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## **COVID-19 and pastoralism: reflections from three continents**

Giulia Simula, Tsering Bum, Domenica Farinella, Natasha Maru, Tahira Shariff Mohamed, Masresha Taye, Palden Tsering

PASTRES Programme, Institute of Development Studies, University of Sussex, UK

Giulia Simula [G.Simula@ids.ac.uk](mailto:G.Simula@ids.ac.uk); Domenica Farinella [dfarinella@unime.it](mailto:dfarinella@unime.it); Natasha Maru [N.Maru@ids.ac.uk](mailto:N.Maru@ids.ac.uk); Tahira Shariff [T.ShariffMohamed@ids.ac.uk](mailto:T.ShariffMohamed@ids.ac.uk); Masresha Taye [M.Taye@ids.ac.uk](mailto:M.Taye@ids.ac.uk); Palden Tsering [P.Huadancairang@ids.ac.uk](mailto:P.Huadancairang@ids.ac.uk);

### **Abstract**

Focusing on pastoralism, this article reflects on five diverse cases across Africa, Asia and Europe and asks: how have COVID-19 disease control measures affected mobility and production practices, marketing opportunities, land control, labour relations, local community support and socio-political relations with the state and other settled agrarian or urban populations? In response to the lockdown measures, we explore what innovations have emerged to secure livelihoods, through new forms of social solidarity and 'moral economy'. The cases examine how impacts and responses have been differentiated by class, age, wealth and ethnicity, and explore the implications for socio-economic processes and political change in pastoral settings.

**Keywords:** Uncertainty, COVID-19, mobility, pastoralism, political economy

## **1. Introduction**

COVID-19 has brutally exposed deep structural inequalities in societies across the world, whether through axes of wealth, age, gender health condition, ethnicity, race or knowledge (e.g. Liu et al., 2020; Fischer-Mackey et al., 2020; Mendes and Carvalho, 2020; Wenham, Smith, and Morgan, 2020). Much analysis to date has focused on the macro-consequences of the pandemic on national economies and the impacts on poverty (e.g. Sumner, Hoy, and Ortiz-Juarez, 2020; Wright et al., 2020) or wider questions of the pandemic's impact on development (Oldekop et al., 2020; Peeri et al., 2020) and social justice (Roape, 2020). However, the pandemic has had highly varied impacts, and it is only through focused studies of particular settings that a more comprehensive picture can emerge. In particular, commentary on the virus' impacts has rarely focused on populations who are dependent on mobility for their livelihoods in marginal and remote rural areas. For lockdowns, as the

core public health measure to prevent the spread of COVID-19, have especially dramatic consequences for already-marginal populations where mobility is essential for livelihoods. Such groups include artists, travellers, refugees (Kluge et al., 2020), migrant workers (Liem et al., 2020) and pastoralists.

This *JPS Grassroots Voices* paper focuses on pastoralists in five countries across the world, documenting the experience of the pandemic on a particular type of agrarian livelihood. Pastoralism is an important livestock production system adapted to harsh, non-equilibrium environments, and is highly dependent on mobility, so herds and flocks can harvest nutrients across diverse landscapes (Scoones et al., 2020; Nori, 2019). Pastoralists make use of rangelands in a variety of settings from deserts to savannas to high montane grasslands, where crop cultivation may be difficult. Rangelands make up around a quarter of the world's surface, and there may be around 200 million pastoralists globally (IFAD, 2018; FAO, 2001). Pastoralists are livestock keepers who are specialised in taking advantage of variability and managing grazing itineraries at a variety of scales (Krätli, 2019). Flexible mobility, in vastly different forms and modes, is always central to pastoralism (Turner and Schlecht, 2019).

The paper focuses on five very diverse cases across three continents: Africa (Isiolo in northern Kenya, Borana in southern Ethiopia), Asia (Amdo Tibet in China; Kacchch in Gujarat, India) and Europe (Sardinia in Italy). From February onwards, as researchers who take part in the PASTRES<sup>1</sup> research programme and are based in these countries, we started to collect data on the unfolding of the COVID-19 pandemic in these different sites. First in China, then spreading to Europe and on to Africa and other parts of Asia. The documentation was informal, based on interviews and complemented by the sharing of photos through a cross-country photovoice project<sup>2</sup>. As lockdowns were imposed, researchers were often separated from their field sites, but kept in touch by phone, WhatsApp and other means.

In the sections that follow, a short reflection from each site is offered, based on these interviews. This is followed by an attempt to draw out key themes across sites. The PASTRES project focuses on how pastoralists respond to uncertainties of different sorts (Nori and Scoones, 2019; Scoones, 2019). Through the research we have been investigating uncertainties provoked by droughts, floods or heavy snowfalls; by market conditions and price volatility; by political instability, conflict and insecurity; by land tenure and management regimes, and the intersections between these. And then COVID-19 arrived, or at least the threat emerged. It was initially in far-away capital cities and across borders, but soon impinged on everyday life as public health measures were imposed. Here was a totally new form of uncertainty that the world was grappling with. How did pastoralists in different places respond?

As the case studies illustrate, the disease was initially perceived as distant, the problem of others. Pastoralists are well connected by phones and got the news from around the world, and the threat felt

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1. PASTRES (Pastoralism, Uncertainty, Resilience: Global Lessons from The Margins) [www.pastres.org](http://www.pastres.org)

2. Photovoice involves pastoralists taking photos of their own environment and developing narratives explaining their pictures together. This has continued during lockdown through WhatsApp and other exchanges.

increasingly real, even if not yet experienced. Various rumours and conspiracy theories spread: this was biological warfare, a plot to kill off poorer people, a revenge from God. However, it was only when the lockdown measures were introduced that impacts were really felt in pastoral areas. To date, only a few cases have been observed in our study areas, and most pastoral areas remain isolated from the pandemic. However, the public health measures that have restricted movements, closed markets and required people to stay at home have been harshly felt in all sites, but with varying consequences and with important implications for livelihoods in rural areas.

Across the studies, we asked, how has the period of the COVID-19 pandemic restructured agrarian relations in pastoral areas? To look at how this happened we asked questions such as: how have pandemic control measures affected production practices, marketing opportunities, land control, as well as wider social and political relations, both with the state and other settled agrarian populations or urban consumers? In response to the lockdown measures what innovations have emerged to secure livelihoods, and what forms of social solidarity and ‘moral economy’ have become important in the face of the pandemic and its unequal impacts on society? And how have both the impacts and the responses been differentiated by class, age, wealth, ethnicity and other dimensions of difference, with what implications for processes of social, economic and political change in these pastoral settings? The pandemic, both through the direct impacts of the diseases, but more particularly through the imposition of disease control measures, has had far-reaching effects on pastoral livelihoods and agrarian relations. These are different to settled urban or rural populations, as agrarian dynamics and relations – including patterns of production, accumulation and politics (cf. Bernstein, 1996) – are fundamentally influenced by the ability to move (Scoones, forthcoming). With restrictions on mobility, the consequences for land, markets and social networks are significant, as the cases discussed below show.

Of course, these questions cannot be answered in full whilst still in a midst of the pandemic. As we compiled this paper, all countries had some form of restrictive measures in place in response to the crisis, while the wider economic consequences of extended lockdowns had yet to be fully felt. However, each case offers a window onto an emerging dynamic with major consequences, and together they suggest some themes relating to how COVID-19 is reconfiguring agrarian relations, to which we return at the end of the paper.

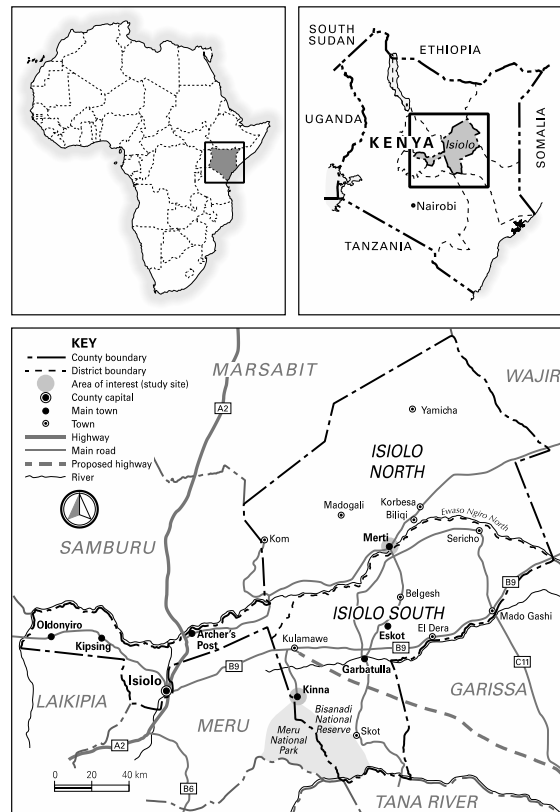
## **2. Grassroots voices: five COVID-19 stories from pastoral areas**

### **2.1. Moral economies and local solidarities during the COVID-19 pandemic: the case of Isiolo, Kenya (by Tahira Shariff Mohamed)**

“It’s abnormal but we feel normal! It’s raining and we have plenty milk ... the only fear is the outbreak of the disease in our region because it will be just you and your God. Even the strongest nations are struggling and what about us who have to walk for about 20 km to get to Merti hospital?” (Q.D., Lakole, Isiolo, April 2020)

Pastoral areas are frequently detached from central state provision of health, infrastructure and social security services revealing a deep structural inequality. Qubaata Dadacha from Lakole referred to the lack of a nearby healthcare facility as the only fear they have from the virus. His village in Merti sub-county does not have even a dispensary so they travel to Merti town to get services. Although the

virus has not yet spread in most of the rangelands, the measures taken by the authorities have had major impacts on pastoral livelihoods. As argued by Eriksen and Lind (2009), adaptation to variability is a political process with uneven outcomes as people have different opportunities and capacities.



**Figure 1.** Map of the study in Isiolo, Northern Kenya.

The effect of the pandemic is perceived differently by pastoralists in different regions of Isiolo district (Figure 1). Pastoralists in remote areas are living a normal life despite curfews and lockdown, but are facing challenges caused by transport disruption. There is decreased access to foodstuffs and vegetables from Isiolo town which is about 230 km away. Gurba Abduba, explained:

Due to hiked transport cost we are not getting daily vegetables and other food from Isiolo. we used to buy two pieces of ‘Nyanya’ (tomatoes) for KSHs 20 (0.2 USD), but now one piece of ‘Nyanya’ costs KSHs 30 (0.3 USD). People have lost livelihood and it is very difficult to cope ... the poor are not getting ‘deni’ (loan) from the shops because the few shops that are here are no longer bringing any food item and some are closed ... the road condition has got worse due to the rain and no transporter wants to risk to bring just food items all the way from Isiolo. (G. A., Korbessa, Isiolo, April 2020)

Pastoralists living in proximity to town by contrast do have access to foodstuffs, but their livelihood is affected by strict policing from security forces who are using the pandemic to extract fines from people. Abba Hoori said:

Supervising your livestock at ‘galchuum’ (evening when livestock returns) and discussing issues of concerns such as the types of pasture they ate, the sick among them and water requirements are essential and part of mala mari hoori (livestock management talk). I usually stay at the camp up to about 9 pm and only then go home. But now I have to be back before evening since the police will take away your motorbike and you don’t get it back until you pay a fine of Kshs 5000 (50 USD). Our lifestyle does not work well with the curfew; at least I have a motorbike, but those who walk to town have to face police wrath or leave early without proper supervision of the herds (A.H., Kinna, Isiolo, April 2020).

The effect of the pandemic is painfully felt especially by women whose economic livelihood falls under ‘restricted trades’, (such as selling ‘*khat*’ [*Catha edulis*], a stimulant). Haati Diba explained that there is a general decrease in trading activities, but butchery owners are booming partly because of Ramadan and also the decreasing price of live animals due to less demand from the outside market. She further felt for the livestock brokers whose earnings have been disrupted due to market restrictions and bans on public gatherings, forcing some pastoralists to trade in a ‘hidden’ place.

Pastoral responses to the pandemic are seen at two different levels. The first involves ways of engaging with the virus through the establishment of local community ‘emergency’ teams, which include health volunteers, chiefs, youth, women and village elders. Although they do not have medical training, they meet every Friday and engage in community sensitisation and screening at the entry borders of the district. Secondly, there is an emerging structured network of community solidarities and mutual help: a new pastoral moral economy. Examples include a group of youth in Merti who have initiated a ‘corona food drive’ so as to feed vulnerable families. In addition, some women are helping milk traders by purchasing excess milk and transforming it into butter so that market disruption will not lead to complete loss. Amina Diko, says:

“There is plenty of milk due to good rain this year, however this disease and restriction of movement disrupted market and the transfer of milk from rural to town. We the women did not easily give into the effect of the virus, we took the excess milk and converted it to butter, to prevent our fellow traders from incurring loss; it’s a form of economic and social support. Personally, I have five litres of ghee which will stay longer than the milk and I am happy to make more ghee if this means preventing further loss from my fellow milk traders.” (A. D., Merti, Isiolo, May 2020)

As the Boran saying goes, ‘ilkaan walii ejjaanit funn walii kutaa’ (the teeth that stand together can chew food together). Forms of mutual support rooted in a local moral economy, mobilising different groups of people – elders, women, youth – are proving essential for pastoralists in the time of COVID-19. Drawing on culturally-rooted relations to respond to uncertainties and everyday variable conditions are essential for pastoral livelihoods – whether in response to drought, insecurity, water shortages or animal diseases. Such practices and relations have become equally essential during the pandemic.

Although these forms of locally-based support are essential in time of crisis, they are highly differentiated in their reach and impact. In most cases, they are activated to counter the lack of immediate state support by providing some relief, but they may not be sufficient to respond to the full consequences of COVID-19 if it spreads seriously. Therefore, to complement local moral

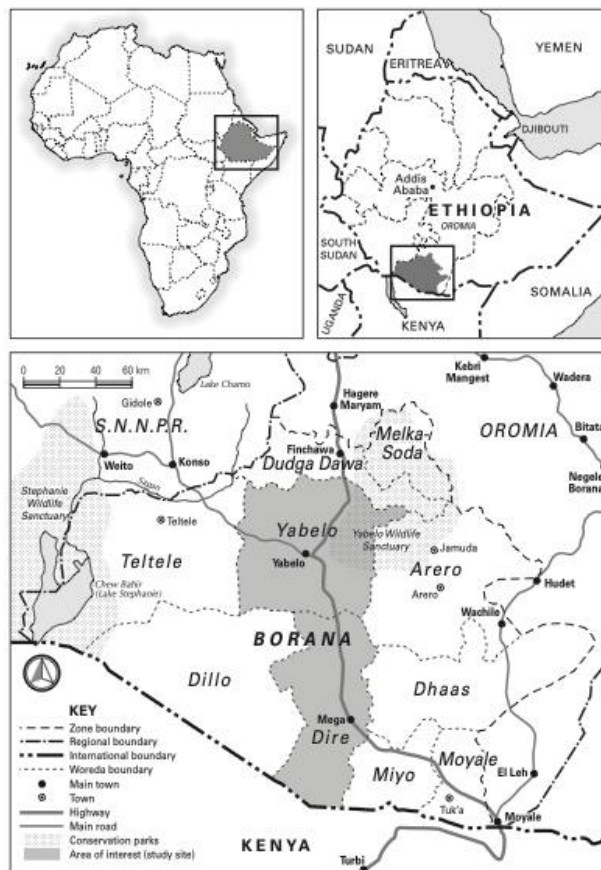
economy responses in Isiolo, there is an urgent need for greater state engagement, beyond simply policing a lockdown. This must focus on addressing the structural inequalities that give rise to the differential vulnerabilities of pastoralists in different locations, alongside the long-term effect of the pandemic – whether the disease or the public health response to it – on pastoral livelihoods.

## **2.2. COVID-19: an enemy of mobility in Borana, southern Ethiopia (by Masresha Taye)**

“Mobility is part and parcel of the pastoral life. Take my name, [Godana], it means, to move around or migrate; and I am more stressed by these mobility restrictions than I am by the pandemic itself.” (M. Godana, Borana, April 2020, 56 years old)

About one month after Ethiopian authorities reported the first COVID-19 case (March 12, 2020), the impact of the public health measures in the country’s ‘formal’ economic sectors was being felt. The adverse impact of the pandemic on the mobility of people was widely discussed, but no reports covered the pastoral perspectives, where mobility is entwined with pastoralists’ life and livelihood. As discussions with pastoralists in Borana zone in southern Ethiopia have shown, restrictions on mobility due to the pandemic have hit pastoralists hard.

The Borana zone accommodates millions of livestock and more than 600,000 pastoralists. Traditionally, Borana society believes in what is locally termed, *Dhaaccii*. This cyclical pattern of events is divided into seven distinctive periods, and the entire cycle takes 56 years. Now, we are in the first cycle, termed as *Fullassa*. In literal terms, it means to pierce something with a sharp object. These events are usually extreme – very good or bad incidents, going outside the usual episodes of ‘normal’ drought or conflict.



**Figure 2.** Map of Borana, Southern Ethiopia.

The last quarter of 2019 in Borana was characterised by magnificent rain with sufficient pasture; all livestock were in good condition. Commonly, the month of April is a month when pastoralists sell livestock. Following two months of fasting, close to 50 million Ethiopians celebrate the Orthodox Easter holiday in April, and the market demand for livestock is high. In preparation for the festivity, pastoralists fatten their animals; this year luckily the rain and pasture were good. Borana livestock are sourced for all major markets across the country. Everyone was expecting a profitable year. Elders in their daily blessings confirmed that ‘this Fulassa will bring floods of happiness and wealth to the people of Borana’.

But things quickly turned upside down; a series of events have jeopardised pastoralists’ livelihood. The good rains at the end of 2019 were followed by a major outbreak of desert locusts, spreading from January during March 2020. And then COVID-19 struck. The fate of the *Fullassa* period had changed from good to bad, it seemed. A series of measures by the government aimed at halting the spread of the virus, including major restrictions on mobility, had changed the high expectations. On March 30, the regional government of Oromia, where Borana zone is located, halted all means of transportation in the region. In Borana, motorbikes and tri-wheeled cars (nicknamed as Bajaj), which are vital means of mobility, were prohibited.

This transformed the much-anticipated good price and bountiful market for the Easter holiday into much uncertainty. When Easter was celebrated, Ethiopia had recorded 105 COVID-19 cases, with three fatalities. Many expected the worst, and public health measures were implemented forcefully.

How did pastoralists respond to the restrictions on mobility, so central to their livelihoods? In an attempt to diversify their risk, some pastoralists reoriented their marketing strategy to Kenya, the second-best destination. The Kenyan government unfortunately dug wide ditches in and around all the formal and informal roads to protect their boundaries from the potential spread of the virus. This made the movement of people and livestock across the border impossible.

The situation got further complicated when the local Ethiopian militia began chasing the Kenyan livestock traders who were able to make it to the market areas on foot. As a result, traders are now uncertain as to where and how to trade livestock.

Mobility is a critical element in the pastoral way of life, and when it is halted disaster strikes. The restrictions on movement and trade have consequently massively affected the economic and social life of Borana pastoralists. Godana elaborates on the situation, ‘mobility with livestock, either in search of water and pasture or market is halted, which means my livelihood is at jeopardy.’

To make matters worse, during the first week of April, religious leaders of all faiths together with the president appeared on national TV urging all Ethiopians to adopt physical distancing measures; to avoid going to churches or mosques and celebrate Easter at home. This signalled the impending decline in livestock demand. Due to the new regulation, the traditional ‘*Qircha*’ practice performed during major holidays, where households living in a neighbourhood contribute money, purchase cattle and share the meat, did not take place. A favourite cultural dish – raw meat – was also banned, forcing thousands of slaughterhouses to reduce their through-put by at least half. A government tax collector at the gate of Borana’s largest livestock market, Haro Bake, confirmed that there was a reduction of revenue by 60 percent from the regular Sunday livestock sales. The government collects a dollar per animal in the fenced market for each transaction and holidays are when the revenue passes increases massively.

“Pastoralists’ asset is livestock and during seasons when pasture and water resources are available, this asset is changed into cash. I have been standing in the market in case I get a buyer for the third time in a month. Buyers could not come due to the restrictions on mobility and if in case few came, they will kill the price.” (H. Bake, April 2020, 65 years old)

Consequently, pastoralists are in a stalemate. Difficult and sometimes conflicting decisions have to be made. Cut the price or keep a large number of livestock? Yet cutting the price is losing income requiring more animals to be sold, thereby resulting in asset depletion. Keeping animals will however force competition over the limited pasture resources, maybe resulting in conflict. And with a second wave of desert locust expected, this will only make matters worse.

COVID-19 – or at least the measures employed to restrict the spread of the virus – is surely an enemy of mobility. This is having a major impact on pastoralists across Ethiopia; yet despite the importance of the pastoral sector for the wider Ethiopian economy, the importance of mobility in generating production and livelihoods in the dry rangelands of southern Ethiopia is being ignored in public health policymaking.

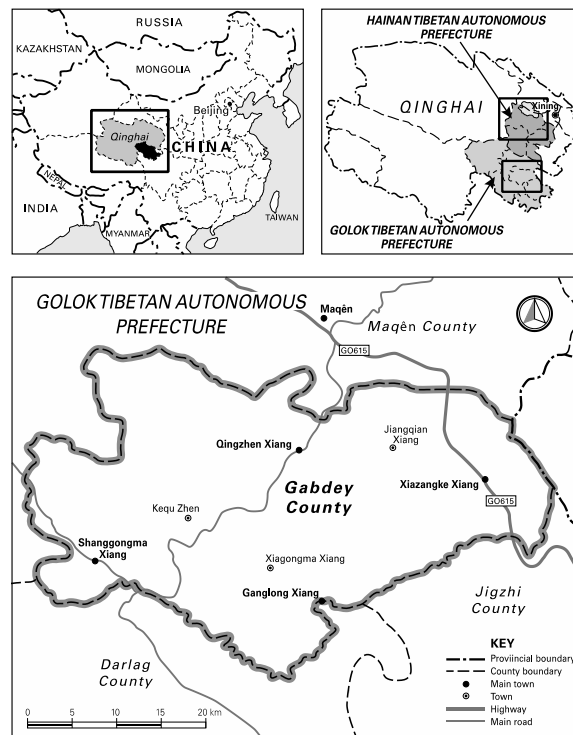


### 2.3. Imagining the future market for caterpillar fungus in Amdo Tibet (by Palden Tsering and Tsering Bum)

“The market (for caterpillar fungus) is going to be better this year, there was talk circulating from one of the incarnates, where he emphasises the value of the fungus (for treating COVID-19) and advocates that pastoralists harvest and consume it this year, instead of selling it at a low price.” (Uncle Ray, Golok, March 2020)

When the Chinese government initiated measures to contain the COVID-19 outbreak in Wuhan in January 2020, traditional Tibetan and Chinese medical communities worked to produce therapies to fight the virus. Caterpillar fungus (*Ophiocordyceps sinensis*) as an important ingredient in Tibetan medicine has drawn renewed attention. Caterpillar fungus is harvested in large quantities in some Tibetan rangelands, both in summer and winter pastures. Those with caterpillar fungus resources can make considerable money from harvesting or from leasing land to others. This complements, and in some cases, it replaces the traditional pastoral production system of rearing yaks, sheep and horses.

As COVID-19 spread, Tibetans from Qinghai donated huge quantities of caterpillar fungus to patients in Wuhan. Medical professionals and Tibetan monastics advocated for caterpillar fungus as a key medicine to boost immunity. For instance, renowned Chinese epidemiologist Zhong Nanshan’s advocacy of caterpillar fungus use has been widely circulated in Tibetan cyberspace. Meanwhile, Tibetan monastics also voiced their support for caterpillar fungus. For instance, as Uncle Ray explained, an acknowledged incarnate monk from one of the local monasteries in Golok had also highlighted the importance of the fungus to pastoralists.



**Figure 3.** Map of the study area in Golok and Hainan, Tibet.

Even though some locals anticipate better market prices for the caterpillar fungus this year, government officials are worried that the contracting economy will drive down consumption of goods

and services, with official reports of a 6.8% shrinkage in the first quarter of 2020 compared with the earlier year (Cheng 2020). This may in turn affect the market and so prices for caterpillar fungus, as one of the prefectural leaders in Golok explained:

“The price in the market depends on the consumers, not the pastoralists. The consumers (of caterpillar fungus) are mainly from the coastal cities of China, such as Guangzhou and Shanghai. The COVID-19 outbreak during the Spring New Year had indeed charmed many to this endemic resource after Qinghai Province offered boxes of them to Wuhan city. However, with the national economic crisis this year, I don’t think there will be a big market for caterpillar fungus, the demand will decline from the coastal consumers.” (Interview, Golok, April 2020)

Access to and control over the valuable resource of caterpillar fungus has varied over time and affects relationships around land. In Golok area, before 2013, all pastoralists had rights to harvest caterpillar fungus on their summer pastures, and harvesting was frequently part of a communal activity. But after 2013, the practice changed with caterpillar fungus harvests on the summer pasture limited to certain individuals from each family, in order to avoid over-use.

Moreover, some families had privatised their summer pasture in order to use the rangeland for natural resources such as caterpillar fungus. As D.J. explained,

“Unlike many other villages here, our summer pasture was already privatised to each household, and this was because of the soaring market price for the caterpillar fungus, which had caused intra-village and intra-household disputes for the past years. To reduce the turbulence in the village and household, we privatised our summer pasture in 2013. Therefore, the family has the ultimate right to decide the use of the rangeland, and we decide the right to access and harvest during the caterpillar fungus season.” (D. J., Golok, April 2020)

However, for those who still use summer pasture collectively, the village leaders decide how many people each family can send based on the size of land and resource ownership. The caterpillar fungus resource ownership differs within the village with some families having resources on both winter and summer pastures, and others only on their summer pasture.

On April 2, 2020, the village monastery gathered all village leaders to discuss a ban on leasing pasture to non-locals this year, especially caterpillar fungus harvesters from neighbouring Gansu and Sichuan Provinces due to a fear of virus transmission. As Uncle Ray recalled:

The monastery, the village leaders and household representatives had collectively discussed and decided to implement a leasing ban for caterpillar fungus harvesting this year. No land leasing to harvesters from outside of Golok and no harvesters hiring from outside of Golok. (Uncle Ray, Golok, April 2020)

This is not the first time that leasing bans have been imposed on non-locals. However, wealthy and influential families broke the rule and continued leasing their land to non-locals since greater rents can be realised.

However, pastoralists, who rely on caterpillar fungus income to complement their livestock rearing are concerned that the ban will reduce local household income since there are not enough harvesters locally, and they are unable to receive leasing fees from non-locals. For instance, Uncle Ray argues:

“My family had a total of 90,000 Yuan from leasing the winter pasture last year for 40 days during the caterpillar fungus and *Fritillaria* harvest. With the leasing ban from the monastery, we must figure out a way to harvest on both our pastures, and this requires additional labour from the family, which is not realistic.” (Uncle Ray, Golok, April 2020)

Many others hold similar views; for instance, T.S., another local pastoralist, shares the following perspective:

“It (the ban) means no income from the winter pasture this year. I have leased my winter pasture to a family from Gansu last year, and I charged 100,000 Yuan for a month. We couldn’t harvest by ourselves, because when three or four of us go to harvest on summer pasture, then there’s not enough labour left to harvest on the winter pasture.” (T.S., Golok, April 2020)

Most parts of the Tibetan pastoral world did not experience COVID-19 transmission, but nevertheless the economic and social impact of the outbreak is felt at both community and individual levels due to both government and local community responses. Even though the social and economic value of caterpillar fungus has seemingly increased, inter-provincial travel restrictions and declining consumer markets are generating many uncertainties, notably around crucial income from caterpillar fungus, either through harvesting and sale or land leasing. COVID-19 is changing caterpillar fungus harvesting patterns through a shift in labour relations – through the ban on outside leasing – and land control, as new land is used for harvesting. This is having a major impact on the economic prospects of pastoral communities, generating heightened uncertainty.

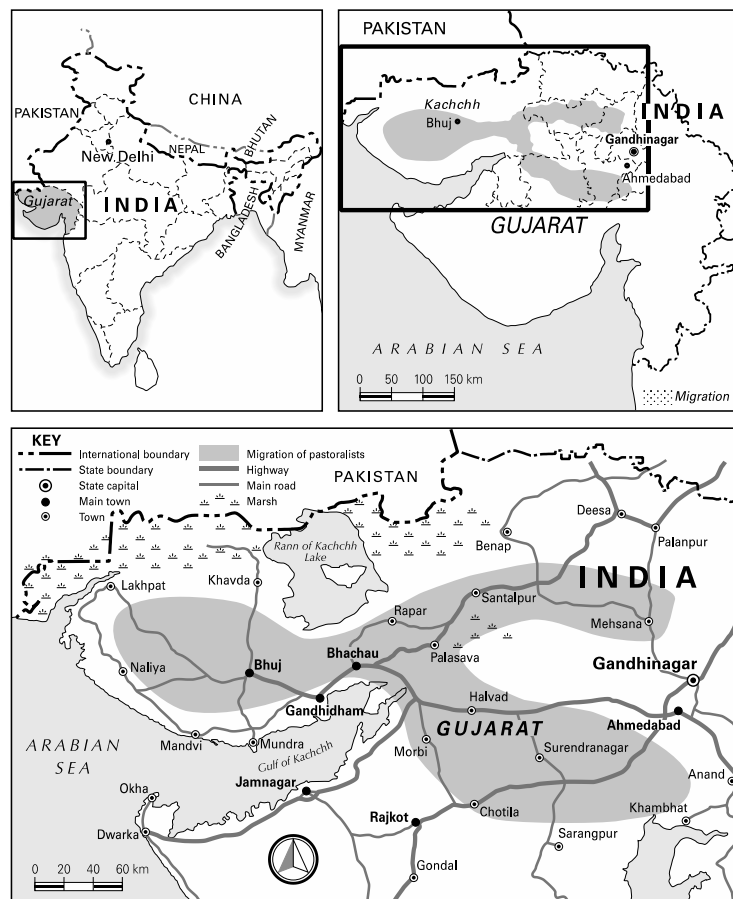
#### **2.4. Negotiating mobility in Kachchh, Gujarat: Rabari pastoralists respond to COVID-19 (by Natasha Maru)**

“Tamaane beek nathi lagti?” (Aren’t you afraid?) I asked over the phone. ‘Amne vagada ma shaani beek hoy?’ (What should we be scared of in the ‘bush’?)” answered Naniben about the coronavirus pandemic that has the world in its grips.

It was the second week of April; the sun was yet to reach its summer peak. A nomadic pastoralist belonging to the Rabari community of Gujarat state, in western India, Naniben was camped in a farm, her sheep grazing close by on cotton crop residues. She seemed nonchalant, aware of the unfolding pandemic, but unaffected; they were going about their business as usual she said, moving from farm to farm, village to village, mobile despite the nationwide lockdown.

As a crisis of (im)mobility, the world’s biggest ever lockdown has revealed the various circuits of movement in India. Contrasted with the elite transnational Indian sitting safe in their home, images of a sea of migrant labourers, incomeless, shelterless, hungry and vulnerable, flooding the roads to their villages have left the world in shock. Many more of them remain immobilised in India’s big cities. The pandemic has exposed the ‘other India’, bringing into stark view the caste, class and religious politics that these mobilities are drenched in.

Yet, there is another mobile India that remains invisible – that of its nomadic pastoralists. As pastoralists across the country move to their summer pastures, where do they fit into the story of a country in crisis? Naniben’s migrating group, like many others from her community, migrates up to 300 km eastwards from Kachchh, their home district, into mainland Gujarat during the winter and summer months, before moving back to graze in the monsoon months. Part of her family remains in camp throughout the year. This mobility is not only central to their livelihood, but also their lifeworld, carving their sense of self and community and their relationships with the natural and social world.



**Figure 4.** Map showing the Rabari migration area in Gujarat.

The past year saw unusually late rainfall, and hence late harvests, delaying Naniben’s winter migration considerably. This resulted in a shorter migration period this year, spending less than three months in Gujarat, as opposed to eight in drier years. While the late rains were justified as God’s doing, the pandemic is understood by the pastoralists as human-made. Their engagement with it is both distant and proximate; while it affects their daily life in a limited way as they continue shepherding, it permeates their conversations and imaginations as a remote but ever-present spectre.

“E badhu hachu chhe?” (Is it all true?) Dayabhai asks me as he seeks to corroborate stories received through WhatsApp forwards and conversations with ‘bhanela loko’ (educated people) like me in the villages. Rumours and myths about the pandemic abound. He uses this information to warn me ‘ghare thi baro na nikalti’ (don’t go out of the house) as the ‘havaman’ (lit. weather, used here to mean the airflow/the times) in the city is bad, while in the ‘vagada’ (bush), where they are, there is less threat. As

one of the local NGO staff says, the pastoralists are making merry in the bush, ‘junglema jalsa kare chhe.’ (Naniben, Gujarat, April 2020).

The pastoralists have so far emerged resilient in the economic distress that has accompanied the lockdown. A growing global meat market has ensured the financial feasibility of keeping small ruminants, making it an attractive livelihood option, despite the religious taboos against slaughter in the region. Although the export of live animals is restricted at the moment, animal sales continue for domestic consumption in some places. The pastoralists normally command the price and seem confident that they will be able to have a desirable price even in a few months’ time. The low input costs and the long lifespans of livestock make it feasible to hold their stock until such a price is received. Yet when I probed further about potential losses, Ishwarbhai said ‘Khule tyaare hachu’ (when it (trade) opens, we will know), indicating a sense of uncertainty over his possible fortunes.

When grazing on farm residues, the pastoralists also earn a fixed amount per night for the valuable manure deposits of their sheep as well as for clearing out the fields while receiving fodder at no monetary cost. Being a large community in Gujarat and falling within dominant religious and caste categories that often mark social ties in the region, the Rabari have cultivated strong relationships with agriculturalists over the years and are valued within the local agrarian system. Therefore, they have experienced favourable interactions with farmers and local state agents, like the police, who have provided free passage and support to the pastoralists during these times.

By the time the lockdown was partially lifted in the area, six weeks after it was first announced, Naniben had arrived back in Kachchh after grazing in another district 60–80 km away. Her relatives, on the other hand, had gone further eastwards crossing another couple of districts. Although the pastoralists maintain that in their local experience ‘amane toh kashu nattu nathi’ (we are facing no obstacles) and ‘vagada ma lockdown ni khabar padti nathi’ (lockdown is not felt in the bush), on probing they say that they have returned earlier this year due to anxieties regarding statutory restrictions on movement. At the same time such dynamics point to the relationship between the mobility experience and grazing for livestock production.

The pastoralists, through their circuits of mobility, had cut across the fragmented, enclosed and privatised farmlands, roads and highways. They walked or hitchhiked through their extensive networks for commuter travel, by-passing the need for buses and trains. They reduced their dependence on essentials by relying on grain from farmers and dairy from their animals. Meanwhile, they also earned through ancillary sources from their multi-resource income portfolio which often includes land given on lease to contract farmers, renting out tractors or trucks, having a secondary flock, etc. They operate at ecological and social interstices, imbibing heterogeneity, flexibility, self-organisation and invention within their livelihoods and lifestyles. This allows them to make the most of variable and uncertain conditions through careful and deliberate decision-making on-the-go. Such capacities to respond to environmental uncertainty have also come in useful during the pandemic.

While the Rabari may have been successful in navigating lockdown, things have not been rosy for all pastoralists in India. Many have not been allowed to enter villages, have faced food and fodder shortages and have also not been able to sell meat or milk. It has been reported that the Muslim pastoralists in the north Indian states in particular have also faced religious persecution due to the lethal communal politics currently ripe in the country. Acknowledging the diversity of pastoral experiences allows for a fuller understanding of the social, economic, and political milieu within

which they are embedded and offers insights for more inclusive policies as the pandemic continues to spread in India.

## **2.5. Facing the pandemic between industrial and artisanal markets: the case of Sardinia (by Giulia Simula and Domenica Farinella)**

“I had never seen a situation like this, and I am worried about that. Because you are working and you don’t know how this is going to end. But at the same time, I am happy because we are still standing and we are still working[...] so, this means that we are an important sector [...] At this moment maybe, people are understanding how valuable this sector is.” (Martina, Sardinia, April 2020)

We are in the third week of lockdown and Martina, 35 years old, sounds quite calm as we speak on the phone. She keeps working, as all other pastoralists do 365 days per year. The animals need daily care and the food chain cannot stop, especially in the case of Sardinian sheep-farms where milk production is the main source of farm income: sheep need to be milked and milk (a perishable product) must be sold or processed fast. In addition, most of the milk is processed into a mature cheese, the Pecorino Romano, required by supermarkets or exported to the U.S., whose demand has not diminished during the lockdown.

We must be honest in these things, given the dramatic situation, right now those who are producing milk have had no major inconvenience or loss, we will see later if we are able to sell all the cheeses; there are categories and workers who are currently stationary and certainly need more help [...] so in my opinion our sector should give more support rather than demand support! (M., Sardinia, April 2020, 50 years old)

Although the lockdown caused various difficulties and delays in feed purchase and a strong decrease in the sale and price of lambs – which, during Easter, allows shepherds to diversify and to increase farm income – pastoralists are used to facing uncertainty and to responding to it, trying to project themselves into the future. The mantra is keep calm, get through the moment and move on, as DM explained:

“I sold the lambs yesterday for a pittance, but it is fine, in some ways we're still working. ... Besides, we're used to it!

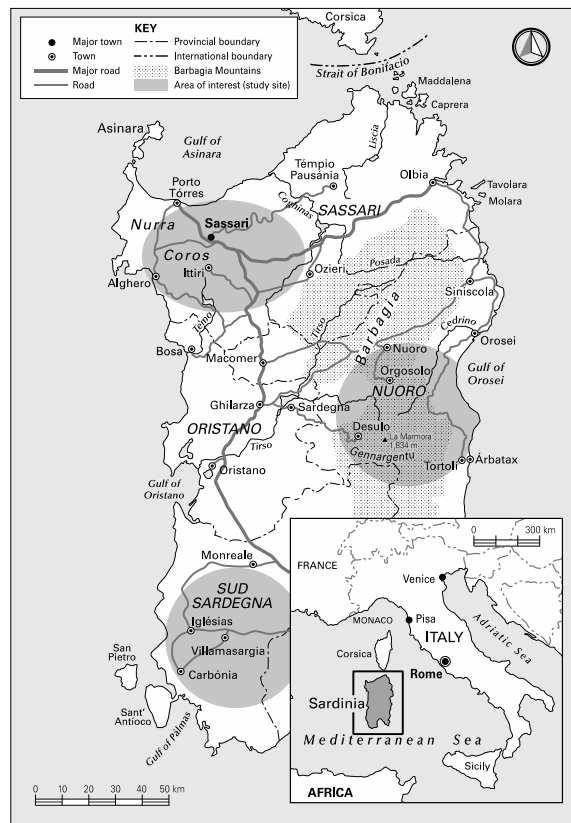
Q. Do the cooperatives collect milk?

Yes, yes, all regular!

Well, at least you cry with one eye! [...] We don't even know how to cry with tears anymore! The important thing is health ... Then we'll see how to make up for it. We need to be patient now.” (D.M., Sardinia, April 2020, 50 years old)

For shepherds, therefore, working life during the lockdown has continued. But the loneliness that characterises pastoral work has worsened, because that sociality that accompanies the shepherds’ life has disappeared: the meeting at the village bar in the evening after herding and milking, the collective eating of pastoral products on Sundays.

“What can I tell you? It's terrible, depressing; you work as usual all day by yourself, but now you no longer have the pleasure of stopping at the bar in the middle of the morning or in the afternoon when you return from the farm to the village, to have a chat with friends ... For someone who's alone like me, it's really hard.” (R.P., Sanluri, April 2020, 63 years old)



**Figure 5.** Map of the study in Sassari, Nuoro and Sud Sardinia province, Sardinia, Italy.

But just as all pastoralists keep working, not everyone is affected by the pandemic in the same way. During the lockdown, if the shepherds who sell milk to local dairy industries – producing mature cheese – survived, the most damaged were those who make cheese from their own milk and sell directly, because their outlet markets were abruptly interrupted. Many sales channels were no longer possible: local outdoor markets, itinerant markets, national and international deliveries were either slowed down or in some cases stopped completely. In other cases, orders were cancelled; those who supplied restaurants and bars saw the orders for their products drop. And consumer demand also decreased. This happened because everyone had to buy at the supermarket due to the restriction on mobility, which allowed everyone to move only within 200 metres from their home. A drop in demand pushed producers to rethink their selling strategies in order to guarantee orders; for example, guaranteeing home deliveries and creating online sales operations. These implied higher costs and re-gearing operations. As Michele explained:

“You know, for us small artisans who, like me, have chosen not to go into big distribution, it is very difficult to sell because no one can move [...] The hope is to reopen the farm to sell our products.” (M., Sardinia, April 2020, 53 years old)

Those who sell informally were hit the worst: with restricted mobility and physical distancing, those relationships were lost and so was the economic exchange. However, shepherds point out that there is great territorial variability. In some places, there are fewer controls, or there is greater tolerance and flexibility from the law enforcement officers; in other areas there are more entrenched and stronger social networks, allowing informal selling to continue, at least in part.

Overall, in the short-term pastoralists who sell milk to the industrial sector of Pecorino Romano cheese have been less strongly affected. But in the longer-term impacts are less predictable. As some pastoralists explained, even those who sell milk to the industries are starting to see signs of crisis. First, some smaller dairies communicated to their associates that in the month of April they would process the same amount of milk as in March, without accepting extra milk from pastoralists (even though April is the most productive month of the milking season). Many factories decided to stop annual cheese production one month earlier, and others have encouraged pastoralists to milk only once a day. The consortium of Pecorino Romano had optimistic predictions, but the demand for this product is highly dependent on exports and large retail sales and these could fall over the next months, due instability in the global market. The US is the main market for Pecorino Romano, and milk producers there are suffering. Substitution of cows' milk for hard cheese production in the US would wipe out demand from Sardinia at a stroke.

Sardinian industrial dairies are trying to manage this potential risk in advance. As in the milk price crisis of 2017, rumours of local over-production of milk are spreading. As a matter of fact, every time there is a milk price crisis in Sardinia, industries (both private and cooperative) manage to get public subsidies to facilitate the sale of the product. In order to mobilise financial resources, all the relevant actors use the case of over-production of milk and cheese, and, in particular, of Pecorino Romano. Even though the quantity of Pecorino Romano produced is well tracked, there is no mechanism that tracks sales. Therefore, as pastoralists themselves say, industries are always able to get public subsidies with the excuse that there was too much milk and too much cheese produced which they, industries, are not able to sell because the market cannot absorb such quantities. Whether this is true or not, this always results in public resources being directed towards the transformation node of the milk chain. This time, as other times in the past, there are no real signs of over-production, and so this might seem like a strategy to drain public aid in order to overcome the post-COVID-19 crisis. Industries argue that supporting the main cheese production chain is the only way to support Sardinian sheep farming. In this way, public support would be given to withdraw Pecorino Romano from the market, thereby subsidising industries and retailers. Once again, however, what is missing are sufficient measures supporting pastoralist themselves.

Pastoralists must adapt fast. While selling to industrial dairies is possible for now, artisanal and local production must respond to these new conditions, avoiding the likelihood of industries outsourcing the risk of the declining local demand onto shepherds' shoulders. Innovations around local sales networks, home deliveries and online collective sales efforts have all emerged during the COVID-19 pandemic in those places where they were not there already. In the future, these could provide new and more sustainable opportunities for Sardinian pastoralists. However, shepherds cannot do everything on their own; it is necessary to rethink the dairy supply chain and the power relations within it, including through the creation of policies that favour small-scale peasant and pastoralist production.



### **3. How COVID-19 is restructuring agrarian relations in pastoral areas: six emerging themes**

Across these diverse cases, a number of themes emerge. Here we identify six, each of which is central to restructuring agrarian relations in pastoral areas as a result of the pandemic. These themes do not stand independently, rather they are all connected to each other. For example, restricted mobility influences pastoralists' market engagement. Limited market engagement, on the other hand, influences how resources are managed and accumulated – for example land. COVID-19 has resulted in an intensified pattern of social differentiation, as those with more assets have found favourable conditions to accumulate land and other vital natural and economic resources at a lower cost. Some of the poorer pastoralists, by contrast, have found it hard to survive and sustain their families and farms. Some coped thanks to state subsidies when these were available or through the support of communities and moral economy mechanisms of reciprocity and mutual help.

We highlighted that the pandemic has had differentiated impacts on the pastoral populations depending on class, gender and age. This is because pastoralists are very diverse and heterogenous, but one thing that pastoralists have in common is the centrality of mobility. Strategic mobility lends pastoralists the flexibility and adaptability with which to make the most of variability in resource availability. Therefore, restricting mobility through lockdowns in particular had a devastating impact on mobile livelihoods. Some are able to respond by avoiding the restrictions or finding new ways of coping (drawing on moral economies of care and support), or by starting up new livelihood activities, while others cannot. Reorganising mobility, land control, labour arrangements and drawing on moral economies is not uniform in pastoral settings. Therefore, as in other settings (Swartz and Valeske 2020), the pandemic has intensified patterns of rural differentiation, as well as conflict between groups (often ethnically defined).

#### **3.1. Mobility**

Mobility – or immobility – is a theme that threads through all of the cases. Lockdowns have restricted pastoralists' ability to move to markets, to tend their animals after curfew times, to move animals near villages and seek fodder. Restrictions on outsiders coming into the local area have also had an impact, as traders no longer come and buy animals or those seeking to harvest products from rangelands – such as the caterpillar fungus in Tibet – no longer are able to come. This reduces incomes and the flexibility so central to pastoralists' adaptive responses. For even as the pandemic spread, production continued – animals had to be fed and watered; cows and sheep gave birth and new-borns had to be raised; animals had to be milked and the products stored. Without mobility then many of these basic functions of animal production became difficult.

While urban populations were confined to their homes, with offices and factories closed and income from wage employment ceasing, pastoralists had to continue their lives. Having herds and flocks is a full-time business. In Kenya, one herder complained that he was not able to manage his animals well as he had to return to town before the curfew. In Sardinia, shepherds complained of loneliness as they were not able to meet up after a long day with their flocks in the bars or restaurants of their town. Life was not normal, but somehow it persisted.

Restrictions on mobility affected different people. Male herders – owners or hired labourers – had to navigate the regulations, curfews and restrictions, including the police and security forces. Younger men in particular learned the COVID-19 landscape, finding ways for animals to survive. Meanwhile, women were more likely to be at home, looking after other aspects of production and processing of products.

### **3.2. Markets**

It was restrictions on markets that perhaps hit pastoralists across our sites the hardest. Local markets closed and artisanal, informal trade was officially banned. The export markets that offer high-value opportunities for live animal trade in East Africa or Tibet, for example, closed, as borders were shut. The classic approaches to responding to uncertainty that are so well honed in pastoral settings involving making use of different market and hedging risks across options were no longer available. In all sites, prices of livestock and their products declined, and markets shrunk. In COVID-19 times, simple rules of demand and supply no longer functioned, and markets operated unevenly and sporadically, meaning that pastoralists had to be continuously alert and responsive.

A number of responses were seen. In some cases, alternative sources of income beyond livestock became especially important. In Amdo Tibet, for example, caterpillar fungus, a valuable rangeland resource long harvested as a complement to livestock income, became a lifeline, with local religious leaders issuing a ban on others coming into the area, encouraging locals to harvest the resource themselves. In Sardinia, those selling milk to industrial dairies could continue as the dairies remained open and the export of Pecorino Romano to the US and elsewhere in Europe continued. However, it was the small-scale processors, producing for the local market, who suffered most. They were no longer able to travel to farmers' markets, tourist purchases dried up and they had to seek ways of moving online for sales combined with home deliveries to local towns. While cheese markets continued in some form, meat markets collapsed. The huge number of lambs grown for the Easter market in Sardinia no longer had buyers, and flocks had to incorporate them. In Kenya, the shutting down of Nairobi and its markets presented a dramatic challenge to the marketing of milk and meat from different pastoral areas. Companies commercialising camel milk from Isiolo were forced to shut down their businesses, with severe implications for pastoral producers and female marketing agents alike.

As markets reconfigured due to border closures, movement restrictions and lockdowns, some gained and some lost. As the cases show, the consequences were not evenly felt. Those with the connections and resources to explore alternatives, including through developing online marketing or hiring workers to process excess produce locally, survived better. Others really suffered, as there was no opportunity to sell animals or livestock products, even at reduced prices.

### **3.3. Land**

These changes have had impacts on land relations, including patterns of access, ownership, leasing and so on. With new herd and flock compositions, there were new demands for pasture and water in the rangelands. Having access to and control over valuable grazing and water resources became more important, especially as movements were limited, incomes declined and fodder markets failed.

While in Europe subsidies for landowners continued, even while production faltered, this was not the case in our other study sites. Here more forthright defence of land from use by outsiders was observed, resulting in conflicts with neighbouring groups in southern Ethiopia and northern Kenya. In India, where pastoralists do not have extensive areas of customary land, negotiating access to land from settled farmers became even more crucial. Here, manure exchanges were reinforced and close links with agricultural landowners became essential, not only to provide land, but also protection from others wary of outsiders coming near a village with a potential risk of COVID-19 infection. Social relations and networks to secure grazing and crop residue fodder were essential and had to be reinforced during the pandemic.

In Amdo Tibet, long-standing lease arrangements with outsiders to harvest caterpillar fungus on particular pastures – both through individual and community arrangements – were overturned. The fear of outsiders coming from the ‘diseased’ lowland areas into what many regarded as a healthy mountain environment without the virus was a major driver. Monastic leaders from local Buddhist temples also argued that it should be locals who benefit from the increased potential value of the fungus as a COVID-19 treatment, rather than allowing outsiders to profit. New regulations, imposed by joint agreements between monasteries and local communities, resulted in a reconfiguration of land control in the rangelands. Once again, some benefited, while others lost out. Those who benefited were those with sufficient labour to harvest and sell the fungus while maintaining their herds and flocks; those who lost were those who relied on external contracts and could not harvest themselves. The result has been an overturning of land relations, and new conflicts emerging.

### **3.4. Labour**

Skilled labour is essential for successful pastoralism – for careful herding to maximise the use of the rangelands; for managing young and sick animals; for processing of animal products and their effective marketing. Labour is highly gendered, with men and women taking on different tasks, and is also age dependent with younger and older people involved in different ways. Increasingly across pastoral areas hired wage labour is important too, often involving workers from distant areas.

COVID-19 has disrupted these labour relations significantly, with different people having to take on new roles; for example, in marketing new products or selling online. Frequently women have been important in these innovations centred on processing and artisanal product marketing, as seen in the Sardinia case. With migration for wage work ceasing, securing wage labourers has become increasingly challenging, and many moved home to their families. Instead, local family labour has had to be mobilised, often including young people and children, who were no longer at school due to closures.

Changes in herd and flock composition – for example, more live kids, lambs and calves due to lack of sales for meat – also imposes new labour requirements, again particularly on women who often look after young animals at homesteads. Without access to government services, such as veterinary care, other roles for looking after sick animals or seeking local specialist help also emerge.

While the much-discussed impact of lockdown measures on labour in formal unemployment, in pastoral areas the most felt consequences centred on the supply of informal migrant labour and gendered and age-specific labour relations, each with specific implications for those who suffer the burden of COVID-19.

### **3.5. Moral economy**

In the absence of state support in remote pastoral areas, pastoralists have had to rely on their own community-based networks of support and solidarity. As the Kenya case showed, such practices are deeply embedded in local institutions and cultures, and have long been central to how pastoralism functions; not just at an individual level but as a more collective endeavour amongst an extended family, community or clan. Traditional forms of moral economy have changed over time and become adapted to new challenges. New institutions – such as mosques, temples or churches – provide support, and new groups, sometimes very informal, sometimes organised with external support from aid programmes, become involved.

The arrival of COVID-19 has provided an important moment for galvanising local forms of moral economy and solidarity – around providing food; supporting production and the management of animals at a collective level and offering labour and care to those in need. In some cases, these drew on existing networks and social relations and were coordinated by respected local leaders; in other cases, totally new initiatives emerged, such as the various youth-led initiatives observed in Kenya.

### **3.6. Politics**

COVID-19 has reshaped politics too. Fears of infection have become politicised, feeding into religious and ethnic divides, as seen in India for example. Marginal, Muslim herders, who sell animals for meat, have been targeted for vicious attacks in some parts of the country. Even when violence is not meted out, forms of ostracism and stigma can reinforce divides that have kept pastoralists politically and socially separate from settled agrarian and urban societies, despite their obvious integration through grazing/manuring arrangements, marketing exchanges and labour hiring.

While COVID-19 can bring people together in new forms of local solidarity and mutual aid, it can also divide, feeding a wider politics of division so evident in many countries. Ethnic, social and cultural differences are accentuated and instrumentalised in the process, fuelling a ‘crisis politics’ that results in impositions of authoritarian control. Heavy-handed policing, arbitrary arrests and discrimination of different sorts have been observed.

Pastoralists of course have long faced such political marginalisation; they are frequently constructed as threats to a central, settled state, keen on secession and sources of violence. Since livelihoods depend on interaction, pastoralists are also adept at negotiating good relations, whether this involves offering state officials milk or other now rare animal products, making deals with farmers who need manure or hiring labour from other areas. Cultivating a peaceful politics in the time of COVID-19 is essential to continue livelihoods, although not all marginalised pastoralists are able to achieve this.

## **4. Conclusion**

Compared with others who have lost jobs and been confined to their homes, pastoralists, who have been able to continue herding their animals and producing livestock products, seem not to have suffered to such an extent. Yet, the COVID-19 pandemic has nevertheless had far-reaching effects. With the key public response to the pandemic being to curtail movements, this has had huge impacts on pastoralist livelihoods who centrally rely on mobility and exchange for their livelihoods. This has

affected relationships and practices at the centre of marketing, labour hiring and land management, for example, and so influenced patterns of production and accumulation, as well as wider politics, in pastoral areas.

Pastoralists have always lived with and from uncertainty, and COVID-19 presented another challenge, layered on responding to climate variabilities, market volatility, insecurity and conflict, among other shocks and stresses. The practical repertoire of responses used in other settings has been important in pastoralists' responses to COVID-19, and particularly the lockdowns (Scoones and Nori 2020). This has required adaptation, flexible innovation and new everyday performances of pastoralism that allow solutions to be found. These may draw on culturally-embedded moral economies or link to new technological innovations, such as online marketing. As Abba Hoori from Isiolo, Kenya explained: 'pastoral life is all about uncertainty, but if the principle of 'Borani walii waheela ammale walii wareega' (literally: Boranas are companions and feed each other) is applied then it is easier to overcome even the most difficult uncertainty.' Embedded in specific socio-economic contexts, these adaptations reveal how the pandemic is restructuring agrarian relations; in some cases subtly, in some cases more concretely. In all the cases, though, unknown futures are confronted and responded to as they unfold.

With the pandemic still on-going, the longer-term consequences remain unknown, but pastoralists are perhaps particularly well equipped to weather the pandemic storm. Of course, not all pastoralists everywhere can, and the opportunities to respond successfully are varied. Some groups are so socially and politically marginalised that there is no room for manoeuvre, and clamp downs and restrictions have resulted sometimes in violence and suppression. In other cases where adaptive flexibility has been more possible, the reconfigurations of land, labour and markets, as well as wider agrarian relations, have resulted in impositions on some more than others – more often than not with women and younger people bearing the burden. As we have emphasised, in most cases, the pandemic crisis has ended up exacerbating existing social, racial, gender, generational and political inequalities, and the policies that are being pursued are reinforcing this divide even further; for example, supporting agribusiness rather than small-scale and more marginal food producers. However, the resilience of pastoral producers comes across repeatedly in interviews. For example, a female pastoralist from Sardinia explained:

What do you want me to say, we'll get up from this one as well, we always get up from everything and we'll do so in this situation too. It's not a new situation for us, we're used to hard lives and to a life of sacrifices. As long as we have food on our table ... and we always do. (Interview, Ittiri, Sardinia, May 2020)

The voices of pastoralists from across our cases therefore do offer a note of hope and optimism. While the pandemic threat is real and the measures imposed harsh, the survival of pastoralism in the face of uncertainty continues to generate examples of creative innovation in everyday practice offering wider inspiration.

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## Notes on contributors

**Tahira Shariff Mohamed** is from Northern Kenya. She is an anthropologist and holds a Master's Degree in International Studies from the University of Nairobi. Her MA project was on human smuggling across the Kenya-Ethiopia Border. Recently, Tahira has worked with the Effective State and Inclusive Development (ESID) Research Centre at the University of Manchester on a project examining governance and the politics of implementing social protection in Kenya. She currently is a PhD candidate with PASTRES at the Institute of Development Studies, University of Sussex, UK.

**Masresha Teye** has recently ended a post at the International Livestock Research Institute's (ILRI) Program on Innovations for Resilient Livelihoods in African Drylands where he was working for over four years as a Program Coordinator (Ethiopia) to be an affiliate PhD student with PASTRES. Masresha worked as a Socio-economic Researcher for different projects for more than nine years focusing on rural and agricultural development, food security, integrated land use studies and pastoral resilience.

**Natasha Maru** is a doctoral candidate at the Institute of Development Studies, University of Sussex, United Kingdom working with the PASTRES programme. She holds an MPhil in Development Studies from the University of Oxford and is interested in the study of mobility, space, place, the commons, the state and everyday politics. Currently working with the Pastoralist Knowledge Hub at the Food and Agriculture Organization of the United Nations, Natasha is keen on bringing pastoral voices into global policy processes.

**Palden Tsering** is from Amdo Tibet. He has worked recently as the project manager for Qinghai Plateau Nature Conservancy (PNC), a local NGO which is dedicated to Biodiversity Conservation and Community Development. In 2017, he completed an MSc in Conservation and Rural Development at the University of Kent exploring the perspectives and attitudes of Tibetan Pastoral Communities in Qinghai toward monasteries involved in conservation and development. Palden is currently a PhD candidate with PASTRES.

**Tsering Bum** is currently a PhD candidate of Anthropology at Emory University in Atlanta, Georgia, USA. From 2012 to 2016, he worked with Tibetan pastoralist communities in China's Qinghai Province to build community-based resource management organisations to conduct biodiversity monitoring, waste management, and human-wildlife conflict resolution. His current doctoral research interests broadly cover political ecology of wildlife conservation, development, and natural resource management in Tibetan pastoralist areas of Qinghai Province.

**Giulia Simula** is an agrarian and food movement researcher and activist from Sardinia. She completed her MA at the ISS in the Hague and is currently a PhD candidate with PASTRES at IDS, Sussex. She is engaged in food sovereignty efforts and worked with LVC, serving as the secretariat of the International Planning Committee (IPC) for Food Sovereignty and with the secretariat of the Civil Society Mechanism (CSM) for relations with the UN Committee of World Food Security.

**Domenica Farinella** is Lecturer in Economic and Environmental Sociology at Messina University, Italy. She previously worked at the University of Cagliari as Lecturer in Environmental Sociology, where she has been conducting ethnographic research, titled Changes in Sardinian Pastoralism: Shepherds and Romanian Workers. Drawing on this experience, she contributes to PASTRES work on mobility-migration interfaces, as well as help support the PASTRES case study on Sardinian pastoralism.

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