicted using equation from Kuyah et al. (2012)[29].

[29] Kuyah, S., Dietz, J., Muthuri, C., Jamnadass, R., Mwangi, P., Coe, R., et al. (2012). Allometric equations for estimating biomass in agricultural landscapes: I. Aboveground biomass. Agric. Ecosyst. Environ. 158, 216–224. doi: 10.1016/j.agee.2012.05.011.

Above Ground Biomass (AGB in kg) = AGB = 0.091*dbh^2.472

According to AR AM tool 18, a volumetric equation is appropriate if at least one of the following conditions is satisfied:

(a) The equation is used in the national forest inventory, or the national GHG inventory, of the host Party;

(b) The equation has been used in commercial forestry sector of the host Party for 10 years or more;

(c) The equation was derived from a data set of at least 30 sample trees, and the value of coefficient of determination (R^2) was not less than 0.85

The volume allometric equations[30] used in this project were derived from peer-reviewed scientific publications. The equations predict tree stem volume based on DBH. The equation derived from 72 trees and reported R2 value is 0.977.[31],[32]

It is found from different literature review[33] that, this generic equation is a valuable tool for estimating AGB in dry forest of subtropical to temperate region[34] similar to agroclimatic condition and species composition of the project area due to its simplicity, general acceptance, and reliability.

Therefore, conditions 5 (c) of A/R Methodological Tool "Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities" (Version 01.0.1) is satisfied.

Step 2 : Biomass estimation

Tree biomass in a plot is estimated as follows using equation 6 of Methodological tool: Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities:

$$b_{TREE,p,i} = \sum_{j} b_{TREE,j,p,i}$$

$b_{TREE,j,p,i}$	Tree biomass per hectare in sample plot p of stratum i; t d.m. ha^{-1}
$b_{TREE,j,p,i}$	Tree biomass per hectare of species j in sample plot p of stratum i; t d.m. ha^{-1}

30 http://ir.mu.ac.ke:8080/xmlui/bitstream/handle/123456789/5958/DiversityandBiomassVariationinMasindeMuliroUniversityofScienceandTechnology1.pdf?sequence=1&isAllowed=y

31 https://www.researchgate.net/publication/256295820_Allometric_equations_for_estimating_biomass_in_agricultural_landscapes_I_Aboveground_biomass/download?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6Il9kaXJlY3QiLCJwYWdlIjoiX2RpcmVjdCJ9fQ

32 https://www.cifor-icraf.org/publications/downloads/Publications/PDFS/JA12060.pdf

33 https://www.mdpi.com/1999-4907/12/12/1652

34 https://www.ajol.info/index.php/jagst/article/view/219214/206858

The average annual increase in existing live woody biomass stocks for each species in a vegetation class in a stratum has been calculated from:

$G_{P,j,s,t} = G_{AB,P,j,s,t}$ ——— Eq. : (42)[35]		
$G_{P,j,s,t}$	(t dm/ha)	Average annual increase in existing woody biomass of species j in stratum s, under the baseline scenario
$G_{AB,P,j,s,t}$	(tdm aboveground biomass/ha)	Average annual increase in existing above-ground woody biomass of species j in stratum s

5.2.8 Project removals due to changes in soil organic carbon

Estimate of project removals due to changes in SOC using a direct measurement approach (Option 2). According to the methodology, for measuring soil organic carbon stock changes, soil sampling must follow a scientifically established method or a nationally-approved standard. For the project, the nationally-approved standard was used for sampling process. National standard Method for Determination of Soil Organic Matter was used to measure SOC of the soil samples.

The minimum necessary sample size for each stratum was evaluated using the 'CDM Tool for the Calculation of the number of sample plots for measurements within A/R CDM project activities' as prescribed by VM0026. Sampling procedures were designed such that the statistical significance of soil carbon stock changes between the baseline carbon stock and the carbon stock in time t can be determined with a 95 percent confidence interval.

The SOC stock in stratum s, sampling site i, under project in year t are calculated using the following:

$P_{SOCmG,s,i,t} = SOC_{mG,s,i,t} \times BD_{mG,s,i,t} \times Depth \times (1 - FC_{mG,s,i,t}) \times 0.1$ ---------- Eq. : (45)		
$P_{SOCmG,s,i,t}$	(t C/ha)	SOC stock in the top 30 cm (or greater depth if required) of soil for management practice mG, stratum s, sampling site i under project in year t
$SOC_{mG,s,i,t}$	(g C/kg soil)	SOC content in the top 30 cm of soil (or greater depth if required) for management practice mG, stratum s, sampling site i, under project in year t
$BD_{mG,s,i,t}$	(g soil/cm^3)	Soil bulk density in the top 30 cm of soil (or greater depth if required) for management practice mG, stratum s, sampling site i, under project in year t
$Depth$	(cm)	Top soil depth, for calculating grassland SOC stock in the top 30 cm of soil (or greater depth if required)
$FC_{mG,s,i,t}$	(percent)	Percentage of rocks larger than 2mm, roots, and other dead residues with a diameter in the top 30 cm of soil (or greater depth

[35] Below ground biomass has not included as carbon pool in the project boundary. Therefore, as specified by the methodology the term ($1+R_j$) has been removed from the equation 42.

		if required), for management practice mG, stratum s, sampling site i under project in year t
0.1		Conversion factor for SOC to t C/ha
mG		Index of management practice
s		Index of stratum
i		Index of sampling site

The $SOC_{mG,s,i,t}$, $BD_{mG,s,i,t}$ and $FC_{mG,s,i,t}$ were measured by "The Biodiversity Company". The result of soil testing report is listed in ER table. Please refer to ER table for relevant parameter references and values.

Calculate average carbon stock of all monitored sites in management practice mG, stratum s, under project using the following:

$P_{SOCmG,s,t} = \frac{\sum_i^I P_{SOC_{mGs,i,t}}}{I}$ ---------- Eq. : (46)		
$P_{SOC,mG,s,t}$	(t C/ha)	Average carbon stock in stratum s under project
$P_{SOC,mG,s,i,t}$	(t C/ha)	SOC stock in the top 30 cm (or greater depth if required) of soil for management practice mG, stratum s, sampling site i under project in year t
I		Monitored sites in stratum s, under project

The following is used to calculate the difference between the carbon stock for management practice mG under project in year t, and the carbon stock under the baseline scenario, for all strata.

$P_{mG,t} = \sum_{s=1}^{S}(P_{SOCmG,s,t} - SOC_{s,baseline}) \times PA_{mG,s,t}$ ---------- Eq. : (47)		
$P_{mG,t}$	(t C)	Difference in the carbon stock between the project in year t and the baseline scenario
$P_{SOCmG,s,t}$	(ha)	Project areas with management practice mG in stratum s in year t
$SOC_{s,baseline}$	(t C / ha)	Average carbon stock in stratum s under project in year t
$PA_{mG,s,t}$	(t C / ha)	Baseline SOC stock of stratum s, in the top 30 cm soil layer (or greater depth if required)
S		Strata under project
s		Index of stratum

The following is applied to calculate average carbon stock of all management practice, under project in year t.

Pt = $\sum_{mG=1}^{M} P_{mG,t}$ ---------- Eq. : (48)		
P_t	(t C)	Carbon stock under project in year t
M		Number of management practice

For the first monitoring of SOC stock, the annual project removals due to changes in SOC stock in year t must be calculated using the following:

$PR_t = \frac{(P_t)}{n} \times 44/12$ ---------- Eq. : (49)		
PR_t	(t CO_2e)	Project removals due to changes in SOC in year t
n	(years)	Number of years from the project start date to year t

According to the above calculation formula, project removals due to changes in SOC in year t is calculated in ER table. Please see the ER table for the detail.

Uncertainty analysis

All parameters are selected according to section 9.1 and 9.2 of the methodology (VM0026, Version 1.1), and soil organic carbon data are obtained by laboratory tests. For the project, the project proponent conducted a survey of all project participants whose livestock grazed in the project area prior to the project start date and during this current monitoring period. This survey covered a full census of project participants whose livestock graze in the project area annually and collected grazing data in the project area under the baseline as well as in project scenario, such as the number of livestock, grazing hours and days of grazing, etc recorded in the Detailed Project Report and declaration made by each project participants. So the parameters about grazing, burning and woody perennials are conservative, and the uncertainty is considered to be 0.

As mentioned before, the project use Option 2 (measurement approach) to estimate project removals due to changes in SOC, the measured SOC changes is derived from sample surveys undertaken within the project area.

The calculated sample size is 41 by using a precision of 15 percent at the 95 percent confidence level, considering the large area of the project boundary, the actual sample size has been increased into 123 by tripling the individual sample size of each stratum with a minimum number of 3. Original sample size has been given in the below table.

Stratum	Actual Sample size
Strata 1	3
Strata 2	9
Strata 3	6
Strata 4	3
Strata 5	3
Strata 6	6
Strata 7	3
Strata 8	3
Strata 9	9
Strata 10	3
Strata 11	9
Strata 12	3
Strata 13	6

Strata 14	6
Strata 15	3
Strata 16	9
Strata 17	3
Strata 18	3
Strata 19	9
Strata 20	3
Strata 21	3
Strata 22	18
Total	123

Soil analysis results are as follows:

Strata No.	Sampling Plot	Sampling depth	SOC content	Bulk Density	Percentage (%) of rocks larger than 2mm, roots, and other dead residues with a diameter in the top 30 cm of soil	SOC stock in the top 30 cm (or greater depth if required) of soil for management practice mG, stratum s, sampling site i under project in year t
		(cm)	(g C/kg soil)	(gm/cm^3)	%	tC/ha
1	1	30	5.4	1.5	0	24.30
	2	35	2.2	1.2	0	9.24
	3	30	7.1	1.2	3.5	24.67
2	1	65	2.4	1.4	2	21.40
	2	80	14.1	1.4	1	156.34
	3	30	6.7	1.4	1.3	27.77
	4	30	5.3	1.2	0	19.08
	5	120	4.4	1.5	2.8	76.98
	6	30	4.2	1.5	3.8	18.18
	7	30	3.2	1.5	1.9	14.13
	8	30	6.9	1.4	1.1	28.66
	9	30	8.2	1.2	39	18.01
3	1	30	5.3	1.4	6.1	20.90

Strata No.	Sampling Plot	Sampling depth	SOC content	Bulk Density	Percentage (%) of rocks larger than 2mm, roots, and other dead residues with a diameter in the top 30 cm of soil	SOC stock in the top 30 cm (or greater depth if required) of soil for management practice mG, stratum s, sampling site i under project in year t
		(cm)	(g C/kg soil)	(gm/cm^3)	%	tC/ha
	2	30	7.3	1.4	1.6	30.17
	3	65	14.3	1	0	92.95
	4	30	2.8	1.5	3.8	12.12
	5	30	4.6	1.5	2.6	20.16
	6	30	9.8	1	0	29.40
4	1	30	16.1	1.3	15.1	53.31
	2	30	13	1.3	8.5	46.39
	3	55	2.2	1.2	2.9	14.10
5	1	50	4.6	1.3	1.3	29.51
	2	45	19.9	1.3	16.8	96.86
	3	40	7.9	1.3	17.8	33.77
6	1	45	5.7	1.4	1.9	35.23
	2	30	3.5	1.5	1.2	15.56
	3	30	6.7	1.4	2.5	27.44
	4	70	11.9	0.9	0	74.97
	5	30	4.3	1.5	2	18.96
	6	30	2	1.4	1.7	8.26
7	1	60	22.7	1	74.1	35.28
	2	30	42.3	0.9	60	45.68
	3	45	42.5	0.7	0	133.88
8	1	45	4.8	1	0	21.60
	2	30	8.4	1	0	25.20

Strata No.	Sampling Plot	Sampling depth	SOC content	Bulk Density	Percentage (%) of rocks larger than 2mm, roots, and other dead residues with a diameter in the top 30 cm of soil	SOC stock in the top 30 cm (or greater depth if required) of soil for management practice mG, stratum s, sampling site i under project in year t
		(cm)	(g C/kg soil)	(gm/cm^3)	%	tC/ha
	3	40	16.2	1	0	64.80
9	1	55	3.47	1.55	1.07	29.18
	2	30	4.7	1.4	1.4	19.46
	3	30	4.9	1.3	12	16.82
	4	30	5.2	1.3	0	20.28
	5	30	5.5	1.3	0	21.45
	6	30	7.6	1.3	0	29.64
	7	60	25	1.3	13.3	169.07
	8	30	9.1	1.3	27.9	25.59
	9	40	11.4	1.4	15.2	54.14
10	1	35	2.8	1.5	6.3	13.77
	2	30	4.7	1.5	12.7	18.46
	3	30	7.6	1.3	0	29.64
11	1	30	2.2	1.5	9.9	8.92
	2	30	2.33	1.42	1.02	9.84
	3	30	2.6	1.4	4.5	10.43
	4	30	7.5	1.5	0	33.75
	5	30	4.9	1.5	47.2	11.64
	6	30	3	1.5	1.5	13.30
	7	30	3.6	1.4	3.4	14.61
	8	30	4.1	1.5	46.6	9.85
	9	30	7.9	1.5	0	35.55

Strata No.	Sampling Plot	Sampling depth	SOC content	Bulk Density	Percentage (%) of rocks larger than 2mm, roots, and other dead residues with a diameter in the top 30 cm of soil	SOC stock in the top 30 cm (or greater depth if required) of soil for management practice mG, stratum s, sampling site i under project in year t
		(cm)	(g C/kg soil)	(gm/cm^3)	%	tC/ha
12	1	30	8.1	1.3	2.5	30.80
	2	60	7.6	1.3	2	58.09
	3	45	4.1	1	3.5	17.80
13	1	30	4.2	1.5	12.4	16.56
	2	30	2.9	1.5	6.4	12.21
	3	30	6.3	1.1	58.7	8.59
	4	30	10.8	1.2	30	27.22
	5	30	13.9	1.1	61.5	17.66
	6	30	9	1.1	47.6	15.56
14	1	50	2.3	1.52	1.48	17.22
	2	30	8.6	1	0	25.80
	3	30	7	1	0	21.00
	4	30	6.2	1	0	18.60
	5	30	17.6	1.4	4.3	70.74
	6	30	4.3	1.4	0.9	17.90
15	1	30	3.8	1.2	0	13.68
	2	45	2.2	1.1	0	10.89
	3	30	3.3	1.1	0	10.89
16	1	60	3.9	1.4	1.6	32.24
	2	30	5.2	1.5	3.5	22.58
	3	30	9.7	1.4	1.3	40.21
	4	30	8.4	0.9	0	22.68

Strata No.	Sampling Plot	Sampling depth	SOC content	Bulk Density	Percentage (%) of rocks larger than 2mm, roots, and other dead residues with a diameter in the top 30 cm of soil	SOC stock in the top 30 cm (or greater depth if required) of soil for management practice mG, stratum s, sampling site i under project in year t
		(cm)	(g C/kg soil)	(gm/cm^3)	%	tC/ha
	5	30	10.8	0.9	0	29.16
	6	30	12.6	0.9	0	34.02
	7	110	13.7	1.5	1.8	221.98
	8	30	8.6	1.4	1.2	35.69
	9	30	11.8	0.9	0	31.86
17	1	40	3.2	0.9	0	11.52
	2	30	11.3	0.9	0	30.51
	3	30	8.6	0.9	0	23.22
18	1	40	4.8	1.4	1.2	26.56
	2	37	4.93	1.37	53.35	11.69
	3	30	4.1	1.4	2.4	16.81
19	1	30	2.50	1.50	1.2	11.12
	2	50	4.40	1.30	2.9	27.77
	3	30	4.60	1.40	1.5	19.03
	4	30	3.40	1.50	1.7	15.04
	5	30	3.00	1.50	1.9	13.24
	6	30	3.10	1.30	0.9	11.98
	7	30	2.60	1.30	1.4	10.00
	8	30	3.00	1.50	1	13.37
	9	30	2.70	1.30	1.5	10.37
20	1	30	3.3	1.5	5.2	14.08
	2	30	2.6	1.5	2.9	11.36

Strata No.	Sampling Plot	Sampling depth	SOC content	Bulk Density	Percentage (%) of rocks larger than 2mm, roots, and other dead residues with a diameter in the top 30 cm of soil	SOC stock in the top 30 cm (or greater depth if required) of soil for management practice mG, stratum s, sampling site i under project in year t
		(cm)	(g C/kg soil)	(gm/cm^3)	%	tC/ha
	3	50	3.1	1.3	1.4	19.87
21	1	30	3.3	1.5	0	14.85
	2	30	10.1	1.5	32.1	30.86
	3	40	3.1	1.5	3.3	17.99
22	1	80	3.6	1.3	60.1	14.94
	2	35	5.6	1.4	64.4	9.77
	3	30	7.7	1.4	16.3	27.07
	4	30	4.9	1.4	53.4	9.59
	5	30	14.2	1.2	57.8	21.57
	6	30	10.6	1.4	44.3	24.80
	7	110	12.7	1.2	7.4	155.23
	8	30	8.1	1.4	18.1	27.86
	9	40	2.2	1.4	17.1	10.21
	10	30	8.1	1.1	1	26.46
	11	40	5.6	1.4	70.1	9.38
	12	30	7.5	1.4	7.3	29.20
	13	30	6.4	1.4	1.1	26.58
	14	30	9.2	1.4	37.6	24.11
	15	60	5.6	1.4	70.1	14.06
	16	30	9.2	1.4	37.6	24.11
	17	110	4.9	1.4	80.6	14.64
	18	30	10	1.2	1.4	35.50

Because of the large sample size, a conservative estimate of carbon sequestration by carbon pools in the project scenario has been given by adopting a value that represents the lower bound of the 95 percent confidence interval (sample mean - 1.96 × standard error). Sample mean has been calculated by the average carbon stock per stratum under the project scenario in accordance with Equation 47 of VM0026 v.1.1 and the standard deviation has been calculated with sample standard deviation. Below table showing the strata wise conservative estimate of carbon sequestration.

Strata	Standard error	Conservative value
1	5.08	9.439290174
2	15.61	11.68246492
3	12.04	10.67
4	12.08	14.2471605
5	21.77	10.70306342
6	9.76	10.93540003
7	31.28	10.30834686
8	13.84	10.07541278
9	16.21	11.08673361
10	4.71	11.40626379
11	3.50	9.574851089
12	11.87	12.3001283
13	2.57	11.2671081
14	8.54	11.81101327
15	0.93	9.9972
16	21.30	10.52283237
17	5.53	10.90925081
18	4.36	9.804504055
19	1.88	10.973746
20	2.51	10.18303525
21	4.90	11.62886321
22	7.71	12.93960451

PROJECT EMISSIONS AND REMOVALS

Project net GHG emissions by sources and removals by sinks are calculated as follows:

$$PE_t = PE_{N2OSN,t} + PE_{GHGBB,t} + PE_{CH4EF,t} + PE_{GHGMD,t} - PRWP_t - PR_t \quad \text{Eq. : (57)}$$

PE_t	(t CO_2e)	Project net GHG emissions by sources and removals by sinks in year t
$PE_{N2OSN,t}$	(t CO_2e)	Project N2O emissions due to fertilizer use in year t (t CO2e)
$PE_{GHGBB,t}$	(t CO_2e)	Project GHG emissions from biomass burning in year t
$PE_{CH4EF,t}$	(t CO_2e)	Project CH4 emissions from enteric fermentation in year t
$PE_{GHGMD,t}$	(t CO_2e	Project GHG emissions from manure management in year t

$PRWP_t$	(t CO_2)	Project average net change in carbon stocks of existing woody biomass in year t
PR_t	(t CO_2)	Project removals due to changes in SOC in year t

Project net GHG emissions/ removals during this monitoring period is summarized in the following table, please refer to ER spreadsheet for detailed calculation.

Crediting year	[36]$PE_{N2OSN,t}$	$PE_{GHGBB,t}$	$PE_{CH4EF,t}$	$PE_{GHGMD,t}$	$PRWP_t$	PR_t
2018[37]	238.4	42.39	15,528.72	5,319	6,284.6	107,213
2019	459.9	139.99	31,329.00	10,731	16,682.5	212,678
2020	432.3	84.26	31,595.12	10,823	13,961.1	213,260
2021	423.4	133.62	31,461.28	10,776	16,821.0	212,678
2022	423.4	88.41	31,754.32	10,876	17,161.1	212,678
Total	1977.34	488.67	141,668.44	48,525	70,910.29	958,506.73

5.3 Leakage Emissions

Methodology VM0026 considers two types of leakage.

1) Market leakage due to reduction in the production of livestock products within the project boundary;

2) Displacement of grazing beyond the project boundary

$$LE_t = LE_{M,t} + LE_{GD,t} \text{ ---------- Eq. : (58)}$$

LE_t	(t CO_2e)	Leakage emissions in year t
$LE_{M,t}$	(t CO_2e)	Leakage emissions due to market leakage in year t
$LE_{GD,t}$	(t CO_2e)	Leakage emissions due to grazing displacement in year t

Market leakage was judged to be negligible since livestock reductions were not a project activity and livestock numbers are driven by grassland capacity and rainfall rather than markets.

For this project activity, the project area is well structured (fencing of private lands) to keep livestock within the project area. The project proponent prevent incursion of livestock from outside the project area or excursion of livestock from inside the project area through fencing, patrolling by game scouts. Thus Leakage from displaced livestock was judged to be negligible.

So, for the project activity, total leakage calculated as $LE_t = LE_{M,t} + LE_{GD,t} = 0$

[36] Project nitrogen fertilization (LAN & Urea) has been sourced from the project database which is the actual amount of fertilization used by each ranch.

[37] 01 July 2018 to 31 December 2018

5.4 GHG Emission Reductions and Carbon Dioxide Removals

The amount of emission reductions achieved by the project in project year t must be calculated as follows:

$ER_t = BE_b - PE_t - LE_t$ ---------- Eq. : (59)	
ER_t	Emission reductions in year t (tCO_2e)
BE_b	Baseline emissions and removals in year b ($t\ CO_2e$)
PE_t	Project emissions and removals in year t ($t\ CO_2e$)
LE_t	Leakage emissions in year t ($t\ CO_2e$)

State the non-permanence risk rating (%)	18% Project Area is distributed in 4 different regions of South Africa[38]. The climate in these regions is variable, while the microclimatic conditions do not have any effect on the natural risk like 'pest & disease outbreak, geological risk, fire etc. Overall, the project activity is homogeneous in nature. Moreover, Management plans are similar for all instances as the PP, local project team are same for all instances. Hence, one Non-permanence Risk Report has been prepared for the entire project activity and this NPRR is applicable across the project boundary.
Has the non-permanence risk report been attached as either an appendix or a separate document?	☒ Yes ☐ No
For ARR and IFM projects with harvesting, state, in tCO_2e, the Long-term Average (LTA).	NA
Has the LTA been updated based on monitored data, if applicable?	☐ Yes ☐ No If no, provide justification.
State, in tCO_2e, the expected total GHG benefit to date.	984,784.82 tCO2e
If a loss occurred (including a loss event or reversal), state the amount of tCO_2e lost:	Not applicable as there is no loss event or reversal for this monitoring period.

[38] https://wwf.panda.org/discover/our_focus/food_practice/drakensberg_grasslands_south_africa/
https://www.oneearth.org/ecoregions/drakensberg-grasslands/
https://link.springer.com/article/10.1007/s10708-024-11061-2

Vintage period	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Leakage emissions (tCO_2e)	Buffer pool allocation (tCO_2e)	Reductions VCUs (tCO_2e)	Removals VCUs (tCO_2e)	Total VCU issuance (tCO_2e)
01-Jul-2018 to 31-Dec-2018	16,557.49	-92,369	0	19,704.64	-543.65	109,470	89,222
01-Jan-2019 to 31-Dec-2019	32,845.02	-186,701	0	39,846.85	-1,825.80	221,371	179,699
01-Jan-2020 to 31-Dec-2020	32,935.01	-184,287	0	39,457.94	-1,988.82	219,211	177,764
01-Jan-2021 to 31-Dec-2021	32,845.02	-186,704	0	39,871.77	-1,960.69	221,510	179,677
01-Jan-2022 to 31-Dec-2022	32,845.02	-186,697	0	39,933.00	-2,308.43	221,850	179,609
Total	**148,028**	**-836,757**	**0**	**178,814**	**-8,627.38**	**993,412**	**805,971**

Vintage period	Ex-ante estimated reductions/ removals	Achieved reductions/ removals	Percent difference	Explanation for the difference
01-Jul-2018 to 31-Dec-2018	111,651	108,927	-2.44%	Ex-ante calculation was based on the average value of the monitored parameters. But achieved reductions / removals is based on the actual value of the monitored parameters. This is the reason for this minor difference
01-Jan-2019 to 31-Dec-2019	221,482	219,546	-0.87%	
01-Jan-2020 to 31-Dec-2020	221,482	217,222	-1.92%	
01-Jan-2021 to 31-Dec-2021	221,482	219,549	-0.87%	
01-Jan-2022 to 31-Dec-2022	221,482	219,542	-0.88%	
Total	997,577	984,785	-1.28%	

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

Section	Information	Justification
1.1	Ranch name	Because of privacy issue, veld name should not be included in the public version
2.3.5	Benefit sharing	Because of commercial sensitivity and privacy issue, this information can't be published in public version
3.1	Ranch name	Because of privacy issue, veld name should not be included in the public version
4.3	Under "sampling framework", veld name has been included	Because of privacy issue, veld name should not be included in the public version
ER sheet	"PDB_Fertilizer" – Ranch name "PDB_Burning" – Ranch name "PDB_Livestock" – Ranch name and livestock details "PDB_woody perennials"- Ranch name and beneficiary name Veld name and their details in every sheet	Because of commercial sensitivity and privacy issue, this information can't be published in public version
Agreements and financial data	Agreement with project participant and PP	Because of commercial sensitivity and privacy issue, this information can't be published in public version

APPENDIX 2: STAKEHOLDERS CONSULTATION & COMMUNICATION

Stakeholders Communication and Consultations:

Details for the year 2021:

Date	**Name** (full)	**Method** (Meeting, e-mail, virtual call)	**Comment**	**Response**	**Accompanying Documentation** (Attendance Register, Agenda, Minutes, Maps)
04 February 2021	parag@weact.com.au; kerrynm@ewt.org.za; vivek@weact.com.au; mandyp@ewt.org.za; tanyas@ewt.org.za; yolanf@ewt.org.za	Zoom meeting with EWT to discuss landowner feedback project agreement	Feedback on project agreement for approval		Calendar invite, follow up emails
10 February 2021	Dr Ian Little <ianl@ewt.org.za>; Catherine Vise <catherinev@ewt.org.za>; Oldrich van Schalkwyk <oldrichvs@ewt.org.za>	Zoom meeting with EWT for Soutpansberg Area	Feedback on project agreement for approval		Calendar invite, follow up emails
04 March 2021	Tanya Smith <tanyas@ewt.org.za>	Zoom call with EWT to discuss marketing and engagement	Feedback on project agreement for approval		Calendar invite, follow up emails
18 March 2021	EWT CME - Tanya Smith <TanyaS@ewt.org.za>; Dr Lara Jordan <LaraJ@ewt.org.za>; Bradley Gibbons <bradleyg@ewt.org.za>; Dr Ian Little <ianl@ewt.org.za>; Catherine Vise <catherinev@ewt.org.za>; Kerryn Morrison <kerrynm@ewt.org.za>	Zoom engagement and education call with EWT	Engagement and capacity building	Bi weekly	Calendar invite, follow up emails

Date	Name (full)	Method (Meeting, e-mail, virtual call)	Comment	Response	Accompanying Documentation (Attendance Register, Agenda, Minutes, Maps)
01 April 2021	EWT CME - Tanya Smith <TanyaS@ewt.org.za>; Dr Lara Jordan <LaraJ@ewt.org.za>; Bradley Gibbons <bradleyg@ewt.org.za>; Dr Ian Little <ianl@ewt.org.za>; Catherine Vise <catherinev@ewt.org.za>; Kerryn Morrison <kerrynm@ewt.org.za>	Zoom engagement and education call with EWT	Engagement and capacity building	Bi weekly	Calendar invite, follow up emails
12 April 2021	Vivek Dugar <vivek@weact.com.au>; Mark Gerrard <mark@wildlifeact.com>; Rachel Kramer <RachelK@wildtrust.co.za>; Jean Harris <jeanh@wildtrust.co.za>	Zoom engagement and education call with Wild Trust	information sharing	Collaboration opportunity	Calendar invite, follow up emails
14 April 2021	Johan Pienaar(SKSS) <johan@skss.co.za>	MS Teams meeting to discuss possible project opportunity	information sharing - Swartkops Sustainable Systems	Scalability needs to be reached	Calendar invite, follow up emails
15 April 2021	EWT CME - Tanya Smith <TanyaS@ewt.org.za>; Dr Lara Jordan <LaraJ@ewt.org.za>; Bradley Gibbons <bradleyg@ewt.org.za>; Dr Ian Little <ianl@ewt.org.za>; Catherine Vise <catherinev@ewt.org.za>; Kerryn Morrison <kerrynm@ewt.org.za>	Zoom engagement and education call with EWT	Engagement and capacity building	Bi weekly	Calendar invite, follow up emails
28 May 2021	rick.dillon@structuredgrowth.co.za; rick@vjdillon.co.za; Vivek Dugar <vivek@weact.com.au>; Hylton@bahori.com	MS Teams meeting	Information sharing	Contract signed	Calendar invite, follow up emails
09 June 2021	Vivek Dugar <vivek@weact.com.au>; Hylton@bahori.com; Avi from madeonearthhikingtrails@gmail.com	MS Teams meeting	Information sharing, collaboration opportunity	Capacity and resource requirement	Calendar invite, follow up emails

Date	**Name** (full)	**Method** (Meeting, e-mail, virtual call)	**Comment**	**Response**	**Accompanying Documentation** (Attendance Register, Agenda, Minutes, Maps)
10 June 2021	Melissa Whitecross <melissa.whitecross@birdlife.org.za>; Carina Pienaar <carina.pienaar@birdlife.org.za>; Kyle Lloyd <kyle.lloyd@birdlife.org.za>; Hanneline Smit-Robinson <hanneline.smit-robinson@birdlife.org.za>; Hylton@bahori.com; Vivek Dugar <vivek@weact.com.au>; Fanie Du Plessis <accounts@birdlife.org.za>	MS Teams meeting	Information sharing and CME engagement	Capacity building	Calendar invite, follow up emails
23 June 2021	Kerryn Morrison <kerrynm@ewt.org.za>; Tanya Smith <TanyaS@ewt.org.za>; Yolan Friedmann <yolanf@ewt.org.za>	Zoom meeting	Discussion on open points	non-exclusivity of CMEs	Calendar invite, follow up emails
21 July 2021	Carina Pienaar <carina.pienaar@birdlife.org.za>; Hylton@bahori.com	MS Teams Meeting	Sneeuwberg Protected Environment	Project potential discussion with BLSA	Calendar invite, follow up emails
21 July 2021	Hylton@bahori.com; hyltallison@gmail.com; Dr Lara Jordan <LaraJ@ewt.org.za>; Bradley Gibbons <bradleyg@ewt.org.za>; Dr Damian Walters <DamianW@ewt.org.za>; Pieter Botha <PieterB@ewt.org.za>	Zoom meeting	EWT capacity building	Information sharing platform	Calendar invite, follow up emails
24 July 2021	Cecilia (farmer meeting) Chrissiesmeer	Informal check-in	Returning farm management file	Cecelia unavailable, informal meeting with Desiree (Farm manager)	Petrol and toll slips
26 July 2021	Kerryn Morrison <kerrynm@ewt.org.za>; Yolan Friedmann <yolanf@ewt.org.za>	MS Teams meeting	Addressing EWT concerns		Calendar invite
28 July 2021	Francois du Plessis; Dr Lara Jordan <LaraJ@ewt.org.za>; Hylton@bahori.com	Zoom call with EWT and landowner	Carbon Project Development progress - Francois du Plessis, EWT & WeAct	Information sharing platform	calendar invite

Date	**Name** (full)	**Method** (Meeting, e-mail, virtual call)	**Comment**	**Response**	**Accompanying Documentation** (Attendance Register, Agenda, Minutes, Maps)
24 August 2021	Hylton@bahori.com; Kyle Lloyd <kyle.lloyd@birdlife.org.za>; Carina Pienaar <carina.pienaar@birdlife.org.za>; Melissa Whitecross <melissa.whitecross@birdlife.org.za>; Vivek Dugar <vivek@weact.com.au>	BLSA CME partnership	Capacity building	Information sharing platform	Calendar invite, follow up emails
25 August 2021	Hylton@bahori.com; Pieter Botha <PieterB@ewt.org.za>	in person meeting	EWT Contract and strategy review	landowner engagement strategy, capacity building	Calendar invite, follow up emails
26 August 2021	Hylton@bahori.com; Pieter Botha <PieterB@ewt.org.za>	in person meeting	EWT Contract and strategy review	landowner engagement strategy, capacity building	Calendar invite, follow up emails
08 September 2021	Hylton@bahori.com; Vivek Dugar <vivek@weact.com.au>; Melissa Whitecross <melissa.whitecross@birdlife.org.za>; Steve McKean <steve@conservation-outcomes.org>	MS Teams meeting	Conservation Outcomes introduction	Information sharing, CME expansion	Calendar invite, follow up emails
09 September 2021	Carina Pienaar, Neil Pienaar, Louis (?) Pienaar	MS Teams meeting	Landowner engagement	Clarification questions on landowner agreement	Calendar invite, follow up emails
09 September 2021	BLSA Staff	MS Teams Meeting	Capacity building	Information sharing platform	Calendar invite, follow up emails
13 September 2021	Steve McKean <steve@conservation-outcomes.org>; Hylton@bahori.com; Kevin McCann <kevin@conservation-outcomes.org>	MS Teams Meeting	Capacity building	Information sharing platform	Calendar invite, follow up emails
15 September 2021	Herman - Retreat - Dullstroom - Mpumalanga Province	In person discussion with BLSA (CME-EWT)	Introductory meeting & Information sharing	Requested a site visit & agreement from Management	Methodologies & Landowner presentation

Date	Name (full)	Method (Meeting, e-mail, virtual call)	Comment	Response	Accompanying Documentation (Attendance Register, Agenda, Minutes, Maps)
15 September 2021	Kyle - BLSA - Dullstroom - Mpumalanga Province	In person discussion with BLSA (CME-EWT)	Introductory meeting & Information sharing	Requested a site visit & agreement from Management	Methodologies & Landowner presentation
16 September 2021	Frith - Trustee Bird Of Prey Centre - Dullstroom - Mpumalanga Province	In person discussion with landowner (CME- EWT & BLSA)	Introductory meeting & Information sharing	Requested a site visit & agreement from Management	Methodologies & Landowner presentation
16 September 2021	Allan - 7 000Ha landowner - Dullstroom - Mpumalanga Province	In person discussion with landowner (CME- EWT & BLSA)	Introductory meeting & Information sharing	Requested a site visit & agreement from Management	Methodologies & Landowner presentation
16 September 2021	Gerda & Bertus- Landowners - Dullstroom - Mpumalanga Province	In person discussion with landowner (CME- EWT & BLSA)	Introductory meeting & Information sharing	Requested a site visit & agreement from Management	Methodologies & Landowner presentation
17 September 2021	Welgevonden 128 JT 9/128 Abrie Loots Abuti CC - Dullstroom - Mpumalanga Province	In person discussion with landowner (CME- EWT & BLSA)	Introductory meeting & Information sharing	Requested a site visit & agreement from Management	Methodologies & Landowner presentation
23 September 2021	Rick Dillon - Owner Waterfall Farm, Upper Wilge Protected Environment - Free State Province	In person discussion with Conservation Outcomes (CME- BLSA & EWT)	Collecting data for project reporting and presenting the process to be followed and expectations of the landowner and CME	Gathered data and provided the process	Data, e-mails & process
28 September 2021	Graham - Manager at Tillietudlum Nature Reserve, Impendle - KwaZulu Natal Province	In person discussion with Conservation Outcomes (CME- CO)	Project specific discussions	Provided landowner presentation, wetlands & SOC methodologies with managed	Landowner Presentation, e-mails & agreement

Date	Name (full)	Method (Meeting, e-mail, virtual call)	Comment	Response	Accompanying Documentation (Attendance Register, Agenda, Minutes, Maps)
				grazing and fire regimes.	
29 September 2021	John Bates - Owner of Fordun Spa & previous chairman of the KZN Crane Foundation, Nottingham Road - KwaZulu Natal Province	In person discussion with Conservation Outcomes (CME- CO)	Project specific discussions	Provided landowner presentation, wetlands & SOC methodologies with managed grazing and fire regimes.	Landowner Presentation, e-mails & agreement
29 September 2021	Ed Ghevers - XXX, Umgeni - KwaZulu Natal Province	In person discussion with Conservation Outcomes (CME- CO)	Project specific discussions	Provided landowner presentation, wetlands & SOC methodologies with managed grazing and fire regimes.	Landowner Presentation, e-mails & agreement
30 September 2021	Cecilia (farmer meeting) Chrissiesmeer	In person discussion with EWT (CME-EWT)	Brief introduction as had to attend to an urgent matter on a neighbours farm.	Please come back and visit when I am back on the farm	Will get details and provide presentation
30 September 2021	Andrew & Kelby - Clan Green Ranches (farmer meeting) Ladysmith - KwaZulu Natal Province	In person discussion with EWT (CME-EWT)	Project specific discussions	EWT reviewing agreement, can provide background and SOC methodology with managed grazing and fire regimes.	Landowner Presentation, e-mails & agreement
22 October 2021	Upper Wilge Protected Area (UWPE) - Free State Province	AGM/ Meeting with the endangered wildlife trust & Birdlife South	Attached Minutes	See Comments & response sheet	Attendance Register, Agenda, Minutes, Map

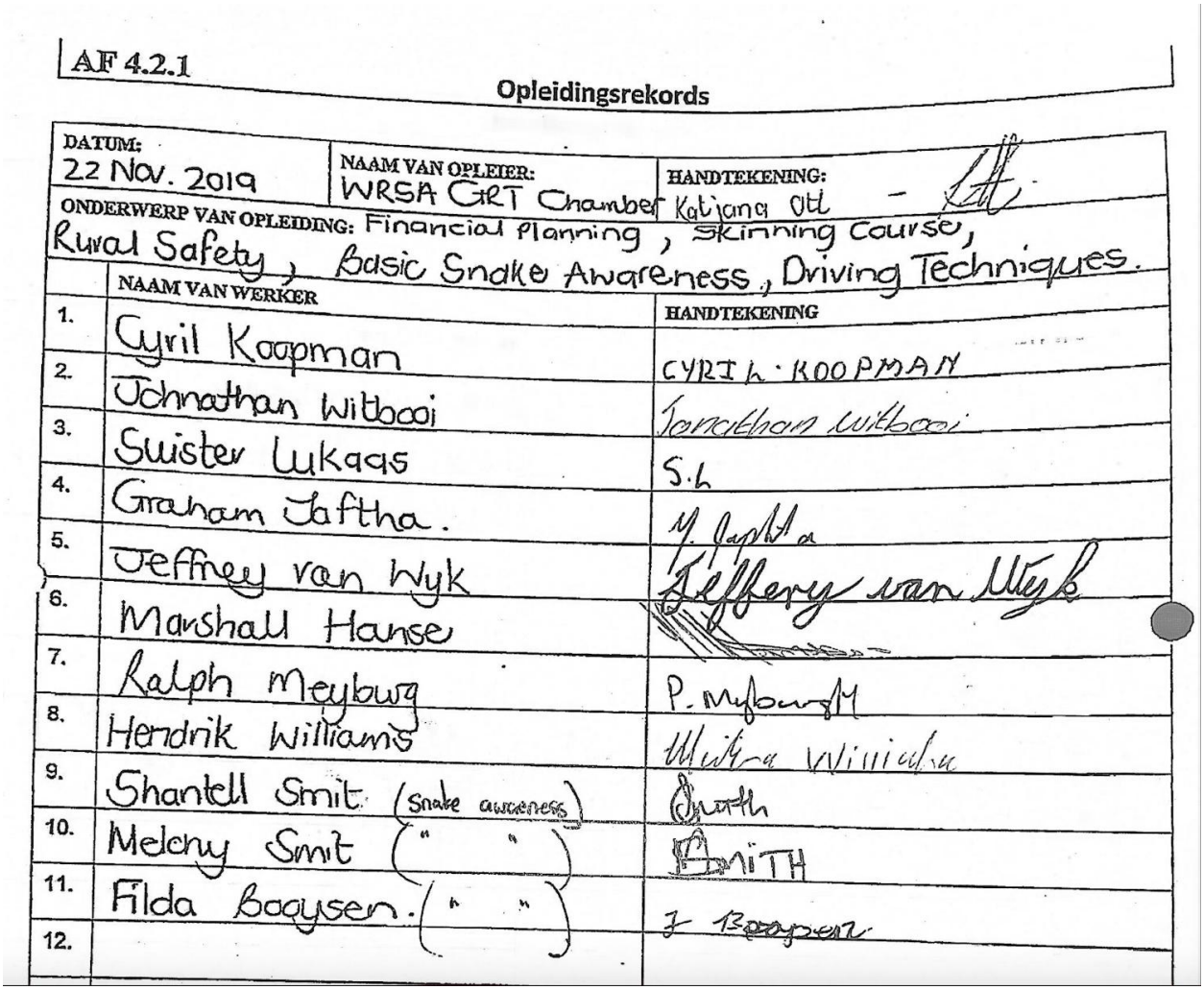
Date	Name (full)	Method (Meeting, e-mail, virtual call)	Comment	Response	Accompanying Documentation (Attendance Register, Agenda, Minutes, Maps)
		Africa (CME-EWT & BLSA)			

Stakeholders' meeting detail for the year 2020 :

Date	Name (full)	Method (Meeting, e-mail, virtual call)	Comment	Response	Accompanying Documentation (Attendance Register, Agenda, Minutes, Maps)
18 September 2020	stalker@iafrica.com; brett@icapafrica.com; tanyas@ewt.org.za; ianl@ewt.org.za; sarah@samara.co.za	Zoom meeting to discuss project specific details	Introductory call & information sharing	Pending EWT Programme agreement	Calender invite
16 September 2020	kerrynm@ewt.org.za; vivek@weact.com.au; tanyas@ewt.org.za; harrietd@ewt.org.za; Mandy Poole <mandyp@ewt.org.za>; Dr Ian Little <ianl@ewt.org.za>; Yolan Friedmann <yolanf@ewt.org.za>	Zoom meeting to discuss CME contract and project strategy	Follow on from previos meetings held with EWT	follow up meeting	Calender invite
10 September 2020	Dr Ian Little <ianl@ewt.org.za>; Tanya Smith <tanyas@ewt.org.za>; Alastair Stalker <stalker@iafrica.com>	Zoom meeting to discuss project oppertuntiy with Samara	Introductory call & information sharing	follow up meeting	Calender invite
31 August 2020	Kerryn Morison	Phone call to discuss project opportunity for Draakensberg	Follow-up call on project discussions		Calender invite
05 August 2020	satish@weact.com.au; natalie.newman@capetown.gov.za; vivek@weact.com.au; lorraine.gerrans@capetown.gov.za; deep@weact.com.au	Zoom call City of Cape Town	Introductory call & information sharing	No specific feedback	Calender invite

Date	**Name** (full)	**Method** (Meeting, e-mail, virtual call)	**Comment**	**Response**	**Accompanying Documentation** (Attendance Register, Agenda, Minutes, Maps)
04 August 2020	vivek@weact.com.au; deon@vula.biz; deep@weact.com.au; satish@weact.com.au	Zoom Call to discuss Northern & Western Cape Project oppertuntiy	Introductory call & information sharing	follow up meeting	Calendar invite
31 July 2020	Deon van Eden	Zoom Call to discuss Northern & Western Cape Project oppertuntiy	Introductory call & information sharing	follow up meeting	Calender invite
26 June 2020	Tanya Smith <tanyas@ewt.org.za>; Dr Lara Jordan <laraj@ewt.org.za>	Zoom Call to discuss Eastern Cape project potential EWT	Introductory call & information sharing	Under progress	Calender invite
25 March 2020	Cobus Theron <cobust@ewt.org.za>; Bonnie Schumann <bonnies@ewt.org.za>; Jean-Pierre Le Roux <jeanpierrel@ewt.org.za>	Zoom Call to discuss Drylands project potential EWT	Introductory call & information sharing	Under progress	Calender invite
24 March 2020	EWT - Tanya	Phone call to discuss project opportunity for Draakensberg	Introductory call & information sharing	follow up meeting	

Sample training attendance register and photograph



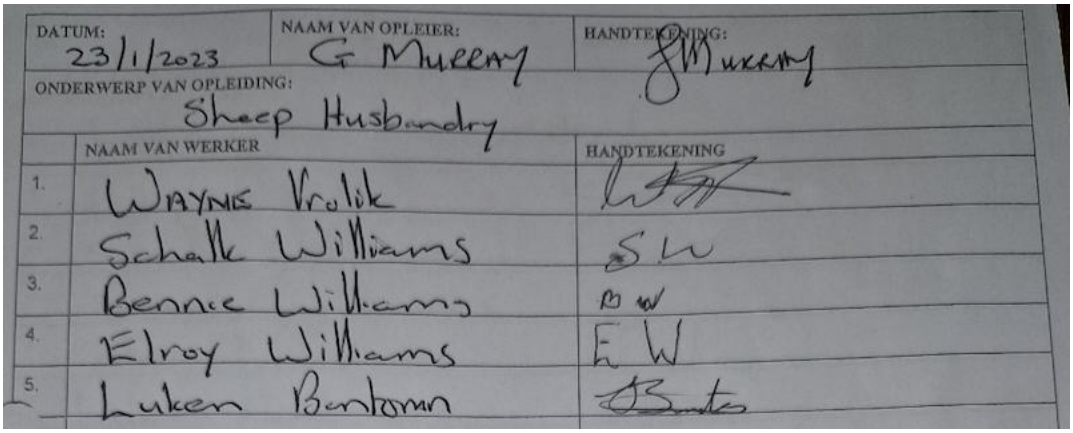
AF 4.2.1

Opleidingsrekords

DATUM:	NAAM VAN OPLEIER:	HANDTEKENING:
22 Nov. 2019	WRSA GRT Chamber	Katjana Ott

ONDERWERP VAN OPLEIDING: Financial Planning, Skinning Course, Rural Safety, Basic Snake Awareness, Driving Techniques.

	NAAM VAN WERKER	HANDTEKENING
1.	Cyril Koopman	CYRIL · KOOPMAN
2.	Johnathan Witbooi	Jonathan Witbooi
3.	Swister Lukaas	S.L
4.	Graham Jaftha.	
5.	Jeffrey van Wyk	Jeffery van Wyk
6.	Marshall Hanse	
7.	Ralph Meyburg	P. Meyburg
8.	Hendrik Williams	Williams
9.	Shantell Smit (snake awareness)	Smith
10.	Melony Smit (" ")	SMITH
11.	Filda Booysen. (" ")	F Booysen
12.		



DATUM:	NAAM VAN OPLEIER:	HANDTEKENING:
23/1/2023	G Murray	G Murray

ONDERWERP VAN OPLEIDING: Sheep Husbandry

	NAAM VAN WERKER	HANDTEKENING
1.	Wayne Vrolik	
2.	Schalk Williams	S W
3.	Bennie Williams	B W
4.	Elroy Williams	E W
5.	Luken Bantom	

APPENDIX 3: PROJECT IMPLEMENTATION DETAILS (GRAZING & BURNING)

Strata	Grazing Plan	Technique	Frequency	Area
1	Goal Ensure continued grazing while preserving ecosystem function and integrity. Focus: Dividing the grasslands into smaller areas (grazing areas) and allow stock movement between them regularly. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	In-field execution: The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 12 blocks and rotating livestock between them. Key Activity Components Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock/wildlife grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat Assessment Step 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 12 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management Adjustments	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 183.8 ha which is divided into 12 blocks. Block/ camp details is available in Project implement ation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		Step 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement: - Lower stocking rates. - Adjust species ratios. - Increase rest periods. Implementation - Regularly monitor vegetation and soil health. - Adjust stocking rates and grazing regimes based on CME advice and habitat assessments. - Apply remedial measures promptly to address selective or over-utilization.		

Strata	Grazing Plan	Technique	Frequency	Area
2	This approach leverages natural rainfall, fire regimes, and the composition of selective grazers to maintain ecological balance and promote biodiversity. <u>Goals & Focus:</u> Ensure sustainable grazing that supports diverse flora and fauna. Rely on natural rainfall, fire, and herbivore behaviour to manage the landscape. Adjust herbivore populations to prevent overgrazing and habitat degradation. <u>General Principles:</u> Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks. In-field execution: The rotational grazing plan (linked to forage and rainfall availability) shows divided grassland and rotating livestock between them. Step 1 - Monitor annual and seasonal rainfall to assess water availability. Step 1.1 - Align grazing patterns with periods of vegetation growth following rains to ensure sufficient forage. Step 1.2 -Implement flexible grazing strategies based on rainfall variability, such as temporary exclusion zones during drought periods. Step 2 - Selective Grazer Composition Step 2.1 - Maintain a mix of selective grazers (e.g., antelope species) and generalist grazers to optimize vegetation use. Step 2.1 - Regularly monitor herbivore populations to ensure they match the reserve's carrying capacity. Introductions and Removals: Introduce or remove species as needed to maintain ecological balance and prevent overgrazing. Step 3 - Carrying Capacity Management Step 3.1 - Conduct periodic assessments of herbivore populations and forage availability. Step 3.2 - Monitor habitat quality indicators such as plant species diversity, soil health, and water resources. Step 3.3 - Make necessary adjustments to herbivore populations based on carrying capacity assessments to prevent habitat degradation. Step 4 - Regular Surveys Step 4.1 - Conduct 2-4 yearly regular vegetation and herbivore surveys to assess the health of ecosystems and effectiveness of the grazing plan. Step 4.2 - Remote sensing technology and field observations to monitor changes in vegetation cover and species composition. Step 5 - Adaptive Management	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 6772.9 ha which is divided into several paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		Step 5.1 - Allowing for adjustments based on ongoing monitoring and research findings. Step 5.2 - Engage with ecological experts and stakeholders to review and refine the grazing plan periodically.		

Strata	Grazing Plan	Technique	Frequency	Area
3	This approach leverages natural rainfall, fire regimes, and the composition of selective grazers to maintain ecological balance and promote biodiversity. Goals & Focus: Ensure sustainable grazing that supports diverse flora and fauna. Rely on natural rainfall, fire, and herbivore behaviour to manage the landscape. Adjust herbivore populations to prevent overgrazing and habitat degradation. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks. In-field execution: The rotational grazing plan (linked to forage and rainfall availability) shows divided grassland and rotating livestock between them. Step 1 - Monitor annual and seasonal rainfall to assess water availability. Step 1.1 - Align grazing patterns with periods of vegetation growth following rains to ensure sufficient forage. Step 1.2 -Implement flexible grazing strategies based on rainfall variability, such as temporary exclusion zones during drought periods. Step 2 - Selective Grazer Composition Step 2.1 – Maintain a mix of selective grazers (e.g., antelope species) and generalist grazers to optimize vegetation use. Step 2.2 - Regularly monitor herbivore populations to ensure they match the reserve's carrying capacity. Introductions and Removals: Introduce or remove species as needed to maintain ecological balance and prevent overgrazing. Step 3 - Carrying Capacity Management Step 3.1 - Conduct periodic assessments of herbivore populations and forage availability. Step 3.2 - Monitor habitat quality indicators such as plant species diversity, soil health, and water resources. Step 3.3 - Make necessary adjustments to herbivore populations based on carrying capacity assessments to prevent habitat degradation. Step 4 - Regular Surveys Step 4.1 - Conduct 2-4 yearly regular vegetation and herbivore surveys to assess the health of ecosystems and effectiveness of the grazing plan. Step 4.2 - Remote sensing technology and field observations to monitor changes in vegetation cover and species composition. Step 5 - Adaptive Management	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 4319.8 ha which is divided into more than 30 blocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		Step 5.1 - Allowing for adjustments based on ongoing monitoring and research findings. Step 5.2 - Engage with ecological experts and stakeholders to review and refine the grazing plan periodically.		

Strata	Grazing Plan	Technique	Frequency	Area
4	Goal Ensure continued grazing while preserving ecosystem function and integrity. Focus: Dividing the grasslands into smaller areas (grazing areas) and allow stock movement between them regularly. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	In-field execution: The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 12 blocks and rotating livestock between them. Key Activity Component Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock/wildlife grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat Assessment Step 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 12 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management Adjustments Step 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement:- Lower stocking rates.- Adjust species ratios.- Increase rest periods.	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 1612.1 ha which is divided into more than 13 blocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		Implementation- Regularly monitor vegetation and soil health.- Adjust stocking rates and grazing regimes based on CME advice and habitat assessments.- Apply remedial measures promptly to address selective or over-utilisation.		

Strata	Grazing Plan	Technique	Frequency	Area
5	Goal Ensure continued grazing while preserving ecosystem function and integrity. Focus: Dividing the grasslands into smaller areas (grazing areas) and allow stock movement between them regularly. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	In-field execution: The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 14 blocks and rotating livestock between them. Key Activity Components Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock/wildlife grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat Assessment Step 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 14 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management Adjustments Step 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement:- Lower stocking rates.- Adjust species ratios.- Increase rest periods..	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 353.6 ha which is divided into 14 blocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		Implementation- Regularly monitor vegetation and soil health.- Adjust stocking rates and grazing regimes based on CME advice and habitat assessments.- Apply remedial measures promptly to address selective or over-utilisation.		

Strata	Grazing Plan	Technique	Frequency	Area
6	This approach leverages natural rainfall, fire regimes, and the composition of selective grazers to maintain ecological balance and promote biodiversity. <u>Goals & Focus:</u> Ensure sustainable grazing that supports diverse flora and fauna. Rely on natural rainfall, fire, and herbivore behaviour to manage the landscape. Adjust herbivore populations to prevent overgrazing and habitat degradation. <u>General Principles:</u> Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks. In-field execution:The rotational grazing plan (linked to forage and rainfall availability) shows divided grassland and rotating livestock between them. Step 1 - Monitor annual and seasonal rainfall to assess water availability. Step 1.1 - Align grazing patterns with periods of vegetation growth following rains to ensure sufficient forage. Step 1.2 -Implement flexible grazing strategies based on rainfall variability, such as temporary exclusion zones during drought periods. Step 2 - Selective Grazer Composition Step 2.1 - Maintain a mix of selective grazers (e.g., antelope species) and generalist grazers to optimize vegetation use. Step 2.1 - Regularly monitor herbivore populations to ensure they match the reserve's carrying capacity. Introductions and Removals: Introduce or remove species as needed to maintain ecological balance and prevent overgrazing. Step 3 - Carrying Capacity Management Step 3.1 - Conduct periodic assessments of herbivore populations and forage availability. Step 3.2 - Monitor habitat quality indicators such as plant species diversity, soil health, and water resources. Step 3.3 - Make necessary adjustments to herbivore populations based on carrying capacity assessments to prevent habitat degradation. Step 4 - Regular Surveys Step 4.1 - Conduct 2-4 yearly regular vegetation and herbivore surveys to assess the health of ecosystems and effectiveness of the grazing plan. Step 4.2 - Remote sensing technology and field observations to monitor changes in vegetation cover and species composition. Step 5 - Adaptive Management	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 4915.8 ha which is divided into several blocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		Step 5.1 - Allowing for adjustments based on ongoing monitoring and research findings. Step 5.2 - Engage with ecological experts and stakeholders to review and refine the grazing plan periodically.		

Strata	Grazing Plan	Technique	Frequency	Area
7	Goal Ensure continued grazing while preserving ecosystem function and integrity. Focus: Dividing the grasslands into smaller areas (grazing areas) and allow stock movement between them regularly. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	In-field execution: The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 12 blocks and rotating livestock between them. Key Activity Components Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock/wildlife grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat Assessment Step 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 12 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management Adjustments Step 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement:- Lower stocking rates.- Adjust species ratios.- Increase rest periods.	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 2549.9 ha which is divided into several blocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		Implementation- Regularly monitor vegetation and soil health.- Adjust stocking rates and grazing regimes based on CME advice and habitat assessments.- Apply remedial measures promptly to address selective or over-utilisation.		

Strata	Grazing Plan	Technique	Frequency	Area
8	Goal Ensure continued grazing while preserving ecosystem function and integrity. Focus: Dividing the grasslands into smaller areas (grazing areas) and allow stock movement between them regularly. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	In-field execution: The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 4 blocks and rotating livestock between them. Key Activity Components Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat Assessment Step 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 4 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management Adjustments Step 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement:- Lower stocking rates.- Adjust species ratios.- Increase rest periods.	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 741.3 ha which is divided into 4 blocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification. .

Strata	Grazing Plan	Technique	Frequency	Area
		Implementation- Regularly monitor vegetation and soil health.- Adjust stocking rates and grazing regimes based on CME advice and habitat assessments.- Apply remedial measures promptly to address selective or over-utilisation.		

Strata	Grazing Plan	Technique	Frequency	Area
9	This approach leverages natural rainfall, fire regimes, and the composition of selective grazers to maintain ecological balance and promote biodiversity. Goals & Focus: Ensure sustainable grazing that supports diverse flora and fauna. Rely on natural rainfall, fire, and herbivore behaviour to manage the landscape. Adjust herbivore populations to prevent overgrazing and habitat degradation. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks. In-field execution: The rotational grazing plan (linked to forage and rainfall availability) shows divided grassland and rotating livestock between them. Step 1 - Monitor annual and seasonal rainfall to assess water availability. Step 1.1 - Align grazing patterns with periods of vegetation growth following rains to ensure sufficient forage. Step 1.2 -Implement flexible grazing strategies based on rainfall variability, such as temporary exclusion zones during drought periods. Step 2 - Selective Grazer Composition Step 2.1 - Maintain a mix of selective grazers (e.g., antelope species) and generalist grazers to optimize vegetation use. Step 2.1 - Regularly monitor herbivore populations to ensure they match the reserve's carrying capacity. Introductions and Removals: Introduce or remove species as needed to maintain ecological balance and prevent overgrazing. Step 3 - Carrying Capacity Management Step 3.1 - Conduct periodic assessments of herbivore populations and forage availability. Step 3.2 - Monitor habitat quality indicators such as plant species diversity, soil health, and water resources. Step 3.3 - Make necessary adjustments to herbivore populations based on carrying capacity assessments to prevent habitat degradation. Step 4 - Regular Surveys Step 4.1 - Conduct 2-4 yearly regular vegetation and herbivore surveys to assess the health of ecosystems and effectiveness of the grazing plan. Step 4.2 - Remote sensing technology and field observations to monitor changes in vegetation cover and species composition. Step 5 - Adaptive Management	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 8643.7 ha which is divided into more than 70 camps. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification. .

Strata	Grazing Plan	Technique	Frequency	Area
		Step 5.1 - Allowing for adjustments based on ongoing monitoring and research findings. Step 5.2 - Engage with ecological experts and stakeholders to review and refine the grazing plan periodically.		

Strata	Grazing Plan	Technique	Frequency	Area
10	This approach leverages natural rainfall, fire regimes, and the composition of selective grazers to maintain ecological balance and promote biodiversity. Goals & Focus: Ensure sustainable grazing that supports diverse flora and fauna. Rely on natural rainfall, fire, and herbivore behaviour to manage the landscape. Adjust herbivore populations to prevent overgrazing and habitat degradation. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks. In-field execution:The rotational grazing plan (linked to forage and rainfall availability) shows divided grassland and rotating livestock between them. Step 1 - Monitor annual and seasonal rainfall to assess water availability. Step 1.1 - Align grazing patterns with periods of vegetation growth following rains to ensure sufficient forage. Step 1.2 -Implement flexible grazing strategies based on rainfall variability, such as temporary exclusion zones during drought periods. Step 2 - Selective Grazer Composition Step 2.1 - Maintain a mix of selective grazers (e.g., antelope species) and generalist grazers to optimize vegetation use. Step 2.1 - Regularly monitor herbivore populations to ensure they match the reserve's carrying capacity. Introductions and Removals: Introduce or remove species as needed to maintain ecological balance and prevent overgrazing. Step 3 - Carrying Capacity Management Step 3.1 - Conduct periodic assessments of herbivore populations and forage availability. Step 3.2 - Monitor habitat quality indicators such as plant species diversity, soil health, and water resources. Step 3.3 - Make necessary adjustments to herbivore populations based on carrying capacity assessments to prevent habitat degradation. Step 4 - Regular Surveys Step 4.1 - Conduct 2-4 yearly regular vegetation and herbivore surveys to assess the health of ecosystems and effectiveness of the grazing plan. Step 4.2 - Remote sensing technology and field observations to monitor changes in vegetation cover and species composition. Step 5 - Adaptive Management	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 2860.4 ha which is divided into more than 26 paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification. .

Strata	Grazing Plan	Technique	Frequency	Area
		Step 5.1 - Allowing for adjustments based on ongoing monitoring and research findings. Step 5.2 - Engage with ecological experts and stakeholders to review and refine the grazing plan periodically.		

Strata	Grazing Plan	Technique	Frequency	Area
11	This approach leverages natural rainfall, fire regimes, and the composition of selective grazers to maintain ecological balance and promote biodiversity. <u>Goals & Focus:</u> Ensure sustainable grazing that supports diverse flora and fauna. Rely on natural rainfall, fire, and herbivore behaviour to manage the landscape. Adjust herbivore populations to prevent overgrazing and habitat degradation. <u>General Principles:</u> Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks. In-field execution:The rotational grazing plan (linked to forage and rainfall availability) shows divided grassland and rotating livestock between them. Step 1 - Monitor annual and seasonal rainfall to assess water availability. Step 1.1 - Align grazing patterns with periods of vegetation growth following rains to ensure sufficient forage. Step 1.2 -Implement flexible grazing strategies based on rainfall variability, such as temporary exclusion zones during drought periods. Step 2 - Selective Grazer Composition Step 2.1 - Maintain a mix of selective grazers (e.g., antelope species) and generalist grazers to optimize vegetation use. Step 2.1 - Regularly monitor herbivore populations to ensure they match the reserve's carrying capacity. Introductions and Removals: Introduce or remove species as needed to maintain ecological balance and prevent overgrazing. Step 3 - Carrying Capacity Management Step 3.1 - Conduct periodic assessments of herbivore populations and forage availability. Step 3.2 - Monitor habitat quality indicators such as plant species diversity, soil health, and water resources. Step 3.3 - Make necessary adjustments to herbivore populations based on carrying capacity assessments to prevent habitat degradation. Step 4 - Regular Surveys Step 4.1 - Conduct 2-4 yearly regular vegetation and herbivore surveys to assess the health of ecosystems and effectiveness of the grazing plan. Step 4.2 - Remote sensing technology and field observations to monitor changes in vegetation cover and species composition. Step 5 - Adaptive Management	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 9034.3 ha which is divided into several paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification. .

Strata	Grazing Plan	Technique	Frequency	Area
		Step 5.1 - Allowing for adjustments based on ongoing monitoring and research findings. Step 5.2 - Engage with ecological experts and stakeholders to review and refine the grazing plan periodically.		

Strata	Grazing Plan	Technique	Frequency	Area
12	Goal Ensure continued grazing while preserving ecosystem function and integrity. Focus: Dividing the grasslands into smaller areas (grazing areas) and allow stock movement between them regularly. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	In-field execution: The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 14 camps and rotating livestock between them. <u>Key Activity Components</u> Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock/wildlife grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat AssessmentStep 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 12 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management Adjustments Step 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement:- Lower stocking rates.- Adjust species ratios.- Increase rest periods.	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 2315.3 ha which is divided into 14 paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification. .

Strata	Grazing Plan	Technique	Frequency	Area
		Implementation- Regularly monitor vegetation and soil health.- Adjust stocking rates and grazing regimes based on CME advice and habitat assessments.- Apply remedial measures promptly to address selective or over-utilisation.		

Strata	Grazing Plan	Technique	Frequency	Area
13	This approach leverages natural rainfall, fire regimes, and the composition of selective grazers to maintain ecological balance and promote biodiversity. <u>Goals & Focus:</u> Ensure sustainable grazing that supports diverse flora and fauna. Rely on natural rainfall, fire, and herbivore behaviour to manage the landscape. Adjust herbivore populations to prevent overgrazing and habitat degradation. <u>General Principles:</u> Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks. In-field execution:The rotational grazing plan (linked to forage and rainfall availability) shows divided grassland and rotating livestock between them. Step 1 - Monitor annual and seasonal rainfall to assess water availability. Step 1.1 - Align grazing patterns with periods of vegetation growth following rains to ensure sufficient forage. Step 1.2 -Implement flexible grazing strategies based on rainfall variability, such as temporary exclusion zones during drought periods. Step 2 - Selective Grazer Composition Step 2.1 - Maintain a mix of selective grazers (e.g., antelope species) and generalist grazers to optimize vegetation use. Step 2.1 - Regularly monitor herbivore populations to ensure they match the reserve's carrying capacity. Introductions and Removals: Introduce or remove species as needed to maintain ecological balance and prevent overgrazing. Step 3 - Carrying Capacity Management Step 3.1 - Conduct periodic assessments of herbivore populations and forage availability. Step 3.2 - Monitor habitat quality indicators such as plant species diversity, soil health, and water resources. Step 3.3 - Make necessary adjustments to herbivore populations based on carrying capacity assessments to prevent habitat degradation. Step 4 - Regular Surveys Step 4.1 - Conduct 2-4 yearly regular vegetation and herbivore surveys to assess the health of ecosystems and effectiveness of the grazing plan. Step 4.2 - Remote sensing technology and field observations to monitor changes in vegetation cover and species composition. Step 5 - Adaptive Management	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 5717.2 ha which is divided into several paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification

Strata	Grazing Plan	Technique	Frequency	Area
		Step 5.1 - Allowing for adjustments based on ongoing monitoring and research findings. Step 5.2 - Engage with ecological experts and stakeholders to review and refine the grazing plan periodically.		

Strata	Grazing Plan	Technique	Frequency	Area
14	This approach leverages natural rainfall, fire regimes, and the composition of selective grazers to maintain ecological balance and promote biodiversity. <u>Goals & Focus:</u> Ensure sustainable grazing that supports diverse flora and fauna. Rely on natural rainfall, fire, and herbivore behaviour to manage the landscape. Adjust herbivore populations to prevent overgrazing and habitat degradation. <u>General Principles:</u> Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks. In-field execution:The rotational grazing plan (linked to forage and rainfall availability) shows divided grassland and rotating livestock between them. Step 1 - Monitor annual and seasonal rainfall to assess water availability. Step 1.1 - Align grazing patterns with periods of vegetation growth following rains to ensure sufficient forage. Step 1.2 -Implement flexible grazing strategies based on rainfall variability, such as temporary exclusion zones during drought periods. Step 2 - Selective Grazer Composition Step 2.1 - Maintain a mix of selective grazers (e.g., antelope species) and generalist grazers to optimize vegetation use. Step 2.1 - Regularly monitor herbivore populations to ensure they match the reserve's carrying capacity. Introductions and Removals: Introduce or remove species as needed to maintain ecological balance and prevent overgrazing. Step 3 - Carrying Capacity Management Step 3.1 - Conduct periodic assessments of herbivore populations and forage availability. Step 3.2 - Monitor habitat quality indicators such as plant species diversity, soil health, and water resources. Step 3.3 - Make necessary adjustments to herbivore populations based on carrying capacity assessments to prevent habitat degradation. Step 4 - Regular Surveys Step 4.1 - Conduct 2-4 yearly regular vegetation and herbivore surveys to assess the health of ecosystems and effectiveness of the grazing plan. Step 4.2 - Remote sensing technology and field observations to monitor changes in vegetation cover and species composition. Step 5 - Adaptive Management	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 3768.0 ha which is divided into 65 paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification. .

Strata	Grazing Plan	Technique	Frequency	Area
		Step 5.1 - Allowing for adjustments based on ongoing monitoring and research findings. Step 5.2 - Engage with ecological experts and stakeholders to review and refine the grazing plan periodically.		

Strata	Grazing Plan	Technique	Frequency	Area
15	Goal Ensure continued grazing while preserving ecosystem function and integrity. Focus: Dividing the grasslands into smaller areas (grazing areas) and allow stock movement between them regularly. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	In-field execution: The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 12 blocks and rotating livestock between them. Key Activity Components Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock/wildlife grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat Assessment Step 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 12 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management Adjustments Step 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement:- Lower stocking rates.- Adjust species ratios.- Increase rest periods.	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 236.7 ha which is divided into 12 paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification. .

Strata	Grazing Plan	Technique	Frequency	Area
		Implementation- Regularly monitor vegetation and soil health.- Adjust stocking rates and grazing regimes based on CME advice and habitat assessments.- Apply remedial measures promptly to address selective or over-utilisation.		

Strata	Grazing Plan	Technique	Frequency	Area
16	This approach leverages natural rainfall, and a holistic grazing management system to maintain ecological balance and promote biodiversity. Goals & Focus: Ensure sustainable grazing that supports diverse flora and fauna. Adopts a rotational grazing system at high animal densities for short periods of time. The high grazing density increases total forage use, manure deposition, and allows for a suitable regrowth period. Adjust herbivore populations to prevent overgrazing and habitat degradation. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks. In-field execution:The rotational grazing plan (linked to forage and rainfall availability) shows divided grassland and rotating livestock between them. Step 1 - Monitor annual and seasonal rainfall to assess water availability. Step 1.1 - Align grazing patterns with periods of vegetation growth following rains to ensure sufficient forage. Step 1.2 -Implement flexible grazing strategies based on rainfall variability, such as temporary exclusion zones during drought periods. Step 2 - Selective Grazer Composition Step 2.1 - Maintain a mix of selective grazers (e.g., antelope species) and generalist grazers to optimize vegetation use. Step 2.1 - Regularly monitor herbivore populations to ensure they match the reserve's carrying capacity. Introductions and Removals: Introduce or remove species as needed to maintain ecological balance and prevent overgrazing. Step 3 - Carrying Capacity Management Step 3.1 - Conduct periodic assessments of herbivore populations and forage availability. Step 3.2 - Monitor habitat quality indicators such as plant species diversity, soil health, and water resources. Step 3.3 - Make necessary adjustments to herbivore populations based on carrying capacity assessments to prevent habitat degradation. Step 4 - Regular Surveys Step 4.1 - Conduct 2-4 yearly regular vegetation and herbivore surveys to assess the health of ecosystems and effectiveness of the grazing plan. Step 4.2 - Remote sensing technology and field observations to monitor changes in vegetation cover and species composition. Step 5 - Adaptive Management	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 6640.8 ha which is divided into several paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification. .

Strata	Grazing Plan	Technique	Frequency	Area
		Step 5.1 - Allowing for adjustments based on ongoing monitoring and research findings. Step 5.2 - Engage with ecological experts and stakeholders to review and refine the grazing plan periodically.		

Strata	Grazing Plan	Technique	Frequency	Area
17	Goal Ensure continued grazing while preserving ecosystem function and integrity. Focus: Dividing the grasslands into smaller areas (grazing areas) and allow stock movement between them regularly. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	In-field execution: The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 15 camps and rotating livestock between them <u>Key Activity Components</u> Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock/wildlife grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat Assessment Step 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 12 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management Adjustments Step 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement:- Lower stocking rates.- Adjust species ratios.- Increase rest periods.	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 837.1 ha which is divided into 15 paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification. .

Strata	Grazing Plan	Technique	Frequency	Area
		Implementation- Regularly monitor vegetation and soil health.- Adjust stocking rates and grazing regimes based on CME advice and habitat assessments.- Apply remedial measures promptly to address selective or over-utilisation.		

Strata	Grazing Plan	Technique	Frequency	Area
18	Goal Ensure continued grazing while preserving ecosystem function and integrity. Focus: Dividing the grasslands into smaller areas (grazing areas) and allow stock movement between them regularly. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	In-field execution: The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 4 blocks and rotating livestock between them. Key Activity Components Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock/wildlife grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat Assessment Step 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 12 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management Adjustments Step 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement:- Lower stocking rates.- Adjust species ratios.- Increase rest periods.	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 1849.3 ha which is divided into 4 paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		Implementation- Regularly monitor vegetation and soil health.- Adjust stocking rates and grazing regimes based on CME advice and habitat assessments.- Apply remedial measures promptly to address selective or over-utilisation.		

Strata	Grazing Plan	Technique	Frequency	Area
19	Goal Ensure continued grazing while preserving ecosystem function and integrity. Focus: Dividing the grasslands into smaller areas (grazing areas) and allow stock movement between them regularly. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	In-field execution:The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 7 camps and rotating livestock between them. <u>Key Activity Components</u> Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock/wildlife grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat Assessment Step 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 12 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management Adjustments Step 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement:- Lower stocking rates.- Adjust species ratios.- Increase rest periods	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 7884.7 ha which is divided into 7paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		Implementation- Regularly monitor vegetation and soil health.- Adjust stocking rates and grazing regimes based on CME advice and habitat assessments.- Apply remedial measures promptly to address selective or over-utilisation.		

Strata	Grazing Plan	Technique	Frequency	Area
20	Goal Ensure continued grazing while preserving ecosystem function and integrity.Focus:Dividing the grasslands into smaller areas (grazing areas) and allow stock movement between them regularly. General Principles: Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	In-field execution:The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 20+ camps across the farms and rotating livestock between them. <u>Key Activity Components</u> Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock/wildlife grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat Assessment Step 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 12 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management AdjustmentsStep 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement:- Lower stocking rates.- Adjust species ratios.- Increase rest periods.	Continual rotation throughout the year. Strata wise details are available in project implementation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 2195.2 ha which is divided into more than 20 paddocks. Block/ camp/ paddock details is available in Project implementation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		Implementation- Regularly monitor vegetation and soil health.- Adjust stocking rates and grazing regimes based on CME advice and habitat assessments.- Apply remedial measures promptly to address selective or over-utilisation.		

Strata	Grazing Plan	Technique	Frequency	Area
21	Goal: Ensure continued grazing while preserving ecosystem function and integrity. Fire Breaks: Maintain fire breaks to control the spread of wildfires and protect key habitats.	In-field execution:The rotational grazing plan (linked to controlled burn plan) shows divided grassland into 17 camps across the farms and rotating livestock between them. <u>Key Activity Components</u> Step 1 - Grazing Patterns monitored & understood Step 1.1 - Species-Specific Behavior observed: Livestock/wildlife grazing habits and vegetation impacts observed. Step 1.2 - Seasonal Movements: Track movements to align grazing with food/water availability. Step 1.3 - Address Challenges and feedback to step 1.1: Overgrazing from insufficient rest, overstocking, or incorrect burning, which reduces palatable grasses and increases unpalatable species. Step 2 - Habitat Assessment Step 2.1 - Vegetation Surveys: Conduct regular surveys (per CME recommendations) (usually 2-4 years) to monitor plant species, biomass, and cover. Step 2.2 - Soil Health Monitoring: Assess soil compaction, nutrient levels, and erosion to evaluate grazing impacts (every 5 years) Step 3 - Carrying Capacity Step 3.1 - Population Density: Maintain sustainable grazing with a conservation grazing capacity of 3.71 ha/AU (AGC: 2.23 ha/AU), supporting ~35.5 animal units (AUs) due to high palatable Decreaser species density. Step 3.2 - Stocking Rate: Following CME's estimated Total Stocking Rate for grazers and browsers across vegetation types. Step 3.3 - Grazing Camps: Treat the area as a single grazing camp, and 12 smaller blocks within this are being grazed at a sustainable commercial stocking rate. Step 4 - Management Adjustments Step 4.1 - Population Control: Adjusting wildlife populations via natural or managed interventions to prevent overgrazing. Step 4.2 - Remedial Measures: For over-utilised land, implement:- Lower stocking rates.- Adjust species ratios.- Increase rest periods.Implementation- Regularly monitor vegetation and soil health.- Adjust stocking	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 454.3 ha which is divided into 17 paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		rates and grazing regimes based on CME advice and habitat assessments.- Apply remedial measures promptly to address selective or over-utilisation.		

Strata	Grazing Plan	Technique	Frequency	Area
22	This approach leverages natural rainfall, fire regimes, and the composition of selective grazers to maintain ecological balance and promote biodiversity. <u>Goals & Focus:</u> Ensure sustainable grazing that supports diverse flora and fauna. Rely on natural rainfall, fire, and herbivore behaviour to manage the landscape. Adjust herbivore populations to prevent overgrazing and habitat degradation. <u>General Principles:</u> Resting grassland blocks between grazing cycles, allowing recovery during rain and growth seasons, enabling regrowth of forage plants, and creating the potential for improved soil health and biodiversity.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks. In-field execution:The rotational grazing plan (linked to forage and rainfall availability) shows divided grassland and rotating livestock between them. Step 1 - Monitor annual and seasonal rainfall to assess water availability. Step 1.1 - Align grazing patterns with periods of vegetation growth following rains to ensure sufficient forage. Step 1.2 -Implement flexible grazing strategies based on rainfall variability, such as temporary exclusion zones during drought periods. Step 2 - Selective Grazer Composition Step 2.1 - Maintain a mix of selective grazers (e.g., antelope species) and generalist grazers to optimize vegetation use. Step 2.2 - Regularly monitor herbivore populations to ensure they match the reserve's carrying capacity. Introductions and Removals: Introduce or remove species as needed to maintain ecological balance and prevent overgrazing. Step 3 - Carrying Capacity Management Step 3.1 - Conduct periodic assessments of herbivore populations and forage availability. Step 3.2 - Monitor habitat quality indicators such as plant species diversity, soil health, and water resources. Step 3.3 - Make necessary adjustments to herbivore populations based on carrying capacity assessments to prevent habitat degradation. Step 4 - Regular Surveys Step 4.1 - Conduct 2-4 yearly regular vegetation and herbivore surveys to assess the health of ecosystems and effectiveness of the grazing plan. Step 4.2 - Remote sensing technology and field observations to monitor changes in vegetation cover and species composition. Step 5 - Adaptive Management	Continual rotation throughout the year. Strata wise details are available in project implement ation declaration which is provided to VVB for verification. Sample copy of the same has been attached	Rotational grazing covered 18064.5 ha which is divided into more than 35 paddocks. Block/ camp/ paddock details is available in Project implement ation declaration which is provided to VVB for verification.

Strata	Grazing Plan	Technique	Frequency	Area
		Step 5.1 - Allowing for adjustments based on ongoing monitoring and research findings. Step 5.2 - Engage with ecological experts and stakeholders to review and refine the grazing plan periodically.		

Strata	Burn Plan	Technique	Frequency	Area
1	Objective To conduct a controlled cool burn in a grassland to promote ecological health and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burn was conducted in 2018	Total area burnt in 2018 was 36.39 ha. Burn available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
2	Objective The key terrestrial ecological processes identified within the farm are herbivory and fire. Fire is dealt with as a risk to biodiversity, infrastructure and agricultural loss through unnatural and unplanned fires. For vegetation types, fire is likely to have been a rare rather than regular occurrence, but could nevertheless have exerted a major influence on plant communities. The key objective on this farm is to address fire as a risk addressed in the farm's risk plan to address this threat. Timing Conduct burn after a vegetation assessment or an unplanned burn due to lightning strike. Considerations for Cool Burn - Veld Biomass: kg/ha. - Air Temperature: °C. - Relative Humidity: %. - Wind Speed: km/hr. Procedure Step 1- Carry out vegetation assessment to determine biomass load. Step 2 - determine if herbivory can reduce this load. Step 3 - Permission: Obtain approval from the local fire protection association. Step 4 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the areas/ camps are burned for that year. Step 5 - Outcome: recovery as new shoots appear.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks.	Burn was conducted in 2019 and 2022	Total area burnt in 2019 was 512.9 ha and 515.6ha in 2022. Burn details are available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
3	Objective The key terrestrial ecological processes identified within the farm are herbivory and fire. Fire is dealt with as a risk to biodiversity, infrastructure and agricultural loss through unnatural and unplanned fires. For vegetation types, fire is likely to have been a rare rather than regular occurence, but could nevertheless have exerted a major influence on plant communities.The key objective on this farm is to address fire as a risk addressed in the farm's risk plan to address this threat. Timing This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike. Procedure Step 1- Carry out vegetation assessment to determine biomass load. Step 2 - determine if herbivory can reduce this load. Step 3 - Permission: Obtain approval from the local fire protection association. Step 4 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the areas/ camps are burned for that year. Step 5 - Outcome: recovery as new shoots appear.	This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike.	Burn was conducted in 2019 and 2022	Total area burnt in 2021 was 1002.13 ha Burn details are available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
4	Objective Fire is being used as a management tool along with high density non- selective grazing post burning and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burn was conducted from 2018 to 2022	Total area burnt was 782.6, 1060.5, 415, 1094.6 and 908.6 ha in 2018, 2019, 2020,2021 ,2022 respectively Burn details are available in Project implementation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
5	Objective To conduct a controlled cool burn in a grassland to promote ecological health and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burn was conducted in 2022	Total area burnt in 2022 was 76.1 ha Burn details are available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
6	Objective The key terrestrial ecological processes identified within the farm are herbivory and fire. Fire is dealt with as a risk to biodiversity, infrastructure and agricultural loss through unnatural and unplanned fires. For vegetation types, fire is likely to have been a rare rather than regular occurrence, but could nevertheless have exerted a major influence on plant communities. The key objective on this farm is to address fire as a risk addressed in the farm's risk plan to address this threat. Timing Conduct burn after a vegetation assessment or an unplanned burn due to lightning strike. Considerations for Cool Burn - Veld Biomass: kg/ha. - Air Temperature: °C. - Relative Humidity: %. - Wind Speed: km/hr. Procedure Step 1- Carry out vegetation assessment to determine biomass load. Step 2 - determine if herbivory can reduce this load. Step 3 - Permission: Obtain approval from the local fire protection association. Step 4 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the areas/ camps are burned for that year. Step 5 - Outcome: recovery as new shoots appear.	The technique that the farmer conducts, depends on the biomass load, vegetation type, time of year, topography and take other precautions such as creating the necessary fire breaks.	Burn was not conducted	-

Strata	Burn Plan	Technique	Frequency	Area
7	Objective To conduct a controlled cool burn in a grassland to promote ecological health and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burn was conducted in 2018-2022	Total area burnt in 2018, 2019, 2021, 2022 - was 1200 ha and in 2020 it was 620 ha. Burn details are available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
8	Objective To conduct a controlled cool burn in a grassland to promote ecological health and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The occurrence of fire is limited to planned burns implemented by the farmer, natural fire starting and unplanned runaway fires which originate outside the farm (usually within or around human settlements). The farmer makes a decision based on biomass loads, moribund material and historic burning practices. The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burn was conducted in 2018-2022	Total area burnt in 2018-2022 was 231.14 ha. Burn details are available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
9	Objective The key terrestrial ecological processes identified within the farm are herbivory and fire. Fire is dealt with as a risk to biodiversity, infrastructure and agricultural loss through unnatural and unplanned fires. For vegetation types, fire is likely to have been a rare rather than regular occurrence, but could nevertheless have exerted a major influence on plant communities. The key objective on this farm is to address fire as a risk addressed in the farm's risk plan to address this threat. Timing This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike. Procedure Step 1- Carry out vegetation assessment to determine biomass load. Step 2 - determine if herbivory can reduce this load. Step 3 - Permission: Obtain approval from the local fire protection association. Step 4 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the areas/ camps are burned for that year. Step 5 - Outcome: recovery as new shoots appear.	This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike.	Burn was conducted in 2021	Total area burnt in 2021 was 1718.14 ha. Burn details are available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
10	Objective The key terrestrial ecological processes identified within the farm are herbivory and fire. Fire is dealt with as a risk to biodiversity, infrastructure and agricultural loss through unnatural and unplanned fires. For vegetation types, fire is likely to have been a rare rather than regular occurrence, but could nevertheless have exerted a major influence on plant communities. The key objective on this farm is to address fire as a risk addressed in the farm's risk plan to address this threat. Timing This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike. Procedure Step 1- Carry out vegetation assessment to determine biomass load. Step 2 - determine if herbivory can reduce this load. Step 3 - Permission: Obtain approval from the local fire protection association. Step 4 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the areas/ camps are burned for that year. Step 5 - Outcome: recovery as new shoots appear.	This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike.	Burn was not conducted	-

Strata	Burn Plan	Technique	Frequency	Area
11	Objective The key terrestrial ecological processes identified within the farm are herbivory and fire. Fire is dealt with as a risk to biodiversity, infrastructure and agricultural loss through unnatural and unplanned fires. For vegetation types, fire is likely to have been a rare rather than regular occurrence, but could nevertheless have exerted a major influence on plant communities. The key objective on this farm is to address fire as a risk addressed in the farm's risk plan to address this threat. Timing This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike. Procedure Step 1- Carry out vegetation assessment to determine biomass load. Step 2 - determine if herbivory can reduce this load. Step 3 - Permission: Obtain approval from the local fire protection association. Step 4 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the areas/ camps are burned for that year. Step 5 - Outcome: recovery as new shoots appear.	This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike.	Burn was conducted in 2019	Total area burnt in 2019 was 2157.47 ha. Burn details are available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
12	Objective To conduct a controlled cool burn in a grassland to promote ecological health and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burn was conducted in 2018-2022	Total area burnt in every year from 2018-2022 was 792 ha. Burn details are available in Project implementation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
13	Objective The key terrestrial ecological processes identified within the farm are herbivory and fire. Fire is dealt with as a risk to biodiversity, infrastructure and agricultural loss through unnatural and unplanned fires. For vegetation types, fire is likely to have been a rare rather than regular occurence, but could nevertheless have exerted a major influence on plant communities.The key objective on this farm is to address fire as a risk addressed in the farm's risk plan to address this threat. Timing This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike. Procedure Step 1- Carry out vegetation assessment to determine biomass load. Step 2 - determine if herbivory can reduce this load. Step 3 - Permission: Obtain approval from the local fire protection association. Step 4 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the areas/ camps are burned for that year. Step 5 - Outcome: recovery as new shoots appear.	This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike.	Burn was not conducted	-

Strata	Burn Plan	Technique	Frequency	Area
14	Objective The key terrestrial ecological processes identified within the farm are herbivory and fire. Fire is dealt with as a risk to biodiversity, infrastructure and agricultural loss through unnatural and unplanned fires. For vegetation types, fire is likely to have been a rare rather than regular occurrence, but could nevertheless have exerted a major influence on plant communities. The key objective on this farm is to address fire as a risk addressed in the farm's risk plan to address this threat. Timing This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike. Procedure Step 1- Carry out vegetation assessment to determine biomass load. Step 2 - determine if herbivory can reduce this load. Step 3 - Permission: Obtain approval from the local fire protection association. Step 4 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the areas/ camps are burned for that year. Step 5 - Outcome: recovery as new shoots appear.	This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike.	Burn was not conducted	-

Strata	Burn Plan	Technique	Frequency	Area
15	Objective To conduct a controlled cool burn in a grassland to promote ecological health and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burn was not conducted	-

Strata	Burn Plan	Technique	Frequency	Area
16	Objective The key terrestrial ecological processes identified within the farm are herbivory and fire. Fire is dealt with as a risk to biodiversity, infrastructure and agricultural loss through unnatural and unplanned fires. For vegetation types, fire is likely to have been a rare rather than regular occurrence, but could nevertheless have exerted a major influence on plant communities. The key objective on this farm is to address fire as a risk addressed in the farm's risk plan to address this threat. Timing This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike. Procedure Step 1- Carry out vegetation assessment to determine biomass load. Step 2 - determine if herbivory can reduce this load. Step 3 - Permission: Obtain approval from the local fire protection association. Step 4 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the areas/ camps are burned for that year. Step 5 - Outcome: recovery as new shoots appear.	This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike.	Burn was not conducted	-

Strata	Burn Plan	Technique	Frequency	Area
17	Objective To conduct a controlled cool burn in a grassland to promote ecological health and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burning conducted in 2022	Total area burnt in 2022 was 143.89 ha. Burn details are available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
18	Objective To conduct a controlled cool burn in a grassland to promote ecological health and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burning conducted in 2018-2020 and 2022	Total area burnt in every year was 481 ha. Burn details are available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
19	Objective To conduct a controlled cool burn in a grassland to promote ecological health and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burning conducted in 2018-2020	Total area burnt in 2022 was 1833.66 ha. Burn details are available in Project implement ation declaration which is provided to VVB for verification

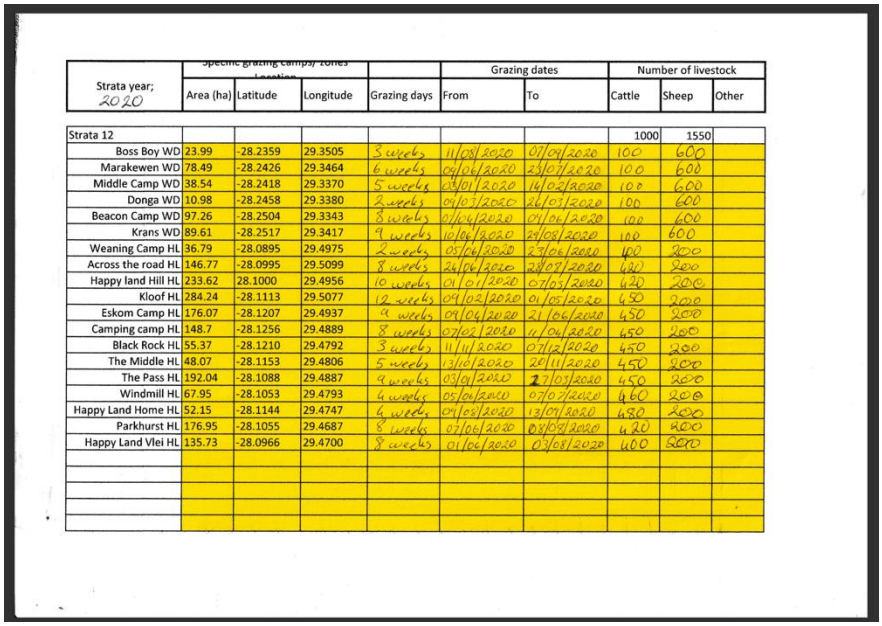
Strata	Burn Plan	Technique	Frequency	Area
20	Objective To conduct a controlled cool burn in a grassland to promote ecological health and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burning conducted in 2018-2022	Total area burnt in each year was 665.2 ha. Burn details are available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
21	Objective To conduct a controlled cool burn in a grassland to promote ecological health and encourage natural animal movement to burnt areas. Timing Conduct burn directly after the first spring rains. Ensure burn occurs before the season's growth begins. Verify sufficient moisture has penetrated the ground and plant crowns remain moist. Conditions for Cool Burn Veld Biomass: Exceeds 3000 kg/ha. Air Temperature: Below 20°C. Relative Humidity: Above 40%. Wind Speed: Not exceeding 20 km/hr. Procedure Step 1 - Permission: Obtain approval from the local fire protection association. Step 2 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the blocks are burned for that year. Step 3 - Outcome: As new grass shoots appear, this facilitates the natural movement of the animals from previously grazed areas to the freshly burnt areas. Ensures that hooves disturb the soil and urine and dung deposited. Reference de Ronde, C., et al. (2004). Guidelines for controlled burning.	The farmer conducts cool patch mosaic burn, as per the annual plan in grasslands after spring rains. Burning occurs before growth starts, with moist soil and plant crowns available.	Burning conducted in 2021	Total area burnt was 1012.4 ha. Burn details are available in Project implement ation declaration which is provided to VVB for verification

Strata	Burn Plan	Technique	Frequency	Area
22	Objective The key terrestrial ecological processes identified within the farm are herbivory and fire. Fire is dealt with as a risk to biodiversity, infrastructure and agricultural loss through unnatural and unplanned fires. For vegetation types, fire is likely to have been a rare rather than regular occurrence, but could nevertheless have exerted a major influence on plant communities. The key objective on this farm is to address fire as a risk addressed in the farm's risk plan to address this threat. Timing This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike. Procedure Step 1- Carry out vegetation assessment to determine biomass load. Step 2 - determine if herbivory can reduce this load. Step 3 - Permission: Obtain approval from the local fire protection association. Step 4 - Execution: Apply fire under above specified conditions, with the trained fire team, to ensure a cool burn. until the areas/ camps are burned for that year. Step 5 - Outcome: recovery as new shoots appear.	This farm currently practices a no burn policy. Burning would only take place under the following conditions; conduct burn after a specialist vegetation assessment/ recommendation or an unplanned burn due to lightning strike.	Vegetation assessment dependent and or longer than 7 years	Farm divided into 35+ camps.

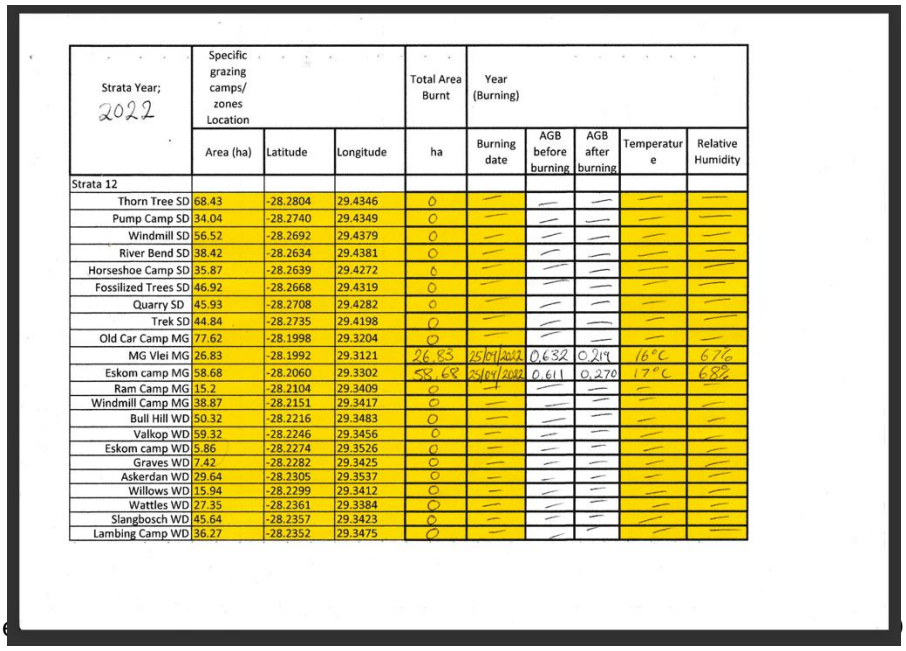
APPENDIX 4: SAMPLE COPY OF PROJECT IMPLEMENTATION DOCUMENTS

Sample[39] copy of Project Implementation Details (grazing & burning) for strata 12



Strata year; 2020	Specific grazing camps/ zones Location				Grazing dates		Number of livestock		
	Area (ha)	Latitude	Longitude	Grazing days	From	To	Cattle	Sheep	Other
Strata 12							1000	1550	
Boss Boy WD	23.99	-28.2359	29.3505	3 weeks	11/03/2020	01/04/2020	100	600	
Marakewen WD	78.49	-28.2426	29.3464	6 weeks	04/06/2020	23/07/2020	100	600	
Middle Camp WD	38.54	-28.2418	29.3370	5 weeks	08/01/2020	14/02/2020	100	600	
Donga WD	10.98	-28.2458	29.3380	3 weeks	04/03/2020	26/03/2020	100	600	
Beacon Camp WD	97.26	-28.2504	29.3343	8 weeks	01/04/2020	01/06/2020	100	600	
Krans WD	89.61	-28.2517	29.3417	9 weeks	16/06/2020	29/08/2020	100	600	
Weaning Camp HL	36.79	-28.0895	29.4975	2 weeks	05/06/2020	23/06/2020	400	200	
Across the road HL	146.77	-28.0995	29.5099	8 weeks	24/06/2020	28/07/2020	420	200	
Happy land Hill HL	233.62	28.1000	29.4956	10 weeks	01/01/2020	07/05/2020	420	200	
Kloof HL	284.24	-28.1113	29.5077	12 weeks	09/02/2020	01/05/2020	450	200	
Eskom Camp HL	176.07	-28.1207	29.4937	9 weeks	09/04/2020	21/06/2020	450	200	
Camping camp HL	148.7	-28.1256	29.4889	8 weeks	07/02/2020	11/04/2020	450	200	
Black Rock HL	55.37	-28.1210	29.4792	3 weeks	11/11/2020	07/12/2020	450	200	
The Middle HL	48.07	-28.1153	29.4806	5 weeks	13/10/2020	20/11/2020	450	200	
The Pass HL	192.04	-28.1088	29.4887	9 weeks	05/01/2020	27/03/2020	450	200	
Windmill HL	67.95	-28.1053	29.4793	4 weeks	05/04/2020	07/07/2020	460	200	
Happy Land Home HL	52.15	-28.1144	29.4747	4 weeks	09/08/2020	13/09/2020	480	200	
Parkhurst HL	176.95	-28.1055	29.4687	8 weeks	07/06/2020	03/09/2020	420	200	
Happy Land Vlei HL	135.73	-28.0966	29.4700	8 weeks	01/06/2020	03/08/2020	400	200	

Sample[40]



Strata Year; 2022	Specific grazing camps/ zones Location			Total Area Burnt	Year (Burning)				
	Area (ha)	Latitude	Longitude	ha	Burning date	AGB before burning	AGB after burning	Temperature	Relative Humidity
Strata 12									
Thorn Tree SD	68.43	-28.2804	29.4346	0	—	—	—	—	—
Pump Camp SD	34.04	-28.2740	29.4349	0	—	—	—	—	—
Windmill SD	56.52	-28.2692	29.4379	0	—	—	—	—	—
River Bend SD	38.42	-28.2634	29.4381	0	—	—	—	—	—
Horseshoe Camp SD	35.87	-28.2639	29.4272	0	—	—	—	—	—
Fossilized Trees SD	46.92	-28.2668	29.4319	0	—	—	—	—	—
Quarry SD	45.93	-28.2708	29.4282	0	—	—	—	—	—
Trek SD	44.84	-28.2735	29.4198	0	—	—	—	—	—
Old Car Camp MG	77.62	-28.1998	29.3204	0	—	—	—	—	—
MG Vlei MG	26.83	-28.1992	29.3121	26.83	25/09/2022	0.632	0.219	16°C	67%
Eskom camp MG	58.68	-28.2060	29.3302	58.68	25/09/2022	0.611	0.270	17°C	68%
Ram Camp MG	15.2	-28.2104	29.3409	0	—	—	—	—	—
Windmill Camp MG	38.87	-28.2151	29.3417	0	—	—	—	—	—
Bull Hill WD	50.32	-28.2216	29.3483	0	—	—	—	—	—
Valkop WD	59.32	-28.2246	29.3456	0	—	—	—	—	—
Eskom camp WD	5.86	-28.2274	29.3526	0	—	—	—	—	—
Graves WD	7.42	-28.2282	29.3425	0	—	—	—	—	—
Askerdan WD	29.64	-28.2305	29.3537	0	—	—	—	—	—
Willows WD	15.94	-28.2299	29.3412	0	—	—	—	—	—
Wattles WD	27.35	-28.2361	29.3384	0	—	—	—	—	—
Slangbosch WD	45.64	-28.2357	29.3423	0	—	—	—	—	—
Lambing Camp WD	36.27	-28.2352	29.3475	0	—	—	—	—	—

[39] All details regarding project implementation for all project sites (1 to 22 strata) are available in project participants declaration which has been submitted to VVB for verification

[40] Please refer foot note number 56

2018	WELTEVREDE										
Strata 20	Specific grazing camps/ zones Location			CAMP	GRAZING SHEEP		GRAZING CATTLE		Number of livestock		
	Area (ha)	Latitude	Longitude	status	grazing	winter	grazing	winter	Cattle	Sheep	Other
									78	1343	20
GF 1	53.3	-26.334546	30.240001	SB	T		T				
GF 2	108.2	-26.339843	30.234589	NB	R		R				
GF 3	171.15	-26.349674	30.226138	SB	JAN/FEB		NOV/DEC				
GF 4	77.81	-26.352346	30.214419	SB	FEB		T				
GF 5	29.76	-26.355626	30.216258	NB	R		R				
GF 6	31.02	-26.367099	30.222215	SB	MRT/APRIL		JAN/FEB				
GF 7	64.46	-26.365515	30.226777	NB	APRIL		MRT				
GF 8	6.8	-26.353277	30.227228	SB	T		T				
GF 9	4.27	-26.354006	30.228836	SB	T		T				
GF 10	47.49	-26.393384	30.243417	NB	R		R				
GF 11	15.11	-26.348714	30.238592	SB	SEPT/OCT		MRT/APRIL				
GF 12	39.13	-26.349152	30.240642	NB	OCT		SEPT				
GF 13	31.75	-26.373548	30.227754	SB	T		T				
GF 14	45.41	-26.376872	30.231341	NB	R		R				
GF 15	87.88	-26.386661	30.228441	SB	NOV/DEC		SEPT/OCT				
GF 16	33.85	-26.394725	30.228510	NB	DEC		NOV				
GF 17	30.9	-26.398947	30.226792	NB	NOV		OCT				

2018	GOEDEHOOP										
Strata 20	Specific grazing camps/ zones Location			Grazing SHEEP			Grazing CATTLE		Number of livestock		
	Area (ha)	Latitude	Longitude	CAMP	GRAZING	WINTER	GRAZING	WINTER	Cattle	Sheep	Other
				STATUS	MONTHS	CAMPS	MONTHS	CAMPS	68	1034	1
GF 1 A	111.9	-26.372443	30.148468	SB	OCT		SPET				
GF 1 B	111.9	-26.372443	30.148468	NB	R		R				
GF 2	68.2	-26.384601	30.146691	SB	MRT/APR		JAN/FEB				
GF 3	35.9	-26.384874	30.143339	SB	NOV		OCT				
GF 4 A	76.86	-26.396347	30.135522	SB	JAN/FEB		NOV/DEC				
GF 4 B	76.86	-26.396347	30.135522	NB	DEC		MRT				
GF 5	66.56	-26.390087	30.135944	NB	R		R				
GF 6	64	-26.383279	30.134885	NB	SEPT		APR				

2018	MOOIGELEGEN										
Strata 20	Specific grazing camps/ zones Location			CAMP	GRAZING SHEEP		GRAZING CATTLE		Number of livestock		
	Area (ha)	Latitude	Longitude	STATUS	GRAZING	WINTER	GRAZING	WINTER	Cattle	Sheep	Other
									110	1181	18
GF 1	31.15	-26.418065	30.294181	SB	T		T				
GF 2	49.1	-26.422817	30.292975	NB	R		R				
GF 3	55.4	-26.423829	30.284167	SB	JAN/FEB		NOV/DEC				
GF 4	57.2	-26.418472	30284386	NB	NOV		OCT				
DRIEFONTEIN 2											
GF 1	73.1	-26.387966	30.267813	SB	T		T				
GF 2	26.3	-26.395006	30.267965	NB	R		R				

GF 3	31.76	-26.390586	30.262532	SB	MRT/APR		JAN/FEB				
GF 4	30.1	-26396548	30.262704	NB	DEC		NOV/DEC				
GF 5	9.91	-26.387165	30.263721	NB	S		SEPT				
DRIEFONTEIN 3											
GF 1	20.3	-26.419808	30.246583	SB	T		T				
GF 2	37.5	-26.420953	30.253306	NB	R		R				
GF 3	42.9	-26.424707	30.251958	SB	SEPT/OCT		MRT/APRIL				
GF 4	39.8	-26.423950	30.262462	NB	S		SEPT				
MAGDALENASMEER											
GF 1	26.58	-26.383897	30.273197	SB	T		T				
GF 2	78.11	26.384338	30.278746	NB	R		R				
GF 3	39	-26.392545	30.287859	SB	JAN/FEB		NOV/DEC				
GF 4	39.77	-26398335	30.270732	SB	T		T				
GF 5	112.3	-26.394970	30.280456	NB	R		R				
GF 6	42.13	-26.398781	30.2879.16	NB	NOV		OCT				
GF 7	23.4	-26.405420	30.285103	SB	MRT/APR		JAN/FEB				
GF 8	20.5	-26.405284	30.282453	NB	DEC		NOV/DEC				
GF 9	197	-26.412829	30.275429	SB	T		T				
GF 10	13.9	-26.405950	30.272228	NB	R		R				
GF 11	11.61	-26.421634	30.272141	SB	SEPT/OCT		MRT/APL				

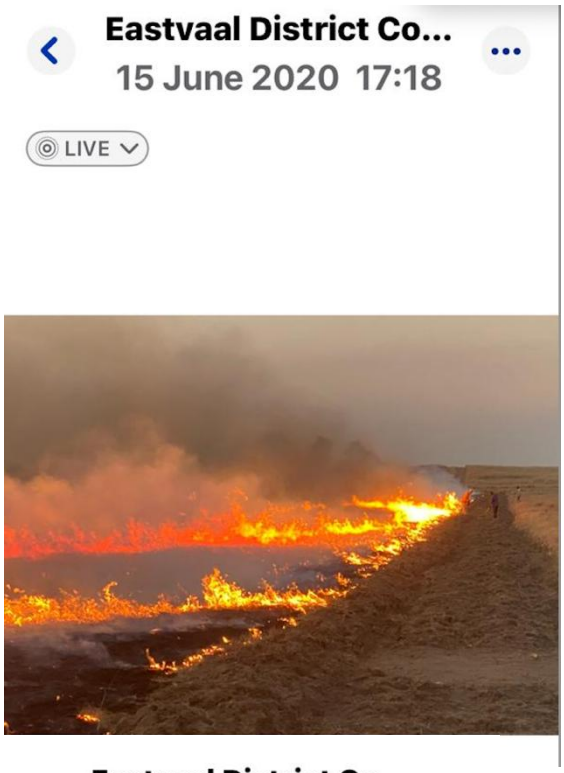
2018	**LELIEFONTEIN**										
Strata 20	**Specific grazing camps/ zones Location**			**CAMP**	**GRAZING SHEEP**		**GRAZING CATTLE**		**Number of livestock**		
	Area (ha)	Latitude	Longitude	STATUS	GRAZING	WINTER	GRAZING	WINTER	Cattle	Sheep	Other
									102	1113	4

GF 1	67.08	-26,225789	30,223818	SB	T		T				
GF 2	5.2	-26,231525	30,225890	NB	R		R				
GF 3	16.84	-26,229754	30,222146	SB	JAN/FEB		DEC/NOV				
GF 4 A	42.25	-26,232323	30,220054	NB	NOV		OCT				
GF 4 B	42.25	-26,232323	30,220054	SB	T		T				
GF 5	43.36	-26,240265	30,223546	NB	R		R				
GF 6	72.6	-26,254916	30,221093	SB	T		T				
GF 7	45.83	-26,238448	30,215891	SB	MRT/APR		JAN/FEB				
GF 8	45.83	-26,244185	30,218406	NB	DEC		JAN/FEB				
GF 9	106.56	-26,251838	30,214709	NB	R		R				
GF 10	65.57	-26,249994	30,252440	SB	SEP/OCT		MRT/APR				
GF 11	33.7	-26,241326	30,209655	NB	OCT		APRIL				

LEGEND	BURNING		GRAZING	
	SB	SPRING BURN AFTER RAIN	R	FULL SEASON REST CAN WINTER GRAZE
	SB+	SPRING BURN AFTER RAIN IF SUFFICIENT FUEL	P	PRIMARY GRAZING
			S	SECONDARY GRAZING IF PRIM EXHAUSTED
	NB	NO BURN	T	TERTIARY GRAZING ONLY IF ALL EXHAUSTED

Photographs of Project site.

Strata 20



Photographs of Strata 6