

Enabling adoption of methane-reducing breeding programs through GHG accounting and MRV frameworks

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Methane emissions from ruminants contribute significantly to global greenhouse gas (GHG) emissions. Genetic selection has proven effective in reducing enteric methane emissions, but achieving real-world impact requires widespread adoption. This study evaluates the role of GHG accounting tools and robust Measurement, Reporting, and Verification (MRV) frameworks in enabling methane-reducing breeding programs.

Drawing on expert interviews and a targeted literature review, it provides an overview of existing national and farm-level accounting tools, explores strategies for integrating genetic potential into these tools, reviews examples of MRV-linked incentive mechanisms in the livestock sector, and maps key stakeholder roles and engagement needs.

The study highlights actionable pathways for integrating low-methane genetics into GHG accounting tools, which allow for quantifying impact, identifying emission hotspots, and guiding practical reduction strategies on farm. When paired with MRV systems, these tools provide credible, verifiable estimates that support incentives such as carbon credit payments, supply-chain premiums, and regulatory compliance. At the outset of scaling low-methane breeding, measurable reductions can drive meaningful progress, providing proof of impact and momentum for the ruminant sector toward a low-emissions future.