RALICÓ FARM: A MODEL FOR REGENERATIVE GRAZING

Berca S.A

Project title	Ralicó Farm: a model for regenerative grazing.
Project ID	5535
Crediting period	28-April-2022 to 27-April-2042
Original date of issue	23-April-2025
Most recent date of issue	23-April-2025
Version	v1
VCS Standard Version	4.7
Prepared by	ProSustentia

CONTENTS

1 PROJECT DETAILS

1.1 Summary Description of the Project

The project aims to remove greenhouse gases from the atmosphere by implementing regenerative grazing practices in the Ralicó farm, located in the shouthwestern region of the Córdoba province, within the General Roca department in Argentina. The eligible farm area includes both wooded areas and open land. A significant portion is covered by Caldén forest, which shows different levels of density and conservation, while the rest consists of cleared areas, all suitable for grazing management activities.

The core strategy of this approach involves subdividing the farm's large pastures into smaller paddocks and implementing a rotational grazing system. This method ensures that each paddock receives adequate rest and recovery time between grazing periods, promoting healthier soil, improved vegetation cover, and increased carbon sequestration across the landscape.

At a global scale, there is an increasing number of scientific studies that demonstrate the advantages of regenerative livestock farming. In Argentina, this type of practice and its impact on enhanced productivity, carbon capture, and ecosystem health was evaluated across diverse ecoregions. For instance, the impacts of rotational grazing in the Espinal ecoregion (the ecoregion in which the field is located) were studied by Venturini et al. (2019)[1].

For the division of paddocks, the installation of multiple fences and watering troughs to guarantee water access in all grazing paddocks is required. Watering troughs are to be strategically placed to ensure that livestock have consistent access to water, promoting proper hydration and minimizing stress on the animals.

Developing these regenerative grazing activities in areas with remnants of native trees or forests also plays and important role in the conservation of natural habitats. These productive systems mitigate climate change without the need for a change in land use, thereby safeguarding habitats that support a rich diversity of native flora and fauna.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation/ verification	Not applicable since this is a	VCS	Not applicable since this is a draft project	Not applicable since this is a

[1] Venturini et al (2019), Componentes orgánicos del suelo en módulo de producción agroecológica. Available at: https://www.researchgate.net/publication/351580760_Componentes_organicos_del_suelo_en_modulo_de_pro duccion_agr oecologica

	draft project description being submitted to list the project as under development		description being submitted to list the project as under development	draft project description being submitted to list the project as under development

1.3 Sectoral Scope and Project Type

Sectoral scope	14, Agriculture, Forestry and other land use (AFOLU)
AFOLU project category[2]	Agricultural Land Management (ALM)
Project activity type	Improved Grassland Management (IGM)

1.4 Project Eligibility

1.4.1 General eligibility

The project activity is included under the AFOLU scope of the VCS Program and does not contain any activities which are excluded under section 2.1.3 of the VCS Standard v4.7.

The project activities are intended to increase soil organic carbon through the implementation of an improved grazing management plan in the farm. The project is eligible under the scope of the VCS Program since the mentioned AFOLU activities (project category ALM) are supported by a VCS methodology approved under the VCS Program, VCS methodology VM0042 "Improved Agricultural Land Management" (version 2.1)[3]. The methodology will be applied in full and the specific applicability conditions are discussed in section 3.2 of the present document.

1.4.2 AFOLU project eligibility

According to the VCS Standard (v 4.7) Appendix A1.2, eligible ALM activities are those that reduce net GHG emissions on croplands and grasslands by increasing carbon stocks in soils and woody biomass and/or decreasing CO_2, N_2O and/or CH_4 emissions from soils. Eligible ALM activities include Improved Grassland Management (IGM).

As set out in the mentioned Appendix, the project area shall not be cleared of native ecosystems within the 10-year period prior to the project start date. In this regard, no natural ecosystems

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[2] See Appendix 1 of the VCS Standard

[3] VM0042 Methodology available at: https://verra.org/wp-content/uploads/2024/09/VM0042v2.1_ImprovedALM_corrected_21Jan2025.pdf

have been converted, cleared, drained or degraded to generate GHG credits within 10 years of the project start date in the field.

To verify that the ecosystem in the project area had not been altered in the 10 years prior to the project's start, Landsat satellite images from 2006, 2011, and 2021 were visually compared to assess changes in vegetation cover. No changes were observed in the native tree cover of the field (Figure 1)

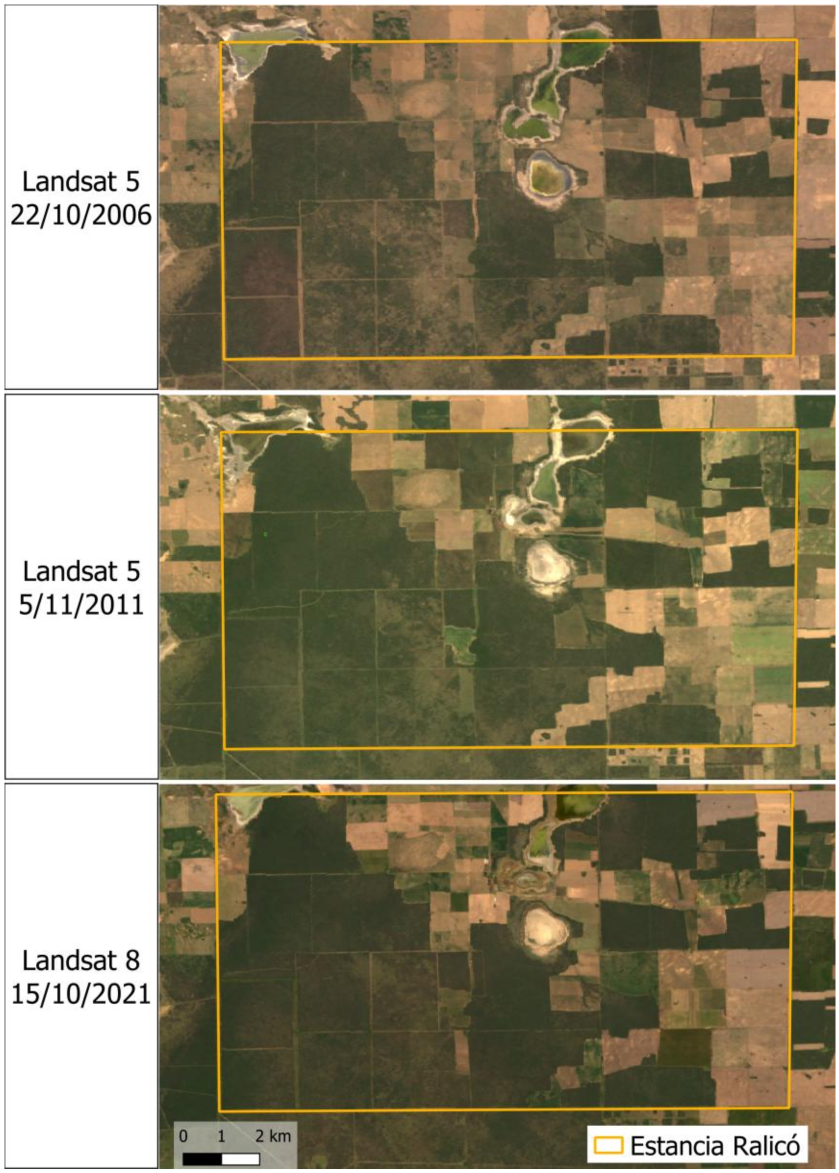

Figure 1: Satellite images of the Ralicó Field for the years 2006, 2011 and 2021.

1.4.3 Transfer project eligibility

Not applicable for the project.

1.5 Project Design

☒ Single location or installation

☐ Multiple locations or project activity instances (but not a grouped project)

☐ Grouped project

1.5.1 Grouped project design

Not applicable since this is not a grouped project.

1.6 Project Proponent

Organization name	BERCA S.A
Contact person	Viviana Duffau
Title	Account Manager
Address	Av. de Mayo 666. Buenos Aires, Argentina
Telephone	+54 9 11 5412 9116
Email	vduffau@berca-sa.com.ar

1.7 Other Entities Involved in the Project

Organization name	ProSustentia
Role in the project	VCS-CCB Certification Consultant
Contact person	Federico Moyano
Title	Director
Address	San Martín 140, 14th Floor, Buenos Aires, Argentina
Telephone	+54911-36338195
Email	fmoyano@prosustentia.com

1.8 Ownership

The project is being carried out on land privately owned by the Project Proponent

1.9 Project Start Date

Project start date	28- April- 2022
Justification	This is the date where the rotational grazing scheme effectively started in the field.

1.10 Project Crediting Period

Crediting period	☒ 20 years crediting period as the minimum period set for all AFOLU projects in section 3.9.3 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	28-April-2022 to 27-April-2042

1.11 Project Scale and Estimated GHG Emission Reductions or Removals

☒ < 300,000 tCO2e/year (project)

☐ ≥ 300,000 tCO2e/year (large project)

Calendar year of crediting period	Estimated GHG emission reductions or removals (tCO_2e)
28-April-2022 to 31-December-2022	10.213
01-January-2023 to 31-December-2023	10.096
01-January-2024 to 31-December-2024	9.978
01-January-2025 to 31-December-2025	9.858
01-January-2026 to 31-December-2026	9.737
01-January-2027 to 31-December-2027	9.615
01-January-2028 to 31-December-2028	9.491

01-January-2029 to 31-December-2029	9.367
01-January-2030 to 31-December-2030	9.241
01-January-2031 to 31-December-2031	9.114
01-January-2032 to 31-December-2032	8.986
01-January-2033 to 31-December-2033	8.856
01-January-2034 to 31-December-2034	8.725
01-January-2035 to 31-December-2035	8.593
01-January-2036 to 31-December-2036	8.459
01-January-2037 to 31-December-2037	8.325
01-January-2038 to 31-December-2038	8.188
01-January-2039 to 31-December-2039	8.051
01-January-2040 to 31-December-2040	7.912
01-January-2041 to 31-December-2041	7.771
01-January-2042 to 27-April-2041	7.771
Total estimated ERRs during the first or fixed crediting period	188,347
Total number of years	20
Average annual ERRs	9,417

1.12 Description of the Project Activity

The project is not located within a jurisdiction covered by a jurisdictional REDD+ program.

The total farm area is 15.000 hectares composed of different types of vegetation covers. 8,500 hectares are covered by Caldén woodland[45] in varying degrees of coverage and degradation, which encompasses areas of firebreaks which are planted with summer and winter forage crops.

The remaining 6,500 hectares consist of cleared land. Half of this area is dedicated to pastureland for livestock grazing, while the other half is utilized for commercial crop cultivation. The 3,250 hectares designated for agriculture are excluded from the project area.

The property is dedicated to the breeding, rearing, and fattening of cattle. For this, grazing is carried out on the available forage in the woodland area and on approximately 3,250 hectares of the cleared land. Within the woodland area, there are forage resources of different quality, influenced by variations in tree height and density.

The overall Project activities to be carried out in the farm aim to shift livestock management practices from extensive, continuous grazing to planned regenerative grazing

The technique involves dividing a grazing area into multiple paddocks, each equipped with access to a watering trough, and rotating livestock through these paddocks in a planned sequence. This strategy confines cattle to smaller portions of land for intensive grazing during short periods, followed by scheduled rest periods.

Intensive grazing in smaller paddocks encourages animals to consume a broader range of plant species, which helps reduce vegetation cover and prevents the dominance of less desirable species. This system also reduces the energy animals expend in searching for more palatable pastures, allowing them to allocate more energy toward growth, maintenance, and reproduction.

In the paddock, livestock trample plant material and distribute manure, enhancing soil fertility, nutrient cycling, and the turnover rate of below-ground biomass (BGB). BGB turnover is crucial for carbon and nutrient cycling in ecosystems, as it represents the average time required for the plant's below-ground biomass to fully renew. A 2022 study by Oyarzabal et al. found that in South American sub-humid grasslands, sites that had not been grazed for over three years showed a 62% reduction in BGB at a depth of 0-10 cm, compared to grazed sites.

Herd confinement to paddocks also generates concentrated hoof impacts on the soil, breaking up harmful surface crusts that contribute to sheet erosion and hinder rainfall infiltration. This process improves soil structure, making it more conducive to plant growth.

Meanwhile, the planned resting periods allow forage species ample time to regenerate, rebuild root systems, and set seed for the next grazing period, leading to healthier pastures over time. The

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[4] https://drn.lapampa.gob.ar/images/Archivos/Bosque_Calden/Estado_de_Conservacion_del_Distrito_Calden.pdf

[5] Justification on how these types of ecosystems fit the definition of "grasslands" provided in the VCS Program Definitions v4.5 document is provided in Section 3.1 of the present document (Applicability of Methogology)

decomposition of regenerated plant roots, along with carbon returned to the soil from livestock dung, increases soil carbon levels, contributing to CO2 sequestration.

To facilitate paddock subdivision, multiple fences and strategically placed watering troughs will be installed to ensure consistent water access across all grazing areas. This setup will help maintain proper hydration for livestock while reducing stress on the animals.
Despite abundant scientific evidence supporting the benefits of these practices in Argentina and globally, they remain uncommon in the region. This is largely due to cultural and investment barriers, which can be summarized as follows:

- Transitioning to regenerative grazing requires initial investments in infrastructure, such as fencing and watering systems, which can deter some producers due to short-term costs.
- Continuous and extensive grazing, the most conventional cattle raising practice, has often been deeply ingrained in traditional farming methods (intense fire frequency and low cattle movement) which may create resistance to adopting new, regenerative approaches.
- These techniques require specific training for all workers involved in the project (decision makers, on-field workers, engineers, etc) who will, in turn, assume greater responsibilities to successfully implement them.

1.13 Project Location

The Ralicó farm, located in the southwestern region of the Córdoba province, within the General Roca department in Argentina.

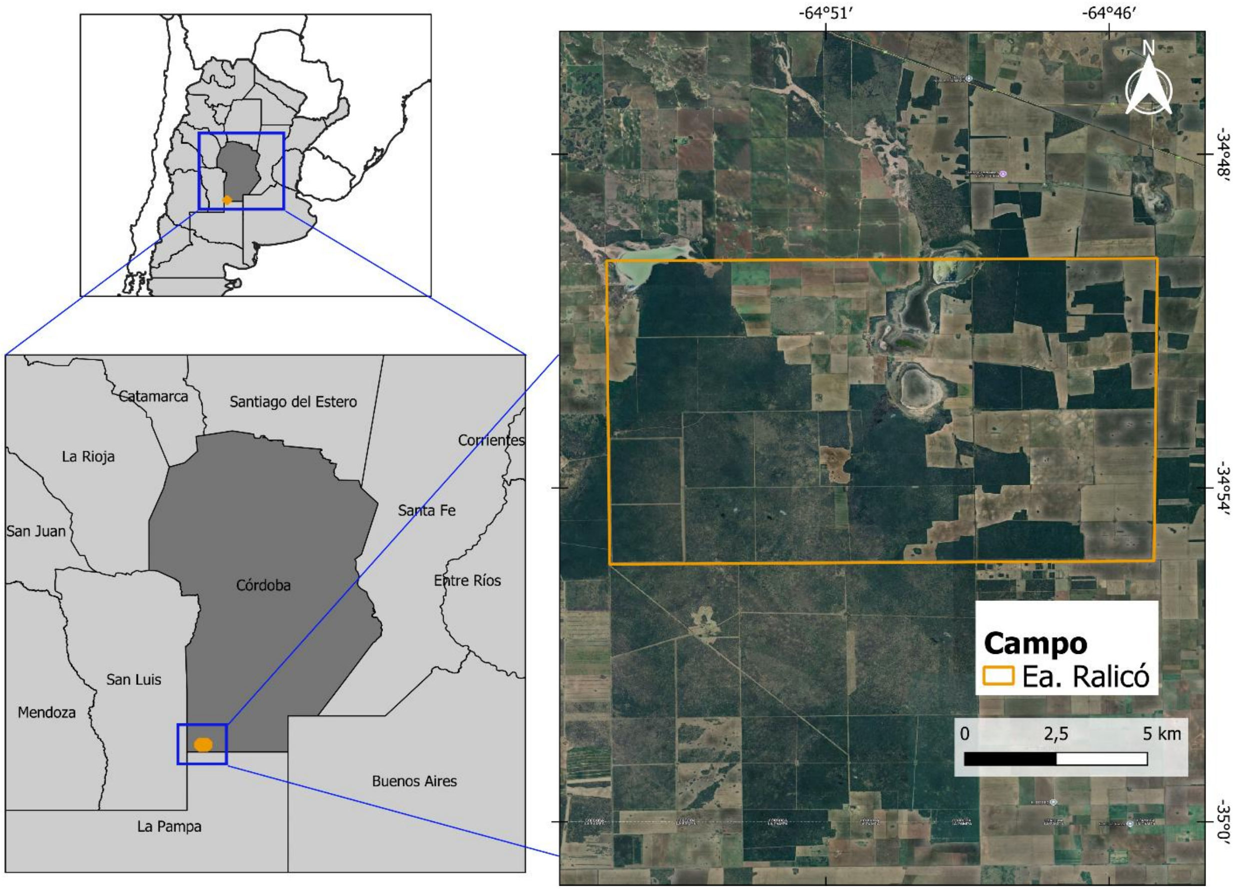

Figure 2: Delimitation and location of the Ralicó establishment in the province of Córdoba.

1.14 Conditions Prior to Project Initiation

Historically, in Ralicó, the woodland area was subdivided into large lots, each averaging 600 hectares, with a usage period of 45-50 days per year. In these vast woodland lots, extensive management and limited access to water sources led to overgrazing near these sources, while areas farther away experienced the opposite.

A wide range of scientific literature indicates that undergrazing can lead to loss of biodiversity and the homogenization of plant communities across various climates. Therefore, undergrazed ecosystems accumulate more biomass in the short term, but can result in lower productivity, less root biomass, reduced diversity, and lower quality soil inputs in the long term. The livestock practices described above are common in the Espinal region, where livestock farming relies on continuous grazing with inadequate animal stocking rates. In many areas, overgrazing occurs year-round, with few producers practicing proper grazing based on the actual availability of forage and appropriate timing of use. There is little pasture division (pastures ≥600 ha), and seasonal rest periods are not implemented.

- Ecosystem type:

The farm is located in the Espinal ecoregion, specifically in the Caldén[6] district. The predominant landscape in this district is a flat to gently rolling plain, originally occupied by open forests of semi-arid savanna type, scattered within a matrix of grasslands, primarily grasses with high forage value. The typical vegetation is a tree layer dominated by Prosopis caldenia (caldén), forming forests associated with P. nigra and P. flexuosa (algarrobos), Geoffroea decorticans (chañar), and Jodina rhombifolia (sombra de toro). The shrub layer is not always present, and the herbaceous layer is mainly composed of grasses.

- Current and historical land-use: extensive grazing on rangelands.
- Present and prior environmental conditions of the project area:

The establishment presents a general slope in a southeast-northwest direction; however, its topography shows significant undulation, as the highest points are located at the southeast vertex, with an elevation of 260 meters, which is also found near Laguna Tromen-co, at the northwest vertex. In the middle part of the field, near Laguna Ralico, the lowest points are found, with an elevation of approximately 237 meters, which gives a height difference of more than 20 meters between these sectors, demonstrating its significant undulation. The flattest area is located in the eastern sector of the field. According to the Soil Atlas of the Argentine Republic, the establishment is located in the area known as Pampa Medanosa, a region with rolling to gently rolling terrain, with mounds and dune-like hills, excessive drainage, and deep groundwater layers.

1.15 Compliance with Laws, Statutes and Other Regulatory Frameworks

Law/ Regulation	Project Compliance
Law 14,346[7] - Mistreatment and acts of animal cruelty.	The project management complies with the requirements of this law.
Law 22,421[8] – Fauna Conservation	The project is in compliance with this law.
Decree-Law 22,939/83[9] - Marks, Signs, Certificates and Guides (amended by Law No. 26,478)	The project is in compliance with this law.

6 https://drn.lapampa.gob.ar/images/Archivos/Bosque_Calden/Estado_de_Conservacion_del_Distrito_Calden.pdf

7 Full text: Law N° 14,346
8 Full text: Law N° 22,421
9 Full text: Law N°22,939

Law 23,302[10] - Indigenous Policy and Support for Aboriginal Communities	The project is in compliance with this law.
Law 26,160 - Indigenous Communities	The project is in compliance with this law.
Law 24,295[11] - Approval of the United Nations Framework Convention on Climate Change	The project is in compliance with this law.
Law 25,438[12] - Approval of the Kyoto Protocol to the United Nations Framework Convention on Climate Change	The project is in compliance with this law.
Law 25,675[13] - Minimum Budgets for achieving sustainable and adequate environmental management, preservation and protection of biological diversity, and implementation of sustainable development	The project is in compliance with this law.
Law 25,688[14] - Environmental Water Management Regime	The project is in compliance with this law.
Law 26,331[15] - Minimum Standards for the Environmental Protection of Native Forests	In case a Project Activity Instance is located in an area categorized with any conservation value and does not have legal permits for grazing activities, the requested authorization will be submitted. The activities of the project will not be implemented without legal authorization.
Law 26,727[16] – Agricultural Labor Regime	The project is in compliance with this law
Law 26,815[17] - Fire Management Law	The project is in compliance with this law.

[10] Full text: Law N°23,302
[11] Full text: Law Nº24.295
[12] Full text: Law N°25,438
[13] Full text: Law N°25,675
[14] Full text: Law N°25,688
[15] Full text: Law N°26,331
[16] Full text: Law N°26,727.
[17] Full text: Law N°26,815

Law 27,520[18] - Minimum Budgets for Adaptation and Mitigation to Global Climate Change	The project is in compliance with this law.
International Labor Standards	The project is in compliance with this standard. Aike commits to adhering to the social, safety, and occupational health principles defined by the ILO.

1.16 Double Counting and Participation under Other GHG Programs

1.16.1 No Double Issuance

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

☐ Yes ☒ No

1.16.2 Registration in Other GHG Programs

Has the project registered under any other GHG programs?

☐ Yes ☒ No

Is the project active under the other program?

☐ Yes ☒ No

1.16.3 Projects Rejected by Other GHG Programs

Has the project been rejected by any other GHG programs?

☐ Yes ☒ No

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

1.17.1 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

[18] Full text: Law N°27,520.

1.17.2 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

1.17.3 Supply Chain (Scope 3) Emissions

Do the project activities specified in Section 1.12 affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

1.18 Sustainable Development Contributions

The project activities (Section 1.12) will contribute to addressing the United Nations Sustainable Development Goals (SDG). In 2019 Argentina's Government established and implemented monitoring systems for SDG indicators integrated with the national planning and identifying the advances and challenges in relation to them[19] [20] [21][22]. The project will contribute to national commitments with the SDG. Table 1 summarizes the most relevant aspects in which the project will generate significant changes.

Table 1: Project contributions to Sustainable Development Goals

SDG	SDG target	SDG Indicator	Argentina commitment	Contributions
	2.4	*2.4.1*	-	Regenerative grazing is expected to increase net primary productivity, compared with the baseline scenario[23],[24]. Additionally, this kind of management is considered more sustainable than common

[19] https://www.argentina.gob.ar/politicassociales/ods
[20] https://www.indec.gob.ar/indec/web/Institucional-GacetillaCompleta-177
[21] https://www.argentina.gob.ar/politicassociales/ods/federal/2019
[22] https://www.argentina.gob.ar/sites/default/files/listado_metas_e_indicadores_2019_0.pdf
[23] Jacobo E. and Rodriguez A. (2024). Ecosystem Services of Grazed Grasslands in the Flooding Pampa. Python 93:6.
[24] Quiroga R.E., Blanco L.J. and Ferrando C. (2009). A Case Study Evaluating Economic Implications of Two Grazing Strategies for Cattle Ranches in Northwest Argentina. Rangeland Ecology & Management, 62(5):435-444. http://dx.doi.org/10.2111/08-044.1

SDG	SDG target	SDG Indicator	Argentina commitment	Contributions
				practice[25,26,27] as it will take place without damaging native forests, using fewer agrochemical inputs and enhancing ecosystem resilience (see section 1.12).
8 DECENT WORK AND ECONOMIC GROWTH	*8.5, 8.6, 8.7, 8.4*	8.5.1, 8.5.2, 8.6.1, 8.7.1, 8.4.1, 8.4.2	8.5, 8.6, 8.7	The project will impact on the employment rate and income in its zone. Firstly, cattle movements through paddocks require an increment of labor at each farm. Also, employees will be trained in order to carry out the project activities. This knowledge can be extended to neighboring farms, increasing their employment opportunities. Secondly, the landowner will increase their revenue because of the project implementation. Conservative grazing increases net primary productivity (NPP) compared with continuous grazing. As the production of meat depends on the grass availability this increment in NPP has a direct relationship in livestock productivity. Consequently, conservative grazing model yields produce higher profit, income stability and gross margin compared to the continuous grazing model[28],[29]
13 CLIMATE ACTION	*13.2*	13.2.2	13.2	Grasslands provide habitats for biodiversity, contribute to food production, and deliver many cultural services. They also store ~34% of the terrestrial carbon stock, with ~90% of their carbon stored belowground as root biomass and soil organic carbon (SOC), thus playing a vital role in soil carbon

[25] Bai Y and Cortufo M (2022). Grassland soil carbon sequestration: Current understanding, challenges, and solutions. Science 377:603–608

[26] Bardgett, R.D., Bullock, J.M., Lavorel, S. et al. Combatting global grassland degradation. Nat Rev Earth Environ 2, 720–735 (2021). https://doi.org/10.1038/s43017-021-00207-2

[27] Jacobo E. and Rodriguez A. (2024). Ecosystem Services of Grazed Grasslands in the Flooding Pampa. Python 93:6.

[28] Jacobo E. and Rodriguez A. (2024). Ecosystem Services of Grazed Grasslands in the Flooding Pampa. Python 93:6.

[29] Quiroga R.E., Blanco L.J. and Ferrando C. (2009). A Case Study Evaluating Economic Implications of Two Grazing Strategies for Cattle Ranches in Northwest Argentina. Rangeland Ecology & Management, 62(5):435-444. http://dx.doi.org/10.2111/08-044.1

SDG	SDG target	SDG Indicator	Argentina commitment	Contributions
				sequestration[30;31,32]. However, grasslands are highly vulnerable to human disturbance (e.g., overgrazing and land-use conversion to agriculture). Continuous livestock grazing reduces plant cover and productivity, and thus root inputs and plant and microbial-mediated SOC formation, while stimulating losses through microbial turnover and erosion caused by increased compaction and reduced cover. Contrary to rotational grazing the average SOC stock increase (28.4%) [33,34;35]. Summarizing, the project will reduce carbon emissions caused by overgrazing. Also, the integration with the native forests present which will not be affected by deforestation will allow for carbon sequestration in woody biomass.
15 LIFE ON LAND	*15.1, 15.2, 15.3*	15.1.1, 15.2., 15.3.1	All the detailed targets.	Regenerative and conservative grazing improves ecosystem services provision in different ecoregions of Argentina and potentially allows the conservation of rangeland and forest ecosystems [36;37,38]. This practice increases soil organic carbon and nitrogen

[30] Bai Y and Cortufo M (2022). Grassland soil carbon sequestration: Current understanding, challenges, and solutions. Science 377:603–608

[31] Bardgett, R.D., Bullock, J.M., Lavorel, S. et al. Combatting global grassland degradation. Nat Rev Earth Environ 2, 720–735 (2021). https://doi.org/10.1038/s43017-021-00207-2

[32] Byrnes R., Eastburn D.J., Tate K.W. and Roche L.M. (2018). A Global Meta-Analysis of Grazing Impacts on Soil Health Indicators. J. Environ. Qual. 47:758–765. doi:10.2134/jeq2017.08.0313

[33] Bai Y and Cortufo M (2022). Grassland soil carbon sequestration: Current understanding, challenges, and solutions. Science 377:603–608

[34] Bardgett, R.D., Bullock, J.M., Lavorel, S. et al. Combatting global grassland degradation. Nat Rev Earth Environ 2, 720–735 (2021). https://doi.org/10.1038/s43017-021-00207-2

[35] Byrnes R., Eastburn D.J., Tate K.W. and Roche L.M. (2018). A Global Meta-Analysis of Grazing Impacts on Soil Health Indicators. J. Environ. Qual. 47:758–765. doi:10.2134/jeq2017.08.0313

[36] Distel R. (2016). Grazing ecology and the conservation of the Caldenal rangelands, Argentina. Journal of Arid Environments 134:49-55

[37] Jacobo E. and Rodriguez A. (2024). Ecosystem Services of Grazed Grasslands in the Flooding Pampa. Python 93:6.

[38] Mieres L., Roulet MS, Vitti D., Swarc D., Almada M.S., Menichelli M. (2019), Componentes orgánicos del suelo en módulo de producción agroecológica. Voces y Ecos Nº 41· 7

SDG	SDG target	SDG Indicator	Argentina commitment	Contributions
				stocks, soil stability[39,40,41;42] and enhances NPP, plant and animal biodiversity, particularly birds[43]. Additionally, intensive rotational cattle regime prevents invasive species establishment[44]. Regenerative grazing will improve soil health and, consequently, improve infiltration, herbaceous vegetation recruitment and water retention in soil matrix[45]. Thereby it has a positive impact in reducing erosion, soil degradation and desertification.

1.19 Additional Information Relevant to the Project

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

[39] Bai Y and Cortufo M (2022). Grassland soil carbon sequestration: Current understanding, challenges, and solutions. Science 377:603–608

[40] Bardgett, R.D., Bullock, J.M., Lavorel, S. et al. Combatting global grassland degradation. Nat Rev Earth Environ 2, 720–735 (2021). https://doi.org/10.1038/s43017-021-00207-2

[41] Byrnes R., Eastburn D.J., Tate K.W. and Roche L.M. (2018). A Global Meta-Analysis of Grazing Impacts on Soil Health Indicators. J. Environ. Qual. 47:758–765. doi:10.2134/jeq2017.08.0313

[42] Mieres L., Roulet MS, Vitti D., Swarc D., Almada M.S., Menichelli M. (2019), Componentes orgánicos del suelo en módulo de producción agroecológica. Voces y Ecos Nº 41· 7

[43] Jacobo E. and Rodriguez A. (2024). Ecosystem Services of Grazed Grasslands in the Flooding Pampa. Python 93:6.

[44] Aranda M, Tognetti P, Mochi L, Mazía N (2023). Intensive rotational grazing in pastures reduces the early establishment of an invasive tree species. Biol Invasions 25:3137–3150

[45] Jacobo E. and Rodriguez A. (2024). Ecosystem Services of Grazed Grasslands in the Flooding Pampa. Python 93:6.

2.1.2 Stakeholder Consultation and Ongoing Communication

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6– Section 3.1.3.

2.1.3 Free Prior and Informed Consent

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.1.4 Grievance Redress Procedure

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.1.5 Public Comments

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.2 Risks to Stakeholders and the Environment

2.2.1 Management Experience

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.2.2 Risk Assessment

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.3.2 Human Rights

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.3.3 Indigenous Peoples and Cultural Heritage

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.3.4 Property Rights

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.3.5 Benefit Sharing

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.4 Ecosystem Health

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.4.1 Rare, Threatened, and Endangered Species

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.4.2 Introduction of Species

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

2.4.3 Ecosystem Conversion

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

3 APPLICATION OF METHODOLOGY

3.1 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	VM0042	Methodology for Improved Agricultural Land Management	2.1

3.2 Applicability of Methodology

Methodology ID	Applicability condition	Justification of compliance
VM0042	Projects must introduce or implement one or more new changes to preexisting ALM practices which: a) Improve fertilizer (organic or inorganic) management; b) Improve water management/irrigation; c) Reduce tillage/improve residue management; d) Improve crop planting and harvesting (e.g., improved agroforestry, crop rotations, cover crops); and/or e) Improve grazing practices.	The project aims to improve grazing practices through an adjustment to a pre-existing practice (rotational grazing). This is achieved through more intensive fencing of the woodland and pasture areas, which seeks to facilitate forage control and prevent overgrazing and undergrazing.
	Projects that introduce or implement quantitative adjustments (e.g., decrease in fertilizer application rate) must exceed five percent of the preexisting value, calculated as the average value over the historical lookback period, developed for the baseline schedule of activities.	The project does not aim to implement quantitative adjustments; it only seeks to adjust the grazing time of the forage.
	Project activities must be implemented on land that is either cropland or grassland at the project start date. The land must remain cropland or grassland throughout the project lifetime except under the following scenarios: a) Introduction of temporary grassland into cropland where it is demonstrated, prior to the project start date and to the addition of new project activity instances, that the integration of forage crops (e.g., annual/perennial grasses, legumes) into annual crops is part of a planned, long-term ALM system (e.g., integrated crop livestock system). Project proponents must provide documentation of the long term management plans, covering the duration of the project, that describe proposed practices, crops and expected benefits and outcomes of integrated grassland-cropland management; or b) A one-time conversion	The project activities will be implemented on cropland or grassland at the project start date. However, the introduction of temporary grassland into cropland will occur in some areas of the field. For this, it will be demonstrated, before the project start date and before the addition of new PAIs, that the integration of forage crops into annual crops is part of a planned long-term ALM system.

	from grassland to cropland or vice versa where it is demonstrated, prior to project validation, that project lands in the baseline scenario are degraded and the introduction of improved land use change practices would significantly improve soil health. Project proponents must provide documentation demonstrating that lands are degraded at the start of the project and degradation will continue in the baseline scenario due to the presence of degradation drivers or pressures in the baseline scenario.	
	Empirical or process-based models used to estimate stock change/emissions via Quantification Approach 1 must be: a) Publicly available, though not necessarily free of charge, and from a reputable and recognized source (e.g., the model developer's website, IPCC or government agency). Sufficient conceptual documentation of inputs, outputs and information on how the model functionally represents SOC dynamics must be accessible to the public. The project proponent must include the model source in the project description document (e.g., hyperlink to the model and date of webpage access or citation of peer-reviewed publication) Providing the source code or an API for independent replication of calculations is not required; b) Shown in peer-reviewed scientific studies to successfully simulate changes in SOC and trace gas emissions resulting from the changes in ALM practices included in the project description; c) Able to support repetition of the project model simulations. This includes clear versioning of the model used in the project and stable software support, as well as fully reported sources and values for all parameters used with the	If the Quantification Approach 1 is used to estimate stock change/emissions, the models involved will satisfy the following characteristics: a) Be publicly available from a recognized and reputable source. Possess sufficient public conceptual documentation of inputs, outputs, and information on how the model functionally represents the dynamics of SOC. b) Have been validated in peerreviewed scientific studies to successfully simulate changes in SOC and trace gas emissions resulting from changes in ALM practices included in the project description. c) Are able to support repetition of the project model simulations. The version of the model used, the sources consulted, and values for all parameters used will be specified. If multiple sets of parameter values are used,

	project version of the model. Where multiple sets of parameter values are used in the project, clearly identify the sources of varying parameter sets and how they were applied to estimate stock change/emissions in the project. Acceptable sources include peerreviewed literature and statements from appropriate expert groups that demonstrate evidence of expertise with the model via authorship of peer reviewed model publications or authorship of reports for entities supporting climate-smart agriculture. These sources must describe the datasets and statistical processes used to set parameter values;	the sources of these sets and how they were applied to stock change/emissions will be indicated. All sources to be used can be found in peer-reviewed literature and statements from appropriate expert groups that demonstrate evidence of expertise with the model via authorship of peer-reviewed model publications or authorship of reports for entities supporting climate-smart agriculture.
	d) Validated per datasets and procedures detailed in Section 5.2 of VMD0053 Model Calibration and Validation Guidance for the Methodology for Improved Agricultural Land Management. Model prediction error must be calculated using datasets as described in Section 5.2.5 of VMD0053 and must use the same parameters or sets of parameters applied to estimate stock change/emissions in the project; and e) Using the same model version in the baseline and project scenarios. Further, the same parameters/parameter sets must be used in the baseline and project scenarios. Model input data must be derived following guidance in Table 6 and Table 8. Model uncertainty must be quantified following guidance in Section 8.6.	d) Are validated per datasets and procedures detailed in Section 5.2 of VMD0053 Model Calibration and Validation Guidance for the Methodology for Improved Agricultural Land Management. The model prediction error was calculated as described in Section 5.2.5 of VMD0053 using the same parameters or sets of parameters applied to estimate stock change/emissions in the project. e) The same model version and the same parameters/parameter sets will be used in the baseline and project scenarios. Model input data will be derived following the guidance in Table 6 and Table 8 of VM0042. Model uncertainty will be quantified following

		the guidance in Section 8.6 of VM0042.
	Not applicable if the project area has been cleared of native ecosystems within the 10-year period immediately prior to the project start date.	The project area has not been cleared of native ecosystems within the 10-year period immediately prior to the project start date. This was demonstrated in Section 1.4.2 of the present document.
	Not applicable if the project activity is expected to cause a sustained reduction in productivity of greater than 5%, as demonstrated by peer-reviewed and/or published studies on activity in the region or a comparable region.	The project's activity will not reduce productivity (measured in meat sales in kg); instead, it aims to increase it, as better forage management will allow for a gradual increase in the field's carrying capacity.
	Not applicable if the project activity is biochar application. Biochar may be applied as a soil amendment in the project area provided that the total organic carbon content5 of the biochar applied is subtracted from the estimated SOC stock change in the project scenario at each verification event	Biochar application is not included as a project activity.
	Not applicable if the project activity occurs on a wetland; this condition does not exclude crops subject to artificial flooding where it is demonstrated that crop cultivation does not impact the hydrology of any nearby wetlands	If wetlands are identified in the project area, these areas will not be included as part of the project.

3.3 Project Boundary

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

3.4 Baseline Scenario

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

3.5 Additionality

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

3.5.1 Regulatory Surplus

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

3.5.2 Additionality Methods

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

3.6 Methodology Deviations

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

4 QUANTIFICATION OF ESTIMATED GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

4.2 Project Emissions

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

4.3 Leakage Emissions

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

4.4 Estimated GHG Emission Reductions and Carbon Dioxide Removals

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

5 MONITORING

5.1 Data and Parameters Available at Validation

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

5.2 Data and Parameters Monitored

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

5.3 Monitoring Plan

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

This section has been omitted in accordance with the VERRA Registration and Issuance Process v4.6 – Section 3.1.3.