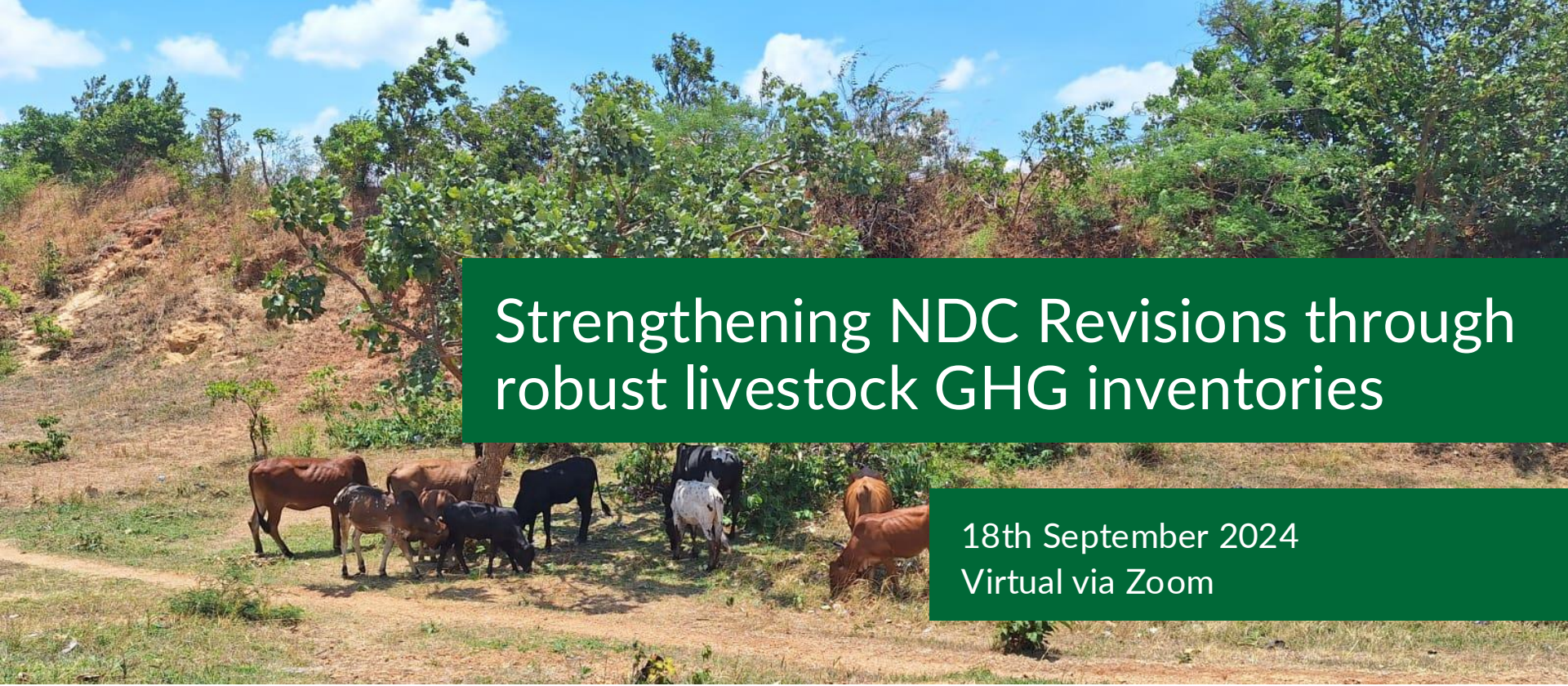


Strengthening NDC Revisions through robust livestock GHG inventories

18th September 2024
Virtual via Zoom

SOUTH SOUTH NORTH
TOWARDS CLIMATE RESILIENCE

African Climate Action Partnership
Partnering on climate action in Africa

RCC East and Southern Africa
Collaboration for Climate Action

Welcome Remarks

UNFCCC RCC East and Southern Africa

Overview of livestock Tier 2 GHG inventory development

RCC East and Southern Africa
Collaboration for Climate Action

African Climate Action Partnership

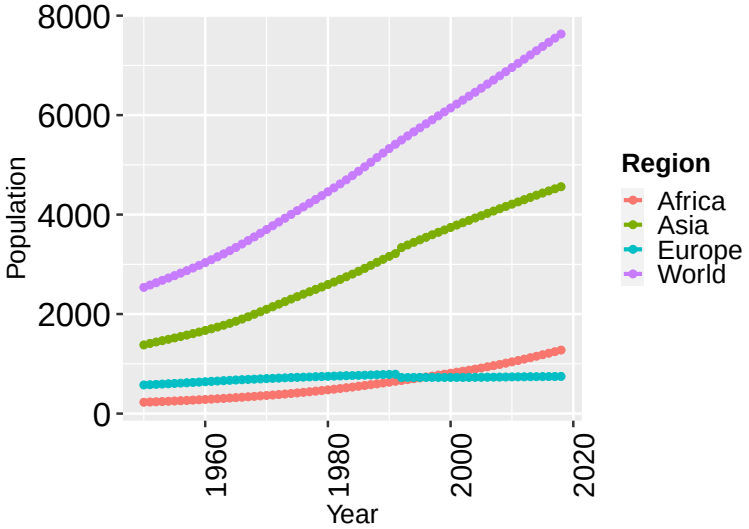
Walter Svinurai
University of Zimbabwe

Presentation outline

- Global livestock production & socio-economic drivers
- Livestock contribution to climate change
- Why improve estimation of livestock GHG emissions
- Overview of livestock Tier 2 GHG inventory development

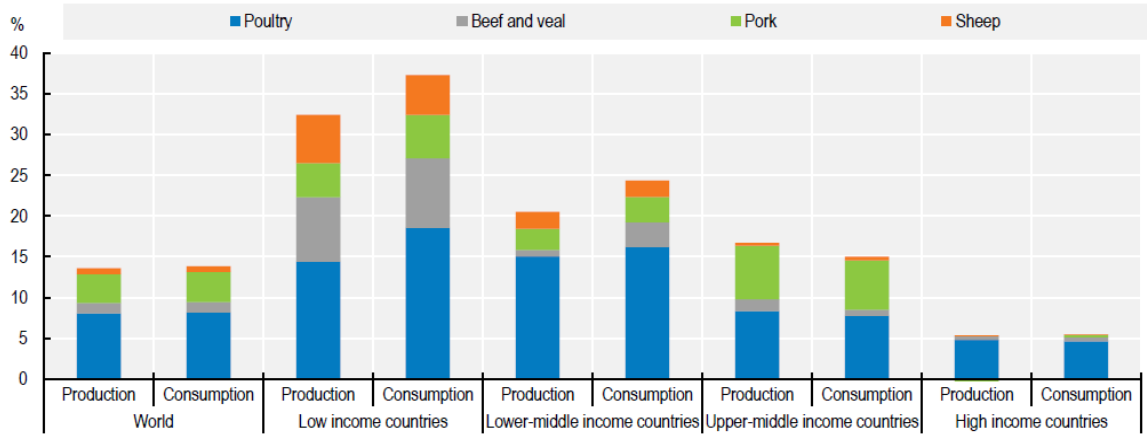
Global livestock production & socio-economic drivers

Global population growth, 1960 - 2020



FAO, 2021

Growth in meat production & consumption, 2021 - 2030



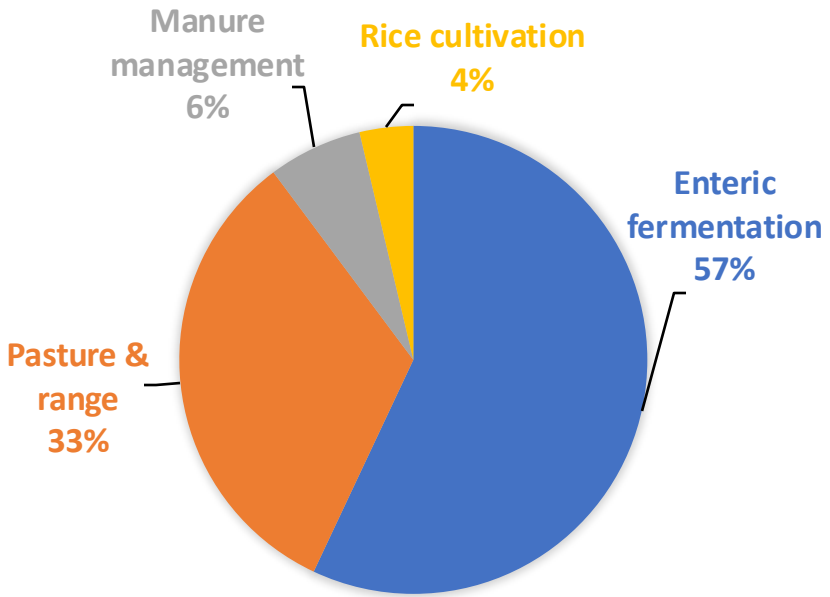
OECD-FAO, 2021

- SSA- 20 % of global grazing land, 2nd largest livestock population
  - Produce only 3 % of global meat production
- LICs & LMICs driving global meat demand

Livestock contribution to climate change

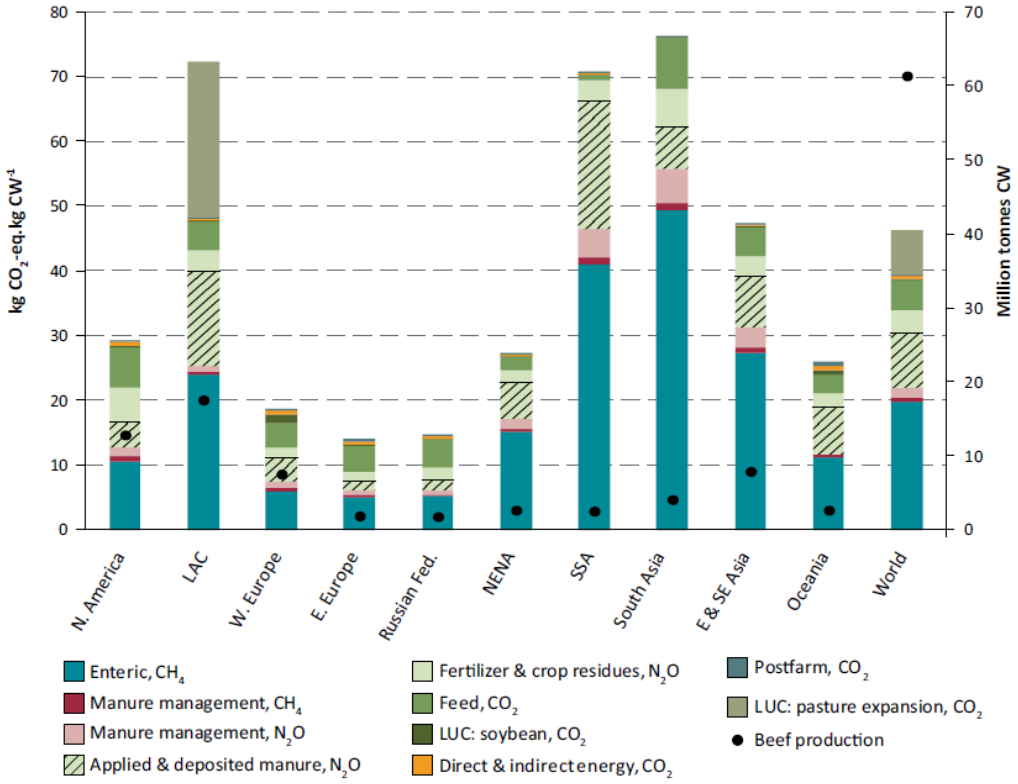
- Paris Agreement aims to limit global warming to <1.5 or <2°C above pre-industrial level (Article 2)
- All countries are required to submit Nationally Determined Contributions (NDCs) every 5 years
- Enhanced Transparency Framework, countries also required to submit Biennial Transparency Report to tracking of progress made in NDCs (Article 13) every 2 years
  - Includes a national inventory report of GHGs emitted by key sources & sinks
- > 33 % of total GHGs in SSA are from Agric & forestry (Tongwane & Moeletsi 2018)

Livestock contribution to agricultural GHGs in Africa: 2014



FAOSTAT, 2022

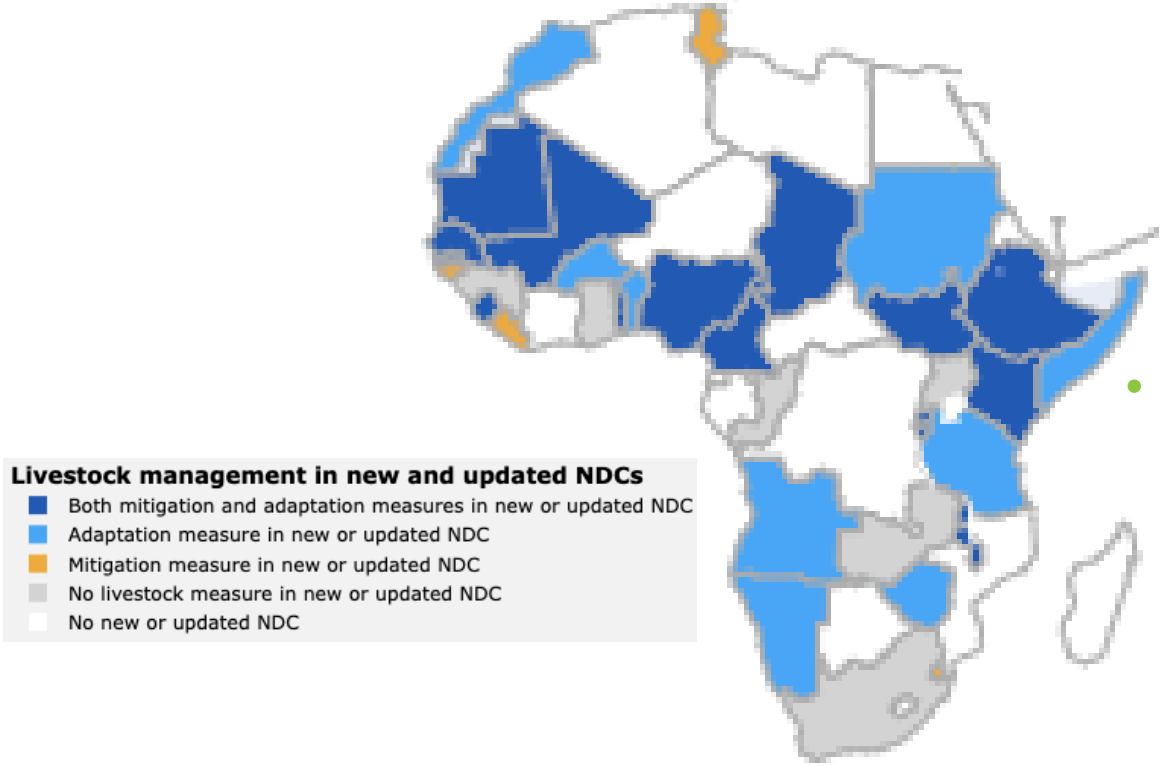
Livestock contribution to climate change…



FAO, 2013

- GHG emission intensity for beef i.e., amount of GHG per kg of meat produced in Africa, South Asia & Latin America is double that of western countries
  - Low productivity in extensive beef systems
- Opportunity > increase meat production while decreasing emission intensity to meet anticipated human demand

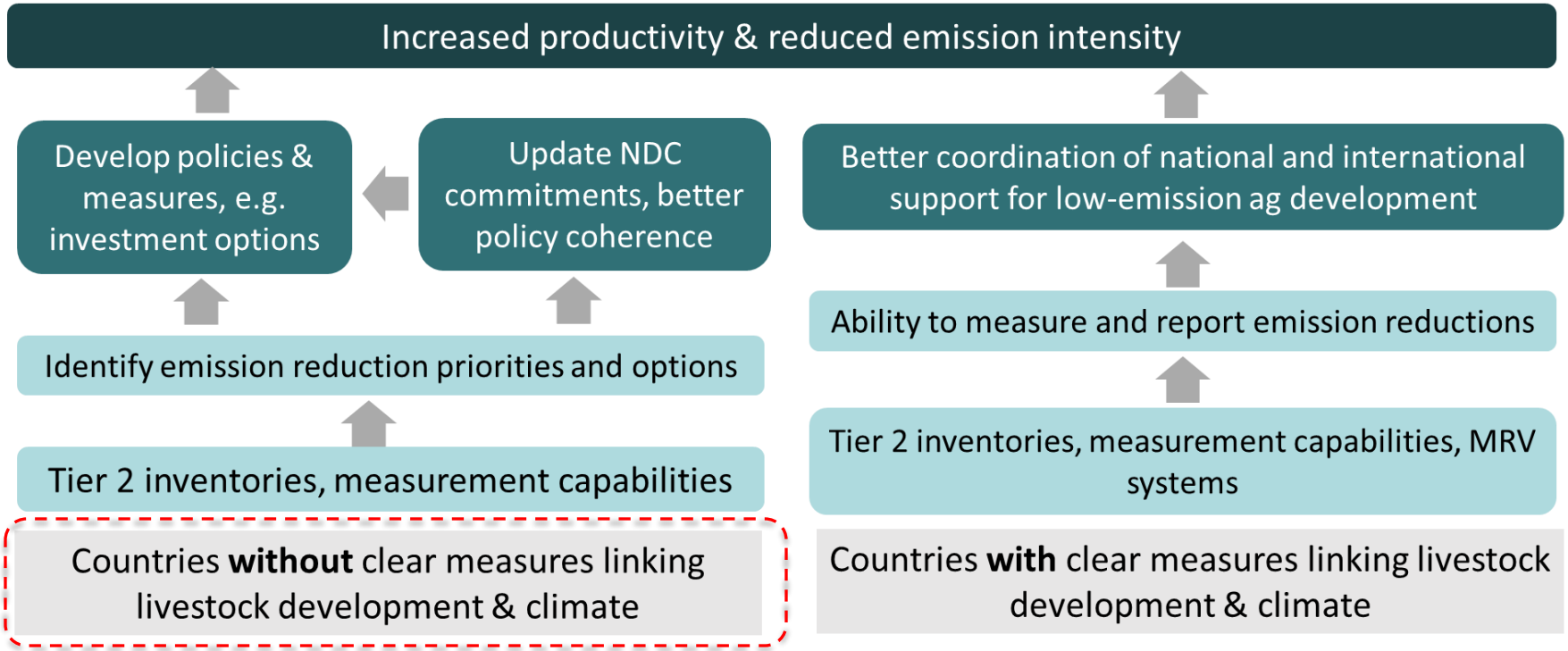
Why improve estimation of livestock GHG emissions



- About 6 African countries quantified livestock mitigation actions with specific timelines & GHG goals
  - limited availability of accurate data
- Up to 21 African livestock adaptation actions are broad, qualitative (except Ethiopia)
  - lack of comparable indicators

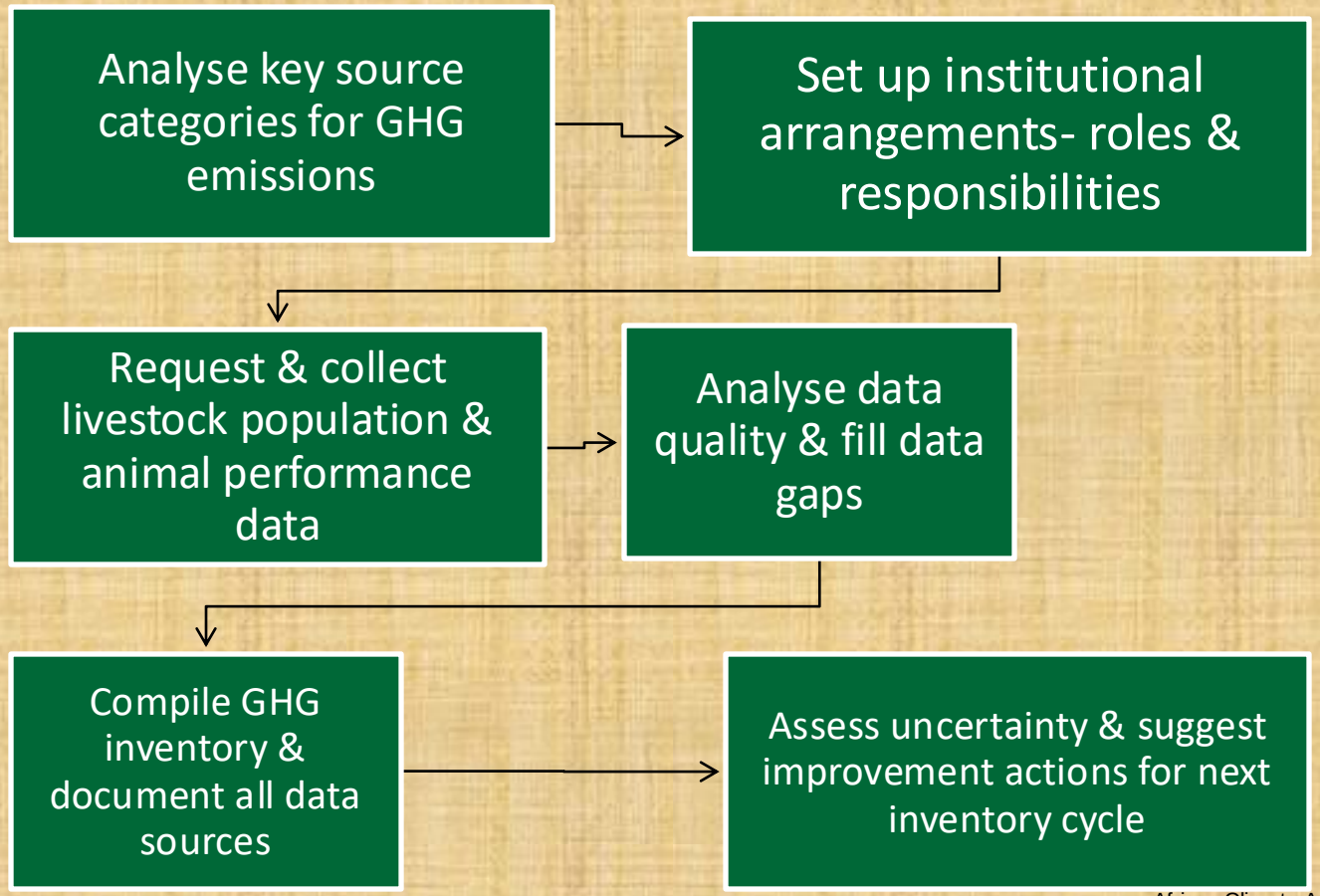
Adapted from Rose et al (2021).

Why improve estimation of livestock GHG emissions…



Wilkes, 2023

Overview of livestock Tier 2 GHG inventory development

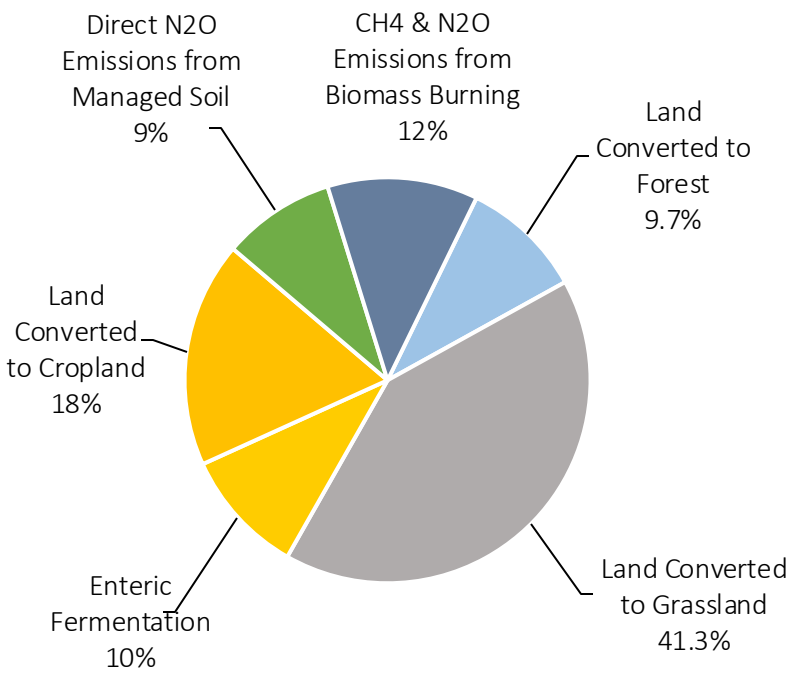


Current national & agriculture sector GHG emissions

Sectoral contribution to national GHG emissions: KCA 2000 -2017

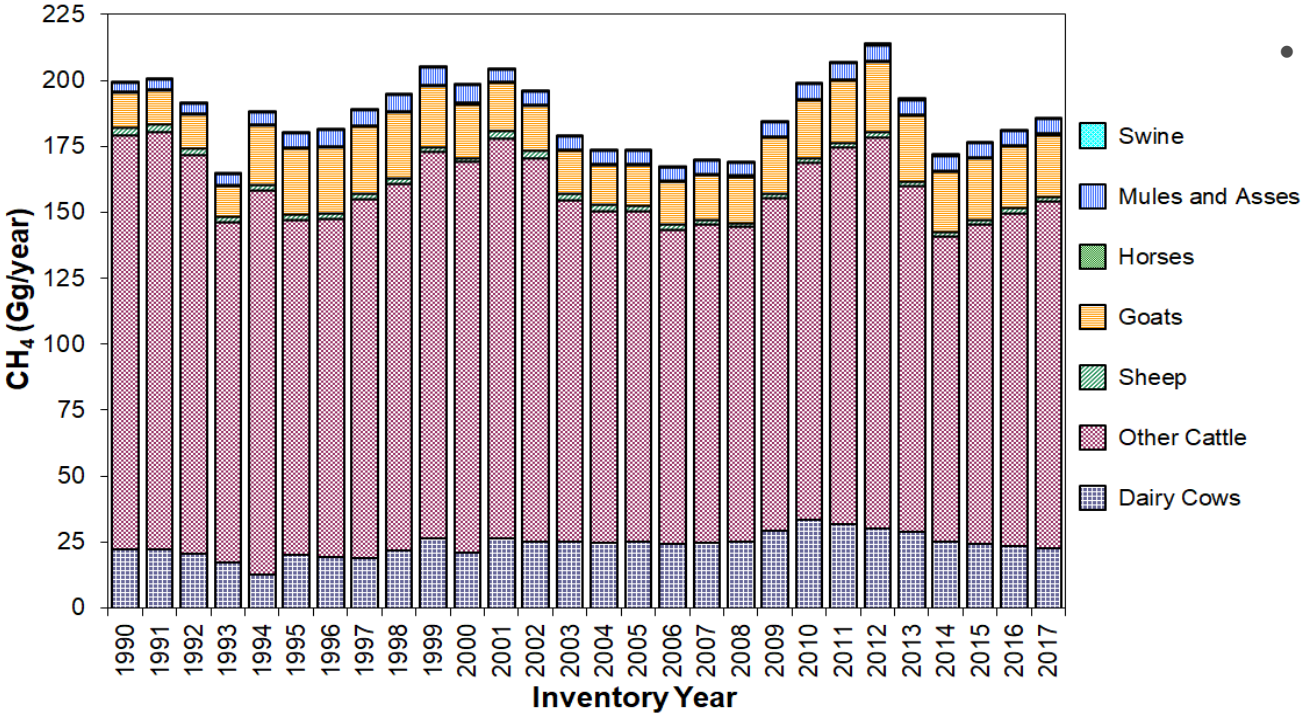
IPCC Category	GHG	2010 (Gg CO_2 Eq)	Contribution to Total Emissions (%)	Cumulative Total Contribution (%)
Forest land > Forest land	CO_2	-3,529	29	29
Land > Forest land	CO_2	-24,524	21	50
Land > Cropland	CO_2	23,243	20	70
Land > Grassland	CO_2	19,357	17	87
N_2O managed soils	N_2O	3,915	4	90
Enteric Fermentation	CH_4	4,193	4	94
Biomass burning	N_2O	1,632	1	95

Livestock contribution to agricultural GHGs: 2017



Zimbabwe NC4: 2021

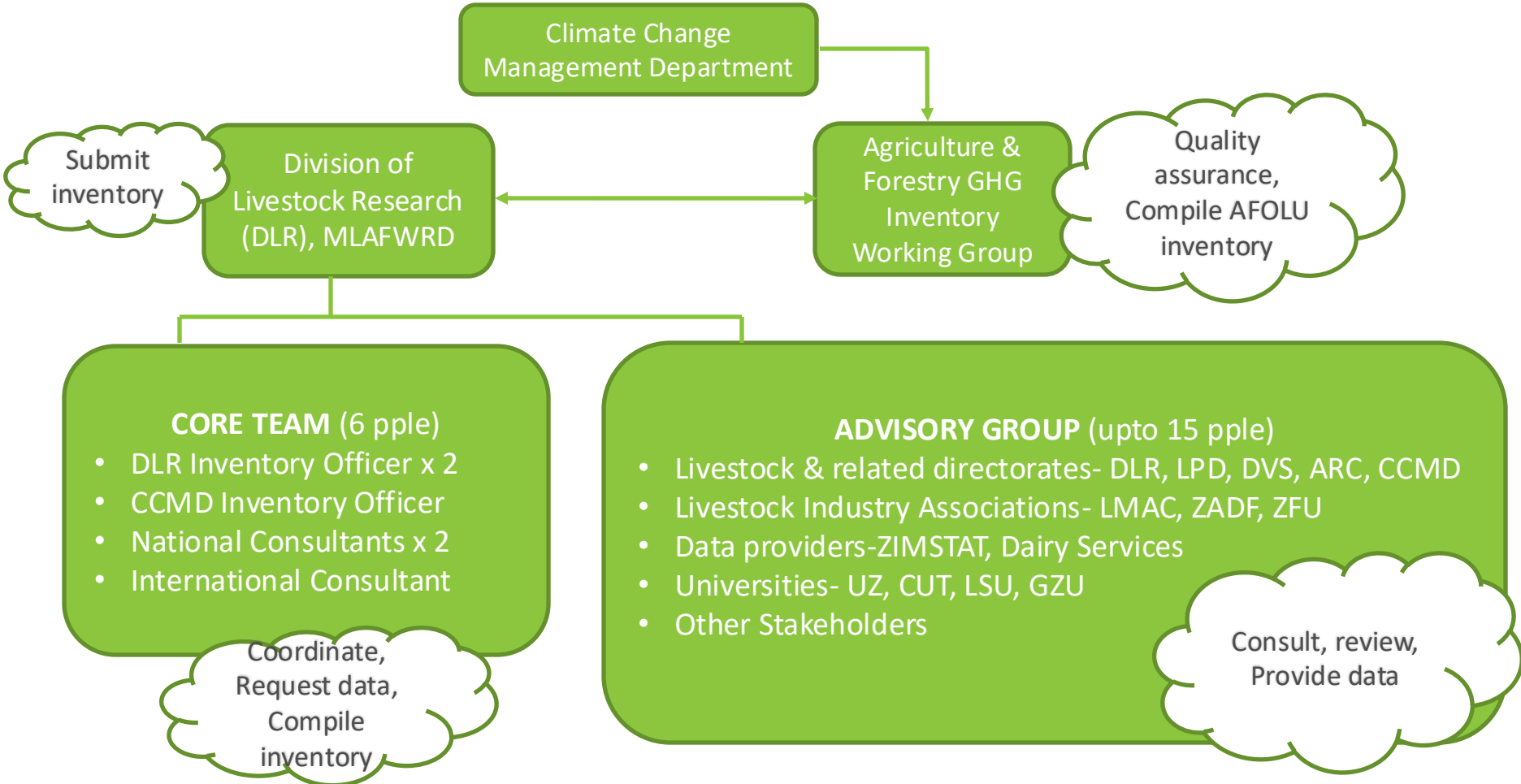
Greenhouse gas emissions by livestock sub-categories



- IPCC (2006) recommendation
  - Implement Tier 2 for beef & other cattle, & dairy cattle

Zimbabwe NC4, 2021

Institutional Arrangements for Livestock Tier 2 GHG inventory Compilation



Tier 1 & Tier 2 approaches for estimating livestock GHGs

General categories (dairy & other cattle)

Fixed per animal (static for all production systems)

= Number of animals

✖

Emissions / Animal

Fixed continental-scale default

No change over time

Tier 1

= Number of animals

✖

Intake / Animal

Estimated from key productivity measures

Can change over time

✖

Emissions / Intake

Use default or country/diet-specific values if available

Tier 2

Specific animal sub-categories

Breed/management/ performance dependent

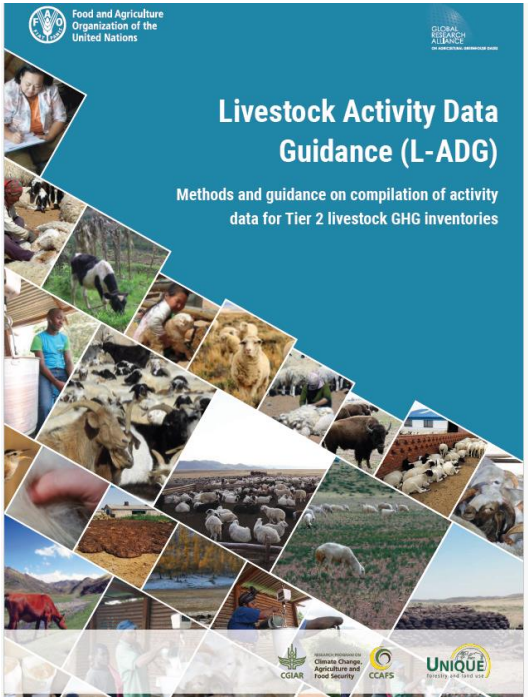
Data requirements for livestock Tier 2 GHG inventory

- Specific animal sub-categories
  - Production systems
    - Intensive, semi-intensive dairy
  - Herd structure
    - Calves < 1 yr
    - Heifers- 1yr, 2yr, 3yr
    - Steers - 1yr, 2yr, 3yr
    - Adult cows >3 yr
    - Adult males >3 yr
    - Bulls >3 yr

- Animal performance data
  - Liveweight
  - Liveweight gain
  - Diet composition
  - Feed quality
  - Calving rate
  - Milk yield
  - Manure management system

Addressing livestock activity data gaps

- Options for filling missing animal performance data include:
  - Official data
  - Research publications
  - Industry associations
  - Values from similar countries
  - Expert judgement
  - IPCC default values
- For other gaps, any appropriate method can be used if it is:
  - Transparent
  - As accurate as possible (no under- or over-estimation)
  - Consistent over time



African Climate Action Partnership

Partnering on climate action in Africa

Country progress in developing Tier 2 inventory & setting NDC targets for livestock in Zimbabwe

Walter Svinurai

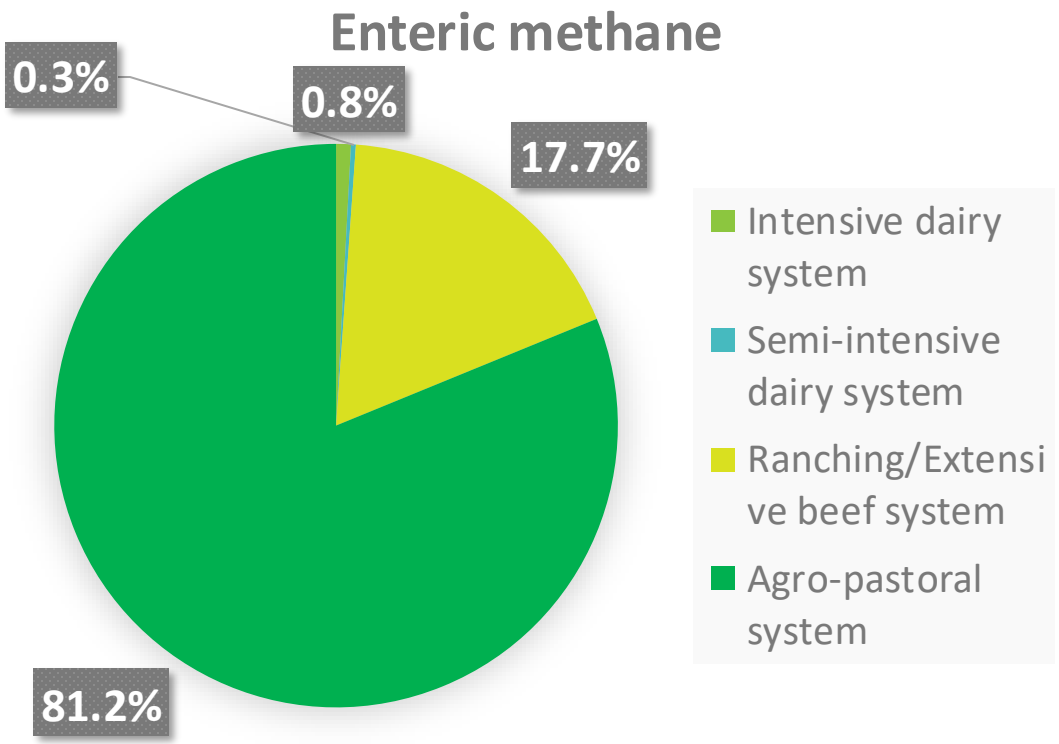
Presentation outline

- Livestock Tier 2 GHG inventory improvement in Zimbabwe
- Tier 2 Implications for planning climate actions
- Country progress in developing Tier 2 GHG inventory
- Institutional needs for improving livestock GHG inventory
- Data needs for improving Zimbabwe's livestock GHG inventory
- Climate investments towards setting NDC targets for livestock

Overview of livestock GHG inventory improvement in Zimbabwe

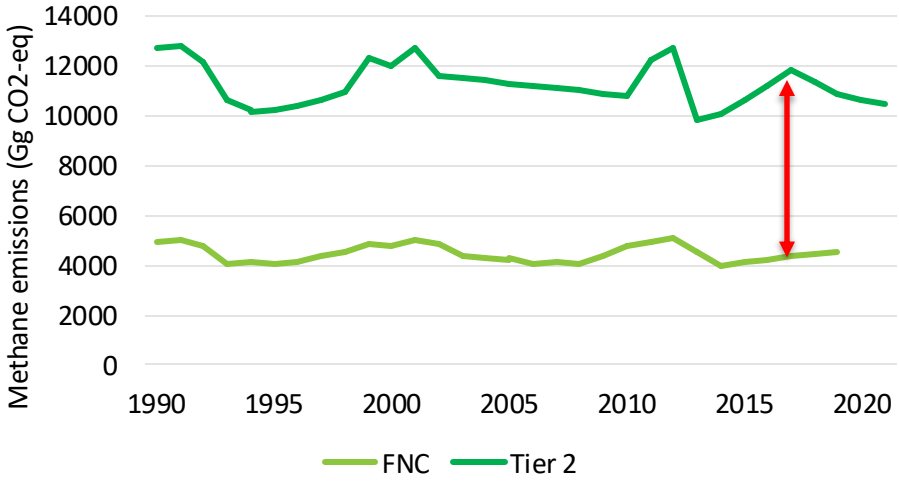
- Livestock is a key source of GHGs at national level in all National Communications 1 to 4
  - Cattle Tier 2 emissions have doubled
- Livestock only included in NDCs (2021) as means of adaptation
  - Lack of evidence to quantify targets due to unavailability of disaggregated livestock activity data
- Increased prioritisation of livestock GHG improvement & resource mobilisation
  - Aim is to include livestock mitigation actions in NDC in 2025
- Stakeholder engagement & consultations for buy-in ongoing

Enteric methane emissions from cattle in Zimbabwe

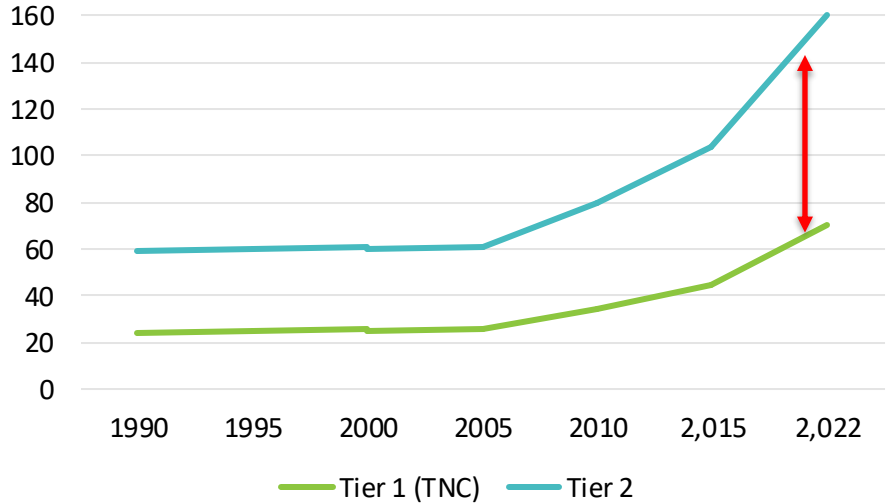


Tier 2 Implications for planning climate actions

Comparison of Tier 1 & Tier 2 enteric methane estimates for cattle: Zimbabwe



Comparisons of Tier 1 & Tier 2 enteric methane estimates for cattle: Malawi



MoA, *2024*.

- Tier 2 emissions are 2.3 times more than Tier 1

Implied enteric methane emissions factors

Production system	Methane Emission Factor (kg CH_4/head/year)				
	Zimbabwe	Malawi	Botswana	Zambia	IPCC (2019)
Intensive dairy	66.70	-	64.22	86.70	86
Semi-intensive dairy	44.80	54.88	-	55.90	66
Commercial/Ranching beef	74.53	68.58	73.78	72.00	60
Extensive/Agro-pastoral	76.61	74.16	84.58	63.40	48

Cattle production systems

Purpose	Breed type	Age	Production system	Farm types
Dairy cattle	Exotic and/or crossbreds	Adult cows >3 years	Intensive dairy	Large Scale Commercial
		Adult males (Bulls) >3yrs		
		Heifers (1-3 years	Semi-intensive dairy	Small Scale Commercial New Commercial - A2
		Growing males (1-3) years		
		Calves (< 1 years)		
Other cattle - Beef cattle	Exotic and/or crossbreds	Adult cows > 3 years	Extensive/Ranching	Large Scale Commercial Small Scale Commercial New Commercial - A2
		Adult males (Bulls) >3yrs		
		Heifers (1-3 years)		
		Growing males (1-3 years)		
		Calves (< 1 year)		
		Growing males (1-3 years)	Intensive - Feedlot	LSC, SSC, A2
Other cattle - Multi-purpose cattle	Indigenous breeds	Adult cows > 3 years	Agro-pastoral	Communal Old Resettlement Scheme New Resettlement - A1
		Adult males (Bulls) > 3 years		
		Heifers (1-3 years)		
		Growing males (1-3 years)		
		Calves (< 1 year)		

Population data with herd structure

	Dairy cattle		Beef & Multipurpose cattle	
	Years	Data sources	Years	Data sources
	1990 – 1996	Central Statistical Office	1990 – 2002	Central Statistical Office
	2014 2018 – 2019	Dairy census	2003 – 2009 2015 – 2016 2018 – 2019	Interpolation
	1997 – 2013 2015 – 2017	Interpolation	2010 – 2014 2017, 2020	ZIMSTAT
	2020 – 2021	Extrapolation	2021	Extrapolation

Liveweight data sources : Beef & multi-purpose cattle

	Sex	Birth weight	6 months weight	24 months weight	> 36 months weight
Beef cattle	Female	Literature: 4 Expert opnion: 1	Literature: 4	Literature: 3 Expert opnion: 1	Literature: 4 Expert opnion: 1
	Both	Literature: 4	Literature: 4	Literature: 4	Literature: 4
	Male	Literature: 1 Expert opnion: 1	-	Literature: 6	Literature: 6
Multi-purpose cattle					
	Female	Literature: 1 Expert opnion: 1	Literature: 1 Expert opnion: 1	Literature: 7, Expert opnion: 1	Literature: 6, Expert opnion: 1
	Both	Literature: 16	Literature: 26	Literature: 12	-
	Male	Literature: 2 Expert opnion: 1	Literature: 2 Expert opnion: 1	Literature: 2 Expert opnion: 1	Expert opnion: 1

- Scanty literature for LW over regions & time
- Same with dairy cattle LW

Feed basket: Beef & agropastoral systems

	Beef		Feedlot	Agropastoral	
	Highveld	Lowveld		Highveld	Lowveld
Natural forages	72	75	-	79	79
Planted forages	3	0	-	-	-
Grass hay	10	10	20	3	3
Silage	2	2	-	-	-
Agro-industrial by-products	3	3	-	1	1
Concentrates	5	5	80	2	2
Crop residues	5	5	-	15	15

- No subcategory-specific feed basket due to limited data
  - Expert opinion used, high uncertainty in feed digestibility
- Same with feed basket for dairy cattle

Manure management systems

	Intensive dairy production system		Semi-intensive dairy production		Extensive ranching	Agro-pastoral system
	Dairy cows	Other herd	Dairy cows	Other herd	Whole herd	Whole herd
Uncovered anaerobic lagoon	5	5	0	0	0	0
Liquid slurry & pit storage	4	4	0	0	1	0
Solid storage	77	50	78	20	10	10
Dry lot	8	8	17	17	11	20
Daily spread	5	5	5	5	0	0
Biogas digester - low leakage	1	1	0	0	1	0
Pasture/range/paddock	0	27	0	58	77	70
Total	100	100	100	100	100	100

- No data on MMSs, Expert opinion used

Institutional needs for improving livestock GHG inventory

- Limited knowledge & skills & coordination amongst institutions to implement the data-demanding Tier 2 method
  - Now it's time to build capacity in the Department of Livestock Research so that the department is capable of making continuous updates and reporting of the Tier 2 inventory in future
  - More awareness raising is needed to increase understanding of stakeholders in the livestock sector about importance of a Tier 2 GHG inventory
- Inadequate human & financial resources to collect larger amount of data
  - Ensure that livestock improvement needs are considered in the plans and budgets of relevant government agencies.
- Lack of disaggregated data main limitation to inclusion of livestock mitigation actions in NDCs
  - The Tier 2 inventory paves way for assessing mitigation potential of livestock measures & help inform the next NDC update scheduled for 2025

Data needs for improving Zimbabwe's livestock GHG inventory

- The first Tier 2 inventory was compiled using the best available data.
  - Expert judgment employed to compliment literature to address data gaps.
- Huge data gaps remain & there is need to make follow-up activities to collect priority data especially for agropastoral system to help reduce uncertainties:
  i. Conduct surveys to establish herd structures in each cattle production systems - modify ZIMSTAT cattle statistics templates to meet Tier 2 production systems
  ii. Collect liveweight data across cattle sub-categories mostly in agropastoral system
  iii. Conduct feed resources survey to characterise feed basket (quantity and quality) for cattle sub-categories in agropastoral & extensive beef systems
  iv. Carry out survey to characterise MMSs for cattle sub-categories in each production system particularly in agropastoral system
  v. Modify national data collection tools/ templates to include Tier 2 GHG data requirements & reflect national circumstances over time

Climate investments towards setting NDC targets for livestock

Project & funder	Activities	Time frame	Amount (USD)
Financial & technical support for Tier 2 livestock inventory compilation in Zimbabwe by NZAGRC	Strengthening capacity for continuous Tier 2 GHG inventory compilation, data collection for inventory improvement, and mitigation modelling of large-scale livestock interventions for NDCs revision.	2022-2025	255k
CBIT	Hosted 4 workshops for the AFOLU working group which brought sector experts and government officials to discuss about Tier 2 inventory data & management issues. The workshops were additional to the national CBIT support to two training workshops on animal population data & Tier 2 GHG inventory development methods	2022-2024	30k
FAO Flexible Voluntary Contributions project: Scaling-up climate actions to enhance NDCs & climate and livestock.	Two stakeholder consultation workshops and livestock climate policy analysis to enhance livestock climate actions in support of the country's NDC revision in 2025. The project also aims to build technical capacity for livestock Tier 2 compilation and mitigation assessment using GLEAM.	2023-2025	130k

Climate investments towards setting NDC targets for livestock…

Project & funder	Activities	Time frame	Amount (USD)
Climate & Clean Air Coalition (CCAC) country request –Enhance national livestock and climate policies with SLCP mitigation in the livestock sub-sector	Support the Government of Zimbabwe efforts in methane reduction in the livestock sector through 1) strengthened evidence base on enteric methane emission reduction; 2) strengthened capacities of stakeholders in data collection, management and monitoring; and 3) promoting an enabling environment through awareness and advocacy on policy and strategies on methane reduction.	2025-2026	400k
Oxfam proposal to AFDB	Demonstrating feed management practices for reducing enteric methane emissions, increasing accuracy of livestock activity data, and supporting an enabling policy environment for low emission livestock systems in Malawi, Mozambique, Zambia & Zimbabwe.	2025- 2027	5Mil

THANK YOU !!!

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Kenya's Country Experience on improving the livestock MRV system to leverage on Climate Finance

Bernard Kimoro
Head: Climate Change and Livestock Sustainability
State Department for Livestock Development
MOALD - Kenya

Introduction

- Livestock sub-sector is the largest land use system in the world – 30% of ice-free land globally **and in Kenya – over 80 % (Herrero, 2013);**
- Africa has the 2nd largest livestock herd in the world - 1/3 of world livestock population (AUC, 2018)
- Horn of Africa has more than 50% of all African livestock and 9% of the world's cattle (Wollenberg, 2019)

Region	Cattle	Goats	Sheep	Camel
Horn of Africa	**50%**	**39%**	**36%**	**72%**
West Africa	20%	35%	26%	12%
Central Africa	6%	7%	3%	6%

Livestock and Climate Change

In the face of global climate change and food security challenges, the livestock sector in low- and middle-income countries (LMICs) stands at a critical juncture (victim and villain)

Globally livestock supply chains contribute 14.5% of methane emissions - **about 25% in Kenya (Gerber et al., 2013)**

About 80% of the GHG from livestock is derived from ruminants, accounting for in excess of 90% of the total CH4 emissions from livestock (Scholtz et al., 2020). **In Kenya – Over 90 %**

Global climate action challenges in livestock sector

- Despite its importance, the livestock sector receives disproportionately low climate finance support

- Agrifood systems receive only 4.3% of total climate finance and smallholder farmers receive only 0.8% of climate finance, with the livestock sector receiving just a fraction of that going to livestock

- Lack of robust information and evidence is preventing LMICs from accessing their fair share of climate finance, which is essential for sustainable livestock development

Why this low financial support for such an important sector

Inadequate integration of adaptation practices and mitigation actions from livestock sector into national targets to help rural communities adapt to climate change

Poorly defined and unclear livestock actions in NDCs, National Adaptation Plans, climate action plans, and sub- sectoral planning documents (e.g., Livestock Masterplans)

In this regard, only 36% of Nationally Determined Contributions (NDCs) include livestock mitigation actions, while 55% include livestock adaptation actions

What the Livestock sector in Kenya realized for effective Climate Actions

- Effective coordination mechanisms is a foundation for successful integration of livestock development goals into climate strategies and policies between the ministries of agriculture, environment, planning and national treasuries.
- Need to overcome systemic barriers to integrating livestock sector in national climate policies, plans and strategies: low awareness across various ministries of low-cost opportunities to mitigate greenhouse gases from livestock production systems, inadequate capacity for data collection, and lack of technical expertise on livestock modelling and scenario development.
- Importance of ensuring wider understanding and awareness of alternative options to setting mitigation targets beyond reductions in livestock herd numbers, including climate finance to support efficient herd management that will simultaneously deliver income, nutrition and environmental benefits.
- Importance of sectoral institutional strengthening that will engage the critical public entities (environment and climate change; TNT; Economic Planning; etc.) to ensure livestock targets are in the NDCs and other climate policies and Plans

How Kenya's Livestock sector is integrated in National Climate Plans and Strategies

- Kenya prioritized the livestock sector in its development plans and strategies;
- The role and importance of the sector is visible in Vision 2030; ASTGS; KCSAS & KCSAIF; and the NDC, submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in December 2016 and updated in 2020 and National Adaptation Plan (2015-2030)
- To ensure coherence, the livestock sector actions and targets in Kenya's NDC have been aligned with sectoral climate action priorities elaborated in the Kenya Climate Smart Agriculture Strategy (KCSAS, 2017-2026) and the Kenya Climate Smart Agriculture Implementation Framework (KCSAIF, 2018-2027)

However there persist systemic Challenges

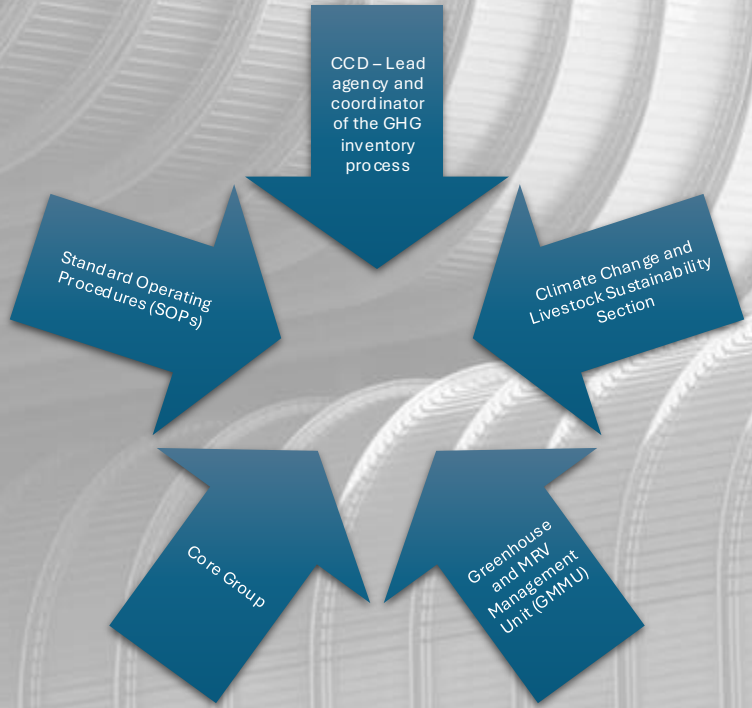
Inadequate institutional capacity

Data gaps and lack of database to support livestock GHG Inventory process

- Available but unpublished
- Available but scattered/discrete = Sources not known
- Unavailable

Inadequate finances to sustain the livestock inventory plan

Institutional arrangements for managing and improving GHG inventory compilation in Kenya



Structure at Ministry of Agriculture and Livestock Development (MoALD)

State Department for Livestock Development (SDLD)

Climate Change and Livestock Sustainability Section

Greenhouse gas and MRV Management Unit (GMMU)

With Core Group

Livestock Adaptation and Resilience Unit (LARU)

Livestock Environment Assessment and Performance Modelling Unit (LEAPMU)

Process Kenya Livestock Sector has followed in compiling advanced GHG inventory

Training of experts on GHG inventory process

- 2 members of staff trained in NZ and South Africa (GRA) s
- Training of Ministry/Department Personnel on Tier 2 Methods (FAO/CCAC and GRA)

Technical support to formation of Core Group for livestock inventory process

Data collection and compilation – FAO/CCAC and GRA/NZ – Supporting the Core Group

Inventory structure development – GRA/NZ

Inventory and publication of Tier 2 GHG Inventory Reports (GRA/NZ)

Inventory Core Group Composition

No.	Institution/Organization and role	Affiliation
1.	Ministry of Environment, Climate Change and Forestry (Climate Change Directorate) - Overall Coordination of the process	Government/Public Sector
2.	State Department for Livestock Development - Administrative data - Oversee implementation of SOP - Coordination of Core Group - Quality Control	Government/Public Sector
3.	Kenya National Bureau of Statistics - Official data	GOK Agency
4.	Kenya Agriculture and Livestock Research organization (KALRO) and International Livestock Research Institute (ILRI) - Livestock performance data - Expert Judgement - Quality Assurance	Research Organization
5.	Egerton University (Tegemeo Institute) and University of Nairobi - Livestock Performance data - Industry level data - Expert judgement	Academia
6.	National Environmental Management Authority (NEMA) - Activity data (manure management) - Expert judgement	GOK Agency
7.	Kenya Camel Association, Kenya Livestock Marketing Council and Kenya Livestock Producers Association - Expert judgement - Industry level data	Private sector/FPOs

The Road we have travelled

2015

Development of Dairy NAMA identified the need for IPCCC Tier 2 methods in livestock inventory

2016–2017

Dairy Inventory process using Tier 2 commenced

- Inventory manager
- Core team
- Inventory structure and data collection
- Draft report and stakeholder validation

2020

Publication of Dairy Tier 2 GHG Inventory

2022

Livestock GHG SOP Guidelines Development

Update of Dairy Tier 2 Inventory

Tier 2 Inventory structure for Non-Dairy Ruminants (Non-dairy cattle; sheep; and goats)

Improvement of Tier 1 inventory structure for Camels

2024

Publication of Tier 2 GHG Inventory for Livestock in Kenya

What we have learnt

- Always start the inventory process and improve over time
- Map strategic partners and involve them right from the outset
- Have a dedicated team to coordinate the process and an SOP to clarify roles
- Develop an activity plan to guide data needs and identify strategic partners to provide the needed data
- Identify projects, programme and initiatives that could provide data needed to support the process
- Institutionalize the process – CCLSS-GMMU-Core Group-SOPs

What helped our Cause?

- NZ Government through GRA supported scoping study and analysis in 2020 (Before updating of NDC)

The Livestock Sub-sector in Kenya's NDC: a scoping of gaps and priorities

Benefits of Advanced GHG Inventory Methods

Iteration to higher Tiers is critical for policy

More room for technical recommendations (Livestock numbers Vs. Animal performance – herd composition, animal nutrition parameters, breeding, etc.)

Improvement in livestock based MRV makes the sector contribute better to NDCs – more evidence, better targeting, etc. e.g., Dairy inventory used in updated NDC and SNC

Good data and GHGI will reduce uncertainties – sharper mitigation potentials - Potential for MOI (finance/Capacity building/Technology development and transfer)

How Advancing to Tier 2 GHGI methods has been of benefit to Kenya

- Kenya's 1st NDC was submitted to UNFCCC in 2016. This made little mention of livestock sector as a mitigation option
- The updated NDC (December 2020) has identified mitigation and adaptation actions for the livestock sector
- The actions have indicative costs disaggregated by funding sources: local sources (unconditional support), foreign support (conditional bilateral and multilateral support), and private sector investments.
- This has helped the livestock sub-sector to mobilize multilateral, bilateral and private funding including development banks and financial institutions

Livestock related targets in Kenya's NDC

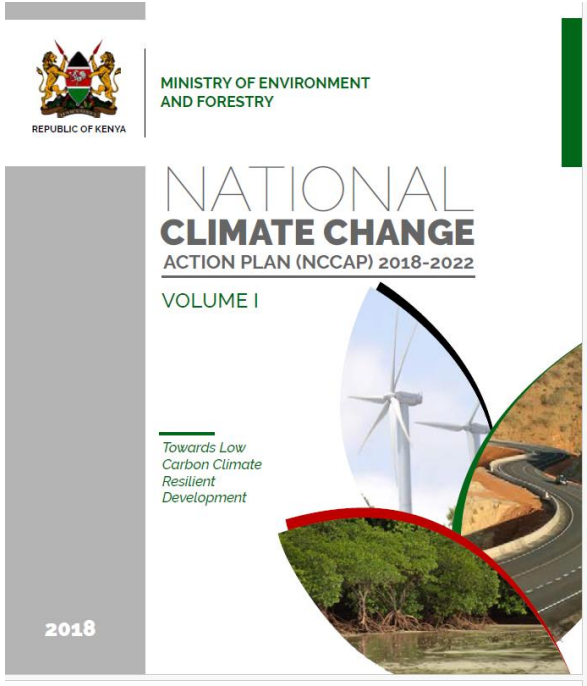
Mitigation

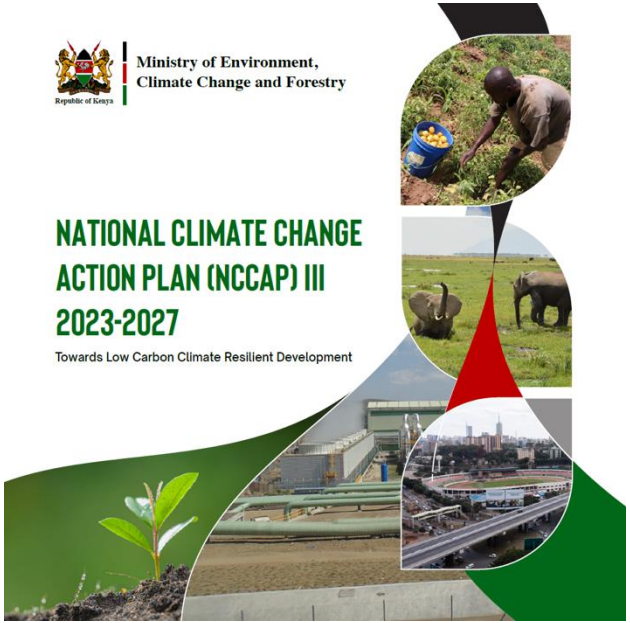
- Climate smart agriculture (CSA) in line with the Kenya CSA Strategy with emphasis to efficient livestock management systems.

Adaptation

- Mainstream CSA towards increasing productivity through value chain approach to support transformation of agriculture (crops, livestock, and fisheries) into innovative, commercially oriented, competitive, and modern sector;
- Build resilience of the agriculture (crops, livestock, and fisheries) systems through sustainable management of land, soil, water, and other natural resources as well as insurance and other safety nets; and
- Strengthen communication systems on CSA extension and agro- weather issues

But these have been unpacked in NCCAPs





NCCAP II (2018 -2022)

NCCAP II (2018 -2022)

- Efficiency in dairy management improved for 267,000 households
- Manure management improved through the adoption of biogas technology by 80,000 households, and at least 200 abattoirs

Emission reduction of about 8.8 MT CO2 eq by 2030 (19% of National GHG emission reduction of 46 MT CO2 eq)

- Improved productivity of pastoralists:
  - 10,000 hectares of rangelands re-seeded in 23 ASAL counties;
  - Annual ASAL's water harvesting and storage increased by 25%, from 16 million cubic meters (m3) to 20 m3 via small dams and water pans, and 700 m3 through large multipurpose dams;
  - Animal disease control and surveillance improved.
  - Number of customers/ beneficiaries farmers accessing climate-oriented livestock insurance increased from 18,000 to 105,750.

NCCAP III (2023 – 2027)

- 500,000 dairy farming households, out of 1.8 million households, supported to adopt climate smart technologies, innovations, and management practices (TIMPS) on quality feeds, precision feeding, breeding management and enhanced animal health for efficient dairy management.
- 1,000 farmer-facing Small and Medium Enterprises (Cooperatives and Community-based Organizations) supported to install milk coolers and meat chilling facilities. Post-harvest losses of animal source foods reduced from 15% to 7.5% through effective climate smart standards, food safety and a Hazard Analysis and Critical Control Point Management System.
- National livestock vaccination coverage increased from 13 million Tropical Livestock Units (TLUs) to 26 million TLUs per year by 2027 for 45 counties to enhance climate resilience and productivity gains in ruminant livestock (cattle, sheep, camels and goats).
- Area under rehabilitated rangelands, with good soil health, increased to 5,000,000 ha through range planning, improvement, and re-seeding of 2,400,000 ha in 23 ASAL counties.
- Sustainable grazing management and silvo-pastoralism implemented in 1,200,000 ha of rangeland for pasture-based finishing and feed lotting, to improve productivity of 400,000 TLUs in 23 ASAL counties over 5 years.

- 400,000 pastoral households, with at least 30% women and 10% youth headed, adopt Livestock Identification and Traceability Systems that support the offtake of 1,000,000 TLUs in 23 counties, to enhance access domestic and export livestock and livestock products markets in a changing climate.
- 500 new feed banks (at least one per ward in 500 wards) supported through establishment and conservation of climate-resilient forage (fodder and pasture) varieties and densified livestock feeds.
- Number of pastoral households using index-based livestock insurance and other financial services increased from 21,000 to 800,000 pastoral households, with at least 30% being women-headed.
- Index-based livestock insurance coverage increased from 110,000 to 2,400,000 TLUs over 5 years through partnerships with the private sector.
- An additional 500 community-based breeding programmes for multiplication and in-situ conservation of adaptable indigenous animal genetic resources for sheep, goats, camels, and cattle established.
- One new national gene bank established for ex-situ conservation strategic national animal genetic resources.
- Water sources and points established along livestock migratory routes in 23 ASAL counties.

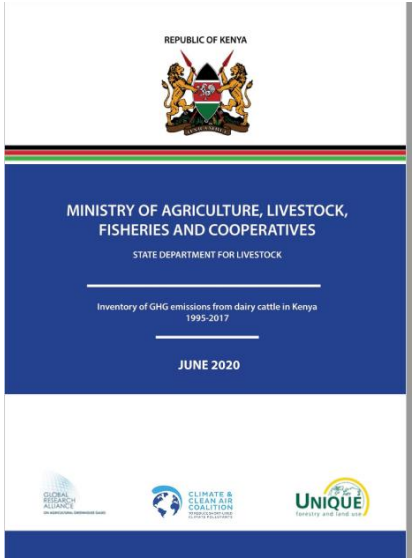
How this has benefitted the sector in Kenya

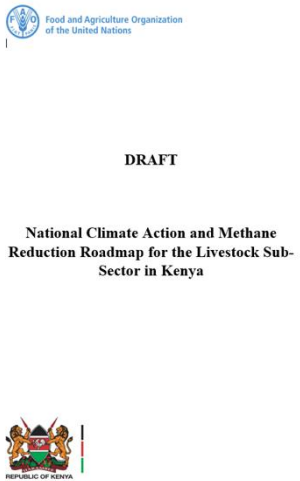
- Prior to Kenya's NDC (2016), no climate investment supported the livestock sector in Kenya
- Putting livestock as part of NDC targets has given rise to critical livestock initiatives
    - 2 World Bank funded projects: KCSAP – USD $65 million in 21 of 47 Kenya's Counties) with 60% of funding classified as climate finance, and DRIVE project -, a regional initiative - USD $150 million for Kenya) with 40% climate finance (IBLI)
    - IFAD is funded KeLCOP (USD $56 million in 10 Counties) with 42% climate finance, and
    - GCF funded TWENDE Project (USD $20 million in 9 Counties) supports rangeland landscape restoration in drought feed reserve areas for pastoralists
    - Current design of regional Dairy NAMA GCF funded initiative (KE, RW; TZ; UG), will mobilize USD $60 million.

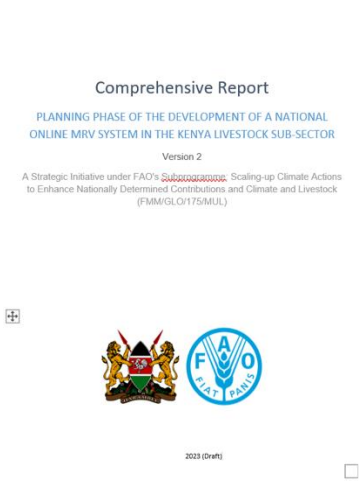
And there is more…..additional support

	Type of support	Partners
	improving institutional capacity to manage the GHG inventory compilation process and to establish a sustainable system for producing regular national GHG inventories	• New Zealand Government (MPI/GRA) • CCAC/FAO
	improving the national capacity on data collection and documentation of the inventory process;	• FAO/CCAC • New Zealand Government (MPI/GRA)
	Support to development of Livestock Climate Actions and Methane Mitigation Roadmap	• CCAC/FAO
	Establishment of Livestock MRV system linked to National MRV system	• CCAC/FAO
	improved capacity to identify and assess the impact of specific mitigation actions and develop bankable proposals to access climate finance	• FAO/CCAC • New Zealand Government (MPI/GRA)

Some of the supported work







Some early outcomes for the sector in Kenya

- Increased animal productivity estimated at 10–30% due to improved feed and water availability due to better targeted livestock climate actions.
- They have also increased incomes by up to 20% which have enhanced resilience of livestock keepers supported by advisory services
- Reduced animal mortalities (from as high as 70% to 20%) among livestock keepers using IBLI,
- Reduced livestock emissions of up to 20% mainly due to improved livestock management practices including better manure management practices.

Conclusion

- Robust systems for data collection, archiving and storage will ensure compliance to the TACCC principles required in a GHG inventory
- To reduce uncertainty and ensure MRV systems provide clear and relatively accurate livestock-based targets into NDCs, it is important to build the necessary institutional capacity
- Putting livestock targets in a country NDC is a signal of opportunities for the sector to receive climate finance and thus support concurrent objectives in food and nutrition security; economic development and environmental sustainability

Thank you
Asante Sana
Merci
Obrigado

Thank You & Closing

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African Climate Action Partnership
Partnering on climate action in Africa

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