

Implication of Market Intermediation on Efficiency of Camel Milk Trade in Kenya

Simon Gicheha¹, Ernst-August Nuppenau²

Background and objective

- Kenya ranks second globally in camel milk production with an estimated per annum production of 0.95 million litres valued at US\$ 35 million. However, the value chain performance have remained poor despite intervention by both government and NGOs over the last ten years.
- The chain features a large number of small (Individual) traders and large (cooperative) market intermediaries operating along different market channels.
- In view of the perception of middlemen as rent seekers in developing economies, We investigate the implication of this institution on the efficiency of camel milk trade in Kenya.
- Research question-** How does market intermediation affect the efficiency of camel milk trade in Kenya?

Material and methods

- Study area** - Isiolo County Kenya. Purposively selected due to the intensity of the enterprise. 80% of camel milk transacted in Nairobi comes from this county.
- Data collected** - Qualitative and Quantitative information collected through FGDs and expert interviews on production and sale volumes, prices, transaction, operation costs and value chain profile was collected. Data collected on August 2019- Feb 2020.
- Analytical method** – Descriptive statistics & OLS regression.

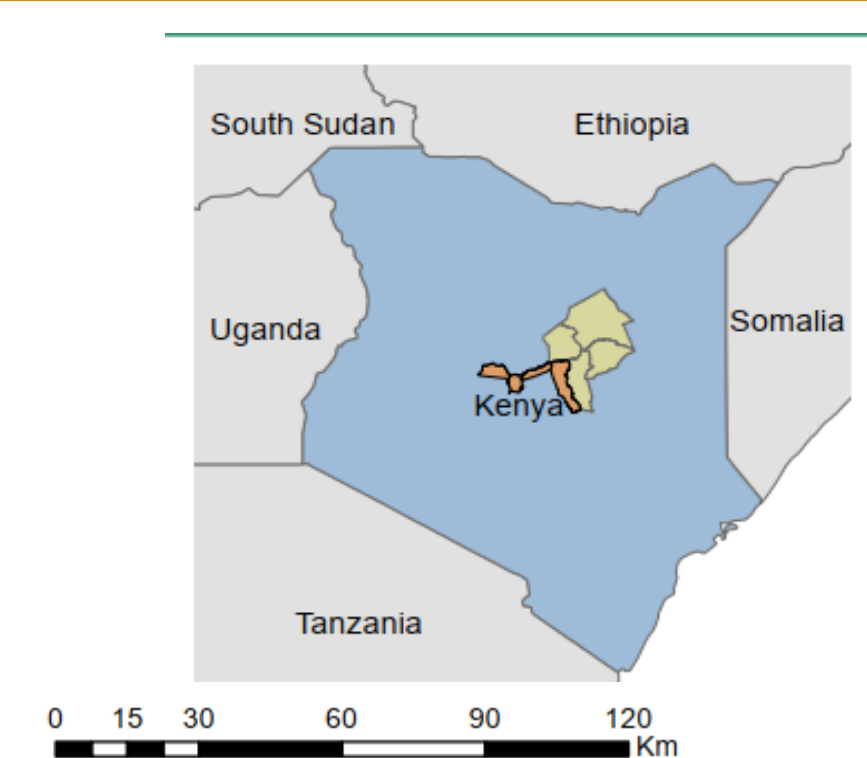


Figure 1: Map of the study area

Results and Discussions

- Majority of the Camel milk producers (79.7%) sell their produce at farm gate to traders highlighting the relevance of market intermediation. Traders operate individually or as a cooperative but also differ by nature of operation.



Figure 3: Local refrigeration and transport facilities by individual trader



Figure 2: Refrigeration and transport facilities at the trader cooperative

- These differences have implications on market performance in terms of volume handled, losses, prices and margins.

Table 1: Handled volumes, distance and milk losses

Mean of daily handled volume (Litres)		Mean producer distance to the market (km)			Milk losses (Percentage of handled volume)		
Coop Trader	Individual Trader	Farm gate	Terminal market	End market	Farm	Individual Trader	Coop trader
73.2 (34.5)	30.7 (25.8)	7.8	75.3	275.2	11.84	5.6%	2.3%

Standard deviation in parenthesis

Table 2: Market share and price distribution by agent type

Agent type	Market share	Proc. price per litre (Ksh)	Sale price per litre (Ksh)
Cooperative traders	45.7%	47.6 (11.0)	125.6(7.8)
Individual traders	54.4%	40.1 (9.6)	59.4 (3.3)

- We test whether the observed difference in size and scale of firms in the market can be accounted for by constant returns to scale.

Table 3: Determinants of marketing costs (Dependent variable is the log of transport, handling, monitoring and aggregate marketing cost)

	units	Transport		Handling		Monitoring		Aggregate marketing cost	
		Glut	Shortage	Glut	Shortage	Glut	Shortage	Glut	Shortage
Trader Characteristics									
Collective marketing among traders	yes=1	-0.45*** (-7.4)	-0.55*** (-5.42)	-3.45*** (-6.84)	-2.78*** (-5.31)	0.23 (-1.65)	0.17 (-1.19)	0.59*** (-3.66)	1.26 (-1.75)
Transaction characteristic									
Transaction size (glut)	litres	0.62* (-2.58)		-0.51 (-1.51)		-0.04 (-0.42)		0.83*** (-3.59)	
Transaction size (shortage)	litres		1.04*** (-7.01)		-0.97*** (-3.70)		0.03 (-0.49)		0.75*** (-4.35)
constant		4.82***	3.78***	7.30***	8.20***	4.86***	4.60***	4.38***	5.42***
		-5.08	-7.92	-5.44	-9.99	-13	-20.04	-4.78	-10.21
N		148	157	193	193	164	164	193	193
r2		0.38	0.49	0.25	0.29	0.18	0.18	0.17	0.17

t statistics in parentheses * p<0.05, ** p<0.01, *** p<0.001

Conclusion and recommendation

- Though efficiency improves with cooperative marketing, individual or non-cooperative trade is still dominant.
- The observed evidence for increasing returns to scale in aggregate marketing costs implies that the variation in size and distribution of firms in this market is therefore a source of inefficiency.
- Policies and institutional and technical innovations that support market entry and vertical coordination are therefore useful and necessary.