



Unlocking the potential of camels for sustainable food systems in drylands

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Resilient Rangelands Pavilion session on 'Shaping Kenya's Camel
Centre of Excellence for Sustainable Impact'

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What this talk will cover

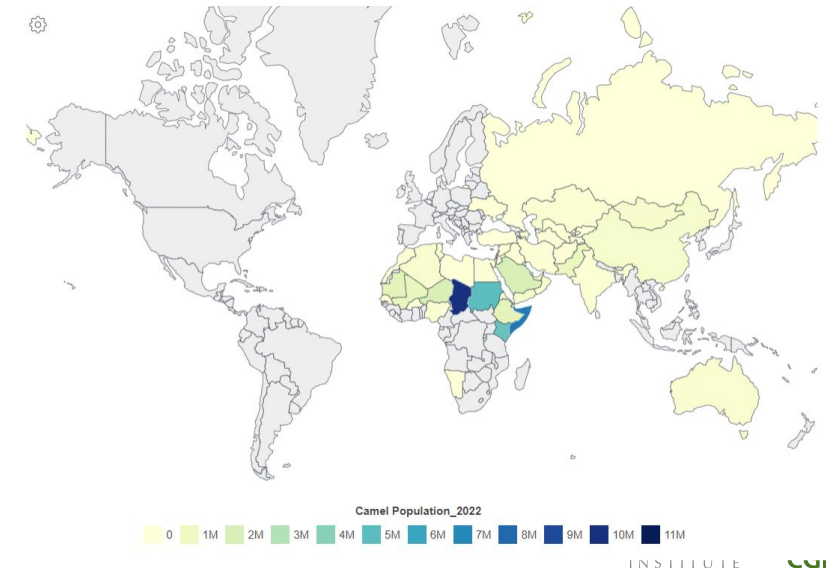
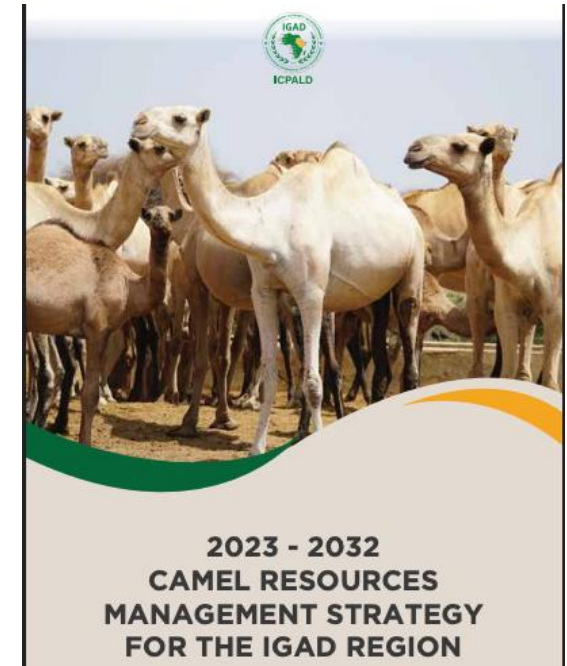
- Why camels matter- population, geography and climate adapted livestock
- Economy and livelihoods – milk, value chains and women's role
- Constraints and emerging risks – Production, markets, One Health
- Looking ahead – strategic levers and a Center of Excellence for the region



Camels in numbers: a Horn of Africa species

- **41.8 million camels globally** – 84% in Africa
- **IGAD region:** 19.1 million (46% of world herd)
- **Horn of Africa (Ethiopia, Kenya, Somalia):** 13.6 million – one in three of the world's camels
- **Kenya:** 4.6 million camels (~11% of the global herd)

• *Source: FAOSTAT, 2023*



The camel milk economy: a billion-dollar opportunity

- **Global camel milk market:** USD 14.1B in 2023, projected USD 25.0B by 2032
- **Kenya:** among the top three global producers (~1.16 billion litres/year)
- **50% of Kenya's camel milk is lost** – post-harvest losses from cooling, hygiene and transport gaps
- Recovering this loss could double producer income at no additional herd cost
- *Sources: Ait El Alia et al., 2025; Oselu et al., 2021; FAOSTAT*



Camels - a solution to food and livelihood security

Themes	
SDGs	1, 2, 5 (No poverty, zero hunger, empowering women)
Management	Mobility, skilled herding, cruelty free, collective subsistence vs capital intensive dairy
Social	Moral economy, ethical dairying, redistribution, indigeneity
Health	Eczema, autism, diabetic, lactose intolerant, immune booster, iron rich?

Elhadi et al. *Pastoralism: Research, Policy and Practice* (2015) 5:8
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Pastoralism
a SpringerOpen Journal

RESEARCH ARTICLE

Open Access

Role of camel milk in pastoral livelihoods in Kenya: contribution to household diet and income

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Abstract

Pastoral livestock production in Kenya is subject to unpredictable rainfall and drought occurrences. These adverse climatic conditions have led to vulnerable and insecure pastoral livelihoods. Despite the potential to alleviate food insecurity of pastoral communities through continuous provision of milk and other products, the potential of camel milk is yet to be fully explored. This study was carried out to examine the contribution of camel milk to pastoral household food baskets and incomes. A semi-structured questionnaire was used to collect information targeting camel milk producers in Isiolo County, upper eastern region of Kenya. The findings show that camel milk contributes significantly to pastoral households. The contribution of the milk to a household food basket was found to be significantly higher ($P \leq 0.05$) during the dry season than in the wet season. Camel milk sales contributed significantly ($P \leq 0.05$) to household incomes throughout the year. These results show the role of camel milk as a complementary source of food and income for pastoral households. Therefore, interventions aimed at supporting pastoral households need to consider the promotion of camel milk production and marketing as an option for building pastoralists' resilience against unpredictable weather.



ARTICLES

<https://doi.org/10.1038/s43016-022-00543-6>



OPEN

A shift from cattle to camel and goat farming can sustain milk production with lower inputs and emissions in north sub-Saharan Africa's drylands

Jaber Rahimi¹, Erwann Fillol², John Y. Mutua³, Giuseppina Cinardi⁴, Timothy P. Robinson⁴, An M. O. Notenbaert^{5,6}, Polly J. Ericksen⁷, Michael W. Graham⁷ and Klaus Butterbach-Bahl^{1,7,8}

Examples of camel milk value chain in Kenya

6

- Informal trade 94% and 6% formal processing (Muloi et al., 2018)
- Groups/association model through traditional smoked milk
- Private supply of non smoked
- Milk/meat processing chain
- Cosmetic products: soaps, moisturisers etc
- Hide and skins processing



From camel milk to yoghurt, cheese and ice-cream

Tuesday, February 23, 2021



Yet, camel production is constrained

- **Management:** mobility restriction, climate variability, consumer awareness
- **Production:** processing and distribution challenges
- **Research:** low investment in camel research
- **Health:** weak surveillance and diagnostic, unknown camel disease,
- **Veterinary service:** no routine vaccines, poor vet infrastructure
- **Breeding:** Artificial insemination, exporting the best breeds
- **Markets:** unfavorable policies, access to finance for scaling
- **Infrastructure:** cooling and handling facilities



One Health blind spot: undiagnosed camel outbreaks in HoA

- At least **10 documented outbreaks** across Ethiopia, Kenya and Somalia (2005–2025)
- **Most have no confirmed diagnosis** – sudden mass mortality, suspected zoonoses
- Largest event: Somalia (Jubaland) 2023 – **6,812 infected, 3,894 dead**
- Ethiopia 2021: ~200 humans affected with suspected zoonotic link – **One Health risk to people, livestock and trade**
- *The HoA needs joined-up surveillance, rapid diagnostics and a regional camel disease registry*

Looking ahead

- Invest in research on camel productivity, economic viability and biodiversity conservation.
- Strengthen infrastructure and best practices, e.g welfare around branding, calf adoption, and access to ‘responsible’ market
- Support the technical and financial capacities of men and women in camel value chains.
- Elevate extension services, curriculum, training, milk safety, and health outreach.
- Broker policies that support camel production as a sustainable livelihood.
- Adapt mobile services and innovation e.g solar-powered coolers, briefcase-labs, VetNow, vaccines



The ask: A need to coordinate our efforts on these species

Joint Efforts are needed to address

- **Camel science and One Health surveillance** – serving Ethiopia, Kenya and Somalia
- **Women and youth-led value chains** – cooling, processing, finance and standards
- **Climate-smart rangeland stewardship** – aligned to GLF Africa 2026 and the IGAD Camel Strategy

Partners so far



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC



Drylands Learning
and Capacity
Building Initiative



