Improved livestock management systems, including agropastoral production systems and others

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The challenge we are facing

The livestock sector today

- Contributions: 18% of dietary energy and 33% of proteins, 40% of agricultural GDP, livelihood of 1 billion poor.
- Externalities: 14.5% of anthropogenic GHG emissions, 33% of reactive N emissions, 33% of arable land dedicated to feed production.

The challenge ahead

- Increase in population and income driving a growth in demand for animal products, e.g. +215% for in Sub-Saharan Africa by 2050.
- Environmental impacts will increase proportionally if no change in production systems.
- Rangeland and feed productivity negatively affected by climate change in most regions, with severe consequence for 200-500 million pastoralists who are among the most vulnerable.
- Extreme weather events and emerging diseases affect productivity and human health.

Moving towards sustainable livestock

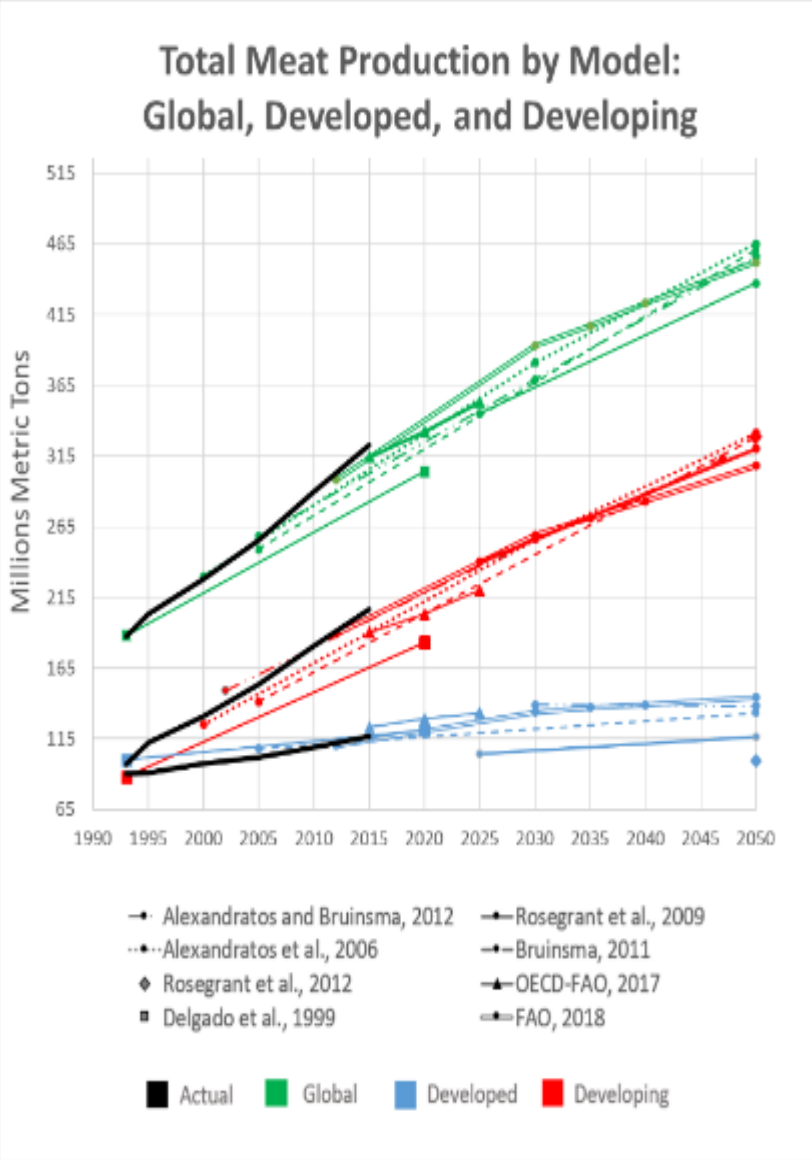
- Building a **more resilient livestock sector**
  - Capacity to absorb the impact of an adverse event (e.g. index insurance, savings and other financial tools);
  - capacity to adapt in response to risk (e.g. improved forecasting, R&D, human capital, investment, networks); and
  - capacity to transform and minimize risk (e.g. facilitate more fundamental changes and development by strengthening stakeholder engagement in long–term planning).

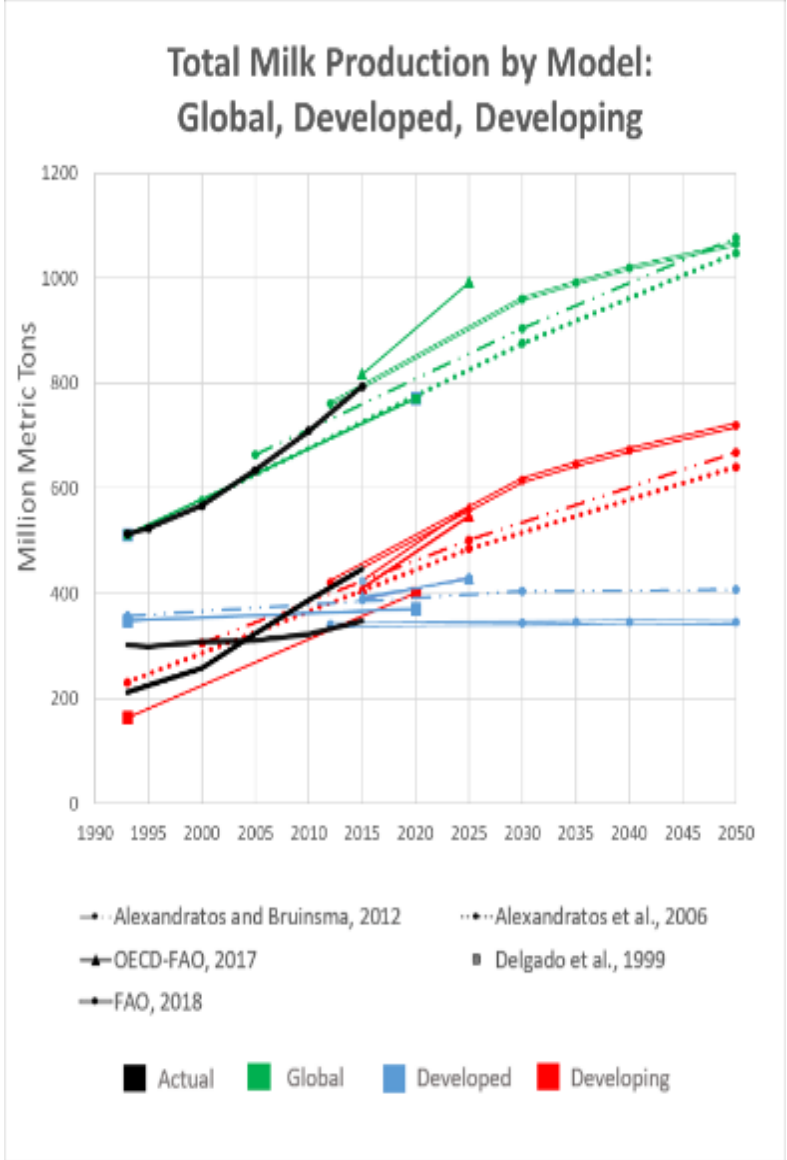
- Three entry points for **GHG emission reduction in the livestock sector**
  - Increased productivity and decreased GHG emission intensity through improved livestock management practices (e.g. feed management, genetics and animal health improvements, animal health, offtake and fattening strategies);
  - increased soil carbon sequestration through improved grazing management practices (e.g. adaptative grazing; restoration of degraded lands); and
  - adoption of energy-efficient equipment (e.g. cooling) and production of renewable energy (e.g. solar and wind) to reduce and displace fossil fuel energy consumption.

- Three out of six elements of the Koronivia decision are directly related to livestock (improved soil carbon in grassland, manure management and livestock management systems) and low carbon livestock could generate multiple SDG synergies.

- **The principles are known but putting livestock on a resilient and low carbon path requires knowledge, investments, adequate institutional and policy environment.**

Investments in the livestock sector





Investment in the sector continues to be strong… and such is the demand for World Bank Group financial support (World Bank and IFC).

Challenge: how to accompany and shape growth to improve sustainability and resilience, and in particular control GHG emissions ?

Operational commitments underpinning CSA mainstreaming: setting goals and measuring progress

We require all projects to complete five Climate Change related processes:

NEW

Climate & Disaster Risk Screening	GHG Accounting	Shadow Price of Carbon	Climate Finance Tracking (Co-Benefits)	Climate Indicators
Identify projects' exposure to climate and disaster risks	Ex-Ante determination of gross and net GHG emissions using the Ex-Act tool and other tools developed by FAO	Accounting for carbon externalities in economic and financial analysis	Determine projects' share of climate finance by identifying adaptation and mitigation Co-Benefits	**Monitor and track the progress of climate results; measuring outputs or outcomes of mitigation and/or adaptation interventions**
RISKS	EMISSIONS	VALUATION	FINANCE	MONITORING

World Bank 2025 Climate Change Commitments: Additional tools and approaches being developed

Livestock portfolio at the World Bank

- IBRD + IDA : ca. 700 million USD of yearly financing directed to livestock sector.
- Some large stand-alone operations but the bulk of investment is integrated in Agriculture and/or Community Driven Development projects.
- **The average climate co-benefits generated by the livestock portfolio in the last 2 and a half years is 61%, with 22% for adaptation and 39% for mitigation**.
  - Higher than for the Agriculture portfolio (57%)
  - An improvement over the average for the three previous fiscal years (55%)
- Drawing on a variety of instruments: Investment Operations, Programs for Results, Analytical Services.

Where investing in adaptation and mitigation makes economic sense

Five main livestock operations approved during the last 3 fiscal years (including current)

Country	Project development objective	Project financing (USD million)	Financial Internal Rate of Return	Economic Internal Rate of Return	Climate Co-Benefits (A-M)
Bangladesh	Improve productivity, market access, and resilience of small-holder farmers and agro-entrepreneurs operating in selected livestock value chains in target areas.	500	17-47%	23.50%	60% (25%-35%)
Ethiopia	Improve livelihood resilience of pastoral and agro-pastoral communities in Ethiopia.	350	10.2-67.7%	14.7-23%	37% (22%-15%)
Mongolia	Improve livestock health, productivity, and commercialization of targeted value chains in project locations and provide immediate and effective response in the event of an eligible crisis or emergency.	30	19-27%	23-33%	55% (44%-11%)
China	Promote integrated environmentally sustainable and climate-smart agriculture, and agri-food quality and safety, in targeted value chains and landscapes in Hubei Province.	150	12.6-19.48%	27.4%-51%	53% (12%-41%)
Kazakhstan	Support the development of an environmentally sustainable, inclusive, and competitive beef production in Kazakhstan.	500	25%	42%	64% (21%-43%)

Example 1 : Mainstreaming sustainable cattle ranching project (CMSCR) - Colombia

2010 – 2020, Financing: US$ 27.7 M (BEIS UK and GEF)

Background

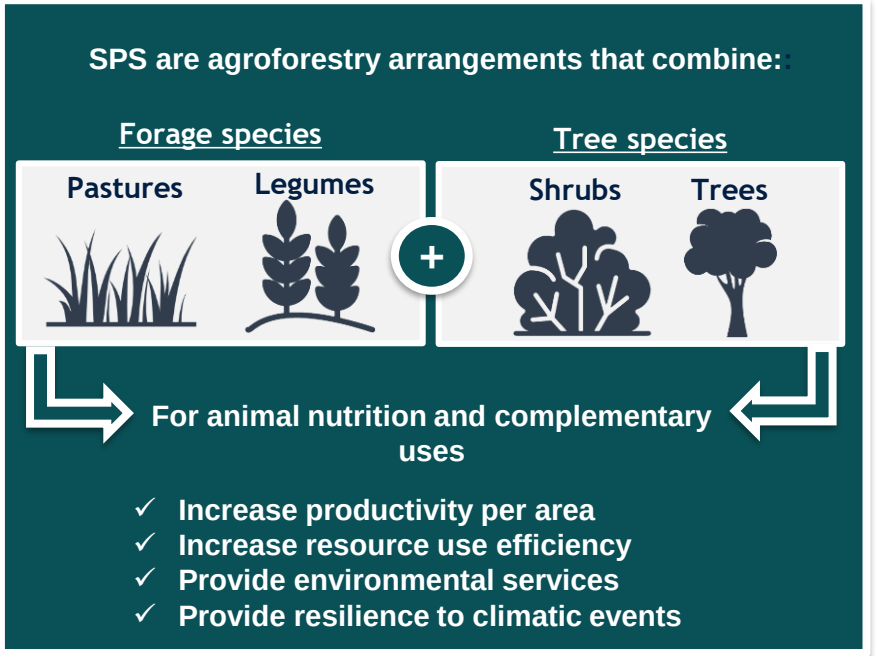
- Cattle ranching is economically important for rural Colombia but is characterized by low-profitability, detrimental environmental impacts and high susceptibility to climatic events.
- Sustainable practices such as Silvopastoral Systems (SPS) can be more efficient, increase income, and reduce climate risks.

Strategy

- Strengthening technical and operational capacity for sustainable land-use.
- Piloting and validating (financial) incentives supporting land-use transformations.
- Enhancing understanding of the impacts of sustainable practices and disseminating experiences and knowledge.

Results after 10 years

- Compared to production areas without SPS, milk productivity increased by about 25 percent, cost of milk production decreased by 9 percent/liter, animal stocking rate increased by 26 percent.
- Production costs were US$127/ha lower on average and farmer's annual income increased up to $523/ha/year.
- Project investments and technical assistance resulted in 100,522 ha being managed under environment-friendly cattle ranching production systems/land uses.
- GHG emissions were reduced by 1,565,026 tons of CO_2 equivalent.



Example 2: Program for sustainable livestock development - Kazakhstan

2020-25, Financing: US$ 500 M

A focus on sustainability:

- Diversification of exports away from minerals and fossil fuel.
- International market demand – pressure on meat production sustainability.
- Farmer-centric model – jobs and income opportunities in rural areas.

Adaptation strategy

- On-farm: range management, feed production and storage, animal housing and watering.
- Advisory services and access to information.
- Development of market linkages.

Net GHG emission reduction strategy

- Increased productivity and decreased GHG emission intensity.
- Soil carbon sequestration through improved grazing management.
- Energy-efficient equipment and production of renewable energy.

Inducing change through a combination of approaches:

- Extension and advisory services.
- Improvement of information systems.
- Conditionality of public support.
- National commitments, including NDC road map.

➢ Estimated net mitigation potential from the livestock sector = 5.6 million tons CO_2eq over the five years.

Climate smart livestock investment requires extra knowledge and assistance

Analytics and technical assistance in support of Climate Smart Livestock systems in Africa - Program for Climate Smart Livestock

National level engagement:

- **Support to project teams** for mainstreaming climate-smart agriculture into livestock projects and activities at design and implementation stages: data, awareness, assessment of options.
- **Support to select Government counterparts** to develop climate-smart livestock development strategies, based on project-level work.

Regional level engagement:

- Development of a **Strategy for resilient and sustainable livestock for the IGAD region** (Eastern Africa, "Intergovernmental Authority on Development").
- Consolidation and dissemination of relevant lessons for the broader livestock development agenda on the continent.

PCSL Countries of Engagement

Improving incentive frameworks for mitigation and adaptation

Livestock sector access to climate finance

Conditional line of credit for the dairy sector in Kenya

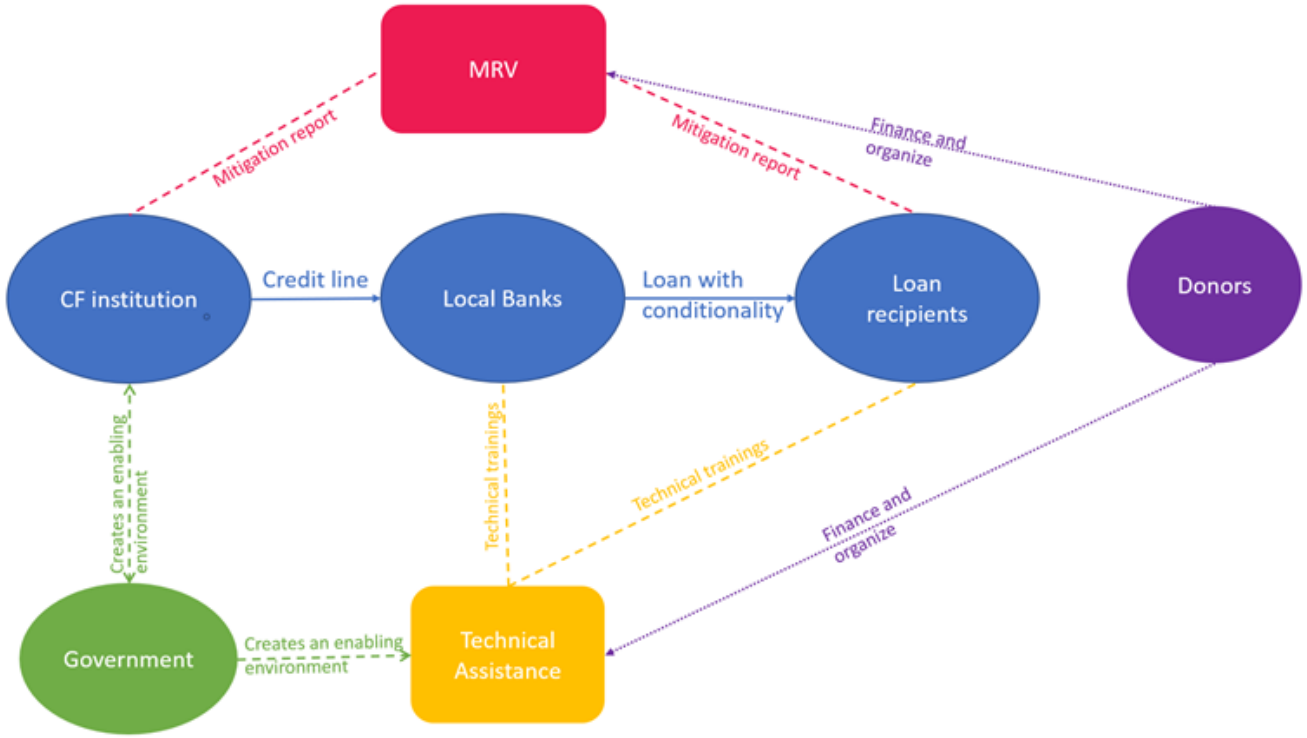
Mitigation practices for the dairy sector in Kenya have the potential to increase the quality and the quantity of milk produced by animal.

→ **Strong business case for concessional loans** to finance their implementation.

Dairy farmers in Kenya have little access to credit, or face interest rates eating up the profitability of the implementation of mitigation strategies.

→ **Mobilizing Climate Finance lowers the cost of credit**.

Conditional line of credit design

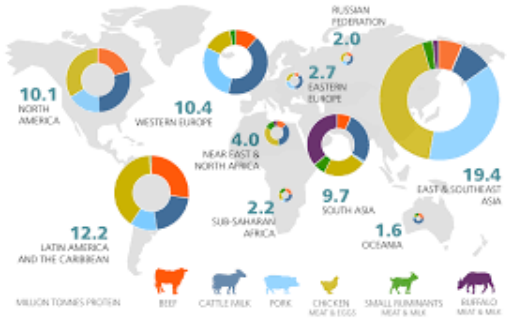


How do we assist Clients mainstream mitigation and adaptation in the livestock sector ?

- Help convert high-level commitments to sustainability and climate change mitigation and adaptation (e.g. as captured in NDCs) into practical action. **Build confidence, analyze and propose options, provide technical assistance.**
- **Develop convergence between the various triggers of change in livestock value chains :** incentives, extension, conditionality of public support, access to land.
- **Build evidence:** support the development of metrics and data for extension and advisory services, adjustment of public expenditure, impact finance, etc.
- **Take advantage of the diversity of livestock systems**. Support investment decisions based the comparative advantages of production systems and complementarities with other sectors (e.g. crop, food processing, forestry, conservation)

Priority actions for the Koronivia Joint Work on Agriculture

Put livestock on the data map



A solid baseline leads to a clear picture of the pathway forward. The KJWA can support Countries to address technical, capacity, and priority-setting bottlenecks for the assessment and monitoring of livestock value chains resilience, and their GHG emissions.

Partnerships and incentives for innovation

Innovation is required to generate adaptation and mitigation solutions that are adapted to the diversity of systems and concepts. The KJWA can hilight opportunities for developing agricultural innovation systems and reward innovation in both public and private sectors, including through multi-stakeholder partnerships.

Set ambitious sustainability targets

Leverage data and success cases to raise ambition for livestock contributions to climate change outcomes. The KJWA can assisting Parties to set ambitious mitigation and adaptation targets for the livestock sector.

THANK YOU

[Moving towards sustainability: The Livestock Sector and the World Bank]

SCAN ME

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[Investing in Sustainable Livestock (ISL)Guide]

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Promising developments

Growing and improving data platforms

Livestock at the 2020 Big Data in Agriculture Virtual Convention

CGIAR Platform for Big Data in Agriculture

Global Partnership for Sustainable Development Data

INITIATIVE

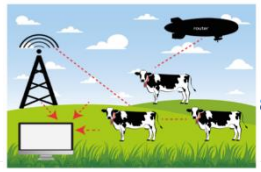
50X2030: Data-Smart Agriculture

Piloting of livestock innovations with climate benefits

Swarms of locusts to become chicken feed

Enormous swarms of locusts – about 60 million insects – have caused major devastation to crops and livelihoods in countries in East Africa, Asia and the Middle East. Scientists in Pakistan have come up with a way to turn these critters into chicken feed.

CAL POLY Digital Transformation Hub



Smart Cow Tracking Prototype

New methods to assess climate results

leap | LIVESTOCK ENVIRONMENTAL ASSESSMENT AND PERFORMANCE PARTNERSHIP

Environmental performance of feed additives in livestock supply chains. Guidelines for assessment

Biodiversity and the livestock sector - Guidelines for quantitative assessment