



ILRI-CIMMYT Study Tour Report: Develop Resilient and Low Emissions Crop-livestock



December 2024

Authors

Adair Zepeda, Adrian Quero Carrillo, Carlos Galdino Martínez García, Germán David Mendoza Martínez, Jaime Leal, Maria del Carmen Zavaleta Córdoba, Pilar Espitia Hernández, Ricardo Améndola, Vladimir May, Kindu Mekonnen, Assenath Kabugi, Ben Lukuyu, Santiago López Ridaura, Haimanot Seifu and Anthony Whitbread.

ILRI-CIMMYT Study Tour Report: Develop Resilient and Low Emissions Crop-livestock Systems in Mexico. ILRI, Nairobi.

The [Mixed Farming Systems Initiative](#) aims to provide equitable, transformative pathways for improved livelihoods of actors in mixed farming systems through sustainable intensification within target agroecologies and socio-economic settings.

This report is part of a CIMMYT-ILRI collaboration to build closer ties for Mexico and LATAM bilateral agenda. The inclusion of Mexican researchers, representatives of their institutions, is important to strengthen Mexican National Research Programs, and reach small scale farms to improve the livestock management, without competition on staple crops.

© 2024



This publication is licensed for use under the Creative Commons Attribution 4.0 International Licence - <https://creativecommons.org/licenses/by/4.0>.

Unless otherwise noted, you are free to share (copy and redistribute the material in any medium or format), adapt (remix, transform, and build upon the material) for any purpose, even commercially, under the following conditions:

 **ATTRIBUTION.** The work must be attributed, but not in any way that suggests endorsement by the publisher or the author(s).

Partners



UNIVERSIDAD AUTÓNOMA METROPOLITANA
Unidad Xochimilco



Contents

Introduction	4
Day One: Visiting Lab Facilities, Presentations and Discussions	4
Day Two: Mazingira Center visit	8
Day Three: Kapiti Research Station visit and Wildlife Conservancy	11
Day Four: Observing Kenya's Independence Day	12
Day Five: Agenda co-design	13
Reflection meeting outcomes	16
Conclusions	17
Acknowledgments	17
Annex 1. A brief reflection meeting notes with the Mexican visitors	18
Annex 2. List of study tour participants	20

Introduction

ILRI and CIMMYT are collaborating on a research project titled 'Develop Resilient and Low-Emission Crop-Livestock Systems in Mexico' to deliver a comprehensive response to the Mexican Government's 2024 investment initiative, 'Mexico Contribution 2024.' The project focuses on achieving three key goals:

- Building local capacity in forage and feed technologies to support productive, low-emission systems.
- Enhancing the use of dual-purpose feed-food crop varieties tailored to Mexican crop-livestock systems and identifying priority value chains for further development and reporting.
- Strengthening local capacity to measure and monitor methane emissions from livestock systems to promote low-emission livestock development.

As part of the capacity development program, ILRI and CIMMYT organized a study tour for a Mexican delegation to Kenya. This tour aimed to expose participants to ILRI's livestock research agenda, strengthen connections among Mexican researchers, CIMMYT, and ILRI, and identify potential activities that could be implemented in Mexico through various partner institutions.

This report captures the experiences of the Mexican delegation and ILRI partners, serving as a collective record of the visit. It begins with an introduction, followed by a detailed account of daily activities. The third section presents a brainstorming and reflection session where participants identified mutual interests and co-designed an agenda for future collaborations. The report concludes with reflections on the study tour and key takeaways for future initiatives.

Day One: Visiting Lab Facilities, Presentations and Discussions

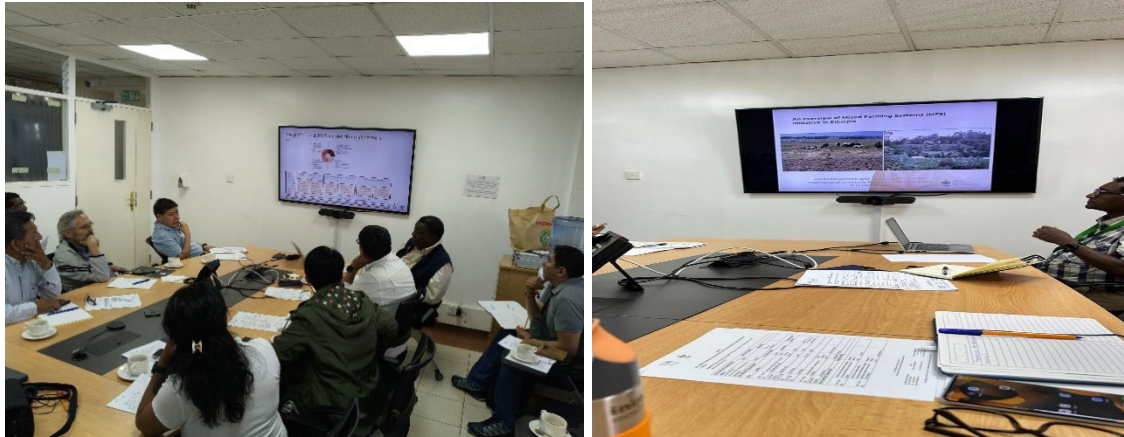
The Mexican study tour participants arrived at ILRI's headquarters in Nairobi in the morning and proceeded to Mara House for briefings and discussion with ILRI scientific staff members. The discussions focused on ILRI's organizational structure and strategic agenda, highlighting its role in advancing agricultural research and innovation. ILRI's headquarters feature state-of-the-art infrastructure, equipped with cutting-edge facilities and advanced technologies. These capabilities have been continually enhanced through diverse investments, supporting a wide range of laboratory and applied research aimed at addressing global challenges in agriculture, climate change and livestock systems.



Study tour participants from Mexico (CIMMYT, Research and University partners) and ILRI

In the morning, **Ben Lukuyu** (ILRI, Senior Scientist) presented about three main research lines, where the objective is to feed animals better to improve smallholder farmers' livelihoods - nutrition, health and reduce GHG emissions (<https://hdl.handle.net/10568/169393>):

- 1.- Diagnostic, analytical and decision-making tools (Lukuyu et al. 2024)- (<https://hdl.handle.net/10568/169738> and <https://hdl.handle.net/10568/169743>)
- 2.- New cultivars/varieties with increased feed quantity and quality.
- 3.- Feed preservation, processing and supplementation technologies.



Discussion on ILRI's research activities and strategic research agenda.

Kindu Mekonnen: presented an overview of mixed Farming Systems (MFS) (<https://hdl.handle.net/10568/163703>). The main implications of farm typologies: small subsistence farm, large subsistence farms, moderate-income farms and diversification commercial oriented farms, in addition he mentioned the challenges and entry points for sustainable intensification.

The challenges identified in MFS in Ethiopia are clustered under:

- System exploration
- Production and utilization
- Institutions, markets and policy
- Impact of climate change
- Resource management

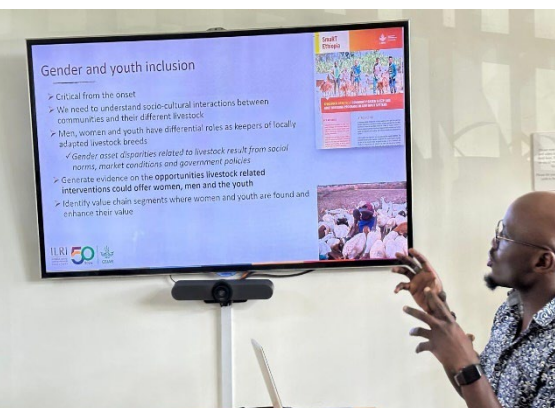
Kindu emphasized that improved technologies, management practices, and the creation of an enabling environment are key entry points for addressing interconnected challenges. He shared insights from their experience in bundling feed and forage innovations with supporting enablers, such as capacity development, revolving systems for forage seed supply, demonstration of innovations, engagement in multi-stakeholder platforms, and commercial forage seed production businesses. These integrated approaches aim to accelerate the adoption of innovations and practices, ultimately improving the livelihoods of smallholder farmers.

Annie Cook delivered a presentation on the interconnectedness of health across animals, humans, and ecosystems. She emphasized how livestock and population health technologies play a crucial role in promoting healthy animals and effective disease management. The presentation highlighted the links between human and ecosystem health, focusing on critical issues such as antimicrobial resistance, food safety, and nutrition. Annie also addressed the impact of re-emerging zoonotic and vector-borne diseases, illustrating their complex interactions with the environment, wildlife, and climate change (<https://hdl.handle.net/10568/169427>).



Discussion on livestock and health management strategies.

Edwin Oyieng: The presentation from Edwin focused on the adoption of an entrepreneurial ecosystem approach to climate-smart and small ruminant production in pastoral communities (<https://hdl.handle.net/10568/169392>). Edwin highlighted the increasing frequency and severity of droughts driven by climate change, which have led to restricted mobility, desertification, loss of breed diversity, and reduced species resilience—issues compounded by limited infrastructure to support interventions. He emphasized the critical need to understand how climate impacts livelihoods through biodiversity loss and the importance of raising awareness about the consequences of genetic erosion. Gender-sensitive actions within community groups were identified as pivotal for enhancing grassland quality management and fostering faster adoption of sustainable practices. Edwin also underscored the importance of contextualizing innovations to accelerate the transformation of pastoral practices in response to climate challenges.



Discussion on livestock genetic improvement and participatory research approaches.



Laboratory visits at ILRI campus in Nairobi, Kenya.

Day Two: Mazingira Center visit

The primary objective of the day was to visit the Mazingira Center at ILRI's headquarters, attend scientific presentations, and observe ongoing experiments. These included studies on feed quality, greenhouse gas (GHG) emissions measurements, experimental protocols, and the infrastructure for biodigesters.

Claudia Arndt: Presented an overview of Mazingira activities, especially related to GHG emissions in Africa's livestock (<https://hdl.handle.net/10568/169429>).

She highlighted Mazingira Center vision: "To test and develop management strategies that improve livestock productivity and at the same time reduce greenhouse gas (GHG) emissions, resource consumption, and environmental degradation, contributing both to mitigation and adaptation". The presentation also included an overview of two key environmental research sites:

- Controlled laboratory installation at the Mazingira Center.
- ILRI Kapiti Farm, research and reserve station (field site).

Edward Cabezas: his presentation focused on ruminants' production systems and enteric CH₄ emissions; Tier 1 and 2 methodologies for estimating enteric CH₄ emissions; animal (sheep and dairy cows) studies in respiration chambers; and cattle study using the SF₆ tracer gas technique (<https://hdl.handle.net/10568/169631>).

To enhance the study tour participants' understanding, a guided tour of the Mazingira Center was conducted by **Jesse Kagai**. During the tour, participants explored the operation of animal chambers used for measuring greenhouse gas (GHG) emissions and observed procedures for quantifying emissions from manure, soil, and water. Additionally, they visited the anaerobic digesters facility to gain insights into its operation and functionality. Additionally, the formulation of different livestock diet types was presented as follows:

- Average diet = Protein 12%, gross energy 61%
- Low Diet = Protein 10%, gross energy 59.5
- High Diet = Protein 14%, gross energy 62.5
- 88% forage and 12% concentrate.

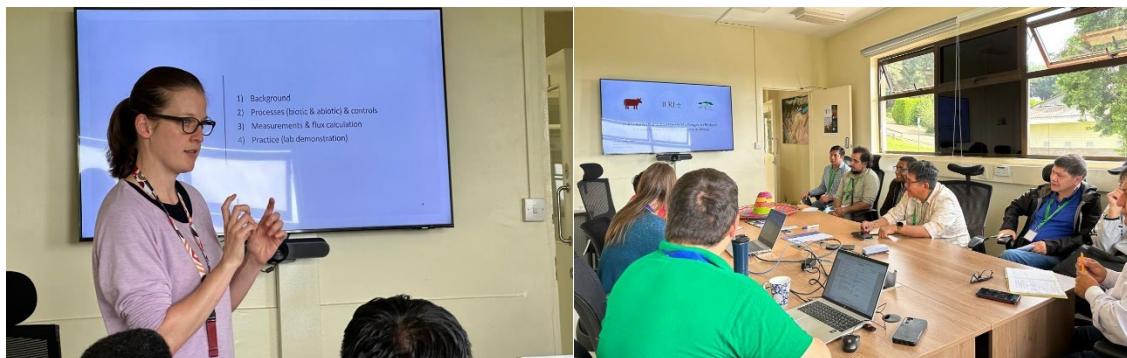
- The animals are subjected to a 90-day diet trial



Mazingira GHG emissions measurement lab.

Sonja Leitner, Daniel Mulat, and Collins Odour provided an in-depth explanation of how soils regulate the production, consumption, and exchange of greenhouse gases (GHGs) such as CO₂, CH₄, and N₂O. They highlighted the complex interactions occurring between the atmosphere, biosphere, hydrosphere, lithosphere, and the soil, collectively known as the pedosphere (<https://hdl.handle.net/10568/169428>). As part of the session, we visited the chambers used to measure GHG emissions from soil and manure. Two types of chambers were demonstrated:

- Closed/Static Chambers
- Dynamic Chambers



Discussion on soils, manure management and carbon sequestration.



GHG emissions measurements techniques.

Evening Visit: Exploring Bio-slurry Production and Benefits

The Mexican delegates visited the Bio-slurry product from Biogas production plant and learned how bio-slurry is important for the environment and improving soil fertility and boosting crop production when applied as a source of organic fertilizer.

Daniel Mulat mentioned some of the manure-fed household biodigester benefits (<https://hdl.handle.net/10568/169399>):

- Kyoto-GHG Mitigations: Significant reduction in greenhouse gases with proven carbon market revenue
- Multiple Co-Benefits: Include improvements in climate, health, gender equality, livelihood, ecosystem, and education
- Next steps: Develop a robust, verifiable, cost-effective, and scalable MRV system to quantify GHG mitigation for carbon finance and the co-benefits with the goal of monetizing them for impact investment.



Biogas structure for bio-slurry and methane capture.

Day Three: Kapiti Research Station visit and Wildlife Conservancy

The Kapiti Research and Wildlife Conservancy spans 13,000 hectares in Machakos County, southern Kenya, located 60 kilometers from ILRI's Nairobi campus (<https://www.ilri.org/research/facilities/kapiti-research-station-wildlife-conservancy>). The ranch is strategically divided into pastures, forage trial plots, research infrastructure for housing and storage, and is representative of Kenya's dry agroecological regions. A significant herd of cattle, sheep, and goats ("shoats") is managed on extensive grazing or pastureland. Key activities at Kapiti include animal healthcare practices, forage crop trials to evaluate biomass production, and greenhouse gas (GHG) measurements for carbon and methane emissions. During the visit, **Nelson Mbale** provided a brief overview of the farm layout and its main activities. On-site, **Vicent Odongo** elaborated on the grazing system, animal management practices, and the routine operations carried out at Kapiti.



Livestock management, GHG monitoring and forage adaptation trials in Kapiti research station, ILRI-Kenya.

A key feature of Kapiti Research Station (RS) is its extensive open grazing activities conducted within the ranch's boundaries. Notably, the region is home to natural predators such as cheetahs and lions, which have been observed within the area. This ranch plays a crucial role in replicating natural grazing conditions representative of several regions in northeastern Africa. To support these efforts, biomass monitoring and light signal systems have been tested and installed, enhancing the station's capacity to study and manage grazing dynamics effectively.



Livestock predators and their control at Kapiti research station, ILRI-Kenya.

Day Four: Observing Kenya's Independence Day

Thursday 12th is Kenya's people was celebrating the 61 years of Independence. During this holyday the Mexican committee observed the local festivities with respect. No professional activities were performed.

Day Five: Agenda co-design

On Friday, December 13th, a reflection meeting was held at the Dusit Princess Hotel in Nairobi. The meeting aimed to evaluate the successes and areas for improvement from the five-day visit to ILRI's laboratory facilities and the Kapiti field research site. It also sought to gather key lessons and identify potential areas for future collaboration.

The reflection meeting was chaired by **Kindu Mekonnen**, with **Ben Lukuyu** also contributing. Each participant was invited to share their reflections on the learning experience and provide suggestions for enhancing future activities. Based on these discussions, three tables were developed: Table 1 provides a general overview, Table 2 outlines the main areas of interest by participant or institution, and Table 3 details the Action-Research co-agenda for future implementation. A comprehensive summary of the reflection meeting outcomes is included in Annex 1.

Overall, participants expressed that, despite its shortness, the visit was highly relevant and offered valuable insights into ILRI's research agenda and technical capabilities. It highlighted ILRI's potential to create meaningful impacts in rural communities, particularly in livestock management. The most significant topics discussed are summarized in the following table:

Study tour evaluation by participants.

	What goes well?	What could be Improved?
UAM-X	Available information	More preparation time before visits
Chapingo	- Linking investigator-farmers in Africa - GHG results	- Impact on productive systems evidence - More preparation time before visits - More information on grazing research - Carbon sequestration through soil (roots)
CIMMYT MFS	- Very clear perspective across ILRI's programs - Mutual interest topics	Include farms into the visit to understand local conditions
CIMMYT PSUR	Methodologies, participatory approaches and current training material	Complicated timing due to CIMMYT year closure
CIMMYT YUC	Methodologies and data related to process	- Real farmers interaction to understand innovation transference - Know impact on territories and their measurement/evaluation
Colpos	Opportunities to apply technologies, fast transfer genetic resources (tropical grasses, kikuyu, Cynodon)	Information about varieties exchange Mexico-ILRI

	What goes well?	What could be Improved?
	grasses.) to adapt material at Mexico farms	
ILRI	• A general positive perspective of the results • Interest in build a mutual agenda with CIMMYT and Mexican institutions/researchers	• Short time preparation
INIFAP	• African people are very kind • ILRI structure is amazing	• Very short time to learn and overlap of the visit with holidays in Kenya.
UAAAN	• Very useful information and labs visits	• Short time to learn on more research topics •
UAEM	• Helpful for future research design (extension, emissions, etc.) • Networking with ILRI and other partners	• Seeking international funds for exchange students and visits

Derived from brainstorming activity, some key points were highlighted as follow:

Mid-and long-term agendas for future collaboration.

Institution	Objective	Mid-term	Long-term
Chapingo			
CIMMYT MFS	• Merging teams and strengthening research teams across institutions • Generate a three-side space to share expertise and research	• Share key information to develop typologies • Implement ILRI's tools as G-feast • Integrate a work group	• Create a robust methodology for MFS analysis • Build strong ties for Mexican institutions and ILRI researchers
CIMMYT PSUR	• Transfer innovations to farmers, with the ILRI experiences	• Test innovations on field	• Set technology for grass, easy samples exchange (methane), use ILRI labs, stablish trials
CIMMYT PSUR	• Mexico has different mixed systems. • Grazing and legumes trials per agroclimatic zones (alternatives)	• G-feast methodology, genetics management (shoat) for gender • Poultry conservation on communities	• Incorporate more practices and training • GHG emission research (carbon and methane)
CIMMYT YUC	• Exchange knowledge and processes methodologies	• Capacity building	• Human capital development for research (Mexico and Kenya)
Colpos	• Genetics resources transfer to develop new adapted varieties in Mexico	• Genetics transfer to develop new adapted varieties in Mexico	• Develop highly efficient varieties for grazing models

ILRI	Integrate cooperation for Mexico-LATAM research	Stablish a co-agenda	Reach valuable knowledge products
UAAAN	Share knowledge resources through methodologies and genetic resources.	- Share genetic resources, including forage wheat, oats, and triticale. - Compare and share research.	- Enrichment of diets for ruminants through solid-state fermentation, considering forage species of wheat, oats, and triticale and their agricultural residues. - Collaborate in the evaluation of the impact of these diets on the emission of GHG.
UAEM	Strengthening ties, developing a cooperative agreement	Build a relevant relationship	Exchange students and researchers
UAM-X	- Define areas in Mexico to collaborate - Commercial statistics for feed anti-methane strategies	Improve methane models at Mexico, costly studies	Manure management models
INIFAP	Validate and transfer ILRI Technologies in Mexico whit small framers.	Make alliances whit research centers that have equipment to measure GEI.	Interaction whit ILRI research and generate publications based on national data.



Discussion on meeting reflections

Reflection meeting outcomes

Some features can be defined in the next Table, merging general discussion of the individual learnings. A mutual agenda could be guided to exchange experiences in key topics and activities, specially related to knowledge generation and innovation divulgation to achieve a successful rate of adoption through farmers, integrating research expertise from specialized institutions.

Actions required for future collaborations

Actions	Products
1 Future visits	• Exchange staff/researchers/students • Visits according to specific agendas (innovations, research, capacity development) • Collaborative agreements (two-ways)
2 Co-research	• Mexico has unique species, used for forage • Local plants in Mexico could be used at Africa for GHG reduction • Mexico has very different ecosystems, that can lead to new research products and strategies to guide other regions • Grazing models to extensive activities • Exchange varieties for experimentation and breeding • Solid-state fermentation (SSF) can be useful for evaluating animal diets and reducing GHG emissions. SSF converts agro-lignocellulosic materials (straws, husks, bran, bagasse, molasses) into nutrient-rich products, reducing antinutritional factors. • Reduce GHG, especially methane • Silage research • Legumes, nutritional blocks, and other alternatives
3 Training	• Exchange students for training, find funds together • Students/staff training • Innovation practices • Gender, cultural approach • NAR • Extension skills • Share methodologies and data
4 Innovation practices at field	• Visit farms and trials that take place with communities • Transfer innovations to Mexican case, especially useful for women and smallholders • Biodigesters
5 Share infrastructure	• Institutions have equipment, but can be shared to improve research
6 Co-funding	• Find mutual beneficial schemes to gain resources for several projects
7 ILRI expectations	• R4D with Mexico • Strengthen partnership with different actors and CIMMYT

Conclusions

A joint research agenda between CIMMYT and ILRI holds significant potential to enhance capacities of both institutions across Africa and Latin America, including Mexico. This collaboration will be instrumental in empowering local research teams and fostering the development of Mexican research capacities through the dissemination of new methodologies and experiences.

CIMMYT, through SAS-LATAM, expresses strong interest in establishing an Expert panel. This panel, comprising Mexican partners and ILRI scientists will play a crucial role in integrating livestock in the mixed farming systems and incorporating these perspectives into Research for Development (R4D) agenda.

Acknowledgments

The authors gratefully acknowledge the Government of Mexico for its invaluable support of the "Develop Resilient and Low-Emissions Crop-Livestock Systems in Mexico" project, a key component of Mexico's 2024 contributions. We extend our sincere appreciation to the International Maize and Wheat Improvement Center (CIMMYT) and the International Livestock Research Institute (ILRI), along with the local partners in Mexico, for their dedicated implementation of the planned activities and their commitment to ensuring the effective use of the Mexican government's investment. Special thanks are also due to the organizers, participants, ILRI scientists and all those who directly or indirectly contributed to the success of the study tour in Nairobi, Kenya. Your efforts are greatly appreciated.

Annex 1. A brief reflection meeting notes with the Mexican visitors

ILRI - CIMMYT collaborative project: Develop resilient and low emissions crop-livestock systems in Mexico.

13 December 2024

A total of nine participants from Mexico, two staff members from ILRI and an independent language translator from Nairobi attended the discussion meeting. The venue of the meeting was Dusit Princesses hotel in Nairobi city. The objectives of the meeting were to reflect on what went well and could be improved from the five-day visit of ILRI lab facilities and Kapiti field research site and draw some lessons and highlight future collaboration areas. The following is the list of points captured from the discussion:

What went well and could be improved:

- The trip was interesting and useful. We are happy and satisfied with the study tour. We thank ILRI and enjoyed the presentations and lab and field visits. Scientists at ILRI are friendly, helpful, and open to work with us in Mexico. The visit has opened opportunities for future research collaboration between ILRI and Universities and research organizations in Mexico. The G-FEAST type of training is useful for us. The genetic conservation methodology for poultry is also important. Some alternative livestock production systems need to be opted and strengthened.
- The research work at ILRI is relevant for Mexico. The communication and diffusion of innovations (feeding practices) and the extension approach are interesting. These could be replicated in Mexico. The gas emission measurement approaches and facilities are useful. Methane and other GHG measurements are important for Mexico. We need to focus on some parts of Mexico and work with good models to measure emissions. The data hub and methodologies at ILRI are relevant for us. Measuring the impact is also important.
- The approach on the management of faeces of the cattle are relevant for Mexico.
- We did not see much research work on carbon capture in the soil and grazing lands. The Brazilians have a very good experience on this, which can be explored and considered in future research programs.
- Mexico's strong opportunity for CO₂ capture and sequestration rely on almost one million square kilometers of semi-desert and desert areas with poor plant-soil cover with valuable plants (grasses) as result of overgrazing. Hence promoting strategies to support grass and forage shrubs and trees is a good immediate strategy to improve land cover for these vast land areas; similarly grazing technology toward efficient grazing represents an immediate opportunity to support CO₂ capture and

sequestration. For other areas watered (temperate, arid or tropical) as well as tropical areas grazing technologies will reduce GHG emissions.

- Some of the visitors did not know about the field trip. It would have been useful if they received information ahead of time.
- The academic visit was short. If the study tour was a bit long, we could visit one or two farmers, understand challenges, their local practices and learn from their experience about adopting or rejecting new innovations of the farm.

Way forward/action points:

- Agreement between Universities and ILRI can be useful to organize exchange visits and student attachment. This should be helpful to develop skills among participants. Moreover, the agreement can help to develop joint project proposals for funding and organizing exchange visits. CGIARs experiences and strategies to apply for financial support from international support (industrialized countries) to reduce GHG, will be very valuable.
- ILRI and CIMMYT can share data and measure the impact with some tools. Agro-ecologies are diverse in Mexico. Sharing the genetic resources of ILRI are important to for Mexico. Some of the best plant materials (Kikuyu, Rhodes, Cynodon grasses) can be evaluated in the tropical Mexico to provide options and support the Mexican farmers. Sample exchange for analysis is also important. Comparative studies about forages between Mexico and Kenya should be useful to understand the differences results and dynamics of the feeding strategies used to feed the livestock.
- It is of interest to Mexican institutions to explore the possibility that ILRI could provide support with its databases to calibrate the NIR equipment that we have available in Mexico. This would allow Mexican researchers from all institutions to advance their forage analysis.
- Developing skills of local partners is a critical component that ILRI and CIMMYT can do in the future.
- Statistics of commercial feed in Africa, manure and grazing land management, multi-nutrient blocks and silage making could be collaboration areas.
- The link from researchers, extension, and farmers here at ILRI is strong and this is lacking in Mexico. The approach of communication and extension of innovations at IRLI is interesting and this could be replicated in rural areas in Mexico.
- The methodology on “Adapting an Entrepreneurial Ecosystem approach for Climate-Smart Small Ruminant Production in Pastoral Communities” research work can be adapted to the Mexico situation.
- Farmers preferences of Maize varieties should be looked at and explore opportunities on dual purpose maize varieties.
- Biological animal diet evaluation including solid state fermentation, and how they affect GHG can be good are of collaborative research work.
- Infrastructure like biodigester from ILRI can be replicated in Mexico.

- There is a need to create an active working team for project proposal writing. This should be the first step in the team since this is very important to get funding for ongoing collaborations.
- ILRI could share information/evidence about biodigester and other technologies to be able to use it in Mexico. The government can invest in this type of initiative. Extensive system is more in Mexico. Scaling technologies to benefit small-scale farmers and impact their livelihoods is important.
- Cooperation among different actors/agencies is important to scale technologies/innovations. This approach can be tried in Mexico crop-livestock systems.
- Targeting through farm type characterization is important to bring change and impact on livelihoods of smallholder farmers. Data exchange is relevant in this case. CIMMYT is working on this type of activity and digital innovations and is interested in broadening the scope to more areas.

Dr. Ben Lukuyu (Senior Scientist at ILRI) closed the meeting by thanking the donor of the ILRI-CIMMYT collaborative crop-livestock systems project in Mexico, ILRI, CIMMYT and the organizers.

Kindu Mekonnen (PhD)

Senior Scientist (Crop-Livestock Systems)
Livestock, Climate and Environment (LCE) program
ILRI, Addis Ababa, Ethiopia

Annex 2. List of study tour participants

Institutions	Names of participants
CIMMYT	• Abel Jaime Leal, Hub Manager • Vladimir Nikolai May Tzun, Hub Manager • Ernesto Adair Zepeda Villarreal, MSc
ILRI	• Ben Lukuyu, PhD (Kenya) • Assenath Kabugi, Kenya • Kindu Mekonnen (Ethiopia), PhD
INIFAP	• María del Carmen, PhD
UAAAN	• Pilar Espitia Hernández, PhD
UAEMéx	• Carlos Galdino Martínez García, PhD
Colpos	• Adrián Raymundo Quero Carrillo, PhD
Chapingo	• Ricardo Daniel Alméndola Massiotti, PhD
UAM-X	• German David Mendoza Martínez, PhD

