

Strategies to Achieve the GHG Mitigation Goals of the Livestock Sector in Latin America

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INTRODUCTION

- Livestock production is a fundamental source of income and greenhouse gas (GHG) emissions in Latin American (LA) countries.
- 20 percent of the region's emissions come from agriculture, 70 percent of which comes from livestock.
- There are several management and technology options with enteric methane (CH₄) mitigation potential that have been evaluated and their scale is expected to contribute to achieving the GHG emission reduction targets under the Paris Agreement.

OBJECTIVES

- Identify alternatives to reduce GHG emissions from livestock production in Latin American countries.
- Recognize barriers and strategies to implement sustainable mitigation technologies.

METHODOLOGY

- Using the results of local studies, we have explored the mitigation potentials of currently proposed management technologies and practices to mitigate enteric methane emissions from livestock production systems in LA countries with the highest emissions.

TABLE 1 | National areas dedicated to cattle production, GHG emissions and proportion of GHG emissions associated with cattle raising and GHG emission reduction in seven countries of Latin America

Country	Land use (million ha)	National GHG emissions (MtCO ₂ eq)	Proportion of livestock-source to national GHG emissions	Emission reduction target
Colombia	37	236.97	9.6%	20% below BAU scenario in 2030
Argentina	110.06	364.4	17%	Limit increase to 35% above 2010 levels by 2030
Costa Rica	1.04	11.25	19.4%	25% below 2012 levels in 2030
Brazil	168	1,465.28	19.2%	Limit increase to 5% above 2010 levels by 2025
Uruguay	13.3	32.36	72%	42% below BAU scenario by 2025
México	197	534.61	13.2%	22% below BAU scenario by 2030
Peru	18.7	169.71	6.3%	20% below 2010 levels in 2030

PERSPECTIVES

- Despite the availability of promising mitigation options (T2) for the cattle sector in LA, their adoption by farmers is still limited by multiple factors.
- There is a need to ensure that farmers have access to inputs, capital and information. Since the establishment of more sustainable technologies involves high initial costs, under capital scarce conditions formal credit systems become essential.
- In most LA countries, no specific credit options exist for such purposes, leaving many producers with scarce financial resources and without opportunities for implementing mitigation options.
- Although the scientific community is generating valuable information on different mitigation options, it is not guaranteed that this information reaches the final users.

TABLE 2 | Methane mitigation options tested in seven countries of Latin America

Country	Region	Tested mitigation actions	Potential methane emission reductions
Colombia	Valle del Cauca	Silvopasture	23.4% lower CH ₄ yields compared to traditional grazing systems
	Valle del Cauca	Improved pasture management	50.1% lower CH ₄ yields than those from degraded pastures
	Southeast Buenos Aires	Improvement of reproductive efficiency	CH ₄ emissions intensity of growing weaned calves decreased between 40 and 60%
Argentina	Southeast Buenos Aires	Grazing with supplements	26% lower emissions intensity of beef production
Costa Rica	Atenas	Improved forage quality	Steers fed with high quality hay during the summer months had 30% lower CH ₄ yield
Brazil	Rio Grande do Sul state	Grazing supplementation and crop diversification	Beef cattle fed with natural pasture plus cash crop soybean had 7 and 5% lower emissions intensities
Uruguay	Colonia, Uruguay	Improved grassland management	Beef cattle fed with high quality pasture had a 12% lower CH ₄ emission yield
	Yucatan Peninsula	Silvopasture	Including 40% of <i>Leucaena leucocephala</i> in a low quality grass diet decreased enteric CH ₄ emissions by 36%
México	Yucatan Peninsula	Silvopasture	Including 30% of ground pods of <i>Samanea saman</i> decreased enteric CH ₄ emissions by 51%
Peru	Central Andes	Improvement of forage quality	Lactating cows fed cultivated pastures during the rainy season had a 79% lower CH ₄ emission intensity

CONCLUSIONS

- Cattle is a major contributor to GHG emissions from the AFOLU sector for most Latin American countries and it would be practically impossible to achieve national emission reduction targets without considering significant reductions from the cattle sector of Latin America.
- Considering cattle only as a large source of GHG emissions would be an incomplete assessment. Their contribution to food production and rural economies are just two of the other dimensions that need to be considered.
- A range of technologies and agronomic practices exist to improve farm level efficiency. A real challenge is to increase productivity without also increasing methane emissions.
- Achieving the desired reductions in enteric methane emissions is feasible but there is a need to consider a set of high leverage actions to increase access and adoption of novel technological options and incentivize behavioral change.

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FURTHER READING
More exhaustive literature can be obtained on this link: <https://bit.ly/3iWzPzRQ> or scan this QR code:



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