

POLICY BRIEF



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The Contribution of Livestock to the Somalia Economy

Livestock contribution to a country's gross domestic product (GDP) and to the overall agricultural value is considered to be a measure of the livestock's role to the national economy. There are different approaches towards determination of a country's GDP including the production approach, the income approach and the expenditure approach. The production approach quantifies the difference between the value of outputs for all sectors less the value of goods and services used in producing those outputs during one year, i.e. it quantifies the so-called "value added" for all sectors in the economy. The income approach measures the incomes of all individuals living in the economy over the reference year; the expenditure approach quantifies all expenditures by all individuals living in the country in the accounting period. Conventional GDP accounting may ignore some of the benefits that people derive from livestock in subsistence oriented economies especially when households directly provision themselves and when economic exchanges are not calculated in monetary terms or when these exchanges go unrecorded. The findings being discussed in this policy brief are based on the production approach. It takes into account the household consumption by assigning monetary values to the non-marketed goods and services provided by livestock, and estimate the contribution of livestock to the wider national economy.

The production approach applied in the IGAD/ICPALD study provided different and higher estimates of the contribution of livestock to the economy of Somalia when compared to the traditional commodity flow approach. The production based approach places the contribution of livestock to the Somalia economy at **8.152 Billion USD** in 2013. This figure is above the IMF estimate of Agriculture GDP of **5.7 Billion USD** where livestock contributes **2.28 Billion USD**, equivalent of 40% of Agriculture contribution to GDP. In the production GDP estimate, some of the direct benefits generated by livestock such as the financial services were incorporated. Thus the contribution of livestock to agricultural GDP (i.e. livestock gross value added) was **8.152 Billion USD**, of which 93.6% was derived from conventional goods common in agricultural GDP and 6.4% from financial services provided by livestock.

Milk is Somalia's most economically important livestock product, with a value of **6.58 Billion USDs** in 2013, equivalent to 81% of livestock contribution to economy. About 6.4% of the direct benefits derived by livestock owners from their animals are attributable to the financial services provided by livestock and are always omitted in the quantification of economic functions of livestock at both household and national levels. Camel are Somalia's most important source of red meat, supplying 52% of meat needed and contributing **266.1 Million USDs**, equivalent to 3.3% of the livestock contribution to the economy. While not as large as its domestic contribution, livestock's share of exports is minimal.

The estimation of livestock contribution to Somalia GDP

The study summarized in this briefing paper employed a production approach to estimating the livestock contribution to GDP which is the more appropriate and accurate approach for the sector. The analysis proceeds in four stages, beginning with national livestock population estimates, provided by the Ministry of National Planning & Development (Department of Statistics & Research) and Ministry of Livestock. In the second stage, production coefficients (estimates of the amount of physical product that will on average be produced by known number of animals) are applied to the livestock population estimates to generate estimates of the total output of goods such as meat, milk, dung for fuel or fertilizer, etc. Third, based on available information on producer or 'farm gate' prices, a monetary value expressed in US dollars – the gross value of production – is ascribed to the total output of each kind of livestock product. Finally, input costs (based in this case on information currently available in the national accounts) are deducted from the gross value of output to derive value added, the unit in which GDP is expressed. Using this approach, initially no distinction needs to be made between production destined for commercial sale, for immediate consumption by producers, or for export. This is an advantage in a semi-commercialized economy, such as Somalia's livestock sector, in which livestock owners consume a significant portion of what their herds produce. Home production for home consumption (or for informal local exchange and consumption) is frequently unrecorded in official marketing statistics. By basing estimates on total product output, Somalia's livestock GDP estimates do not rely on incomplete marketing data and should, in principle, include subsistence production.

Livestock population for Somalia have been based on estimates from FAO and adopted as the official livestock figures since 1998. The last livestock census was conducted in 1975. The estimated distribution of livestock in the different states is as shown in the Table 1 below. This study adopted these estimates in calculating the livestock contribution to agricultural GDP.

Table 1: Livestock Populations Trends, Somalia ('000)

Livestock type	Region	2010*	2011*	2012*	2013*
Cattle	South and Central	4,100	4,000	4,200	4,300
	Puntland	400	400	400	400
	Somaliland	399	404	409	414
Camels	South and Central	4,600	4,600	4,800	4,900
	Puntland	1,864	1,866	1,867	1,868
	Somaliland	1,664	1,682	1,701	1,720
Sheep	South and Central	6,500	6,500	6,700	6,800
	Puntland	6,181	6,182	6,183	6,183
	Somaliland	8,602	8,748	8,897	9,048
Goats	South and Central	8,700	8,600	8,800	8,800
	Puntland	9,009	9,010	9,011	9,012
	Somaliland	8,266	8,464	8,667	8,875

* Sources: Ministry of National Planning & Development (Department of Statistics & Research)

The contribution of livestock to GDP

This study used 2013 as the reference year for comparison of the re-estimated and the national GDP calculations based on official livestock population figures given by Ministry of National planning and Development (Department of Research) in conjunction with the Ministry of Livestock. Based on these figures, the estimated livestock GDP value using the production approach puts the contribution of livestock to GDP at 8.157 Billion USD compared to the IMF estimate of 2.28 Billion. The difference of 5.87 Billion USD is 103% higher than the officially recorded agricultural sector GDP. The disparity in these two estimates is largely due to lack of accurate statistical data and difference in methodological approach that does not account for other benefits derived from livestock. The study aimed to estimate the quantity and value of individual animal products, and these individual values are then combined to provide an overall picture of livestock output. Table 2 below summarizes the study re-estimation of the gross value of livestock goods in Somalia in 2013 which shows that the direct use value of livestock products was 7,636 Billion USD.

Table 2: Gross Value of Domestic Livestock Production in Somalia, 2013

Product	Value (Million USD)
Cattle milk	586.1
Camel milk	5,555
Goat milk	242.5
Sheep milk	200.2
Subtotal estimated milk offtake	6,583.8
Cattle offtake	133.07
Camel offtake	266.1
Goats offtake	358.7
Sheep offtake	281.8
Poultry and pigs offtake	-
Subtotal estimated livestock offtake	1,039.67
Cattle hides and skins	0.404
Camel hides	0.529
Goats skins	6.59
Sheep Skins	5.59
Subtotal estimated hides and skins offtake	13.113
Manure as fertilizer	0
Total Product Output	7636.583

Source: Study estimates, 2015

The economic benefits of livestock

The direct and indirect economic benefits of livestock were estimated, and these included benefits from livestock products and from livestock services (normally not part of GDP estimates). From the study estimates, the total estimated value of goods and services provided by livestock to the Somalia economy was 8.15 Billion in 2013. This value includes livestock products and the financial contribution i.e. livestock as credit and livestock for self-insurance.

Livestock as credit is the value of the financial equivalent (in this case interest) to the value of livestock offtakes and in a way, is the opportunity cost of credit finance or what it would otherwise cost a livestock owner to obtain funds comparable to those produced by liquidating the herd and flocks.

Somalia has eleven commercial lending institutions among them Al Barakaat Bank, Amal Bank, International Bank of Somalia etc. These lending Institutions can be categorized as Islamic or International Banking Institutions. The average interest rate charged by this institution is 13% annually for commercial loans. As is common in other African countries, informal money lenders such as self help groups, merry-go-rounds, etc), commodity based credit providers, Microfinance Institutions (MFIs) and government based agro financing are less developed in Somali. Based on this average interest rate charged on credit in Somalia, and the estimated offtake values, the financial value of livestock offtake are shown in Table 3 below. From the calculations, the total financial value of livestock offtake in 2013 in Somalia was 135.157 Million USD, equivalent to 13% of annual value of offtake in 2013.

Table 3: Estimated Value of Somalia Livestock as Credit (2013)

Livestock	Offtake Values (Million USD)	Estimated financial credit value (Million USD)
Cattle	133.07	17.299
Camel	266.1	34.593
Goats	358.7	46.631
Sheep	281.8	36.634
Poultry	-	
Pigs	-	
Total offtake Value	1,039.67	135.157

Source: Study estimates, 2015

Livestock as self insurance is same as the value that would be accrued if herders were to sell off their herds, for instance during calamities. It is the value of livestock assets as a function of self-insurance and gives annual cost of insurance equivalent to value of livestock offtakes. In this study, the value of livestock as capital is estimated at 100% of the farm gate value, without any discounting. From the Table 4 below, the capital value of the Somali livestock in 2013 was about 8,885.75 Million USD. The estimated value of the livestock assets as self-insurance is equivalent to the insurance premiums that herders in South Sudan would need to pay to provide

themselves with 8,885.75 Million USD of insurance coverage, i.e. the opportunity cost of comparable levels of coverage.

Table 4: Estimated capital value of Somali livestock, December 2013

Livestock	Region	Livestock Population (2013)	2013 Producer prices (USD)	Capita Values of livestock (Million USDs)
Cattle	Somaliland	414,000	500	207
	Puntland	400,000	500	200
	South /Central	4,300,000	450	1,935
Camel	Somaliland	1,720,000	479	823.88
	Puntland	1,868,000	479	894.77
	South /Central	4,900,000	479	2,347.1
Goats	Somaliland	8,875,000	50	443.75
	Puntland	9,012,000	70	630.84
	South /Central	8,800,000	50	440
Sheep	Somaliland	9,048,000	50	452.4
	Puntland	6,183,000	70	432.81
	South /Central	1,564,000	50	78.2
Pigs		-		-
Total capital value of livestock		-		8,885.75

Source: Study estimates, 2015

There is no agency offering livestock insurance in Somalia and therefore this study uses the premium rates offered by livestock insurance providers in Kenya which is between 3.25% and 5% of the animal value. (Average rate of 4.2%). Thus the premium to coverage ratio in Kenya is 2142/5100 equivalent to 0.042. The study estimates the self-insurance value of Somali livestock in 2013 as the capital value of the national herd or 8.886 Billion USD * 0.042 = 0.373 Billion USD = 373 Million USD. The gross value of livestock based goods and services in 2013 are shown in Table 5 below.

Table 5: Direct use benefits derived from livestock, 2013 (Million USDs)

Benefit type	Value of agric GDP (Million USDs)	Services not in estimate (Million)
Value added livestock products (slaughter animals, milk, manure for fertilizer, eggs, hides & skins)	7,636.583	
Traction ploughing		12.65
Transport/Haulage		4.81
Livestock as Credit		135.16
Livestock as Self Insurance		373
Subtotals	7,636.799	525.62
Total Economic Benefits	8,162.419	
Cost of Inputs	5.28	
Livestock gross value added	8,157.139	

Source: Study estimates, 2013

The Role of Livestock in Household Consumption

This study estimates the local milk and red meat consumption per caput using Somalia's Ministry of Planning and National Development's estimate of national population and the results from the milk and meat production offtakes for 2013. These are based on the country 2013 population of 10,800,000.

Table6: Red meat and offal available for consumption, 2013

Product	Total meat and offal offtake for consumption	Total offtake for meat and offal in kg for domestic consumption	Consumption per Caput(kg)
Total beef & offal, heads	287,216	43,082,400	4.0
Small ruminant meat & offal	6,138,010	46,035,075	4.3
Camel meat & offal	555,452	138,863,000	12.9
Total meats and offal		227,980,475	21.2

Source: Estimated slaughter weights for meat and offal are taken from Ministry of Planning estimates 2013

Based on carcass yields of 150 kg for cattle, 250 kg for camels, 7.5 kg for shoats, on average, 4.0¹kg of beef, 4.3 kg of small ruminant meat and 12.9 kg of camel meat is consumed per person in Somalia. The red meat consumption per capita in 2013 was 21.2 kg per person. The milk production estimates given in this report are indicated in Table 10 below:

Table 7: Milk available for consumption, 2013

Product	Amounts (litres)	% of national total	Total offtake for consumption	Consumption per Caput(litres)
Total cattle milk	586,141,110	16.49%	586,141,110	54.2
Total camel milk	2,415,057,650	67.94%	2,415,057,650	223.6
Total sheep and goat milk	553,330,274	15.57%	553,330,274	51.2
Total milk	3,554,529,034	100.00%	3,554,529,034	329.1

Source: Study findings, 2015

Based on the estimated 2013 country population figures of 10,800,000 per capita liquid milk consumption from domestic supply was 329 liters per person per year.

Livestock Products as Inputs in other sectors

The livestock sector in Somalia has not been fully exploited. There is a great potential for investments and growth feeding into other sectors of the economy.

¹ Behnke and Muthami 2011 (p. 6) give an estimate of 15.25 kg for Kenya population. This is also near similar to FAOSTAT's most recent estimate (2007) of 16.34 kg per capita <http://faostat.fao.org/site/610/default.aspx#ancor>.

Hides and skins processing for leather products is one such area that is yet to be tapped for the processing and manufacture of leather products. Export of hides and skins are marginal, and that of value added products such as leather and shoes are insignificant. Without any sufficient and reliable data, this study was unable to quantify livestock based products that are destined for use as inputs in other sectors in Somalia.

Export of Livestock, Hides, Skins and Leather goods

Live animals form the core of Somalia's livestock-based exports. Hides and skins, leather and leather products are also important although there is no disintegrated data to aid economic analysis. Table 8 shows estimates of these livestock export throughput volumes and values, based on official 2015 Ministry of Planning and National Development reports. A significant amount of cattle are exported from Sool, Sanaag and Togdheer regions through the Berbera Port into Saudi Arabia, Yemen and rest of Egypt and Oman. The FAO estimates cattle export in 2013 at 61,540 herds (FAO 2013). Assuming exports grew apace with the sheep and goat flock (2.4% for goats and 1.7% for sheep annually), the estimated number of shoats exported in 2013 was 2,499,634 (Assuming an average growth rate of 2.05% per annum between 2010 and 2013). Overall, in 2013, the study estimates the value of livestock-related exports at 155.75 Million USDs, equivalent to 1.9% of agricultural GDP in 2013. The study did not find any reliable data on the values of export of hides and skins and products such as leather and footwear

Table 1: Livestock and livestock products Exports, 2013

Livestock & livestock products	Numbers	Value (Million USD)	% of agro-GDP
Cattle	61,540	30.77	1.5%
Small ruminants	2,499,634	124.98	6%
Camels	75,490	36.16	1.8%
Pigs	0	0	-
Poultry	0	0	-
Hides and skins	No data available	-	-
Footwear	0	-	-
Sub Total		191.91	9.3%

Source: Study findings, 2015

Recommendations

The following recommendations address the challenges faced in acquiring the required data for the study and gaps noted in the calculation of livestock sector GDP contribution. They are focused on the official system for the collection of data and the analysis of livestock production.

- a) Livestock Census figures: There is need to undertake a rigorous livestock census in Somalia. It is worthwhile to encourage other sector players to conduct surveys out of which estimates of production coefficients can be improved
- b) Adoption of Production-based approach: In estimating the livestock contribution to the country's GDP. This is the more suitable approach as it well captures the

true value and contribution of livestock to the livestock owners and the national economy as a whole. It would be worthwhile to consider training of staff in the ministries of Planning and Livestock on the need to adopt the production based approach in estimating the economic value of the livestock sector. As it is at the present, there appears to be some technical limitations in this area yet the obvious advantages of the method are evident.

- c) Cost-benefit Analysis: A cost benefit estimate would also be necessary in regards to pastoral livestock production systems; the cost of pastures, water, animal health, etc. At the moment, NGOs seems to cover most of the intermediary costs including animal health.