

Pastoralism pays: new evidence from the Horn of Africa¹

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As competition for land and water resources intensifies, there is a growing need to re-evaluate the comparative social and environmental advantages of extensive pastoral production systems. Nine studies of hard-to-reach pastoral areas in Ethiopia and Kenya reaffirm that the true value of pastoral systems is largely overlooked. Camel milk, goat meat, draught power and other goods and services provide subsistence products and household income; they also create employment, income opportunities and access to credit along their 'value chains'. Pastoral products contribute significant revenues to public authorities and support the provision of basic services in rural towns; with support, this productivity could grow.

A series of influential studies on the economics of pastoralism in the mid-2000s pointed to insufficient and poorly targeted investments by national governments, caused by limited understanding of the sector's value.³ Yet demand for high quality meat and milk already outstrips supply in urban areas situated near pastoral systems, and it is likely to grow.⁴ At the same intensive livestock production systems are increasingly posing health and environmental problems.⁵ While some producers and consumers are intuitively recognising the comparative advantages of the pastoral production model,⁶ national development policies will continue seeking to 'modernise' and replace these systems until a clearer evidence-based evaluation is provided to convince them that a different approach is needed.

The African Union's policy framework on pastoralism recognises the economic potential of the sector and the need for further research.⁷ However, a recent study

suggests that institutionalised data collection systems in Ethiopia and Kenya still do not capture the full value of pastoralism,⁸ meaning benefits and development potential remain obscure, and so are frequently obstructed. There are few in-depth studies — or indeed opportunities for first-hand observation — that might help city-based decision-makers understand the dynamism, ecological soundness and innovative potential of pastoral systems.

To help fill these knowledge gaps, IIED and its partners supported nine students from universities in Kenya and Ethiopia to conduct original field studies in pastoral regions of both countries in 2015 (Figure 1). In Ethiopia, with support from Tufts University, IIED worked with the universities of Mekelle, Haramaya and Hawassa. In Kenya, IIED worked directly with the department of Land Resource Management and Agricultural Technology at the University of Nairobi. The studies (which are published in full elsewhere)⁹ sought evidence of the value of pastoralism that statisticians generally overlook. This briefing summarises their findings and discusses what more needs to be done to address the emerging challenges posed by growing demand for high quality meat and milk products; increasing recognition of the health and environmental implications of intensive livestock production; and the gradual realisation of the comparative advantages of the pastoral production model among discerning producers and consumers.

Field studies: location and approach

Four field study locations were selected in Kenya, four in Ethiopia, while a fifth was located on the border between the two countries (Figure 1). In Ethiopia, the sites were distributed across six districts ('woredas') in three regional states: Afar, Somali and Oromia. In Afar, one study focused on the market chain for live goats in zone

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3 Odhiambo, M (2006). Review of the literature on pastoral economics and marketing: Kenya, Tanzania, Uganda and the Sudan – Report prepared for the World Initiative for Sustainable Pastoralism. Nairobi, IUCN ESARO, Reconcile; Davies, J (2007). Total Economic Valuation of Kenyan Pastoralism. Nairobi, World Initiative for Sustainable Pastoralism (WISP); Hesse, C and Macgregor, J (2006). Pastoralism: drylands' invisible asset? London, IIED; SoS Sahel (2006). Pastoralism in Ethiopia: its total economic values and development challenges. Addis Ababa, WISP/GEF/IUCN - SOS Sahel.

4 Steinfeld, H, Mooney, H, Schneider, F and Neville, L (eds) (2010). Livestock in a changing landscape - Volume 1: Drivers, consequences and responses, Washington, Covelo, London, Island Press

5 Mooney, H (2010). Part II: Livestock in a changing landscape - Volume 1: Drivers, consequences and responses. In: Steinfeld, H, Mooney, H, Schneider, F and Neville, L (eds) Livestock in a changing landscape - Volume 1: Drivers, consequences and responses. Washington, Covelo, London, Island Press

6 Mcahey, D, Davies, J, Hagelberg, N and Ouedraogo, R (2014). Pastoralism and the Green Economy – a natural nexus? IUCN and UNEP.

7 AU (2010). Policy Framework for Pastoralism in Africa: securing, protecting and improving the lives, livelihoods and rights of pastoralist communities. Addis Ababa, Department of Rural Economy and Agriculture, African Union

8 Krätli, S (2014). If Not Counted Does Not Count? A programmatic reflection on methodology options and gaps in Total Economic Valuation studies of pastoral systems. Issue Paper. London, IIED

9 Gebremariam Gebrezgabher Gebremedhin and Yemiru Tesfaye (2015). Market chain analysis of live goats: Asaita District, Afar Regional State, Ethiopia. <http://pubs.iied.org/10120IIED.html>

Selamawit Teklu Araya (2015). Impact of camel transportation on pastoralist livelihoods in Ethiopia: Findings from Berahle woreda, Afar Regional State. <http://pubs.iied.org/10127IIED.html>

Sisay Kebede, Getachew Animut and Lemma Zemedu (2015). The contribution of camel milk to pastoralist livelihoods in Ethiopia: An economic assessment in Somali Regional State. <http://pubs.iied.org/10122IIED.html>

Galma Wako (2015) Economic value of camel milk in pastoralist communities in Ethiopia: Findings from Yabello district, Borana zone. <http://pubs.iied.org/10119IIED.html>

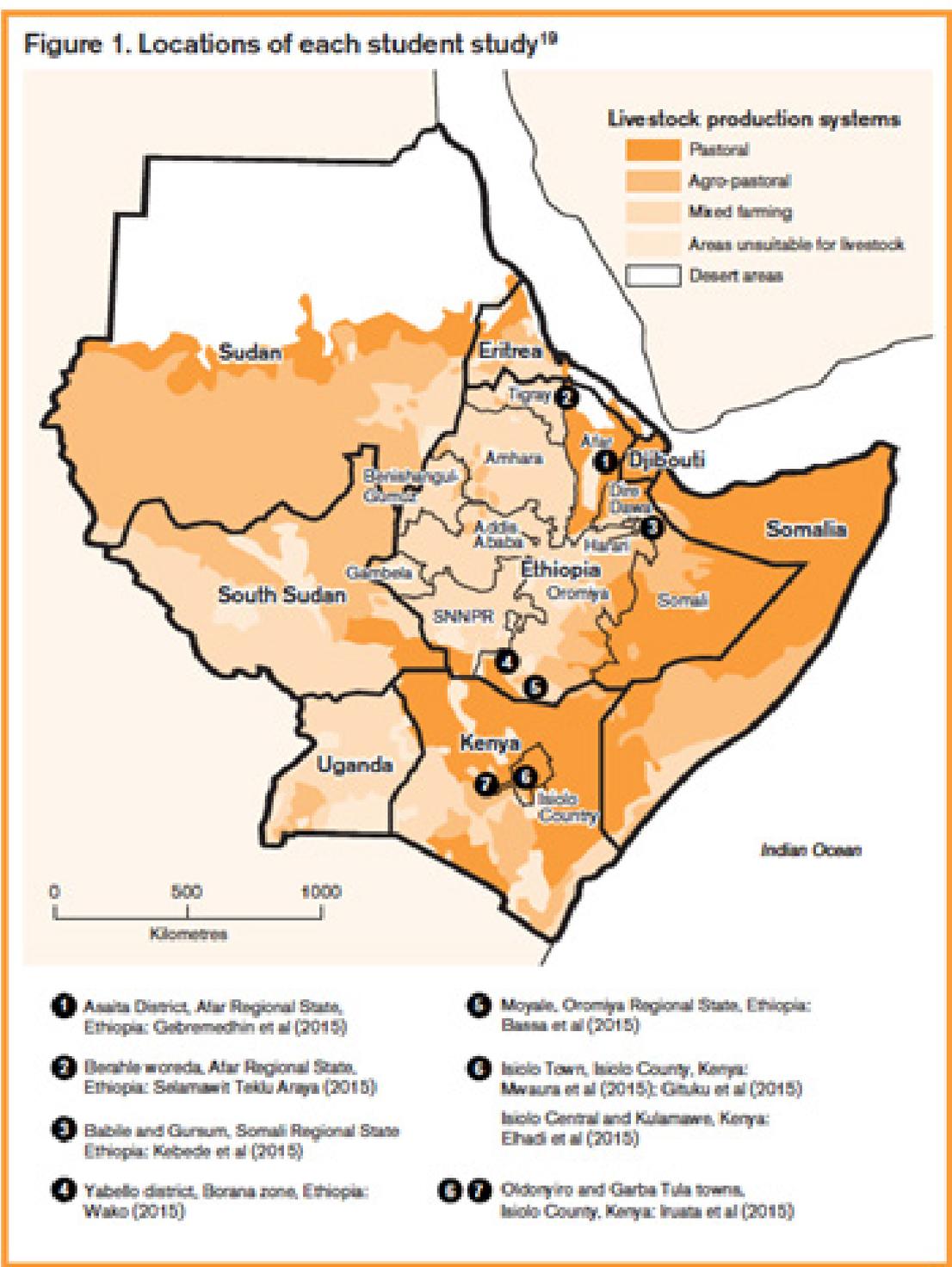
Zekarias Bassa and Teshale Woldeamanuel (2015). Value chain analysis of the cattle trade in Moyale, southern Ethiopia: An economic assessment in Oromiya Regional State. <http://pubs.iied.org/10121IIED.html>

Margaret Waithera Mwaura, Oliver Vivian Wasonga, Yazan A M Elhadi and Robinson Kinuthia Ngugi (2015). Economic contribution of the camel milk trade in Isiolo Town, Kenya. <http://pubs.iied.org/10123IIED.html>

Benard Chira Gituku, Oliver Vivian Wasonga and Robinson Kinuthia Ngugi (2015) Economic contribution of the pastoral meat trade in Isiolo Town, Kenya. <http://pubs.iied.org/10124IIED.html>

Yazan A M Elhadi and Oliver Vivian Wasonga (2015). Economic and nutritional contribution of camel milk in Northern Kenya: A field study in Isiolo County. <http://pubs.iied.org/10125IIED.html>

Marcelino Napao Iruata, Oliver Vivian Wasonga and Robinson Kinuthia Ngugi (2015). Economic contribution of the pastoral meat trade in Isiolo County, Kenya: Findings from Oldonyiro and Garbatulla Towns. <http://pubs.iied.org/10126IIED.html>



1, another on the use of camels for transporting salt in zone 2. In Somali, a single study investigated camel milk production in two *woredas* of Fafan zone. In Oromia, two studies focused on Borana zone: one investigated camel milk production; the other traced the trade routes for cattle from Moyale.

The Kenyan field studies took place within Isiolo County, long established as a major livestock marketing hub for the region.¹⁰ Livestock are trekked to markets in Isiolo from both surrounding counties and neighbouring countries. Two of the studies focused on livestock meat and camel milk marketing in the county capital, Isiolo Town. A third study explored goat meat markets in two smaller towns (Oldonyiro and Garba Tula), and a fourth traced camel milk production from peri-urban and rural production clusters in Isiolo Central and Kulamawe. The studies took a ‘total economic value’ (TEV) approach.

They focused on the ‘use values’ of pastoral production for the local and national economies, including direct benefits (eg from consumption and sale), indirect benefits (such as support for veterinary services or financial institutions) and induced benefits (goods and services and purchased with income earned through pastoralism).¹¹ These values are not routinely recorded by the public authorities.

The students used surveys and interviewed key people along the value chains to explore who benefits most from the pastoral production systems, who controls the marketing channels and price-setting, who takes the most risks, and what options pastoral households have to improve their access to and control over markets and prices. Interviewees were also asked how to improve development policies for pastoral producers, for state revenue generation, and for economic and social development overall.

Many of the studies focused on quantifying the income generated by producing and trading pastoral products, and how heavily households depend on this. Some detailed a particular part of a pastoral value chain, while others examined the entire length of one or several chains from the producers to a range of consumers.

New evidence, emerging themes

Looking across the studies, four key findings related to the economic value of pastoralism emerged:

Contributions to livelihoods are multi dimensional.

The studied households differed in the ways that they used the livestock products for food security, income, income substitution for reduced expenditures, insurance

10 Herlocker, D J, Shaaban, S B and Wilkes, S (1993). Range Management Handbook of Kenya, Nairobi, Republic of Kenya, Ministry of Agriculture, Livestock Development and Marketing

11 Mayen, C and McNamara, K T (2007). The Economic Impact of the Indiana Livestock Industries. Concentrated Animal Feeding Operations ID 354. Indiana, Purdue University

for disaster, capital for investment in other sectors, insurance, social heritage and others. One of the studies assessed the financial services provided through camel ownership in the Afar region and found multi-dimensional contributions:¹² camel ownership offered both a form of investment for the owners, and a means to provide credit to renters until they could afford their own camels. The different uses were often determined by the economic status of the households, or the gender of individuals involved. For example, in the camel-milk producing areas that were studied in both Ethiopia and Kenya, while the producers were male, the traders were female and had very few other livelihood options.

Numbers dependent on pastoral livelihoods revealed. The studies revealed a more accurate than usual picture of the numbers of people who rely on pastoralism for their living, including those employed through the livestock production and service systems and the associated trade and transportation activities. The camel milk trade through Isiolo Town was estimated to generate a gross monthly turnover of up to 10.58 million Kenyan shillings (KSh), supporting 1,046 people, including traders and labourers as well as their spouses, children and relatives.¹³ Meanwhile, in the production areas of Isiolo Central and Kulamawe, 10,532 people were benefiting directly and indirectly from camel milk production.¹⁴ In the rural towns of Isiolo County, well over half of the population was supported either directly or indirectly by the local trade in goats.¹⁵

Contribution to public revenues are significant.

Contributions to local and national economies through taxes and other fees paid to public institutions were revealed to be significant. For example, in Isiolo County, the livestock and meat trade generates more than 17 million KSh per year for the local authorities through medical certificates, business permits and other fees and licences from meat shops, butcheries and offal dealers.¹⁶ However, the revenues collected by the local and national governments are often a small fraction of the potential contributions from pastoral livestock production, due to the informal nature of the trade in many of the pastoral products, or the unregulated channels through which they must pass. One study found that more than half of the cattle produced in Ethiopia’s Moyale district passed through informal channels across the border with Kenya, bypassing formal channels where they would contribute taxes to the Ethiopian economy.¹⁷

Pastoralism contributes to trade and economic activity.

The pastoral production systems and associated trades were found to be providing a steady stream of income

12 Selamawit Teklu Araya (2015). *ibid*

13 Margaret Waithera Mwaura et al (2015). *ibid*

14 Yazan A M Elhadi and Oliver Vivian Wasonga (2015). *ibid*

15 Marcelino Napao Iruata et al (2015). *ibid*

16 Marcelino Napao Iruata et al (2015). *ibid*

17 Zekarias Bassa and Teshale Woldeamanuel (2015). *ibid*

to support both public and private provision of essential public services, including transportation, water and energy supplies. They also established trade channels that support the flow of other essential goods.¹⁸ The studies observed not only the current total economic value and contributions of pastoral production systems but also their future potential. Urban areas showed increasing demand for pastoral products, and exports to other regions — particularly the Middle East — were also growing. The studies highlighted opportunities for increased support to connect pastoralist producers to these markets, and to enable them to overcome constraints and risks that reduce productivity. These range from security problems to lack of roads and infrastructure for marketing, as well as information constraints that force pastoralists to rely on ‘middlemen’ when doing business.

Case for further research

As global livestock production systems increasingly intensify and face competition for resources from other sectors, there is a need to reevaluate the advantages of the remaining extensive production systems in pastoral areas. In regions outside Kenya and Ethiopia, extensive systems have been replaced by intensive alternatives and allowed to decline. Recognition of the comparative benefits and performance of pastoral systems, both from a socioeconomic and environmental perspective, can provide a powerful justification for conserving an increasing the viability of extensive systems.

The budget of the Agriculture and Livestock Sector in Isiolo County for the year 2013/2014 was 13,081,000 KSh.¹⁹ This is less than half the value of camel milk consumed by households in just the two rural production clusters that were researched in Study 6 (estimated at 35,305,200 KSh). None of this value is captured in conventional agricultural production statistics. When compared to the full value of the camel milk produced across the county as a whole, plus all of the other products generated from the pastoral production systems, the public investment represents a tiny fraction of the return.

A wider, evidence-based review of the value of the pastoral production systems is clearly needed to make the case for more intelligent investment. This will require not only filling data ‘blind spots’, but also training a new generation of decision makers so they can: reach the remote areas where action is needed; direct the necessary data collection and analysis; and effectively read the signs that these will uncover. National governments should

give greater attention and support to the integration of local statistical capacities in the pastoral livestock and associated environment sectors with national and international economic development planning.

The nine studies discussed here generated new evidence of the value of pastoral production, and revealed issues requiring further investigation. One such area concerns the value of the ecological benefits generated by pastoral production systems. In water catchments that are characterised by climatic variability, periodic droughts and complex processes affecting vegetation responses to climate and other stresses, these benefits are essential for a healthy ecosystem.

Many such catchments are undergoing technological transitions, in which water conservation may be achieved through trade-offs with increased use of energy, for example through the introduction of diesel or solar-powered systems for pumping, treatment and more precise control of volumes and timing of water discharge. The balance of energy sources, and potential social and environmental implications of these trade-offs remain poorly understood in both extensive and intensive livestock production systems.

In conclusion, the total economic value of pastoralism remains a complex and elusive question, but the evidence amassed through these nine studies reaffirms that it has been widely underestimated. The studies have provided quantitative evidence of some of the key missing statistics that must inform decision makers as they design policies and programmes for the pastoral sector.

18 GOK 2013. County budgets 2013–2014. Nairobi, Kenya: Commission on Revenue Allocation, Government of Kenya.

19 Figure based on: Food and Agriculture Organization of the United Nations, (2010) Cecchi et al, ‘Geographic distribution and environmental characterization of livestock production systems in Eastern Africa’, Ecosystems & Environment Volume 135, Issues 1-2, 1 January 2010, 98–110. Original available at www.fao.org/80/geo/network?uiid=4227fd03-dce7-4cd9-b38f-23ceaff379f Reproduced with permission.