

ILRI Science for Impact Seminar Series



**PATHWAYS TO SAFER,
MORE SUSTAINABLE
DAIRY SYSTEMS-
EVERY DROP COUNTS**

10 JUNE 2025, 11AM EAT



Today's program

MC: Esther Kihoro

- 1. Welcome remarks - Fabian Kausche**
- 2. Introduction to the seminar – Anna Lacasta**
- 3. ILRI's work on Dairy: a wider perspective – Isabelle Baltenweck**
- 4. Framing presentations on key areas of ILR's Dairy Work**
 - 1. Food safety in dairy - Silvia Alonso**
 - 2. Transforming Dairy through Science and Technology – Selam Meseret**
- 5. Panel discussion – facilitated by Amos Omore**
- 6. Wrap up - Anna Lacasta**

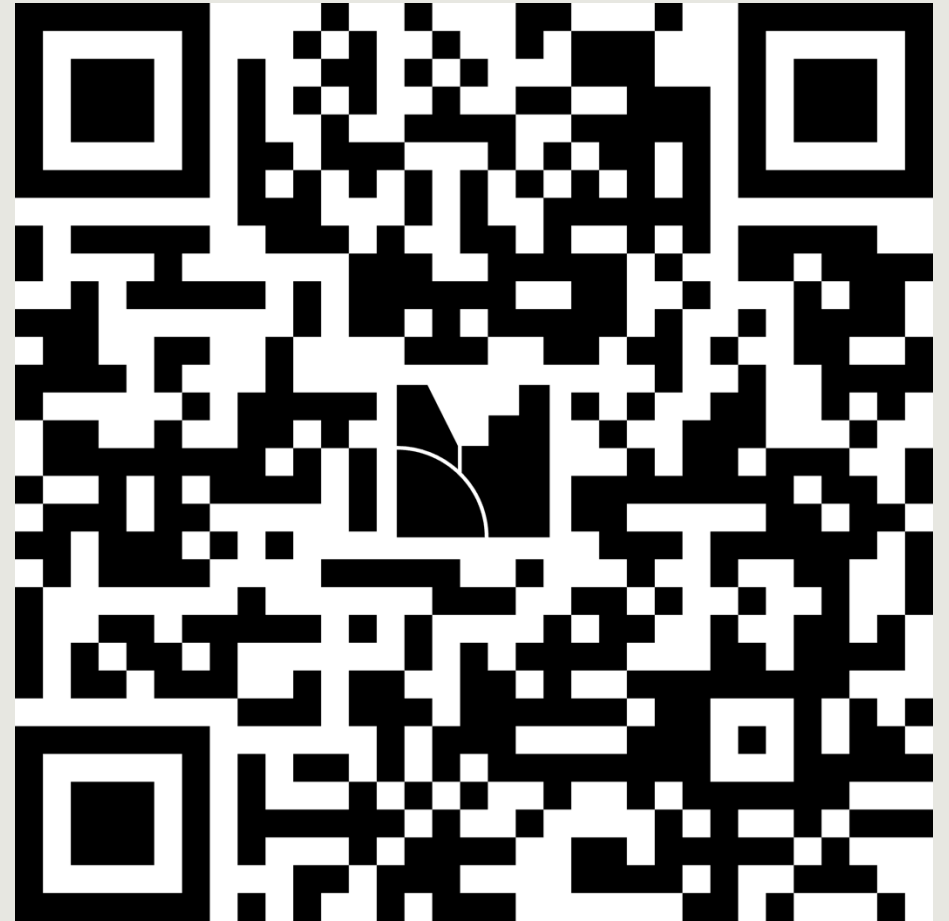
All seminars can be found on our intranet page

<https://cgiar.sharepoint.com/sites/ILRIScienceforimpactseminarseries/>

Menti Code

<https://www.menti.com/algywq633jiw>

Code: 2717 7248



QR Code

Food safety in dairy



Sweet like an
apple....



...but
potentially
deadly



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Milk and milk safety



ILRI research on food safety



Milk safety for health

“If it is not safe, it is not food”



Milk safety for wealth

“Safer food, better business”



Milk safety for equity

“Safe food, fair food”

Hazard identification and risk assessment

INFECTION ECOLOGY & EPIDEMIOLOGY
2018, VOL. 9, 1547095
<https://doi.org/10.1080/2008686.2018.1547095>



OPEN ACCESS

Status of aflatoxin contamination in cow milk produced in smallholder dairy farms in urban and peri-urban areas of Nairobi County: a case study of Kasarani sub county, Kenya

Irene Kagera^{a,b}, Peter Kahenya^c, Florence Mutua^{b,d}, Gladys Anyango^e, Florence Kyallo^a, Delia Grace^{ib} and Johanna Lindahl^{b,f,g}

Research | [Open access](#) | Published: 02 June 2022

Aflatoxin exposure among children of age 12–59 Months in Butajira District, South-Central Ethiopia: a community based cross-sectional study

[Mary Ayele](#) , [Demewoz Haile](#), [Silvia Alonso](#), [Heven Sime](#), [Adugna Abera](#), [Kifle Habte Balcha](#), [Kedir Teji Roba](#), [Geremew Tasew Guma](#) & [Bilal Shikur Endris](#)

[BMC Pediatrics](#) **22**, Article number: 326 (2022) | [Cite this article](#)



One Health
Volume 19, December 2024, 100914

Moving milk and shifting risk: A mixed methods assessment of food safety risks along informal dairy value chains in Kisumu, Kenya

[Lilly Catherine Smith](#)^a, [Andrew Stringer](#)^b, [Kevin Omondi Owuor](#)^c, [Bryson Alberto Ndenga](#)^c, [Christabel Winter](#)^c, [Keli Nicole Gerken](#)^{b d}



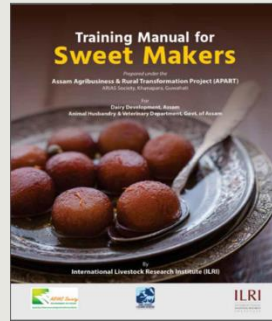
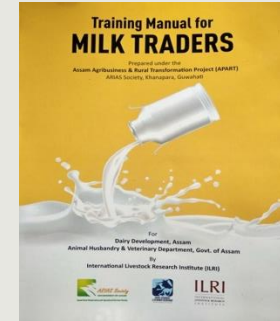
2024

Human health risk associated with aflatoxin residues in milk and milk products

Deka, Ram Pratim

Assam (India): Comprehensive Informal Dairy Sector Initiative for Food Safety (CIDSi-FS)

- **Key features:**
 - -Training, monitoring & Certification (TMC) of informal dairy value chain (VC) actors
 - - Awareness on milk safety for consumers
 - - Surveillance & testing of milk samples for quality & safety
 - - Inter-departmental coordination committee for collective actions on milk safety
 - - Policy framing for informal dairy sector
- **Developers:** ILRI & Dairy Dev. Dept, Govt. of Assam
- **Being piloted:** 20 districts of Assam covering about 20,000 informal dairy VC actors
- **Outcome:** Improved knowledge, attitude & practices of VC actors & increased productivity, quality & business volume of milk
- **Policy initiative & Scaling:** Informal dairy sector policy has been drafted and it is under consideration of the Govt. of Assam



Kenya: MoreMilk (I) – Making the most of milk

- **Main goals:**
- Improving milk safety in markets through more successful businesses.
- Design a capacity and incentive-based program for inclusive transformation of the informal dairy sector.
- **Key features:**
- -- Training and marketing of dairy vendors operating in the informal sector
- Innovative training (adult learning theory)
- Incentive-based behaviour change
- Milk marketing – to promote milk consumption in children
- **Pilot tested:** RCT based impact evaluation
- **Outcome:** Increased milk intake by children, no change in safety or business outcomes
- **Policy initiative & Scaling:** MoreMilk (II): more milk for lives and livelihoods in Kenya; ILRI-KDB initiative to upscale MoreMilk program, pilot test it, and scale it.



Kenya: MoreMilk (II) – more milk for lives and livelihoods in Kenya

- **Main goals:**
- Develop a test a scheme for the **gradual transformation** of the informal dairy sector in Kenya and bringing them under an appropriate regulatory framework
-
- **Key features:**
- Informal sector transformation program - Training and marketing of dairy vendors operating in the informal sector
- Creating 'safe' milk sources (milk farm, transporters)
- Create demand from consumers for milk from 'in the program' vendors
- **Goes beyond food safety**
 - Best farming practices
 - Market dynamics
 - Gender equity
 - Financial services
 - Investment case

**Safe and
quality
Milk**

**Vendors
compliant
with the
requirements**

**Consumer
trust**



Thank you



Transforming Dairy through Science and Technology

Livestock Genetics, Nutrition and Feed Resources Program, ILRI

ILRI Science for Impact Seminar Series:
Pathways to safer, more sustainable dairy systems
June 10, 2025

Talking points

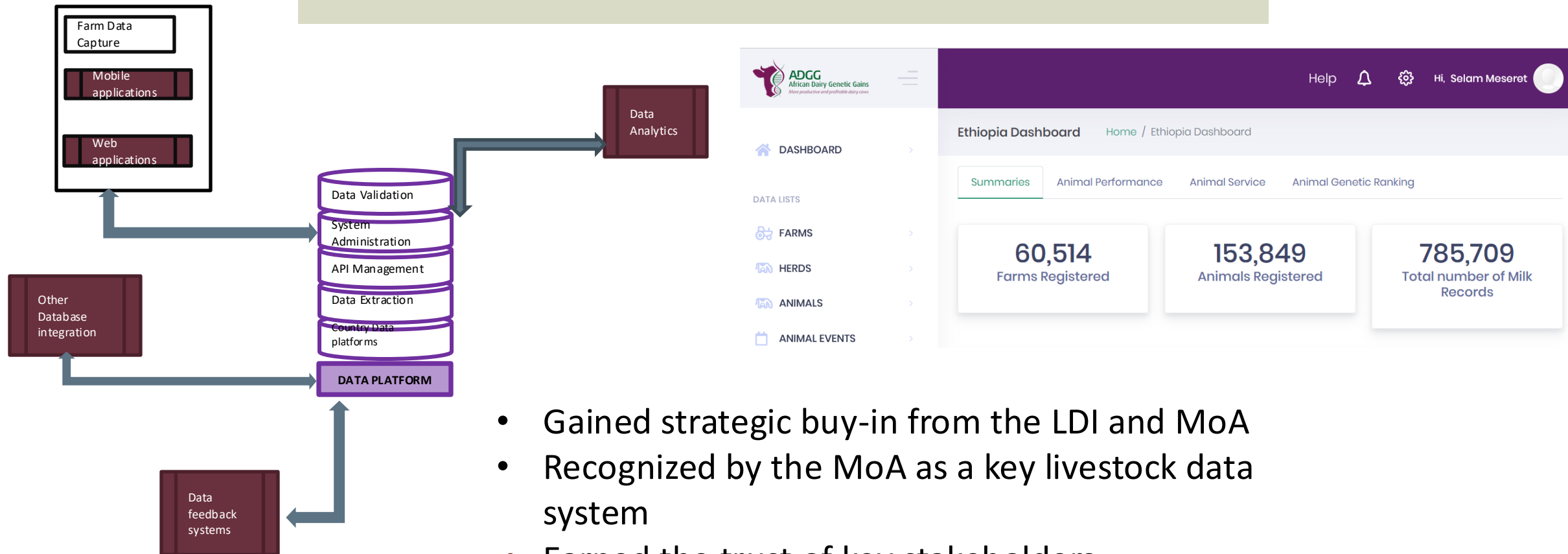
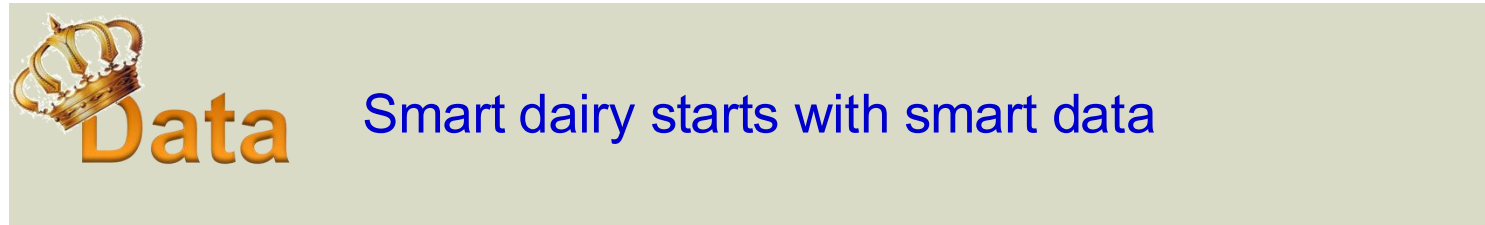
 Data-driven dairy solutions through digital tools and genomic technologies

 Building climate-smart dairy systems

 Feed and nutrition innovation

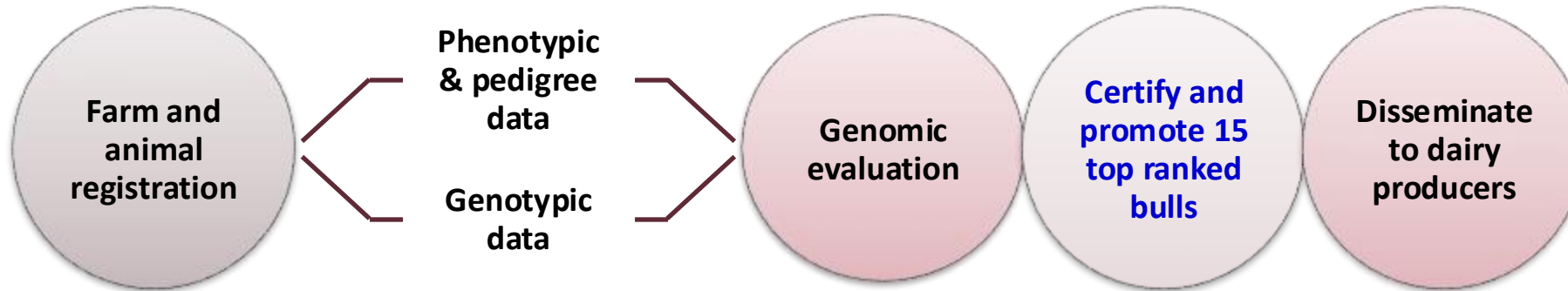


Data platform



- Gained strategic buy-in from the LDI and MoA
- Recognized by the MoA as a key livestock data system
- Earned the trust of key stakeholders

Data for national impact



Economic Impact

- Substitutes the importation of semen and live dairy animals
 - 231,000 straws ~ 2 M USD foreign currency saved
- Six PhD graduate students



CAPACITY DEVELOPMENT



Farmer-level data use

Real-time feedback via SMS – 5,300 farmers

Farmers receive immediate alerts and data-driven recommendations **165K SMS**

Digital extension services –26,500 farmers

Access to advisory services – **10M SMS**

Market incentives for tracked animals

Registered animals with records attract better market prices

Enhanced services for registered producers

Push call educational messages **-24,000 women farmers**

Breed composition feedback - 9,000 dairy animals

Climate-smart dairy breeding

Methane Phenotyping

- Methane emissions measured in approximately 900 animals using a Laser Methane Detector (LMD).
- Enables on-farm phenotypic data collection

Developing Proxy Measurements

- Research underway to validate Mid-Infrared Spectroscopy (MIR) from milk as a proxy for methane emissions.

Toward Climate-Resilient Breeding

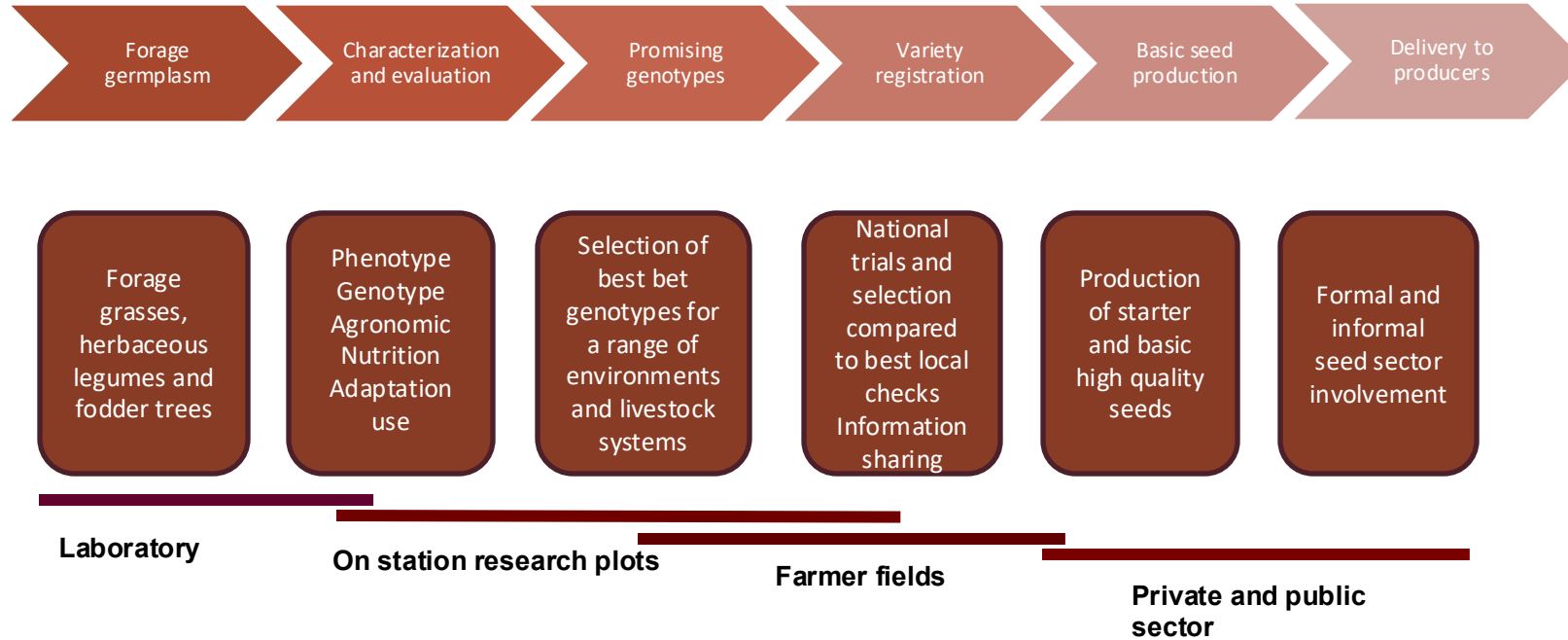
- Quantify genetic variation in methane traits
- Supports selection of low-emitting animals



- Genebank forage germplasm collections continue to serve as new forage options
- More than 30% of forage varieties registered in Ethiopia originated from the Genebank



Genebank

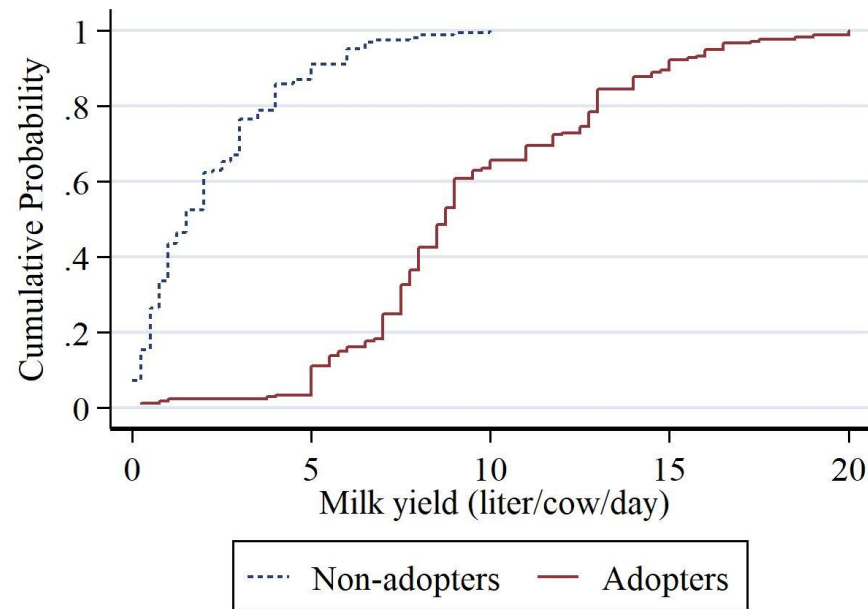


Dairy farmers

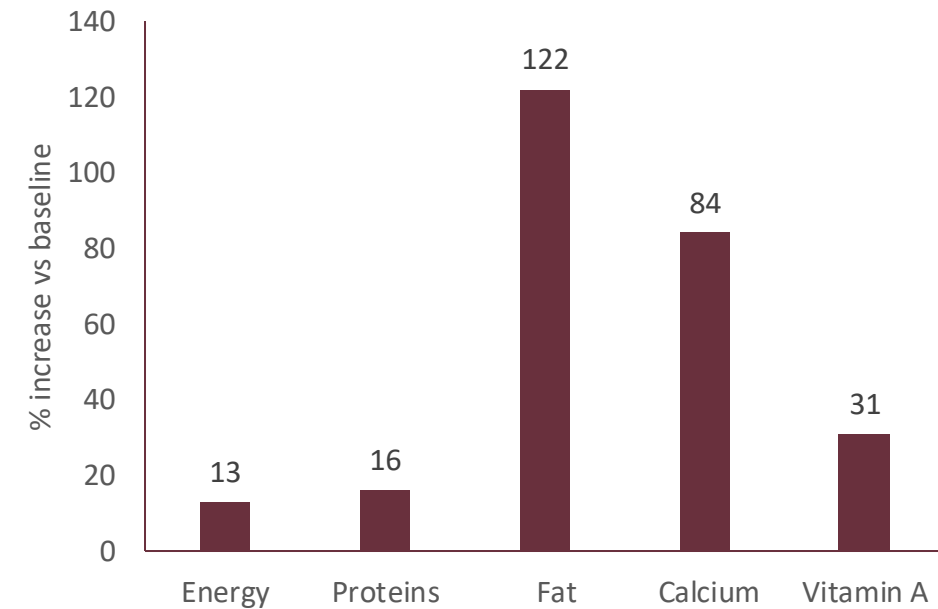


Forage R4D work supporting dairy development

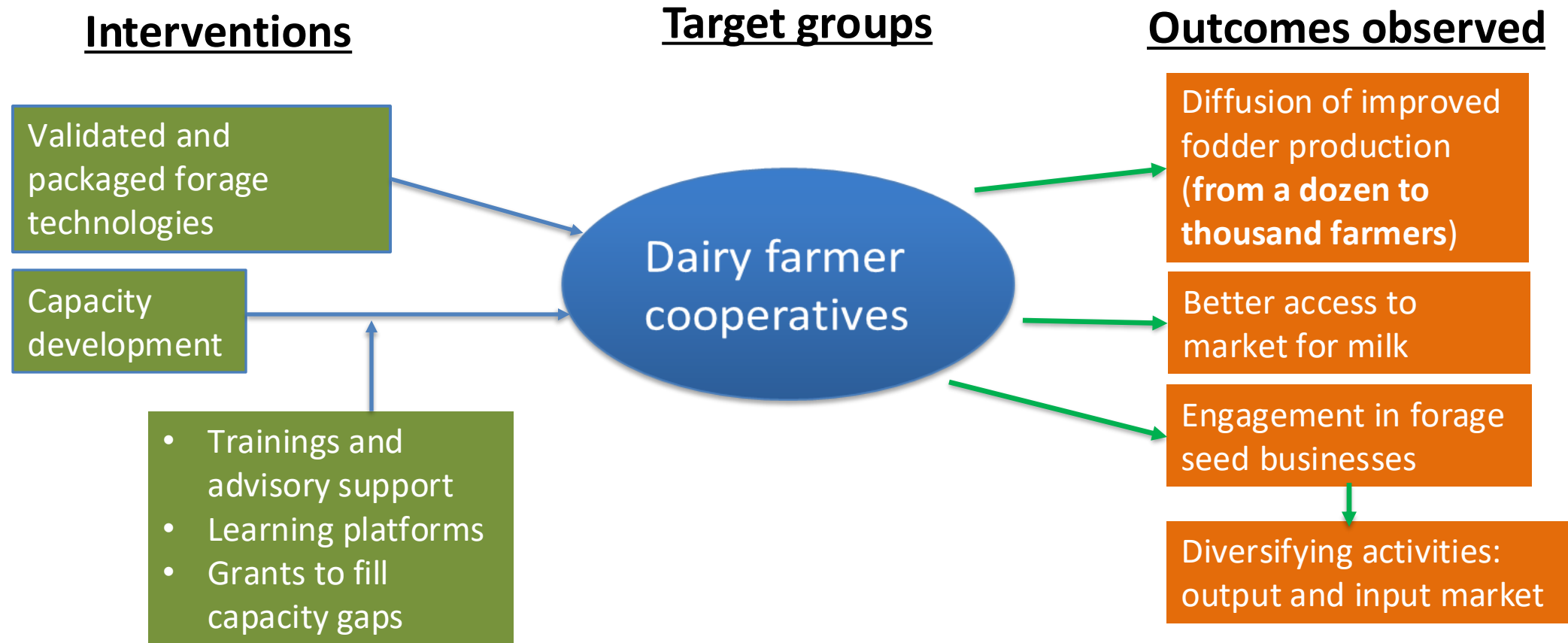
- Productivity gains due to improved forage adoption through dairy cooperatives



- House Holds nutritional gains
- Compared to the baseline, adopters were able to improve their HH nutrition

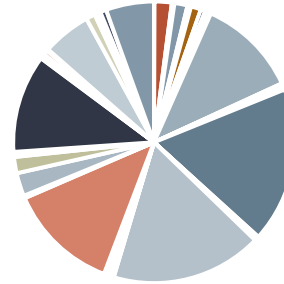


- Targeted supports to farmer cooperatives helped to build capacity and improved technology uptake



On-farm feed advisor (OFFA): a mobile app for dairy diet optimization

OFFA supporting dairying worldwide: India, Kenya, Ethiopia, Nepal leading



■ Afghanistan	■ America	■ Australia	■ Azerbaijan	■ Bangladesh	■ Baringo
■ Benin	■ Botswana	■ Burkina	■ Cambodia	■ Cameron	■ Canada
■ Chile	■ China	■ Egypt	■ Eritrea	■ Ethiopia	■ Fiji
■ France	■ Georgia	■ Germany	■ Ghana	■ India	■ Indonoecia
■ Iran	■ Iraq	■ Ireland	■ Kazakisthan	■ Kenya	■ Kyrgistan
■ Libya	■ Marcedonia	■ Malawi	■ Mauritíous	■ Mexico	■ Myanmar
■ Netherlands	■ Nepal	■ Newzealand	■ Nicaragua	■ Nigeria	■ Pakistan
■ Pilippines	■ Portugal	■ Romania	■ Rwanda	■ Senegal	■ Slovenija



Panelists



Amos Omore



Arshanee Moodley



Chinyere Ekine-Dzivenu



Silas Moasa



Immaculate Omondi



Theo Knight-Jones

Follow up

1. Next seminar on Friday July 11 – on how we are doing impact assessment and the example of IBLI impact assesment
2. A survey form will be sent out tomorrow to fill in. Please take 5 minutes to fill in
3. For suggestions and ideas contact a steering committee member
4. Follow the seminar series at <https://cgiar.sharepoint.com/sites/ILRIScienceforimpactseminarseries/>

