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Impact of COVID-19 on livestock exports from Somalia and the Horn of Africa

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Abstract: *Somalia has a significant place in the livestock sector in the Horn of Africa; livestock trade and export is one of the key economic contributors. Most of the livestock trade happens with the Middle East, the Kingdom of Saudi Arabia being one of its biggest importers. The COVID-19 pandemic has led to both massive loss of life and huge economic losses as the result of measures to contain the virus. In June 2020, the Kingdom of Saudi Arabia took the decision to restrict the number of pilgrims for the annual Hajj. Impacts resulted in a decline in income from the seasonal Hajj of 80 per cent, though domestically prices of livestock remained stable and local markets were used for livestock sales. This paper, besides highlighting the effects, provides recommendations which could inform strategic planning, humanitarian aid, and resilience building for the livestock value chain in Somalia and the Horn of Africa*

Keywords: livestock trade, COVID-19, market resilience, livelihoods

Introduction

SOMALIA IS FOUND IN NORTH-EASTERN AFRICA, bordering Ethiopia, Djibouti, and Kenya. Somalia includes both Somaliland and Puntland to the north; however, the two regions function autonomously, declaring themselves as independent states and with their own governments. Culturally dominated by the Somali people, it is one of the most homogeneous nations in Africa. The population of around 15.5 million people is evenly split, with 51 per cent living in urban areas (including 9 per cent internally displaced persons) and 49 per cent living in rural areas (26 per cent as pastoralists and agro-pastoralists and 23 per cent farmers). World Bank studies suggest 70 per cent of households live below the 2011 international poverty line of US$1.9/ day (World Bank, 2016; Federal Government of Somalia (FGS), 2020). Regional disparity is significant, with Puntland having the lowest poverty rate at 27 per cent followed by Somaliland at 50 per cent and Mogadishu at 57 per cent (UNDP and World Bank, 2003; UNFPA, 2014). Remittances from Somali diaspora living in the USA or other countries play a significant role in supporting relatives

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in-country: in 2018, remittances were valued at around $1.4 billion or around 25 per cent of GDP (Federal Government of Somalia, 2020).

Despite rapid urbanization, the livestock sector employs more than half of Somalia's total labour force and livestock sales account for between 50 and 80 per cent of household income for poorer households (Khalif, 2020). In 2015, the livestock population of Somalia was estimated to be 40 million: 14 million Somali black-headed sheep, 13 million Somali Galla goats, 7 million Somali camels, and 5 million Somali short-horned zebu cattle. The Ministry of Livestock, Forestry and Range estimate for zebu cattle was 50 million in 2017, rising to 53 million in 2019. Reliability of the figures is questionable without a full census being done. Reliability of the numbers aside, the majority of livestock continue to be herded and managed by pastoral and agro-pastoral households, and broadly under extensive production systems. Most of the cereal is imported from its neighbouring countries (Federal Government of Somalia, 2020).

The vast arid rangelands of Somalia cover most of Somaliland, Puntland, and south-west Somalia, and fall across the boundaries of its neighbours Kenya, Ethiopia, and Djibouti. With high temperatures and low and unpredictable rainfall, they are among the harshest in sub-Saharan Africa. Rainfall is bi-modal, with the main *Guu* rains falling from March to mid-July, and the shorter *Deyr* rains falling from October to early December. The rains are separated by two dry seasons, the shorter *Hagaa* summer season and the harsher *Jilaal* winter season. Annual rainfall varies from 400 to 600 mm in the southern areas to 200 mm in the central and more arid rangelands. Areas of semi-humid rangelands are restricted to the highlands of Somaliland and the Juba-Shebelle riverine areas in the south-west, accounting for around 5 per cent of the total land mass. Rainfed farming can occur in areas receiving anywhere from 100 to 600 mm, but typically in areas where rainwater run-off collects in depressions and along the banks of seasonal streamflow.

In response to these dry, harsh conditions, Somali pastoralists have developed sophisticated herding responses: mobility – the movement of herds from 'wet' to 'dry' season grazing areas, for accessing water and markets, among others; diversification – herding mixed animal types that include grazers (sheep and cattle) and browsers (goats and camels) that utilize different rangeland resources; splitting – with cattle trekked to one area better suited to their grazing needs, while goats and camels are moved to another that better favours their browsing needs. Typically, too, at the onset of perceived drought threats, pastoralists offload (sell) older and weak animals and slaughter young animals to safeguard core breeding females, even sometimes causing them to abort before giving birth.

Traditionally, rangelands were managed by clans under Somali *Xeer* customary law that continues to hold significant local legitimacy (UK Essays, 2018). The result, however, of the 1975 Somalia Land Law, civil war, and subsequent inter-clan conflict, is that increasing numbers of pastoral households have enclosed land for rainfed farming, pasturing lactating animals, and for dry-drought season grazing (ibid.). Despite these changes wealthy households continue to trek livestock on seasonal migrations, with camel herders trekking vast distances including across international borders. In contrast, poorer pastoralists dependent on small ruminants are

less mobile, with many living year-round in semi-permanent homesteads and trying to survive through alternative livelihood strategies: exploiting local rangeland resources – frankincense, building materials, firewood, and making charcoal; or moving to sedentary farming areas in search of employment and farming opportunities (Leonard, 2007).

Local and often manageable droughts occur every 2–3 years, while more widespread and chronic droughts, the result of two or three consecutive poor/failed rains, occur, on average, around every 8 to 10 years (Leonard, 2007). Particularly severe droughts were recorded in 1964, 1973–74, 1988–89, 1999–2001, 2008, 2010–11 (the East Africa drought), and most recently in 2016–17. The Food and Agriculture Organization of the United Nations (FAO) has recently released a '2020–2021 La Niña Advisory – potential impacts on agriculture and food security in high-risk countries' (FAO 2020). The advisory includes severe drought forecasts over the next year for the Horn of Africa including Somalia.

Even in the most severe droughts live animals will be exported – and can be a major mechanism for relieving pressures on resources in-country. The drought in 2017 was particularly severe, and yet, in the same year more than 4.7 million live animals were exported to the Middle East from other areas of Somalia and its neighbours. In other years, including 1961, 1977, 1981, 1997, 2005, 2006, 2019, and most recently 2020, Somalia experienced heavy rain and flash floods which are becoming increasingly severe as a result of climate change and increased land pressures and loss of ground cover upstream in Ethiopia. Floods are also associated with outbreaks of malaria, cholera, and even Rift Valley fever (OIE, 2018).

The importance of the livestock sector and the challenges that the sector faces, prompted the Federal Government of Somalia, in collaboration with the FAO and funded by the World Bank, to adopt a refined Livestock Sector Development Strategy in 2019. The strategy and development priorities have been based on climate resilience, and aims to promote investment in different areas of the livestock value chain including processing, production, and marketing to ensure food safety and enhance global competitiveness (FAO, 2019).

Major trade routes and livestock trade

Live animal exports from Somalia to the Middle East flourished after the 1960s oil boom. In order of importance, the main country markets are Kingdom of Saudi Arabia (KSA), followed by Yemen, Oman, and United Arab Emirates (Mahmoud, 2010; Musa et al., 2020). Since the 1990s, live animal exports from Somalia and neighbouring countries have grown to become the largest 'on the hoof' live animal export trade in the world, with millions of animals trekked annually from small and remote local markets across the area, to terminal and export markets and then to the Middle East (Little, 2009). The estimated total value of cross-border livestock trade in the Horn and East Africa in 2009 was more than $60 m. This, however, does not include exports to the Middle East (ibid.).While Somalia's livestock trade has grown exponentially since the 1960s, the trade itself is not new and long-standing trade routes criss-cross international borders in the region

with livestock central to the trade as they can be trekked by hoof and in areas with few if any roads. The vast majority of livestock are exported from the ports of Berbera, Bossaso, Djibouti, and finally the ports of Mogadishu and Kismayo. For each, animals are sourced as follows:

Berbera port:

- Berbera receives animals from Babile in Ethiopia through Tog Wajaale on the Ethiopian border and as far south as Beledweyne and south-east from Galkayo (green routes). Aggregated animals are trekked and transported to the cooler Somaliland mountains within a day's transport of Berbera. When ready to be shipped, the animals are transported to the port's holding and quarantine facilities.

Bossaso port:

- Bossaso receives animals from as far south-west as Beledweyne and beyond to Bay Gaal, with additional animals collected en route through Somali Region, Ethiopia. Other animals are collected from Galkayo and the pastoral rangelands of Sanag, Sool, Mudug, and Galgudud regions of Puntland.
- Traders at Bossaso port report higher taxation, quarantine, and certification charges than in Berbera. Despite these extra charges, local traders prefer Bossaso, as they are typically better connected to authorities and export officials through the clan system.

Together with income from hides and skins and chilled carcass exports, livestock account for 80 per cent of Somalia's exports, while the livestock sector contributes 40 per cent of Somalia's gross domestic product (GDP) (excluding cash remittances from Somalis in the diaspora). Using a production-based approach, however, a 2013 IGAD (Inter-Governmental Authority for Development) Centre for Pastoral Areas and Livestock Development (ICPALD) study estimated livestock's contribution to be an additional $8 billion or an additional 25 per cent above the official GDP figure. Significantly, domestically consumed milk was the most important livestock product, with an estimated value of $6.5 billion, or more than 80 per cent of livestock's contribution to the economy (ICPALD, 2015). Livestock exports peaked in 2010–11 with an estimated 3–3.5 million heads, with the vast majority shipped from Berbera port in Somaliland (ICPALD, 2012). That year, the livestock trade accounted for 85 per cent of export earnings and 30 per cent of total GDP (Majid, 2010).

Though pastoralists, traders, and others clearly benefit from the live animal trade from the Horn of Africa to the Middle East, experience from the past shows that if the trade is halted for any reason then the impacts can be severely felt.

In 2020 a new crisis arose that halted the trade – the COVID-19 pandemic. The COVID-19 pandemic has resulted in both massive loss of life and huge economic losses as the result of measures to contain the virus. All regions of the globe have been affected, and the Horn of Africa and the Middle East has been no exception. Over 2 million people in the continent have been infected with the disease, resulting in over 50,000 deaths. Studies show that the impacts of the

pandemic will have far-reaching effects on poverty with the threshold of poverty being pushed from an estimate of 570 million Africans by 2030 to 631 million (Cilliers et al., 2020). In June 2020, in order to limit the spread of the virus, the KSA took the decision to restrict the number of pilgrims for the 2020 Hajj. This meant that it was no longer necessary for the KSA to import the almost 3 million live animals to provide sacrifice and food for the pilgrims and to meet the ceremony's sacrificial requirements (Khalif, 2020). The impact that these decisions would have on those reliant for their livelihoods on this trade was unclear, but it was assumed to be highly likely that the impact would be significantly detrimental.

Purpose and methodology

The former DFID-Somalia (now FCDO) requested the research project SPARC (Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises) to investigate the impact of the restricted Hajj on pastoralists, traders, and others in the Horn of Africa, and particularly in Somalia. It was anticipated that this study would lead to recommendations to FCDO on how to respond to the anticipated crisis in the short and long term. Based on a rapid assessment, the study undertook research on the Somalia livestock value chain itself including the impacts of past blockages on the livestock export trade and the current situation of the restricted Hajj.

Research was carried out in Somalia through focus group discussions (FGDs) and key informant interviews (KIIs), including with agro-pastoralists and pastoralists, brokers, traders (both men and women), butchers, and exporters, together with ancillary workers involved in and benefiting from the livestock trade. In addition, the study team carried out a literature review. Although the number of people interviewed was small (10 FGDs and 12 KIIs in the Bossaso Corridor, 12 FGDs and 28 KIIs in the Ethiopia–Berbera corridor, and 2 FGDs and 2 KIIs in the South Central Somalia–Garissa corridor), the authors feel that the information collected and issues raised provide a useful guide to wider impacts across the different stakeholder groups and which could be investigated more deeply.

Historical bans and their impacts on livestock trade

From start to finish, Somalia's livestock export trade is dominated by small- and medium-scale private businesses (ECA, 2017). Studies have identified 15 different sets of actors and as many as 30 different transactions from the original sale to trekking, feeding, watering, and loading (onto lorries and eventually ships at the ports). These transactions involve as many as 15 to 17 million pastoralists, brokers, small-scale traders, herders, feed and water suppliers, medium-scale and large-scale traders, financiers, trekkers-transporters, and exporters in Ethiopia, Somalia, and northern Kenya (ICPALD, 2012; Eid, 2016). In contrast to the trade from producers to the port(s), livestock exports to the Middle East are dominated by a few large, private sector companies typically registered in KSA, Egypt, or Oman (Little, 2009). To meet the annual Hajj 'sacrificial' demand, the KSA awards huge contracts to national companies (Eid, 2016).

Despite the long-standing dominance, Somalia's livestock export trade has been repeatedly affected as the result of trade blockages and port closures related to livestock disease, droughts, and other hazards. For example, in the early 1990s the port of Berbera was closed as a result of the civil war. In response, exporters switched to Bossaso in Puntland. Exports were also affected in 1998, again in 2000–09 and 2016–17 by KSA-imposed live animal import bans from the Horn of Africa due to an outbreak of Rift Valley fever (RVF). As a result, small ruminant exports through the port of Berbera fell by 98 per cent from 2 million to around 50,000 (Eid, 2016). The lifting of the 2000–09 ban was facilitated by negotiations between the KSA and Somaliland that resulted in KSA private sector investment (as Somaliland is not recognized as a country, it is unable to attract investment from global institutions) in animal health and quarantine facilities at Berbera port. Once functional, it was possible to test animals before they were shipped, and for the KSA to be confident that there was no longer a disease threat. Somaliland has continued to attract private sector investment and in 2016 signed a €400 m investment with DP World to upgrade the port and turn it into a regional trade and logistics hub (Hassan, 2019). However, despite significant fluctuations in the number of exports, there has been an overall increase over the last two decades in the numbers of livestock being traded from Somalia to the KSA and other countries in the Middle East (Musa et al., 2020). Table 1 provides an insight into the impact of previous market shocks and drought crisis in the distinct areas of Berbera, Bossaso and the Garissa corridor.

With the lifting of the above export ban, live animal exports from Berbera have grown exponentially and have overtaken the port of Bossaso as the main source of live animal exports from the rangelands of Somalia, eastern Ethiopia, and north-eastern Kenya. This is because Berbera is closer to KSA and its traders enjoy stronger clan links (specifically the Issa clan) with banks and communications systems operators in Djibouti (FEWS NET, 2010). The positive impact of the lifting of the ban was felt across the region by the millions of people that rely on animal exports for their household income and employment (FEWS NET, 2010).

These impacts were confirmed by those interviewed during this study. Respondents said that the 1998–99 ban due to RVF had the greatest impact across the Berbera, Bossaso, and Garissa corridor. The second largest disruption to the trade was the regional drought of 2016–17. Further, it was emphasized that different actors in the livestock trade value chain adapt to and cope with the different crises in a variety of ways. Some of these are regularly implemented such as pastoralists and agro-pastoralists changing their diets and reducing the number of meals that they eat daily. In times of more severe crises, they may also seek assistance from relatives abroad through remittances, or take loans from neighbours, shopkeepers, and wealthy relatives, with reliance on food aid by some international humanitarian organizations. However, pastoralists prefer not being overly dependent on humanitarian assistance, as this has limited long-term positive impact (according to the respondents). Traders tend to divest their livestock business interests during times of crisis, by switching to other business interests, including trading in other goods and tea shops. One or two brokers stated that they had invested in camels and had started small camel dairies.

Table 1 Pastoralists', exporters' and traders' perceptions of previous market shocks and drought crises

Year/s	*Pastoralists*	*Exporters*	*Traders*
Berbera port			
1998–99 (RVF ban)	Very few markets were open	Sales though Hargeisa and Burao fell by 70%	Huge impact as people avoided eating meat
2016–17 (drought and RVF ban)	As many as 60% of livestock died from the drought	As livestock lost body condition, prices fell by as much as 40–50%.	Wild animals also died and there was hardly any trade
2000–09 (RVF and FMD ban)	Animals tested positive were returned to Berbera and livestock sales collapsed		Livestock were re-routed through Djibouti and other informal routes
Bossaso port			
1998–99 (RVF Ban)	The RVF ban and civil war resulted in a collapse in livestock sales and prices	Greatly reduced live-animal exports resulted in huge losses and a lot of exporters went out of business	Inflation in the price of basic food commodities and civil war led to complete loss of income for small- and medium-scale livestock traders
2000–09 (RVF and FMD ban)	Livestock prices fell by 60%. Some informal exports continued to neighbouring countries	Household income fell by 50%, though some animals continued to be exported to Oman and Yemen	Prices of imported goods doubled, and livestock prices fell drastically
2011 (drought)	Drought followed by fear of RVF from 2009 disrupted livestock trade	Income declined by 30% due to additional costs of disease management, although alternative markets to Yemen and Oman opened up	Livestock prices decreased by 45% causing economic losses especially for small traders
2016–17 (drought and RVF ban)	Though export markets like Oman and Yemen were accessible, severe droughts led to livestock deaths and impacted exports	Very small numbers of livestock were exported, as most either died or were emaciated	Affected all livestock holders as 60% of livestock died or were emaciated and therefore not fit for sale
Garissa corridor			
1998–99 (RVF ban)	Markets were closed and people afraid to slaughter animals because of fear of disease spreading	No markets for slaughtered animals and also other livestock products such as milk	Market being closed for six months continuously led to loss of incomes and closure of business
2006–07 (FMD outbreak)	Markets were operating but with reduced capacity because of the outbreak		Many small traders and businesses were affected by reduced demand for animals to the terminal markets

Traders also reported that they had temporarily engaged in fishing, cropping, and the import of food products and oil from the Arabian countries to sell in local markets. It was, however, widely recognized by all traders that diversification was more difficult for smaller-scale traders and brokers who had more limited capacity and fewer resources. Several brokers responded that they felt particularly vulnerable to livestock-sector shocks as their entire livelihoods were dependent on the sale of livestock.

The impact of restricted Hajj 2020

By 1 June 2020, the COVID-19 pandemic had reached all parts of the globe with reported infections totalling more than 6.6 million (Berlinger et al., 2020). By mid-June, with numbers still rocketing, the Kingdom of Saudi Arabia took the decision to restrict the number of pilgrims for the 2020 Hajj from the average 2.5 million that would normally make the pilgrimage to Mecca and Medina in July, to just 10,000 residents and fewer than 1,000 foreign nationals. Though some argue that similar decisions in the past have been more politically driven, the main reason for this restriction in 2020 was to prevent further spread of the disease (Chitwood, 2020; Knipp and Azzam, 2020). For those who were relying on the Hajj as a market for live animal exports reaching approximately 3 million for this event alone, this decision could prove devastating, especially for a country like Somalia, which has been trying to rebuild its economy, affected by civil wars, insurgency, and most recently severe flooding and attacks by desert locusts (Wardany, 2020).

Pastoralists and agro-pastoralists interviewed in the Berbera port catchment recognized the importance of the seasonal Hajj trade and attributed the income from these seasonal sales at around 40 per cent of their annual income. They also reported that at the time of fieldwork (July 2020) the 2020 year's income from seasonal Hajj livestock sales had fallen by a staggering 80 per cent.

Despite these losses, respondents in Galkayo (Bossaso trading route) reported that prices of livestock had remained relatively stable and, although they were unable to sell as many animals as they typically did, the animals they were able to sell were sold at normal prices. They also reported that they were confident that they could continue to sell animals domestically and through non-Hajj-related commercial sales to the KSA and other countries in the Middle East. Respondents from the Gebiley (Berbera trading route) pastoral group added that a great many people were involved in the Hajj export trade – pastoralists, brokers, vehicle hire operators (transporting livestock between markets), small- and medium-scale traders, and exporters – and they predicted that the restriction could affect household incomes adversely, both immediately and in the medium–long term as well, if sales were not to resume.

Agro-pastoralists from Galooley (Berbera route) shared the view that, while the restricted Hajj 2020 was bad for livestock sales, they had been able to sell vegetables and crops as an alternative way to sustain their income. Therefore, in spite of the ban, the current situation was not as bad as the 2000 or 2016 droughts, both of which had affected the whole country. With above-normal rains, they recognized

Table 2 Income sources of brokers, traders, and exporters, Somaliland

Income sources in a normal year	*Scores*	*Percentage of annual income*	*Average restricted Hajj 2020 falls in business income*
Non-Hajj livestock export/ domestic sales	495	33	
Hajj sales	750	50	–75%
Remittances	85	5.7	
Other businesses – jobs, small tea shops, money exchange	170	11.3	
Total	1,500	100	

that they were able to continue to herd their livestock and to wait to sell the animals at a later date, although at the time they mentioned that few traders were purchasing animals in large numbers.

Similarly, traders and exporters at Bossaso port felt that the restricted Hajj 2020 had not had a severe impact on them, as livestock were typically exported to Oman, Yemen, and UAE and that these exports had continued. Other traders who had already purchased animals for the Hajj had sold them locally to restaurants, butchers, and others. Other livestock had also been sold domestically. Nevertheless, the same traders and exporters acknowledged that Hajj 2020 seasonal livestock prices were lower than in previous years.

Brokers, traders, and exporters in Somaliland involved in the Hajj export trade reported that Hajj sales represented around 50 per cent of their annual income (Table 2). The loss of sales as a result of the restricted Hajj 2020 had caused a loss of three-quarters of their seasonal income. Some traders from Burao expressed that the impact of the restricted Hajj 2020 was worse than those of previous import bans.

To compensate for lost sales, some traders reported that they had purchased animals from Ethiopia to fatten them, though sales were mixed, and they had not, as hoped, been able to export them to other Middle East countries. Other traders reported, as also reported in the news media in July 2020, that three ships had been returned from Saudi Arabia leading to the loss of 1,000 sheep en route. They also stated that they are now re-exporting some of the same animals to Egypt, Oman, Bahrain, and Yemen.

A summary of the impact of the restricted Hajj for different stakeholders as described in FGDs and other is provided in Table 3. The responses are presented through a severity colouring system: dark grey for worst, medium grey for bad but manageable, and light grey for manageable.

Different stakeholders ranked the impact of the restricted Hajj as ‘bad’ and ‘bad but manageable’. This finding appears to be at variance with other local perceptions, where it was suggested by some international development organizations that severe implications on the lives and livelihoods would be felt as a result of the Hajj cancellation (Hammond and Hailey, 2020). Despite this and many other similar forecasts, it appears, at least at the time of this study, that the

Table 3 Perceptions of exporters, traders, and pastoralists concerning the restricted Hajj 2020

Year	*Pastoralists*	*Exporters*	*Traders*
Berbera port			
2020 (restricted Hajj)	Despite the ban, it was possible to sell some animals domestically	While domestic prices have been good, the export trade is reduced by more than 80%	Although volume of trade is affected, markets have not been closed and sales have continued
Bossaso corridor			
2020 (Restricted Hajj)	Local markets have remained functioning. The loss has been the export markets	Profits dropped by 20% compared to the previous year, as livestock prices have fallen	Livestock prices fell by 20% and food prices have increased, as have the prices of other essential commodities
South–Central–Garissa corridor			
2020 (Restricted Hajj)	Markets continue to operate, although at reduced capacity	Chilled meat export has been affected by travel restrictions, rather than by the restricted Hajj directly	Restriction of movement has affected transport of animals into terminal markets

impact was mitigated by above-normal *Guu* spring rains that provided more than adequate pasture and water for the 'extra' livestock and was said to have supported normal and above-normal milk production. Furthermore, pastoralists were able to sell some animals domestically at normal prices and in some areas into the alternative, informal export trade.

Overall, the impact of the restricted Hajj 2020 on different livelihood groups can be summarized as follows.

- *Poor and very poor households*. Seemingly little or no impact from the collapse of livestock sales on poor and very poor households, as they had or have very few if any livestock. Indeed, it may be that some poor households may have benefited from the situation, as would-be pilgrims remained at home and were more likely to share *zakat* or alms with the poor. Some aid agencies also purchased and distributed animals during Eid to support the local livestock markets and assist poorer households.
- *Agro-pastoralists*. With the sequential above-normal rains in the region, the crop harvests in 2020 were above normal leading to an increase in household food security and ultimately their resilience. On the whole, livestock prices across Somalia remained stable, and agro-pastoralists were able to sell some animals at least domestically and through the remaining commercial trade to the Middle East, with reduced competition from livestock typically sourced from Ethiopia.
- *Pastoralists*. In Somaliland in particular, pastoralists are strongly dependent on livestock (and remittances) making them highly vulnerable. However, the above-average recent seasonal rains resulted in adequate pasture and water for unsold animals, albeit with inevitable increased costs for herding and livestock medicines. Furthermore, prices remained stable as animals were

sold domestically through new and emerging trade routes and also to the KSA through the non-Hajj commercial trade. In Ethiopia, some animals were transported and sold in urban areas in the highlands.

- *Traders*. Larger traders and exporters were cushioned from negative impacts of the restricted Hajj by alternative income sources, with some reporting new and alternative domestic and export markets – in light of the increasing restrictions on exports to the Middle East from Australasia. Exporters were continuing to source live animals for the non-Hajj commercial trade in KSA. In contrast, small-scale traders were more seriously affected as a result of having limited capacity and fewer resources to buffer the shock.
- *Livestock trade ancillary workers*. Typically young men and women drawn from poor households, they include vendors who sell their wares, such as food products, at the ports. These ancillary workers were probably the most seriously affected livelihood group. Interestingly, older ancillary workers expressed the view that the restricted Hajj 2020 did not have the same dire impacts as the RVF ban of 1998–99, when all livestock markets were closed. Some expected that the KSA commercial trade would pick up, with exporters identifying other export routes and markets and, as it happened, there would be work again for ancillary workers. This said, all fully recognized that the Hajj 2020 market was lost.

Conclusions and recommendations

Live animals have been exported from the Horn of Africa to the Middle East for many years, through well-established trade routes. As a result of the oil boom in the 1960s, and increased demand, the trade has grown significantly over the last 50 years to become one of the world's largest live-animal export trades. Despite its impressive scale, the live-animal export trade is vulnerable to shocks – conflict, epizootic diseases, and drought – with the result that seasonal flows of live animals through specific Somali ports may be reduced to a trickle. Severe market shocks would normally have a disproportionately negative impact on poorer agro-pastoralists and pastoralists who are more dependent on seasonal livestock sales. Similarly affected are poorer brokers, trekkers, loaders, transporters, feed and water providers, and petty traders, café and tea-shop owners, and other ancillary workers who engage with and are dependent on the livestock sector for the bulk of their livelihoods. In contrast, large-scale and wealthier traders and exporters are typically the least affected, as they have greater capacities and resources and are better able to diversify their business interests.

In this study there was broad consensus across the different stakeholder groups interviewed that the 1998–99 RVF ban was the worst market shock in history. Furthermore, there was general consensus that the 1998–99 ban had a greater impact on livelihoods than the impact of the restricted Hajj 2020, at least at the time of the study. This is because the 1998–99 ban resulted in closure of *all* markets – both domestic and export, and for an extended period. This was not the case with the restricted Hajj 2020, as domestic and alternative export markets continued to function, albeit with a significantly reduced volume. Importantly, too, prices remained reasonably buoyant during the restricted Hajj 2020 sales season.

Functioning alternative markets and stable prices, coupled with above-normal rains that have benefited both pastoralists and agro-pastoralists, have all helped to mitigate the impact of the restricted Hajj 2020 market shock.

Through this paper the authors provide recommendations in the short, medium, and long term which could inform strategic planning, humanitarian aid, and resilience-building of those participating in the livestock trade value chain for Somalia and the Horn of Africa.

Short-term programming

Pastoralists and traders are adapting to the restricted Hajj 2020. Though it is possible that help can be provided by development and humanitarian organizations, in the spirit of 'do no harm' it is strongly recommended that livestock markets are allowed to recover and develop without interference. It will be important to monitor, however, the short- and medium-term changes in rangeland production and productivity due to larger numbers of livestock than would be anticipated at this time. Indeed, above-normal livestock holdings – the result of the loss of the Hajj market – may result in increased levels of risk of livestock pasture-water shortages if the rangeland conditions deteriorate and if droughts occur. Such monitoring can be done nationally through use of satellite imagery and the Normalized Difference Vegetation Index (NDVI).

Further, with the risk of a severe La Niña and drought in early 2021, it would be helpful to develop a La Niña anticipatory action plan with pastoralists and livestock sector specialists. In the event of a possible second restricted Hajj 2021 (which will be influenced by the speed of availability of vaccines against COVID-19, among other things), it would be important to monitor livestock prices and cereal–livestock exchange rates that are central to food security in cereal-deficient pastoral areas. This is a community practice, where on occasion a barter system is followed and poorer households exchange livestock for cereals from relatively well-off households. A baseline exchange rate is agreed upon by both parties. Unanticipated changes in such prices and exchanges serve as an effective early warning systems indicator for impending drought and other crises. While the study shows that many traders have sustained their businesses through this period, small-scale traders and ancillary workers – both young men and women – in the most affected northern areas, found it difficult to sustain their businesses or to find new forms of employment. Women traders usually have higher demands to meet family needs than their male counterparts, so can be more adversely affected. Depending on the recovery trajectory, adapted lending practices from village savings and loans associations and microfinance institutions may enable youth and women to continue to participate in the market as traders and ancillary workers, and therefore support them through such shocks as the restricted Hajj. As economies continue to be affected by COVID-19, and urban consumers lose income, there will be reduced demand for meat. Cash transfers could increase spending in urban areas and may help stimulate continued demand for meat, though equally could be used for cereals, water, education, health or other needs.

Medium-term programming

Efforts should continue to strengthen animal health systems to ensure that livestock producers and traders have access to regular and effective vaccinations and animal health services. Not only will effective animal health services keep animals healthy and ensure higher prices but controlling diseases such as RVF and foot-and-mouth disease will reduce risk of future livestock export bans that can reduce household income and result in larger numbers of livestock on the rangelands. Addressing animal health is best done through an integrated One Health approach that brings together animal, human, and environmental health (including the health of the land and natural resources, as well as 'external' influencing factors such as climate change or air pollution; see OH4HEAL, n.d.). The study highlighted the importance of customary institutions for managing natural resources, land access, and use, together with local-level conflicts and stresses/crises. Investing in building strong community institutions with increased skills and resources is important for increasing the opportunity for problems to be resolved at the local level and without escalation beyond this. Linked with customary institutions is greater investment in rangeland management, land tenure security, and good land-use planning to raise the productivity of rangelands. With greater tenure security, there could be an increased likelihood of more incentives to invest in improving rangeland management, while also strengthening governance more generally and carrying out local rangeland monitoring – key for a productive and sustainable pastoralism/livestock sector.

Long-term programming and development investment

Support should be provided to the Government of Somalia in particular and livestock-sector actors including the private sector, universities, and customary institutions to operationalize the Somalia Livestock Sector Development Strategy. Issues to address in particular include rangeland management, animal health and quarantine services, institutional capacity, and research that can strengthen the livestock sector, including through drought and market shocks. This may require a new approach across the livestock and development sector(s), with pastoralism development more strongly at its core. Important lessons on how to influence and develop this approach can be learned from other countries in the region that have seen this shift in recent years.

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