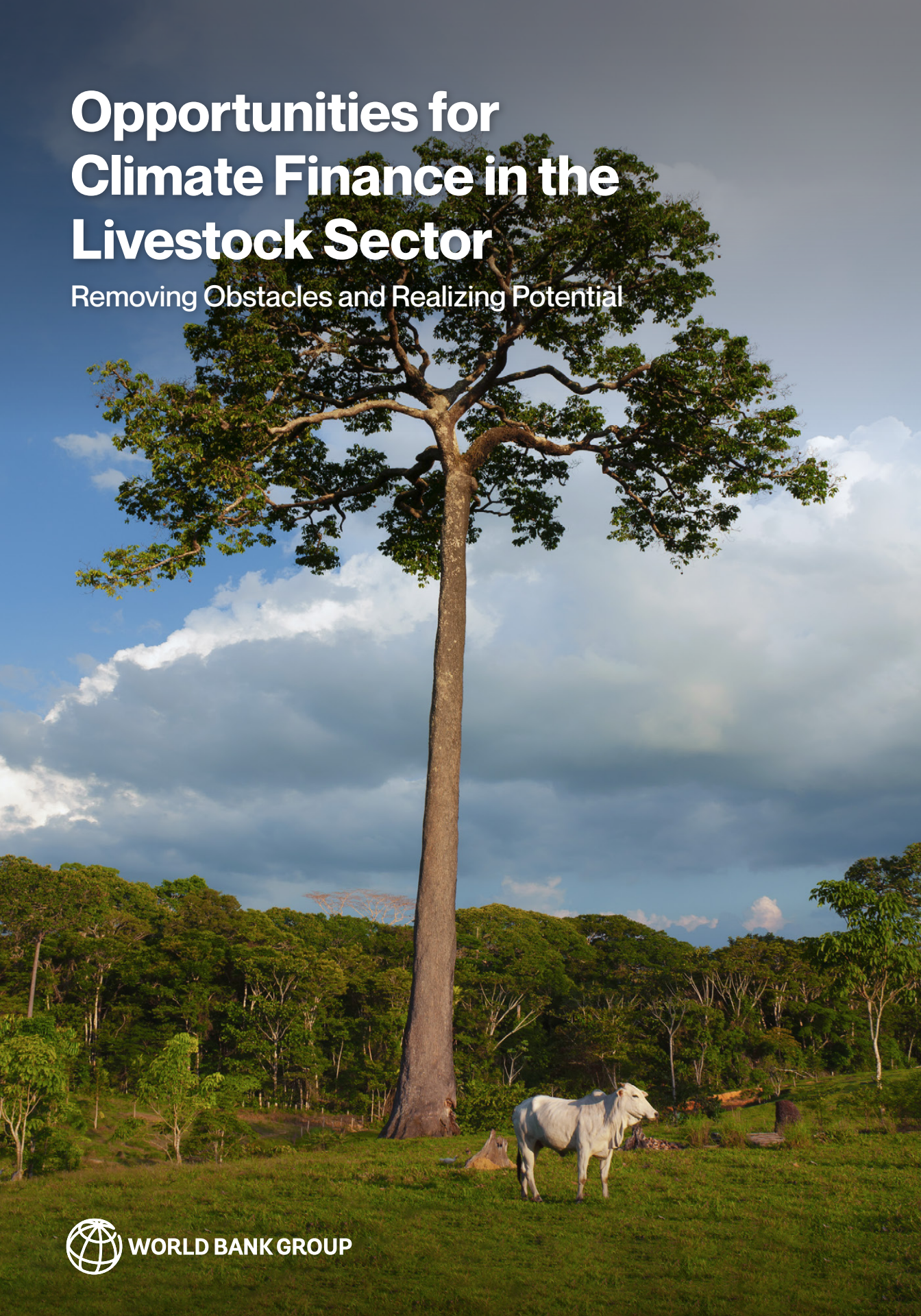


Opportunities for Climate Finance in the Livestock Sector

Removing Obstacles and Realizing Potential



WORLD BANK GROUP

Opportunities for Climate Finance in the Livestock Sector:

Removing Obstacles and Realizing Potential

© 2020 International Bank for Reconstruction and Development

The World Bank 1818 H Street NW Washington DC 20433

Telephone: 202-473-1000 Internet: www.worldbank.org

This work is a product of the staff of The World Bank with external contributions. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank Group, its Board of Executive Directors, or the governments they represent.

The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Rights and Permissions

The material in this work is subject to copyright. Because The World Bank encourages dissemination of its knowledge, this work may be reproduced, in whole or in part, for noncommercial purposes as long as full attribution to this work is given.

Any queries on rights and licenses, including subsidiary rights, should be addressed to World Bank Publications, The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; fax: 202-522-2625; e-mail: pubrights@worldbank.org.

Contributing Authors

The World Bank wishes to acknowledge the contributions of the COWI group to this work.

The work was led from the World Bank Group by Pierre Gerber and Tobias Baedeker under the guidance of Julian Lampietti.

Contributing authors at the World Bank Group: Jean-Dominique Bescond, Lee Cando, Jeanne Massé, Sandhya Srinivasan, and Félix Teillard. At COWI, support was provided by Christina Singh and Asger Strange Olesen, alongside Lucas Bossard, Karolina Sara Kenney, Alejandro Regatero Labadia.

Acknowledgements

Guidance and reviews were provided by Martien van Nieuwkoop (World Bank Group), Marc Sadler (World Bank Group), Jonathan Coony (World Bank Group), Willem G. Janssen (World Bank Group), Timm Tennigkeit (UNIQUE Forestry and Land Use) and Sergiy Zorya (World Bank Group).

This publication has benefited from a wide range of further input received from industry, governmental, and non-governmental experts, in particular collected through interviews with and written comments from Tatiana Alves (Climate Policy Initiative), Richard Bowman (RuMeth International), Vikas Choudhary (World Bank Group), Kevin Cunningham (Yara International), Polly Ericksen (International Livestock Research Institute), Dieter Fischer (World Bank Group), Milena Gonzalez Vasquez (Global Environment Facility), Muhammad Ibrahim (Tropical Agricultural Research and Higher Education Center - CATIE), Zoe Knight (HSBC Centre of Sustainable Finance), Hayden Montgomery (Global Research Alliance on Agricultural Greenhouse Gases), Ruairaidh Petre (Global Roundtable on Sustainable Beef), Raphael Podselver (ProVeg), Matthew Reddy (Global Environment Facility), Carlos Saviani (Royal DSM), Robert Seaton (Brinkman Climate), Hans Shrader (World Bank Group), Fritz Schneider (Global Agenda for Sustainable Livestock), Bernhard Stormyr (Yara International), and Mark van Nieuwland (Royal DSM).

The Executive Summary along with the list of Climate Finance Opportunities were shared for review and comments with 72 professionals and scholars with expertise related to Climate Finance and the animal protein sector. Comments were also received during two online interactive workshops. Results from these consultations are integrated in the present document.

The report was edited by Colm Foy and Wanda Ollis. Layout and design by Sergio Andres Moreno Tellez.

Executive Summary





Climate finance can play a key role in bending the arc of the livestock sector from one that threatens to produce increased emissions and environmental damages to one that reduces its emissions and makes greater contribution to sustainable development. In terms of greenhouse gas (GHG) emissions, livestock is associated with significant costs that will continue to increase if nothing changes. While the sector and its value chains are responsible for about a sixth of GHG emissions, it can be part of the solution by reducing emissions and also putting carbon back into the soil.

Demand for animal protein is expected to grow with increased prosperity, especially in emerging economies. And while calls for the reduction or elimination of animal protein in the human diet are important, complementary action to transform the sector is necessary. Acting now will come at a significantly lower cost and help jump-start the transition. This means introducing practices that increase productivity while reducing GHG emissions from the sector, and ensuring protection of the natural environment and public health. Directing climate finance to the livestock sector is an opportunity to mitigate climate change, improve adaptation, and increase economic gains along the animal protein value chain.

Potential for climate change mitigation in the livestock sector

Adopting the right policies, such as penalizing carbon emissions and rewarding carbon sequestration, have the potential to reduce their net emissions by 89% according to recent studies. This is in line with the objective of keeping global temperature rise to 2°C.

The most important mitigation opportunities in the livestock sector are:

- i. Increasing productivity and production efficiency offers a potential reduction in GHG emissions per unit of product of some 30%, while lowering costs to farmers and improving farm incomes through higher production and productivity. A major approach to this is by improving animal feed digestibility and nutritional levels, a strategy that can produce relative reductions in GHG emissions from ruminants – specifically beef and dairy cattle – from the way they digest feed. Such an approach can increase productivity while reducing enteric (stomach-produced) methane (CH_4). Extracting CH_4 from manure for fuel can reduce the amount of methane emission by up to 80%. Matching nitrogen in animals' feed to their requirements, while matching manure application to the needs of crops can result in lower nitrous oxide emissions.

- ii. Reducing the amount of carbon already in the atmosphere is possible through efficient land management including the restoration of organic-matter-depleted soils. Avoiding additional emissions from land use and land use change is also crucial. Practices to increase biomass accumulation and soil organic carbon levels in pasture sequester carbon from the air and can improve the quality of grasslands grazed by ruminants, which improves their diet and reduces enteric methane production, resulting in an additional global potential mitigation effect of up to 800 Mt CO₂-eq/yr.

Access to finance to invest in mitigation and sequestration is a major challenge for rural communities and policy makers in low- and middle-income countries (LMICs). Finance has long been difficult to access for livestock smallholders who often do not hold collateral except for their animals and have little experience of working with financial institutions. Traditional lenders see the livestock sector as over-risky, with little potential to generate significant returns; it is, therefore, of little interest to them and largely unknown territory. Using Climate Finance to expand financial inclusion to enable adoption by producers of more sustainable practices would improve livelihoods, increase resilience, and achieve a better GHG balance.

A Role for Increased Climate Finance

There are substantial opportunities in the livestock sector for investment by climate finance funds that could accelerate the transformation towards low-carbon and sustainable animal protein value chains. Investment interest can grow with a greater understanding of the sector, fresh approaches to financing, and innovative thinking along the value chain. However, the lack of data, common terminology, and indicators in the field of livestock and climate change hinder development of climate finance for the sector.

In LMICs, productivity gains and improved livelihoods for farmers linked to mitigation could be substantial. Hence, climate finance investment in the sector is potentially a crucial factor, leading to more investment, higher efficiency, and lower emissions per unit of product, despite an initially unwelcome trade-off in the form of increased volumes of production and of GHG, overall. Such a potential trade-off (rebound effect) may be temporary and would not equal the cost of doing nothing, which would be equivalent to increasing emissions from an expansion of the sector relying on business-as-usual production practices.

Farmers and actors along the animal protein value chain, as well as the public authorities, have an opportunity to present the livestock sector as a viable destination for climate finance by clarifying where direct benefits – such as biofuels from methane extracted from manure – and indirect benefits – from good grazing management, for example – can be produced. Policy makers can enact measures to encourage investment in the sector and work with financial institutions – including the multilateral development banks – to form

partnerships toward blended institutional/multilateral/climate-specific investment initiatives.

Blended investment systems can combine local and international technical know-how with local and external financial resources to overcome knowledge gaps and reduce risk, overcoming some of the opacity that has characterized the livestock sector in LMICs due to its disparate nature. Enabling smallholders to aggregate into associations or cooperatives can allow them to communicate with potential investors, while policy can direct resources to raise skills levels, foster innovation and improve traceability and data collection along value chains. The essential objective is to raise awareness about bankable climate investment opportunities in the livestock sector and so direct existing financial flows into mitigating the impact of climate change and to achieve associated co-benefits.

Integrating Innovative Financing into the Animal Protein Sector

Reducing GHG emissions while maintaining livelihoods and reducing poverty is essential for a sector that plays an essential economic role for some 60% of 1.7 billion people and contributes up to half of agricultural GDP. This report identifies six innovative investment opportunities to drive the sector's sustainable transformation with climate finance. There is strong justification for the use of public finance for this transformation, including that of the multilateral development banks and international financial institutions. Public finance will help 'prime the pump' through early action, address market failures, and importantly attract private partners. These opportunities need to be taken alongside complementary efforts to rethink the role of livestock products and proteins in sustainable diets, especially where high levels of meat consumption occur.

Condition credit lines on climate mitigation actions. Lending through local financial intermediaries, presents opportunities for channeling climate finance into greening the livestock sector, while increasing farmers' access to financial and knowledge resources with an identified ecological impact. Climate finance can define mitigation conditions against which it enables stakeholders' access to finance through existing credit institutions, for example by de-risking investments, lowering interest rates and providing technical assistance.

Encourage value-chain finance for native ecosystem protection. With proper incentives, stakeholders along value chains will have the opportunity to adopt practices that, for example, do not rely on deforestation. This is particularly important for livestock value chains given the number and geographic spread of actors and production steps. Linked to strong traceability systems, climate finance can support the development of virtuous value chains.

Drive clean investment through Emissions Trading Schemes. Putting a price on emissions is another tool to bring down emissions and drive investment into cleaner options in the livestock sector. Climate finance can help overcome

the obstacles in linking livestock producers to an ETS: aggregation through existing or ad hoc organizations to lower transaction costs, and the development of cost-effective Measurement, Reporting and Verification systems (MRV). ETS credits sales will make more funds available for further progress in both mitigation and adaptation.

Reward proactive policy commitments through ODA. Remedying the problems of weak or unenforced legislation and a lack of proactive policy commitments to foster climate action, is essential in the transition to a lower emission livestock sector. Programmatic ODA and IFI funding have the capacity to drive policy changes and create the conditions for innovation and private sector investment in climate-sensitive technologies and practices.

Verify sustainable sourcing of livestock feed. Improving the feed of animals to reduce their GHG emissions can displace emissions at the level of feed production, for example by driving feed-crop expansion into forests. Verified Sourcing Area-based climate finance is an innovative solution that supports the marketing of feed that is certifiably sourced from geographical areas free of deforestation. The system offers a win-win of discouraging deforestation while enabling better quality animal feed and associated GHG mitigation benefits.

Innovate in livestock climate finance through prize-based programs. Practices and technologies to reduce GHG emissions and improve the sustainability of livestock value chains remain severely under-researched, with much of the potential gains yet to be uncovered. Prize-based programs provide incentives for research and development by encouraging researchers and entrepreneurs to compete with each other to bring innovations to market. Climate finance supporting such programs can therefore realistically push the frontier of mitigation potential in the sector in cost-effective ways.

Conclusion

Livestock production for animal protein is a major contributor to GHG emissions and climate change. However, there are innovative and traditional solutions to easing the pressure on the environment from livestock raising, while increasing productivity and serving an ever-growing demand for animal-protein products. Collaborating on channeling climate finance to the animal-protein sub-sector is the responsibility of multilateral finance institutions, institutional investors, policy makers, and the entire population of the value chain. There is a need to build concepts in dialogue with local stakeholders and partners toward development of the considerable opportunities for investors and potential benefits for smallholders in low- and middle-income developing countries, recognizing livestock systems as part of broader agriculture and livelihoods system.



