

# **An Analysis of Livestock Theft in South Africa (2013-2023): Towards a Deeper Understanding of Livestock Dynamics for Enhanced Countermeasures**

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### Abstract

Livestock theft poses a significant challenge to the agricultural sector in South Africa, impacting farmers' livelihoods, food security, and economic stability. This article analyses livestock theft in South Africa for the ten-year period from 2013 to 2023. It draws on existing literature, government statistics, and analyses of livestock theft statistics. The study identifies the key factors contributing to livestock theft, including regional disparities, seasonal patterns, and the involvement of organised crime. Key findings reveal a steady decline in reported cases from the 2018/2019 financial reporting year, even though the number of stolen livestock has remained relatively high. This is indicative of underreporting, livestock theft incidents; closed-circuit television (CCTV) and surveillance measures; that have had an influence on the data. Practical recommendations are made for combating livestock theft, including improving reporting mechanisms; conducting targeted research on regional hotspots; implementing interventions during peak theft periods; fostering stakeholder collaboration; and increased investment in the training and capacity-building initiatives for law enforcement agencies. This article contributes to understanding the complexities of livestock theft in South Africa. It offers actionable recommendations for policymakers, law enforcement agencies, and agricultural stakeholders to address this pressing issue and protect the economic livelihoods of farming communities.

**Keywords:** livestock theft; crime statistics; rural communities; emerging factors; crime patterns; economic impact

## Introduction

Agriculture is the foundation of the South African economy, playing a crucial role in GDP growth, job creation, food security, and the survival of rural communities (Sihlobo, 2023). With commercial agriculture occupying a substantial 37.9% of the nation's land area, equal to 46.4 million hectares, it is evident how integral this sector is. This land is largely allocated to grazing, covering 36.5 million hectares, alongside the 7.6 million hectares arable land. In particular, grazing land is the foundation for livestock and game farming. This underscores the indispensable contribution and pivotal role of livestock farming in South Africa's agriculture (StatsSA, 2020a).

### Figure 1

*Map of Africa highlighting South Africa*



Source: Wikimedia Commons

Livestock theft poses a significant challenge in South Africa, affecting farmers and the broader rural community. Numerous South African and African studies have examined this problem, revealing its complex nature, consequences, and possible remedies. The dominant focus remains on understanding the socio-economic ramifications of livestock theft and advocating for coordinated strategies toward its prevention.

In South Africa, livestock theft is a prevalent and pressing issue that has a significant economic impact on commercial farmers and rural communities, annually causing a loss of approximately R1.3 billion (approximately US\$68,5 million at 2024 exchange rate). These economic losses, resulting social unrest, and diminished trust in the criminal justice system are prominent consequences of unchecked livestock theft, exacerbating existing vulnerabilities within rural communities in South Africa (Clack, 2024).

The impact of livestock theft extends beyond individual farmers, affecting entire communities and the broader society. Farmers bear the brunt of financial losses and emotional distress, while rural communities grapple with social tensions and deteriorating trust (Smith, 2020). In addition, consumers may face disruptions in the food supply chain and increased prices for livestock products, further exacerbating concerns about food insecurity.

Addressing livestock theft is imperative to safeguard economic stability, promote social cohesion, and uphold the rule of law. By implementing comprehensive strategies to combat livestock theft and other agricultural crimes, authorities in South Africa can mitigate its adverse effects and create an environment conducive to sustainable agricultural development.

Although existing literature provides valuable information on the prevalence and consequences of livestock theft in South Africa, there is a gap between understanding the issue and its practical implications. Previous studies, such as Clack (2013) and annual reports of the National Livestock Theft Prevention Forum have shed light on the extent of the problem. However, it has become necessary to conduct more in-depth examinations that consider the evolving factors that influence the victims of livestock theft. This study aimed to fill this gap by conducting a comprehensive analysis from 2013 to 2023. It explored emerging trends, patterns and the impact of livestock theft on South Africa's economy, society and food security. Specifically, this article focuses on the frequency, geographic distribution, and magnitude of livestock theft incidents, drawing on official crime statistics, crime hub data, and other secondary sources. By addressing this knowledge gap, the study aims to provide policymakers, law enforcement agencies, and stakeholders with actionable information to combat livestock theft. The research question guiding this investigation is: " How have the prevalence, trends, and changing characteristics of livestock theft in South Africa evolved over the past decade? " The study examines the scope of livestock theft in South Africa from 2013 to 2023, focusing on the number of reported cases, the relationship between livestock theft and demographic characteristics in specific provinces, the differences in theft rates among cattle, sheep, and goats, and the economic impact on livestock farmers.

### **Background of Livestock Theft**

Despite the importance of agriculture, agriculture crime research received little attention in South Africa, and, in the past, academics tended to take a narrow approach towards its study

(Clack & Minnaar, 2018). This explains the general lack of critical information on dealing with these crimes and their associated emotional challenges and costs. Another issue with agricultural crimes stems from the South African Police Service's (SAPS) crime statistics.

The SAPS deserves recognition for its unique approach to publishing livestock theft statistics, making it the only criminal justice agency in Africa to do so. Unlike other crimes, typically reported as separate categories, livestock theft figures are distinctly highlighted, often accompanied by data from the National Stock Theft Prevention Forum, which provides insight into the number of animals stolen. However, it is important to note that while recovery rates are also disclosed, this study focuses solely on understanding the extent of livestock theft. It does not go into the analysis of detection rates, which would require a separate investigation.

Moreover, the fact that only South Africa discloses livestock theft statistics annually creates challenges compared to other countries. This lack of standardised reporting worldwide impedes efforts to gauge the prevalence and impact of livestock theft on a broader scale. There are global studies on livestock theft mentioned in the literature review and among others outside of Africa, some by: Aiyzhy et al (2021); Abbas, Muhammad, Raza, Nasir and Höreth-Böntgen (2014); Malnekoff (2013); and Meserve (2000). The truth is that none of these studies includes official government statistics but those of counties or farmers' unions. Therefore, while the SAPS's transparency in this regard is commendable, it underscores the need for improved collaboration and uniformity in data reporting practices among African countries to facilitate meaningful cross-country comparisons and informed policy interventions on the African continent.

Before 2019, SAPS only published crime statistics yearly, making it impossible to comprehend seasonal trends, for example: festive seasons; summer; fall (autumn); winter and spring. Since September 2019, statistics have been published quarterly (Kempen, 2019). Furthermore, the statistics do not provide information on how many agricultural crimes occurred during a given time. Instead, these offences are classified as contact, aggravated robbery, or property-related crimes. The only distinguishable agricultural crime within SAPS crime statistics is livestock theft, which is separately documented as a category within property-related crimes (Clack, 2013).

Some agricultural crimes, especially violent crimes, are frequently reported in popular media, especially farmers' unions, but are not included in the SAPS crime statistics and become a contentious issue as to what is the genuine situation. The academic literature that is available on agricultural crime focuses on farm attacks, stock theft, and related matters (Scholtz & Bester, 2010; Clack, 2013; 2016: 2018a; Clack & Minnaar, 2018, Doorewaard, 2020; Maluleke, 2021).

In 2018, AgriCulture South Africa (AgriSA), commissioned the Bureau of Market Research at the University of South Africa to undertake a National Agricultural Sector Crime

Survey. The study sample included 1,326 commercial farmers (Tustin & Van Aardt, 2018). According to Tustin and Van Aardt's findings, in 2017 approximately 70% commercial farmers had been victims of crime. The crime incident rates by type of agricultural crime crimes experienced mostly by commercial farmers include theft of livestock theft 39.7%, theft of farm infrastructure 37.2%, theft of farm tools and equipment 34.7%, theft of game and illegal hunting 28.5%, and robbery 25.1%. The 2017 Commercial Agriculture Census conducted by Statistics South Africa (StatsSA) (sample size not published), used different variables and found that approximately 29% of commercial agricultural units had been victims of the following crimes, namely: livestock theft (36%); theft of produce (26%); theft of supplies (25%); violent crimes (5%); and other crimes (8%) (StatsSA, 2020a). In a survey, conducted in 2021 amongst 730 farmers, it was found that 86% of them had been exposed to the following crimes: livestock theft (46%); theft of non-mechanised equipment (36.9%); theft of farm supplies (33.2%); theft of farm produce (22,4%); theft of personal belongings (10,4%); theft of machinery (7,8%); and theft of firearms (3.8%) (Clack, 2022).

For this article, the methodologies of the three studies are not analysed or critiqued. However, it is evident that in all three, livestock theft is the agricultural crime with the biggest impact on South African farmers. Consequently, livestock theft poses a significant challenge in South Africa.

### Literature Review

Livestock theft is a global phenomenon that has occurred everywhere since livestock was domesticated on the Hilly Flanks (i.e., parts of present-day Turkey, Iraq, and Iran) in 7000 BC, finding examples on all continents (Clack, 2018a; Morris, 2010). UNODC (2015) defines livestock theft internationally as a form of robbery involving the theft of livestock, noting that national crime statistics typically categorize criminal offenses according to the definitions provided by each country's legal system. Barclay (2001), Barclay & Donnermeyer (2011), Donnermeyer (2018a), Grote & Neubacher (2016), and Mears et al. 2007) categorise livestock theft as an agricultural crime within the rural crime phenomenon without assessing the extent of the phenomenon and its impact on farming communities. Clack (2014), from a South African perspective, defines livestock theft as a property crime and economic in essence. Clack (2018) indicates that one impediment in researching livestock theft is the different terminology used in various parts of the world when referring to livestock theft, with examples including stock theft (South Africa), cattle raiding (European countries and the USA), cattle rustling (Eastern and Northern Africa), lifting (India) and cattle duffing (Australia).

However, research on livestock theft globally is scant, but examples and concerns are mentioned in agricultural newsletters and newspapers. Making such a sweeping statement on availability is dangerous, as the linguistic challenges of these crimes in non-Anglophone countries may exist, e.g., South American Spanish, but they are unknown. The literature review

will address the few research projects outside the African continent, then move to Africa and South African research.

Comparatively Barclay, (2018), NSW Australia, mention that rural crime, including stock theft, rural trespass, and illegal hunting, is rising and significantly underreported, causing substantial economic losses, including property theft, damage, and loss of breeding potential, with additional crimes like firearm and diesel theft often accompanying them. Clack (2019), compared livestock theft rates between Australia New South Wales (NSW) and South Africa and found a disturbing difference of 27000 livestock theft cases on average in South Africa to 450 in NSW.

Aiyzhy et al.( 2021) in their research in Tuva (south-central), Russia, identifies the five most pressing issues regarding livestock theft that are addressed in most research globally and in Africa. Whilst comparing livestock theft with other regions in Russia, they noted (i) a shift from traditional motives to mercenary ones, (ii) cultural factors influencing livestock theft, (iii) open grazing creates opportunities for crime, (iv) in certain regions in Russia envy, corruption, and violence are common motives and (v) stress the absence of legislative regulation. Although comprehensive, the study does not identify the social and economic consequences of cross-border livestock theft as issues. These issues, particularly in the context of the African and South African environments, are discussed in the following paragraphs.

Agade (2010; Arisukwu et al. (2020), Bunei et al. (2013), Cline (2020), Gray et al. (2003), Olaniyan & Yahaya, (2016) and many other studies show that while foreign analysts focus on insurgent movements, cattle rustling and conflicts between herders and settled farmers pose a more significant threat to national and human security in Sub-Saharan Africa. In regions like northern Nigeria and East Africa, violence related to livestock has escalated, with cattle rustling increasingly driven by organised crime rather than traditional practices. The weakening of tribal elders' authority has led to a shift from culturally regulated cattle raids to more violent and large-scale rustling operations. These studies further argue that these conflicts represent a broader security threat beyond law enforcement or human security issues. The research in these parts of Africa reveals that the number of cases of animals stolen is, in some cases, available for the area based on the information received from respondents, not official information.

The socio-economic consequences of livestock theft are evident in the studies conducted by Lombard (2016: 6); Maluleke et al. (2016); and Pasiwe et al (2021). Livestock serves as the economic backbone of rural areas, providing milk, manure for farming, and meat. It also acts as a form of savings, with livestock sales helping cover essential expenses such as food, school fees, and university tuition. When livestock are stolen, the economic activity and harmonious lifestyle of a household or family are severely stressed in both communal and commercial settings (Khoabane & Black, 20127; Shackleton, Shackleton et al., 2005; Cousins, 1996). Maluleke et al (2016) highlight how small subsistence and non-commercial farmers suffer from even small

losses of stock theft based on economy of scale and are forced to invest heavily in security measures, thereby disproportionately affecting their livelihoods. Pasiwe et al. (2021) expand this perspective, highlighting the prevalent social and economic challenges associated with livestock theft, and indicating significant repercussions for victims. Elderly individuals, both men and women, emerge as primary targets due to their vulnerability in caring for animals 24 hours per day. However, the study further reveals that victims of livestock theft are not only burdened by financial losses but also experience psychological distress and Post-Traumatic Stress Disorder. Similarly, (Smith, 2020) in the UK found agricultural crime – which livestock theft is part - is a significant stressor, ranked just below weather, finance, and time pressures, highlighting the need for broader recognition and discussion of agricultural crime's impact on farm viability, emphasizing its importance as a key farmer stressor. This underscores the severity of livestock theft as a crime akin to robbery, leading to dispossession and profound emotional trauma for those affected. This crime also significantly impacts commercial farmers, resulting in hardship being experienced by the red meat industry as a whole (Geldenhuys, 2020; Donnermeyer, 2018)

Clack, (2022) observes that various factors, including religion, conflicts, and geographical features like rivers, mountains, and oceans influence cross-border livestock theft. Borders, whether between farms, police precincts, counties, states, provinces, or countries, play a significant role in shaping criminal activities. Agade (2010) extensively discusses the challenges in the Karamoja regions in Africa, which comprise parts of Kenya, Uganda, and South Sudan. Rafolatsane (2013) delves into the factors contributing to cross-border livestock theft between South Africa and Lesotho, arguing that livestock theft is extensive and emphasising the role of communities and law enforcement in combating this crime. On the contrary, Aerni-Flessner et al. (2021) challenge the perception of widespread livestock theft along the Lesotho-South Africa border, attributing it to factors such as political exaggeration of the number of livestock stolen, using unquantified jargon, unemployment, and economic inequality.

The lack of confidence in the police among affected livestock farmers and communities is exacerbated by the continual increase in annual livestock theft rates, as revealed Maluleke et al. (2014), Tustin and van Aardt (2018), Clack (2018b) and Clack (2022) Furthermore, Pasiwe et al. (2021) and Buys (2021) indicate that livestock theft is often facilitated by corrupt police officers, with youth and adults involved, with theft linked to drug use. Released suspects frequently reoffended, and poor investigations by the Stock Theft Units, alongside seasonal crime spikes, exacerbated the issue. Pasiwe et al. (2020) further found that a shortage of manpower, inexperienced investigators, and ineffective coordination among law enforcement rendered the Rural Safety Strategy in South Africa (RSS) (SAPS, 2018), largely ineffective (Buys, 2021; Visser, 2023). As a result, according to the Victims of Crime Survey in 2011, the non-reporting of cases was 36.3%, but in 2018, sharply increased to 77%. Clack, (2018b) and Maluleke et al (2018) attribute the decrease in reported livestock theft cases to the non-reporting of livestock theft cases. However, from a 2022 study, involving 920 farmers addressing Farm Crime Relations between Police and Farmers, it was found that 38% of farmers consistently



report crime; 26% often report crimes; 28% occasionally; and only eight percent never (Clack, 2024). The reasons provided by respondents in this study for non-reporting vary but the major motive with the highest, at 85%, being, namely that: “...*the police will do nothing about it*” indicating a total lack of trust in the South African Police Service SAPS (Clack, (2024).

Clack (2020) indicates routine activity theory emphasises the presence of motivated offenders, with factors driving these offenders varying by country, region, and culture. Furthermore, a key point often overlooked is that individuals unfamiliar with livestock are unlikely to steal farm animals. Livestock thieves typically possess basic knowledge of animal husbandry. Offender motivation also differs: some steal out of need, targeting one or two animals, while others, driven by greed and economic exploitation, steal larger numbers in more organised and sometimes militarised operations (Doorewaard, 2020; Doorewaard et al., 2015; Greiner, 2013; Wild et al., 2018)

From a livestock theft prevention perspective, Clack (2015, 2020) emphasised that community engagement via social media using Facebook can be utilised in combating livestock theft and further advocated this venture of crime prevention beyond generic property crime strategies. Furthermore, the study illustrates that livestock theft manifests within unique rural contexts, defying easy generalisation and further shedding light on how to predict perpetrator behaviour in livestock theft. Moreover, Manganyi et al. (2018) mention the challenges in implementing cooperative strategies among stakeholders and suggest the potential use of DNA technology<sup>1</sup> to improve traditional methods of countering livestock theft.

The shift of livestock theft from isolated and opportunistic activity to organised crime involving collusion and corruption is addressed by Bunei, McElwee and Smith (2016). Additionally, Doorewaard (2020) and Breetzke et al. (2022) introduce the dimension of organised crime into livestock theft, underscoring the need for a coordinated and more comprehensive approach to combating this phenomenon. Lombard (2016) and Boitumelo, Moreki, Boitumelo, Tlotleng and Lesaba (2018) touch on regional variations in livestock theft, with the former studying the issue in the Free State Province of South Africa, while the latter highlighted its prevalence in Botswana due to high unemployment rates. Maluleke, Mphatheni and Nkosi (2022) investigated the increase in livestock theft during the COVID-19 pandemic lockdown period in South Africa (March 2020, lifted in June 2022). To the contrary the Institute of Security Studies (2021), found fluctuation in crime patterns and a short-lived decrease in all other crime patterns during this period. Maluleke et al. (2022) suggested that to combat livestock theft effectively during and after lockdown, a multi-agency approach, including reporting mechanisms, livestock branding, and technology utilisation should be adopted. Bunei et al. (2016: 46) examined how cattle rustling in Kenya evolved from a relatively small, isolated, and

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<sup>1</sup>By facilitating physical matching, soil analyses, and examination of manure samples, DNA technology provides substantial evidence for anti-livestock theft efforts (see Manganyi, Maluleke & Shandu, 2018, for more technical detail on this).

opportunistic activity to a more planned and systematic entrepreneurial business involving collusion and corruption. Bamidele (2018), Bashir et al. (2018), Clack & Minnaar (2018), and Gray et al., (2003) addressed the violence associated with livestock theft in Nigeria, The Karamoja region in East Africa and South Africa.

The existing literature reveals a significant research gap on livestock theft in South Africa. Clack's (2013) research serves as a foundational reference point for subsequent studies on livestock theft, and some studies use data from organisations such as the National Stock Theft Prevention Forum (NSTPF). However, these studies do not comprehensively analyse the extent of livestock theft or detailed comparisons across provinces between 2013 and 2023. Although previous research Clack, (2016, 2018a) and Lombard (2020) has shed light on the nature and scale of the issue of livestock theft in South Africa, but their limited scope requires an updated and more comprehensively broader investigation to effectively address current challenges and regional variations to the problem.

Therefore, a thorough and more in-depth examination of livestock theft is critical to determine its proper scope and develop more effective prevention and mitigation of strategic vulnerabilities such as geographical, infrastructural, social, and legal and regulatory vulnerabilities. Research can identify regions with higher risk vulnerabilities by comparing theft rates across South Africa's provinces. In any attempt to formulate such preventative strategies, consideration needs to be made of the significant variances and differences across regional geographical and socio-economic conditions on the ground and in law enforcement capacity regarding livestock theft in South Africa. As a result, comparing livestock theft rates and patterns across provinces can provide valuable insights into these differences and inform targeted interventions.

### **Methodology**

A longitudinal approach was used to examine the evolution of livestock theft in South Africa from 2013 to 2023. The research design emphasised a quantitative approach by exploring the prevalence, trends, and changing characteristics of livestock theft in South Africa that evolved over the past decade. This approach is now one of the most common techniques in criminology and is regularly featured in rural crime studies (DeKeseredy, 2022).

The unit of analysis for this research is livestock theft, commonly referred to as stock theft, which is categorised as a property crime primarily motivated by economic factors (Clack, 2014). Livestock in South Africa, as defined by the Stock Theft Act No. 57 of 1959 (Department of Justice, 1959: 2), encompasses various animals, including horses, cattle, sheep, goats, pigs, poultry, and others. However, this study and the National Stock Theft Prevention Forum (NSTPF) focus solely on cattle, sheep, and goats, which represent approximately 89% of all livestock theft in South Africa (Clack, 2013). The remaining 11% involves other animals such as

horses, mules, donkeys, pigs, poultry, domesticated ostriches, domesticated game, and their carcasses. However, when these categories are examined individually, their contribution to livestock theft is minimal (Clack, 2013).

Data collection for this study uses a longitudinal approach, and official crime statistics published annually in South Africa by the SAPS since 2013 serve as secondary data sources. Additionally, the SAPS Head Office National Endangered Species and Livestock Theft Unit maintains records of stolen, recovered, and lost livestock per the categories as mentioned in the Stock Theft Act, 57 of 1959. This is provided in an MS Excel spreadsheet format to the National Stock Theft Prevention Forum at their bi-annual meetings and the Provincial Livestock Theft Prevention Forums<sup>2</sup>. The NSTPF would then publish the information through a media release. However, public availability is limited and is obtained from the SAPS upon written request, which is the method used in the study (Pullen, 2023).

The quantitative data collected include the number of reported livestock theft cases and the species stolen year. The number of reported livestock theft cases refers to the number of incidents officially recorded and reported to authorities within a specific time frame. On the other hand, the number of livestock stolen per year denotes the total number of individual livestock animals that were illegally taken or stolen during the corresponding period. To further analyse this data, Microsoft Excel (MS Excel) was used for statistical calculations, including determining correlations, means, and standard deviations where applicable. This metric sheds light on the magnitude of the actual loss in terms of livestock animals stolen from their rightful owners.

### **Analysis of Livestock Theft Trends**

The analysis of livestock theft trends in South Africa commences by examining the following six trends: (i) the number of livestock theft cases reported to the SAPS; (ii) the extent of livestock theft in comparison to all other serious crimes in South Africa; (iii) investigating the contributing factors to current trends; (iv) identifying existing provincial disparities/variations in trends; (v) delving into annual and seasonal variations in the incidence/occurrences of livestock theft; and (vi) assessing the economic impact of livestock theft via the number of animals stolen.

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<sup>2</sup>The Author has been a member of the NSTPF for 18 years and served as its chairperson from 2015 until January 2023.

## Findings

### *The extent of livestock theft compared to all other serious crimes in South Africa*

Serious crime refers to SAPS crime statistics derived from the administrative recording process, which assigns a crime code to each reported crime type (e.g. murder, stock theft, etc). The SAPS crime report primarily emphasises 21 priority crimes, categorised into two main types: community-reported serious crimes; and crimes detected as a result of police action. These are further subdivided into four broad categories: contact; contact-related; property-related; and other serious crimes. Livestock theft is included within the category of related property-related crimes (SAPS, 2023) Table 1 summarises livestock theft compared to other serious crimes in 10 years in South Africa.

During the ten years, as outlined in Table 1, livestock theft accounted for, on average, of 1.33% of all serious crimes in South Africa. While this percentage may seem insignificant compared to other serious crimes, deeper analysis is warranted. South Africa has one of the highest crime rates on the world (Lötter, 2020) and labelling livestock theft as a minor crime compared to other crimes (Table 1) would be a serious mistake as it does have various economic, emotional and mental implications for the farming community (Appiah & Simelane, 2017; Khoabane & Black, 2012; Pasiwe et al., 2021). Therefore, dismissing the importance of livestock theft solely by comparing reported cases with other serious crimes would provide a misleading perspective.

**Table 1**

*Livestock theft cases in South Africa as a percentage of all serious crimes*

<b>Years<sup>3</sup></b>	<b>Number of Serious Crimes</b>	<b>Livestock theft cases</b>	<b>Livestock theft cases as a percentage of all serious crimes</b>
2013/2014	2 211 074	24 534	1.11%
2014/2015	2 206 483	24 965	1.13%
2015/2016	2 178 447	24 715	1.13%
2016/2017	2 178 661	26 902	1.23%
2017/2018	2 146 889	28 849	1.34%
2018/2019	2 065 691	29 672	1.43%
2019/2020	1 972 788	28 418	1.44%
2020/2021	1 585 106	26 310	1.66%
2021/2022	1 738 447	25 001	1.43%
2022/2023	1 870 074	27 145	1.45%

Source: SAPS Crime Statistics and author calculations

<sup>3</sup>Crime statistics is published in accordance with the financial year of government (SAPS,2023)

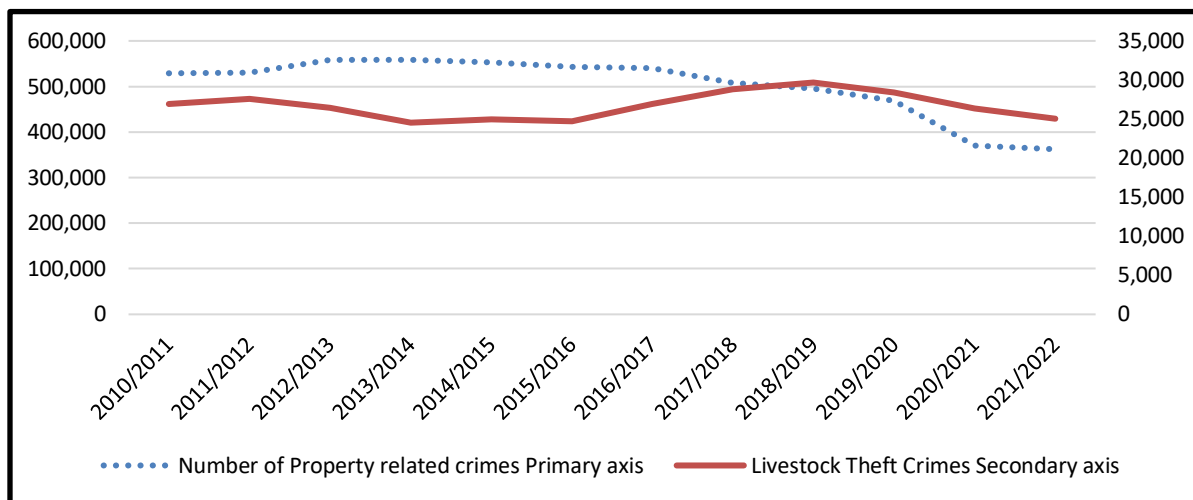
Accordingly, it is essential to recognise that livestock theft is a property crime. Comparing it to all serious crimes may not fully capture its gravity unless juxtaposed with other property-related offences in South Africa. Both property crimes and stock theft are central concerns to criminal justice and law enforcement authorities. Understanding the correlation between these types of crime is crucial for devising effective strategies. Therefore, a comparison of these crimes is presented in Figure 2 below for further clarity.

Figure 2 indicates trends in property-related crimes and livestock theft cases over the twelve-year period 2010/11 to 2021/22 with a weak negative correlation of = -0.0319. This indicates that changes in property-related crimes have little to no impact on the trends in livestock theft during this period. Although both crime types declined, they did not follow the same trend.

Between 2012 and 2018, property crime remained stable but decreased in 2019/2020 and 2020/2021. Livestock theft cases, on the other hand, showed a series of fluctuations over the same period, with no consistent downward trend being observed.

**Figure 2**

*Number of property-related crimes versus livestock theft as a property crime*



(Source: SAPS crime statistics for the period 2010 to 2023, as extracted by author)

Data within Figure 2 further demonstrate the complexities of criminal dynamics, indicating that specific variables and regional contexts must be considered to understand crime trends for livestock theft cases.

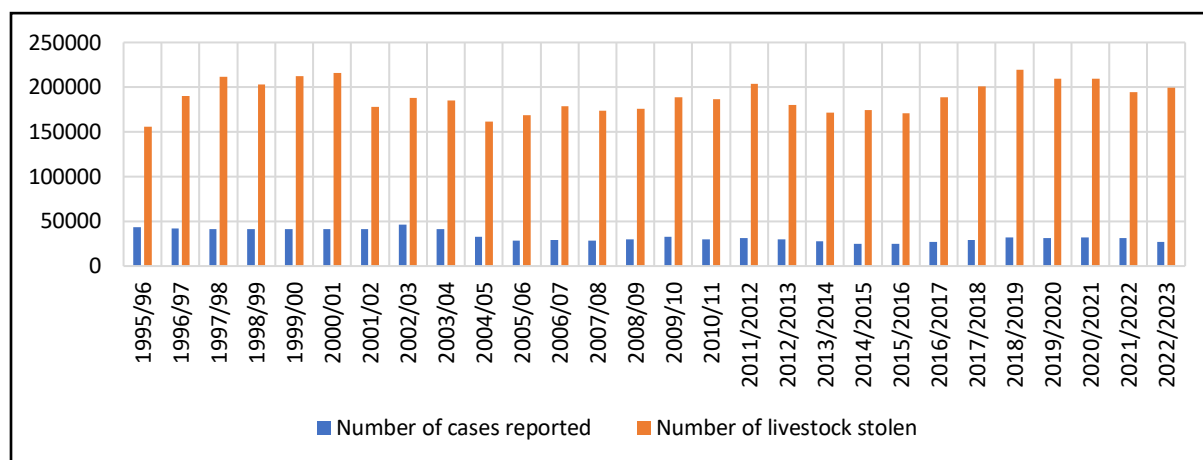
### *Annual number of livestock theft cases reported and number of livestock stolen*

In Figure 3, since 1995, all annual livestock theft cases, as defined in the Stock Theft Act No. 57 of 1959, have been included. The numbers are not limited to those addressed in this article. This visual representation provides valuable information on long-term trends and patterns of livestock theft that extend beyond the scope of this article. By examining the annual variations in reported cases and the number of livestock stolen, the problem and its impact on the agricultural sector can be better understood.

The trend depicted in Figure 3 illustrates a consistent pattern dating back to 1995, characterised by a six- to seven-year period of increasing cases followed by a subsequent decrease lasting four to five years, after which the cycle appears to be repeated. There has been a continuous decline in livestock theft cases from 2018/2019 to 2022/2023. In 2019/2020, there was a slight decrease, primarily attributed to the impact of the COVID-19 pandemic lockdown restrictions. However, following the easing of restrictions in June 2021, cases were increased upward (see Figure 3) (Maluleke et al, 2022).

### **Figure 3**

*Reported livestock theft cases and number of livestock stolen per year since 1995*



(Source: SAPS statistics for the period 1995 to 2023, as extracted by author).

### *Provincial number of livestock theft cases reported from 2012 to 2023*

South Africa is divided into nine provinces, as indicated in Figure 4, which have two different rainfall periods. The western and southern parts of the Eastern Cape are winter rainfall areas, whereas the rest are summer rainfall areas. Furthermore, the west is dry with karoo vegetation, whereas the east is high-fall areas (Department of Agriculture, Land Reform and

Rural Development, 2022). Rainfall is also a crucial factor influencing human lifestyles and land use patterns, contributing to these differences (Leweri et al., 2021).

Figure 5 examines the provincial disparities in the number of cases of livestock theft reported between 2013/2014 and 2022/2023. This figure depicts regional differences in livestock theft rates across provinces, shedding light on areas of greater vulnerability. There may be factors that affect these provincial differences such as rainfall which also is a crucial factor influencing human lifestyles and land use patterns, contributing to these differences (Leweri et al., 2021).

Data from the 2011 agricultural census highlights the fact that provinces such as the Eastern Cape and Kwazulu-Natal have the highest proportions of agricultural households engaged in livestock production and high numbers of cattle, sheep and goats (Stats SA, 2013). This aligns with the high numbers of livestock theft observed in these provinces in Figure 5. Moreover, provinces such as the North West, Northern Cape, and Western Cape have different vegetation and fewer animals and therefore, less livestock theft.

#### Figure 4

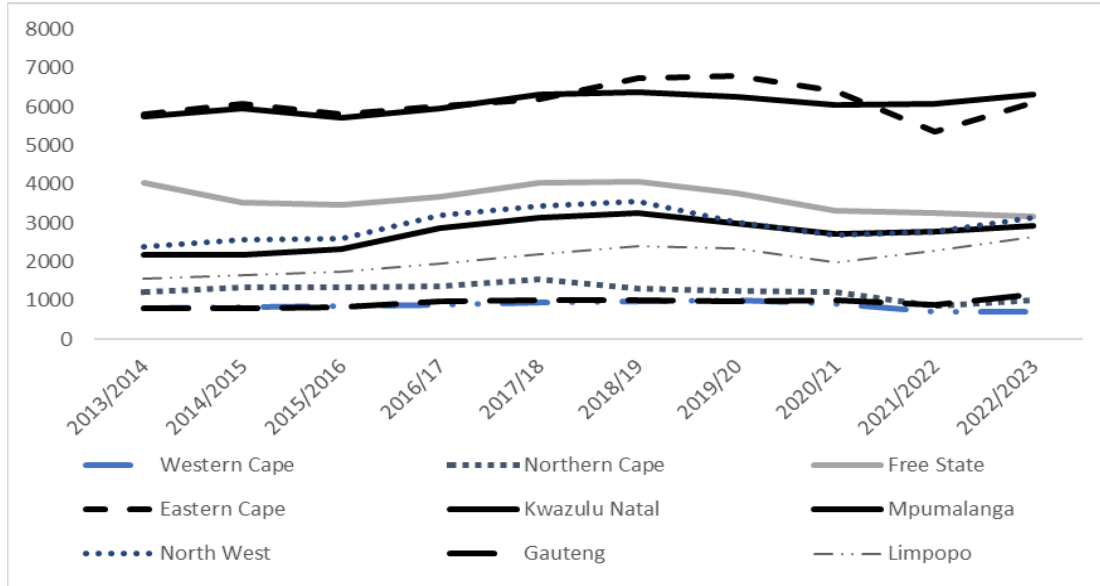
*Map showing the nine provinces of South Africa*



(Source: Wikipedia commons)

**Figure 5**

*Livestock theft cases per province: 2013 to 2023*



(Source: SAPS statistics: 1995-2023, extracted by the author).

***Number of animals stolen per species per province in 2022/2023***

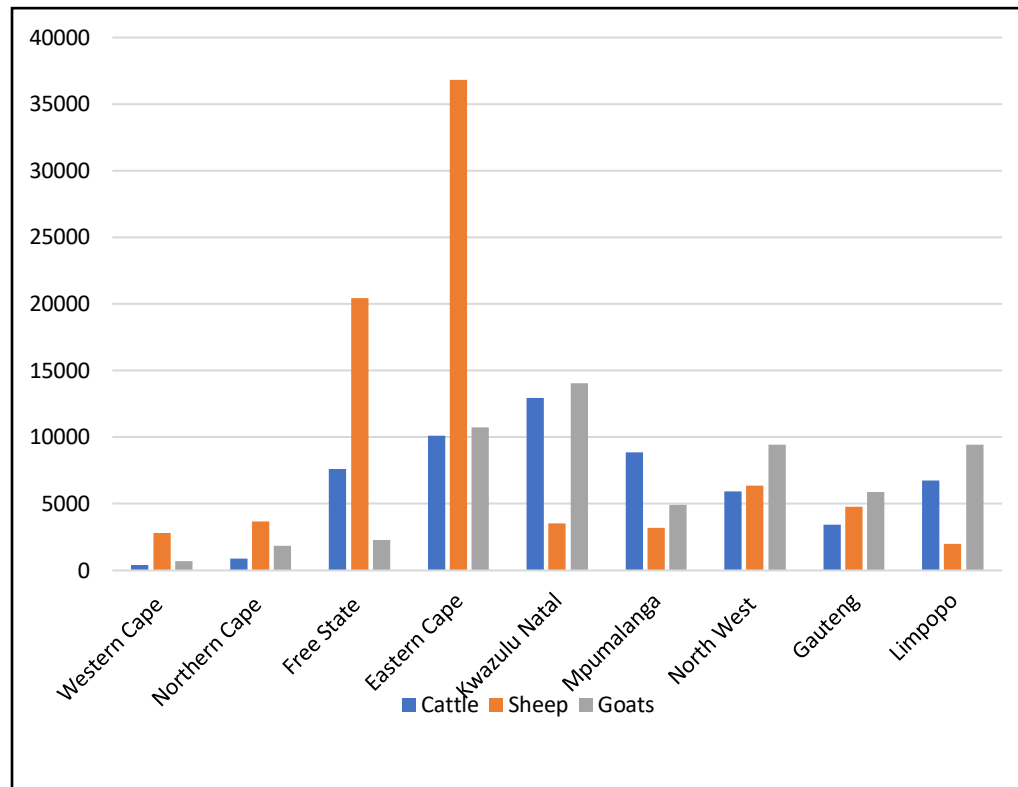
Figure 6 provides a condensed representation of the number of animals stolen by species and provinces for 2022/2023. This graph is a snapshot of livestock theft trends across South African provinces for this period, shedding light on the distribution of stolen animals by species and provinces.

While Figure 6 shows the number of animals stolen per species per province in 2022/2023, Figure 5 dealt with the number of cases. When comparing the information in 5, it is evident that theft of sheep is the most prevalent in the Eastern Cape and the Free State. Furthermore, it is also evident that cattle theft is the more frequent in KwaZulu-Natal and the Eastern Cape. Based on the number of livestock stolen, the impression is that the biggest problem is livestock theft in the Eastern Cape. As the information in Figure 5 may create a false impression.



**Figure 6**

*Number of animals stolen per species per province in 2022/2023*



(Source: SAPS statistics: 2022-2023, extracted by the author).

Table 2 provides valuable data on the number of cattle, sheep and goats per 100 000 residents in various South African provinces, highlighting the differences in livestock populations between provinces. These variations offer essential context for understanding the broader dynamics of livestock theft.

According to Table 2, Gauteng, with its cosmopolitan cities like Johannesburg and Pretoria, has the highest population among South African provinces, totalling 14,273,800 residents. The Northern Cape has a sparse population of approximately 1,213,500 individuals and is characterised by vast, remote landscapes. The Eastern Cape is noted for its abundance of livestock, including 3,073,000 cattle, 6,442,000 sheep, and 1,990,000 goats.

Table 3 displays the number of animals in a province compared to the number of animals stolen in a province. Examining theft rates per 100 000 people offers deeper insights. The Eastern Cape again stands out, experiencing the highest rates of stolen cattle, sheep and goats per capita. This suggests a more acute problem of livestock theft in relation to the size of the

population in this province. Several factors could contribute to these high theft rates, such as economic conditions, where 20 of the poorest municipalities in South Africa are in the Eastern Cape, and the province is second to Limpopo as the province with the highest poverty rate (Stats SA, 2023). The rural-urban divides indicate that the province has the highest number of people living in rural areas (Adetoro et al., 2023).

**Table 2**

*Number of people and animals per province*

Province	Number of people per province	Number of animals			Number of animals per 100 000 residents		
		Cattle	Sheep	Goats	Cattle	Sheep	Goats
Western Cape	6,508,700	467,000	2,528,000	201,000	7,175	541,328	7,951
Northern Cape	1,213,500	41,000	5,161,000	446,000	6,438	1,105,139	17,642
Free State	2,889,900	2,028,000	4,299,000	213,000	31,158	920,557	8,426
Eastern Cape	6,497,100	3,073,000	6,442,000	1,990,000	47,214	1 379,443	78,718
KwaZulu-Natal	11,607,500	2,339,000	625,000	657,000	35,937	133,833	25,989
Mpumalanga	4,442,500	1,234,000	1,508,000	74,000	18,959	322,912	2,927
Gauteng	14,273,800	1,574,000	596,000	654,000	24,183	127,623	25,870
North-West	3,854,400	246,000	84,000	180,000	3,780	17,987	7,120
Limpopo	5,774,600	841,000	192,000	858,000	12,921	41,113	33,940

(Source: Department of Agriculture, Land Reform and Rural Development, 2023; Stats SA, 2020b; and author's own calculations).

The dataset in Tables 2 and 3 explores the correlations between the numbers of different livestock species and the corresponding numbers of animals stolen. For sheep, there is a weak positive correlation (0.298) indicating that more sheep tend to be stolen when there are more sheep. Conversely, cattle show a weak negative correlation (-0.293) between the number of cattle and the number stolen, suggesting a slight decrease in theft as cattle numbers increase. However, neither of these correlations is statistically robust, and the normality assumption is questionable. In the case of goats, there is a moderately positive correlation (0.449), indicating that an increase in the goat population corresponds with a rise in goat theft. Like with sheep and cattle, this correlation lacks strong statistical support. However, Barclay and Donnermeyer (2011) argue that there is a logical link between livestock availability and theft. Given the low and statistical supported, it is essential to consider other factors and conduct more in-depth analyses to draw more robust conclusions about the relationships between the number of animals and theft for each species.

**Table 3**

*Compare the number of animals stolen per 100,000 residents*

Province	Number of animals stolen			Number of animals stolen per 100 000 people per province		
	Cattle	Sheep	Goats	Cattle	Sheep	Goats
Western Cape	422	2 817	693	6	603	27
Northern Cape	894	3 697	1 856	14	792	73
Free State	7 634	20 454	2 306	117	4 380	91
Eastern Cape	10 116	36 839	10 745	155	7 888	425
KwaZulu-Natal	12 927	3 542	14 028	199	758	555
Mpumalanga	8 851	3 173	4 928	136	679	195
Gauteng	5 925	6 382	9 450	91	1 367	374
North-West	3 456	4 774	5 878	53	1 022	233
Limpopo	6 761	1 985	9 436	104	425	373

(Source: Pullen, 2023)

Table 4 shows information on the number of stolen animals, specifically cattle, sheep, and goats, per 100,000 animals in South African provinces. These data allow us to gauge the extent of livestock theft in each province, helping to identify which provinces are most affected by this criminal activity. Gauteng consistently has the highest theft rates per 100,000 animals, indicating that livestock owners in Gauteng are at greater risk of theft for all three species. The Western Cape consistently has lower theft rates for each species, suggesting a relatively lower risk of livestock theft in this province than in others.

This data evaluation of tables 2 to 4 underscores the need for careful consideration when designing data analysis methods. In livestock theft, choosing the appropriate denominator is crucial for a more precise understanding of the problem. Only considering the number of livestock stolen per province per year will not do justice to assessing the extent of livestock theft. Therefore, the annual variations in stolen livestock need to be considered.

**Table 4***Number of animals stolen per 100 000 animals\**

<b>Province</b>	<b>Cattle</b>	<b>Sheep</b>	<b>Goats</b>
<b>Western Cape</b>	90	111	345
<b>Northern Cape</b>	213	72	416
<b>Free State</b>	376	476	1083
<b>Eastern Cape</b>	329	572	540
<b>Kwazulu-Natal</b>	553	567	2135
<b>Mpumalanga</b>	717	210	666
<b>North-West</b>	220	801	899
<b>Gauteng</b>	2409	7598	5250
<b>Limpopo</b>	804	1034	1100

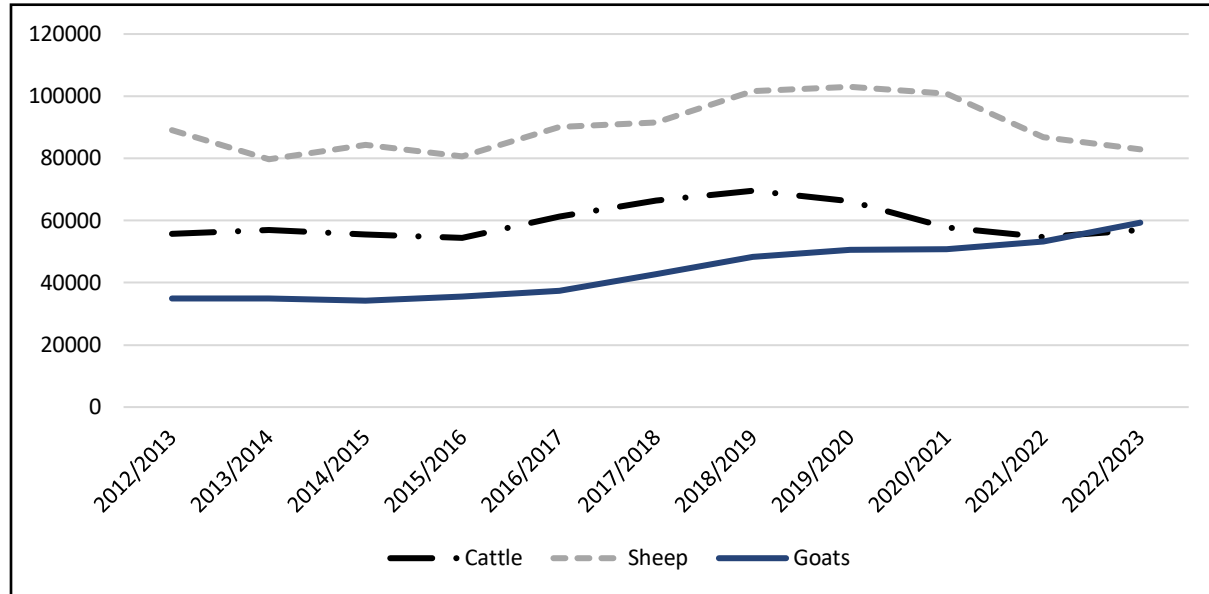
\*To assess the incidence of livestock theft across South Africa, the theft rate per 100,000 for cattle, sheep, and goats in each province is calculated. This rate is determined by dividing the number of stolen animals by the species' total population in the province and then multiplying the result by 100,000. This calculation allows for comparing theft rates across different provinces, taking into account variations in livestock populations, and provides a clearer picture of the relative risk of theft in each region. = (Number of stolen animals / total population x 100,000).

(Source: Author calculations extracted from tables 2 & 3)

### *Annual variation in stolen livestock*

Figure 7 provides a comprehensive overview of annual fluctuations in stolen livestock, including data for cattle, sheep, and goats from 2012/2013 to 2022/2023. This visual representation is crucial for revealing trends and patterns in livestock theft in the past decade. It shows a nuanced representation of the temporal dynamics that characterises trends in livestock theft. Cattle theft exhibited a pronounced peak in 2012/2013, followed by a nadir in 2015/2016, and subsequent significant upward movements in 2016/2017 and 2018/2019. However, a discernible downward trajectory is evident after that, culminating in its lowest incidence by 2022/2023.

Similarly, sheep theft manifests a cyclical pattern, with escalations observed from 2012/2013 to 2014/2015, a subsequent downturn in 2016/2017, and a resurgence to peak levels in 2018/2019. Nevertheless, sheep theft gradually recedes to levels reminiscent of earlier years.

**Figure 7***Annual Variation in Stolen Livestock (2012/2013-2022/2023)*

(Source: Pullen 2023: np)

In stark contrast, goat theft displays a divergent trajectory, witnessing escalations from 2012/2013 to 2014/2015 and experiencing a notable surge from 2017/2018 onwards. This departure from the diminishing trends observed in cattle and sheep theft underscores the complex interplay of factors that underlie these criminal activities, warranting rigorous scholarly inquiry for deeper understanding.

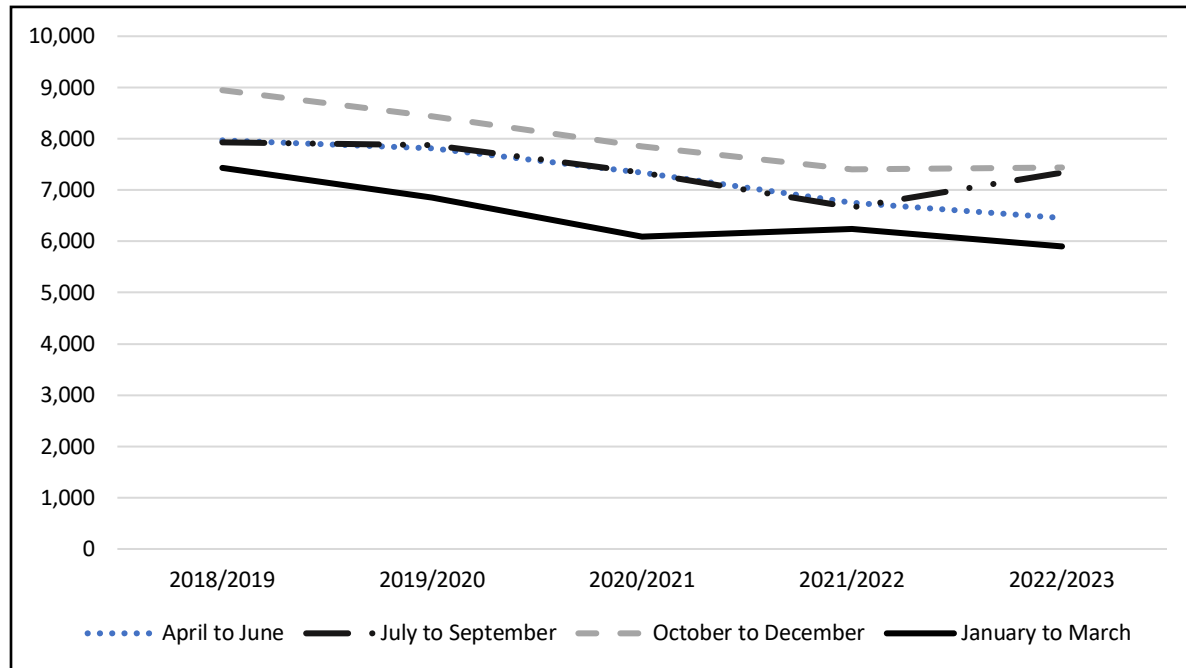
### ***Seasonal trends in livestock theft cases since 2018***

Figure 8 compares livestock theft cases per reporting quarter in South Africa. Livestock theft is influenced by various factors, including seasonal patterns (see Lombard, 2016; Grote & Neubacher, 2016). The annual and seasonal variations in livestock theft are essential to understanding the dynamic nature of this criminal activity.

Figure 8 delineates the distribution of crime statistics in the reporting quarters, revealing a consistent trend with October to December (Summer in South Africa leading up to the celebration of the festive holiday season) consistently registering the highest number of reported cases of livestock theft. This trend underscores significant concerns about increased vulnerability during this period. The increase from July to September 2021/2022 to 2022/2023 after a decrease in April to June over the same period will need to be researched.

**Figure 8**

*Comparison of livestock theft cases per reporting quarter*



(Source: SAPS, 2023: np)

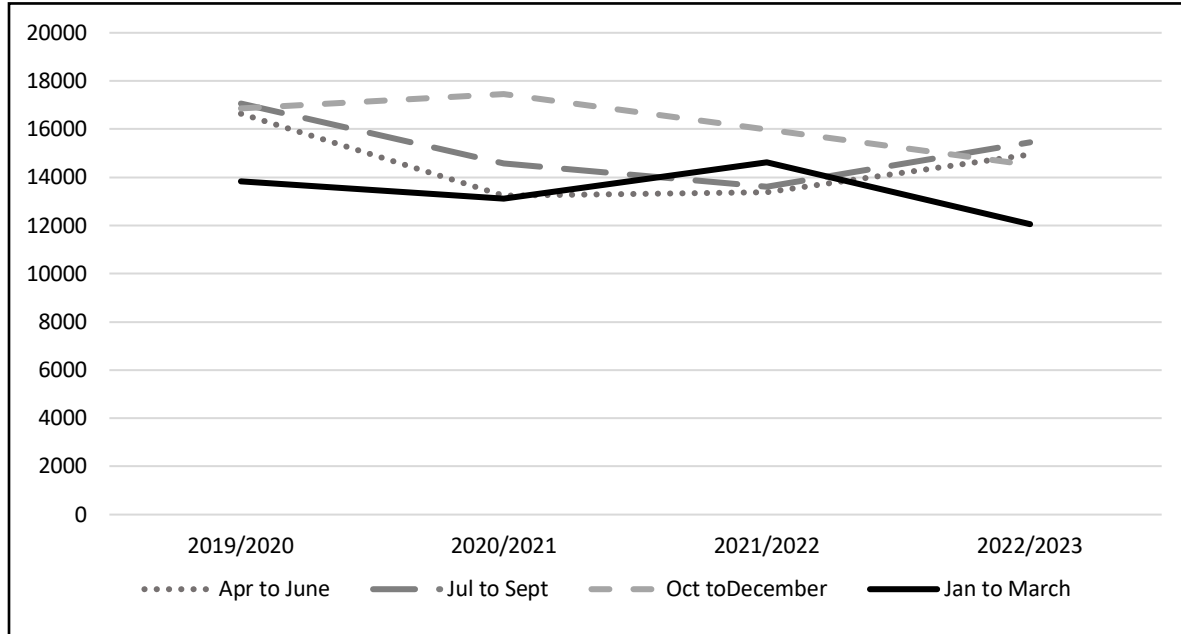
Critical consideration must be given to the potential amplification of livestock theft during festive seasons and seasonal fluctuations. Regional disparities in farming practices may also exert differential influences due to variations in methodologies in different geographical areas. For example, the timing of the Easter weekend in April over the past five years may have influenced the prevalence of theft in the April-to-June reporting period.

However, to comprehensively understand the prevailing situation, it is imperative to integrate the information from Figures 9 to 11, highlighting the variations between stolen species. This comprehensive analytical approach is essential for stakeholders to devise informed strategies to address and effectively mitigate the scourge of livestock theft.

Figure 9 illustrates the dynamic variations in cattle theft occurrences in South Africa from 2019 to 2022, focusing on quarterly reporting. The period from October to December consistently exhibits the highest prevalence of cattle theft. This observation aligns with Figure 7, highlighting the increased incidence of stolen cattle and the corresponding increase in reported cases.

**Figure 9**

*Number of cattle stolen per quarter since 2019*



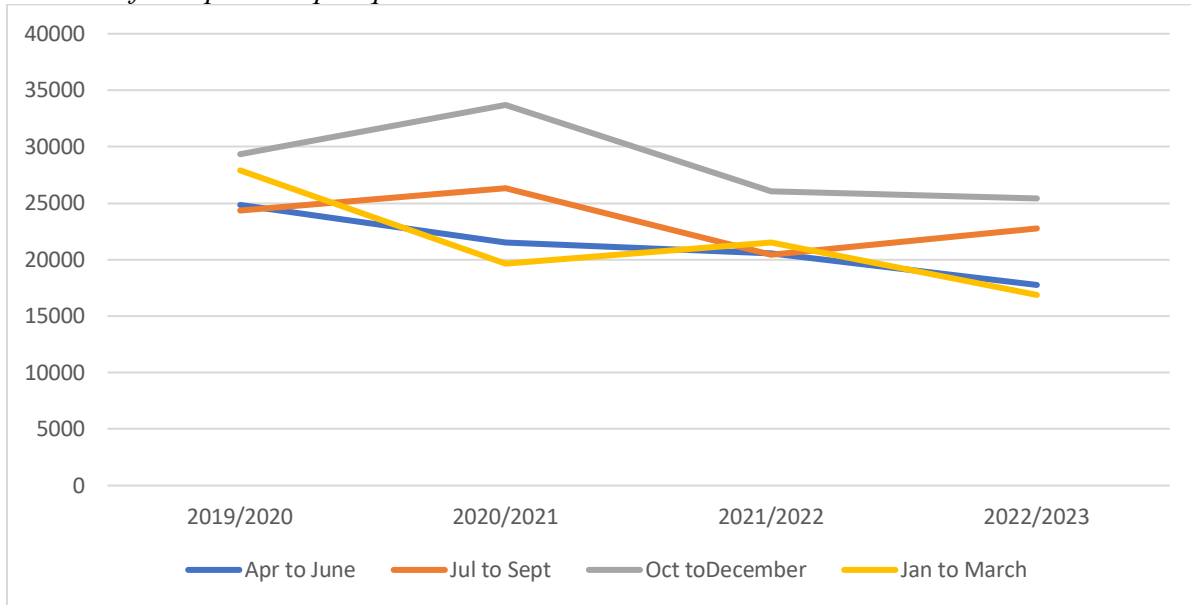
(Source: Pullen, 2023: np)

Figure 10 presents a comprehensive overview of sheep theft trends in South Africa from 2019/2020 to 2022/2023, delineated by reporting periods. Noteworthy observations include a substantial reduction in sheep theft occurrences during the April to June and January to March periods. Furthermore, the decline in sheep theft aligns with the patterns observed in Figure 9, further underscoring the interconnectedness of these trends.

In Figure 11, the comparison of the four periods indicates a general upward trend in goat theft for the July-September and October-December periods over 2019/2020 through 2022/2023. The April-to-June period also increased, although with more noticeable fluctuations. The January to March period fluctuated, but the trend was relatively stable, with some decline in the 2022/23 reporting year.

**Figure 10**

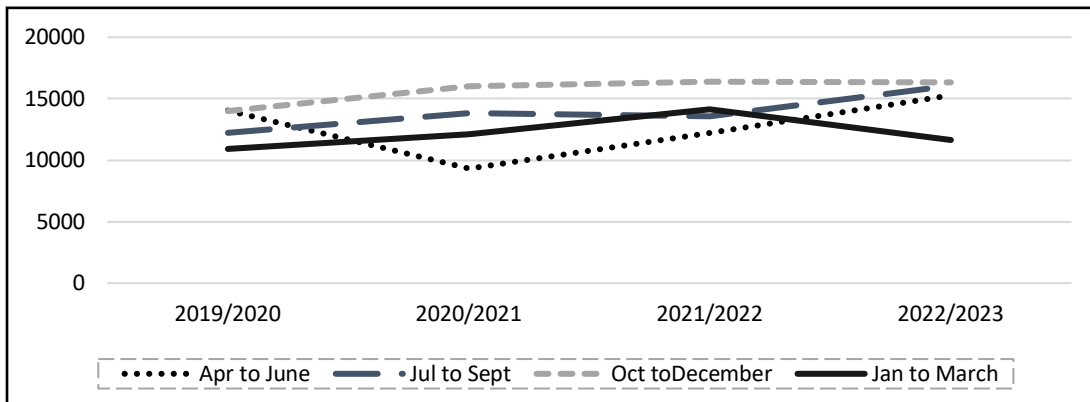
*Number of sheep stolen per quarter since 2019*



(Source: Pullen, 2023)

**Figure 11**

*Number of goats stolen per quarter since 2019*



(Source: Pullen, 2023)

***Economic losses from April 2022 until March 2023***

During the annual November meeting of the National Stock Theft Prevention Forum (NSTPF), the average monetary value of livestock is established. This value is the basis for



calculating the economic impact of livestock theft in the following financial year. The values represent estimates primarily based on the value of female animals. However, they do not encompass the potential loss from future breeding herds and genetic factors (Clack, 2013).

In 2022/2023, the average value of livestock saw cattle valued at R15,000 each, sheep valued at R3,000 per animal, and goats priced at R4,000 each. As indicated in Table 3, the number of animals lost per species is multiplied by these livestock values to estimate the financial losses due to livestock theft and found that the total economic loss from livestock theft is substantial, with cattle theft leading to a loss of R854,790,000. Sheep theft contributes an additional R248,502,000, while goats account for R207,620,000 in losses. Altogether, the economic impact of livestock theft in these categories amounts to a staggering R1,310,912,000, revealing that cattle account for the highest losses primarily due to their higher individual value. In contrast, although sheep and goats are more frequently targeted in terms of overall numbers, their financial losses are comparatively lower.

### Discussion

The impact of scientific research on shaping public opinion, particularly in the context of highly politicised policing issues such as crime statistics, is emphasised by Boehme et al. (2023). This research uses a longitudinal approach to examine the evolution of livestock theft in South Africa from 2013 to 2023, focussing on a quantitative methodology and involving secondary sources. However, it is critical to evaluate any secondary data with caution (Rennison & Mondragon, 2022; Schutt, 2004). In this article, government statistics are critical to democratic governance, driving informed policy-making and supporting agriculture, law enforcement and the well-being of citizens. They may be flawed due to non-reporting, but they are the only information available (Straf, 2005). Aerni-Flessner et al. (2021) support this argument that quantifiable information must be used as unquantifiable words, such as many, lots, high number, etc., do not create any confidence in the information provided. Considering livestock theft trends and patterns in South Africa, it is crucial to acknowledge the limitations inherent in the SAPS's current crime statistics framework, particularly concerning the disaggregation of data at a police station (Budhram & Geldenhuys, 2017). The number of livestock theft cases per police station (1152 stations) is available but too extensive to include in a comprehensive overview.

Over ten years, the analysis of property-related crimes and livestock theft cases reveals distinct trends. While property crimes remained relatively stable throughout the period, livestock theft cases displayed notable fluctuations without a consistent downward trend. This suggests that livestock theft is influenced by various factors, reflecting the complexities of criminal dynamics in rural areas. The lack of a clear and evident decline in livestock theft indicates ongoing challenges in addressing this specific type of crime despite broader stability in property-related offences. Like other crimes, livestock theft is not evenly distributed across provinces. This article also highlights regional disparities in livestock theft rates in South African provinces.

Since 1995, the number of reported cases of livestock theft and the number of animals stolen per year, the long-term trends in reported cases of cases of livestock theft, and the number of stolen animals has been shown fluctuations. Despite fluctuations, there has been a consistent decline in reported livestock theft cases since 2018/2019. However, despite this overall downward trend, mainly since the peak period between 1995 and 2003, the persistently high number of stolen animals from 2019 to 2023 indicates that South Africa has not yet effectively curbed the prevalence of this crime. Potential factors contributing to the decline in reported cases could include non-reporting livestock theft incidents and closed-circuit television (CCTV) surveillance measures. Non-reporting rates in rural areas are common (Ceccato & Abraham, 2022; Weisheit & Donnermeyer, 2000) and livestock theft reporting rates vary across provinces due to distrust in the police, logistical difficulties reporting rural crimes, or cultural norms regarding handling disputes within local communities (Buys, 2021; Clack, 2018b), although this is not part of this study's focus. For non-reporting, Clack (2022) found that 85% of respondents did not trust the police, indicating that farmers question police legitimacy. Furthermore, since 2018, more than 1,500 CCTV cameras have been installed in rural areas, although the specific impact on reducing livestock theft remains unstudied, sparking ongoing speculation (SAPS, 2022).

A comprehensive understanding of livestock theft in South African provinces offers insight into the relationships between population, livestock numbers and theft rates. Provinces with high percentages of agricultural households involved in livestock production, such as the Eastern Cape and KwaZulu-Natal, experience higher theft rates. Different provinces may have their livestock theft hotspots influenced by factors such as agricultural activity, proximity to urban centres and law enforcement capacity (Lancaster & Kamman, 2016). Figure 5 provides information on the evolving patterns of livestock theft across provinces over the last five years. Although most provinces have seen a decrease in theft cases from 2013 to 2022, there was an increase in numbers in most provinces in 2022/2023. Limpopo stand out because the increase is attributed to the change in the animal population growth as there is a deliberate change in agricultural practice where wildlife farming is converted to livestock farming (Department of Agriculture, Land Reform and Rural Development, 2022). KwaZulu-Natal and the Eastern Cape have consistently exhibited higher theft rates attributed to the higher number of animals available to steal (Sidebottom, 2013) than all other provinces, with the Free State reporting rates below those of KwaZulu-Natal, and the Eastern Cape but higher than those of Mpumalanga and the North West. The Western Cape and Northern Cape registered the lowest instances of livestock theft, highlighting disparities in the type of agricultural activity and crime prevalence (Harkness et al., 2024).

According to Table 2, Gauteng, characterised by its cosmopolitan cities, such as Johannesburg and Pretoria, boasts the highest population amongst South African provinces, with 14,273,800 residents. With its dense population and urban orientation, Gauteng is not typically considered a hotspot for livestock farming and theft. However, the province's role as an

economic hub presents unique challenges regarding livestock theft as there are more people. Due to urbanisation, there is much poverty, and people are looking for cheap protein (Peires, 1994). In stark contrast to Gauteng, the Northern Cape embodies empty spaces and rural peacefulness, with a sparse population of around 1,213,500 individuals, which creates distinct challenges in the context of livestock theft. Monitoring and responding promptly to incidents of livestock theft in this province becomes challenging with its vast, remote landscapes. Additionally, the isolation of rural farms can make them prime targets for criminal activities, including livestock theft (Barclay & Donnermeyer, 2011). The Eastern Cape is a province abundant in livestock, boasting the highest population in all three livestock categories. With 3,073,000 cattle, 6,442,000 sheep and 1,990,000 goats, the abundance of livestock presents distinctive challenges and opportunities concerning livestock theft (Sidebottom, 2013). The cultural and economic importance of livestock in this province means that livestock theft has broader socio-economic implications as people lose their animals, which is like a savings account and pay for events such as a school and or university (Ainslie et al., 2002). Livestock theft in the Eastern Cape can severely impact communities' livelihoods and cultural heritage because an empty kraal (cattle pen) indicates poverty, and they cannot afford financial independence (Pasiwe et al..

When comparing the number of animals stolen per 100,000 residents, the Eastern Cape has the highest rates for all three species. This indicates a more acute problem of livestock theft relative to the size of the population in this province, highlighting potential socio-economic challenges that contribute to theft rates. Gauteng consistently records the highest theft rates per 100,000 animals, including cattle, sheep, and goats, suggesting that livestock owners in Gauteng face a greater risk of theft. In contrast, the Western Cape consistently reports lower theft rates for all three species, indicating a relatively lower risk of livestock theft in this province than in others.

Therefore, analysing livestock theft rates solely at a provincial or station level may not provide a complete picture. It is essential to recognise the need for more nuanced data collection methods that consider the geographic mobility of perpetrators and the complex dynamics of rural crime (Curtis-Ham et al., 2020). Such approaches could involve incorporating information on the location of both victims and perpetrators and collaborating with local communities and agricultural stakeholders to improve reporting mechanisms and effectively address the root causes of livestock theft. Clack's (2022) finding that the reporting rate increased from 33% to 60% is a significant increase and can be attributed to the National Stock Theft Prevention Forum's (NSTPF) decision to run an awareness campaign on the issue of livestock theft (Clack, 2018b).

The weak correlations between the number of livestock and the theft of different species of livestock and the number of stolen animals imply the need for more in-depth analyses of the relationships between livestock availability and theft. However, there are logical links between

livestock availability and theft, underscoring the importance of considering multiple factors in understanding livestock theft dynamics (Manyeruke et al., 2023).

Seasonal patterns are evident in cases of livestock theft, with specific reporting periods consistently showing a higher prevalence. Understanding these seasonal fluctuations is crucial to devising targeted strategies to combat livestock theft, especially during vulnerable periods, such as the Christmas season (Peires, 1994). Weather patterns and their influence on crime should also not be ignored (Ankel-Peters et al, 2023). The findings for the various periods show that, for multiple reasons, holidays can affect theft patterns. During the holiday season, there is often an increased demand for livestock, particularly cattle, sheep and goats, for cultural and religious celebrations such as Christmas, Eid, and other holidays. Due to the increased demand, prices may increase, making these animals more attractive targets for theft. Furthermore, during holidays, people often practice increased mobility and travel as they return to their hometowns or visit family and friends. This movement may allow thieves to transport stolen livestock to other areas, making tracking and recovering of stolen animals more difficult. As officials take a break or focus on different aspects of the festivities, the festive season may result in reduced surveillance and law enforcement presence. People may seek animals for these purposes, which can increase the incidence of livestock theft during those periods. The state of the economy during the holiday season can also have an impact. Individuals in financial difficulty may resort to theft to obtain livestock for celebrations or to sell for quick cash (Ainslie et al., 2002). The more organised groups of perpetrators do not select a specific area or province. However, to avoid detection, they choose specific areas/regions based on the distance between the crime scene and their destination (home base). Therefore, perpetrators of livestock theft are willing to travel long distances to obtain or dispose of livestock (Doorewaard, 2020). Furthermore, the involvement of organised crime in livestock theft highlights the evolving nature of this issue.

During the different periods, livestock theft in South Africa shows that each species has unique theft trends. Cattle theft had mixed trends with fluctuations, while sheep theft generally decreased in most periods, and goat theft showed varying trends, with some periods experiencing consistent increases. These variations indicate that different factors influence the theft of each specie during other periods.

In the past, whereas people might have stolen primarily for '*potslagting*' ('slaughtering for the pot'), there are now groups that have latched onto livestock theft as a means of enrichment, and it has a much more organised crime modus operandi (Doorewaard et al, 2015; Saner, 2014; Clack, 2013). Doorewaard (2020) further found that the perpetrators of livestock theft come from a variety of socio-economic backgrounds and that the crime is not limited to one race, class or gender. Although these findings confirm the lucrative nature of livestock theft as the main driver (motive), other factors such as status, vengeance, and peer pressure all played a role in the decision-making and thought processes of the perpetrators (Doorewaard, 2020).

The economic losses incurred from livestock theft from April 2022 to March 2023 are approximately R1.3 billion. This is presumably true for those reported, and the actual value can be much higher as Lombard (2016) found that the actual value exceeds four times the estimate. This financial burden affects individual farmers, the agricultural sector and, by extension, the South African economy. The emotional impact and economic costs of the theft of livestock experienced by the victims cannot be overstated. It disrupts the intricate bond between humans and animals, with far-reaching consequences for the social fabric of rural communities (Appiah & Simelane, 2017; Khoabane & Black, 2012; Müller, 2016).

### **Recommendation and Conclusion**

Effectively addressing livestock theft in South Africa demands a comprehensive, multi-faceted strategy that tackles the issue's complexities by refining existing measures and introducing innovative solutions. This approach starts with detailed research into seasonal patterns and weather-related factors influencing livestock theft, especially during Christmas. By understanding how these factors impact the theft rates of cattle, sheep, and goats, targeted interventions can be developed to better address the problem. Such research should explore specific holidays, regional variations, and the role of cultural and economic factors, alongside examining the influence of the criminal justice system and crime prevention measures during festive periods.

Building trust between farmers and law enforcement agencies is critical for improving the reporting of livestock theft. Enhanced communication channels, such as dedicated hotlines, online reporting platforms, or mobile applications, can encourage prompt reporting. This trust-building can be particularly effective in areas with high rates of stock theft, like the O.R. Tambo District in the Eastern Cape. Focusing on such hotspots and understanding the underlying socio-economic factors contributing to stock theft can guide the development of targeted prevention strategies that protect vulnerable farming communities.

Targeted interventions during peak livestock theft periods, including the holiday season, should be a priority. The specialised unit within the SAPS responsible for livestock theft investigations should intensify efforts to train and inform police and traffic officers in rural areas about the extent of the problem and the relevant legislative requirements. This increased focus will enhance the effectiveness of interventions and improve the overall response to livestock theft. Strategies such as increasing police presence, deploying mobile patrols, and utilising technology like drones and surveillance cameras can deter theft and improve response capabilities. Public awareness campaigns should complement these efforts by educating farmers on proactive measures and the applicable legislative requirements to reduce the risk of livestock theft.

Collaboration between government, police, and agricultural communities is essential for implementing coordinated strategies. Multi-stakeholder task forces involving traditional leaders, community organisations, and local businesses can facilitate joint planning and resource allocation. Additionally, investing in training and capacity-building programs for police, prosecutors, and judicial officials can enhance the effectiveness of law enforcement efforts. Specialised livestock identification, tracking, and recovery training aligned with international standards can further bolster police capabilities (BFAP, 2022).

To assess the effectiveness of these efforts, future studies should analyse detection rates in livestock theft cases, examining law enforcement's success in identifying and apprehending perpetrators. Such research can provide valuable insights into the strengths and weaknesses of current investigative techniques, highlighting areas for improvement.

In conclusion, while livestock theft presents significant socio-economic challenges for South African farmers, a strategic approach that combines research, trust-building, targeted interventions, stakeholder collaboration, and law enforcement training can mitigate its impact. By refining existing measures and embracing innovative strategies, it is possible to safeguard the economic livelihoods of farming communities and contribute to the overall stability of the agricultural sector.

## References

- Abbas, T., Muhammad, Y., Raza, S., Nasir, A., & Höreth-Böntgen, D. W. (2014). Some facts and issues related to livestock theft in Punjab province of Pakistan—Findings of series of cases. *Berliner Und Munchener Tierarztliche Wochenschrift*, 127(3–4), 166–169.
- Adetoro, A. A., Ngidi, M. S. C., & Danso-Abbeam, G. (2023). Towards the global zero poverty agenda: Examining the multidimensional poverty situation in South Africa. *SN Social Sciences*, 3(9), 148. <https://doi.org/10.1007/s43545-023-00735-2>
- Aerni-Flessner, J., Twala, C., Mushonga, M., & Magaiza, G. (2021). A transnational history of stock theft on the Lesotho–South Africa border, nineteenth century to 1994. *South African Historical Journal*, 73(4), 903–926. <https://doi.org/10.1080/02582473.2022.2052171>
- Agade, K. M. (2010). Complexities of Livestock Raiding in Karamoja. *Nomadic Peoples*, 14(2), 87–105. <https://doi.org/10.3167/np.2010.140206>
- Ainslie, A., Kepe, T., Ntsebeza, L., Ntshona, Z., & Turner, S. (2002). *Cattle ownership and production in the communal areas of the Eastern Cape, South Africa* (10). University of Western Cape. [http://repository.uwc.ac.za/bitstream/handle/10566/4360/rr\\_10\\_cattle\\_ownership\\_production\\_communal\\_areas\\_eastern\\_cape\\_south\\_africa\\_2002.pdf?sequence=1&isAllowed=y](http://repository.uwc.ac.za/bitstream/handle/10566/4360/rr_10_cattle_ownership_production_communal_areas_eastern_cape_south_africa_2002.pdf?sequence=1&isAllowed=y)
- Aiyzhy, E., Mongush, A., Mongush, A., Ondar, A.-K., Seden-Khuurak, S., & Bildinmaa, A. (2021). The problems of livestock theft in Tuva: History and modernity (ethnic and legal aspects). *Pastoralism*, 11(1), 32. <https://doi.org/10.1186/s13570-021-00223-3>
- Ankel-Peters, J., Bruederle, A., & Roberts, G. (2023). Weather and crime -- cautious evidence from South Africa. *Q Open*, 3(1), qoac033. <https://doi.org/10.1093/qopen/qoac033>
- Appiah, G. W. K., & Simelane, H. S. (2017). Stock theft and its economic impact on rural communities in South Africa. *Zoe International Journal of Social Transformation*, 1(1), 7–21.
- Arisukwu, O., Igbolekwu, C., Oye, J., Oyeyipo, E., Asamu, F., Rasak, B., & Oyekola, I. (2020). Community participation in crime prevention and control in rural Nigeria. *Heliyon*, 6(9), 1–16. <https://doi.org/10.1016/j.heliyon.2020.e05015>
- Bamidele, S. (2018). Grazing with bullets in Africa: Fulani herdsman-community killings and state response in Nigeria. *Acta Criminologica: African Journal of Criminology & Victimology*, 31(4), 55–71. <https://doi.org/10.10520/EJC-15976f56a2>
- Barclay, E. (2018). The context of farm crime in Australia. *Acta Criminologica : African Journal of Criminology & Victimology*, 31(4), 23–40.
- Barclay, E., & Donnermeyer, J. F. (2011). Crime and security on agricultural operations. *Security Journal*, 24(1), 1–18. <https://doi.org/10.1057/sj.2008.23>
- Bashir, A. M., Yusof, R. B., & Azlizan, T. (2018). Cattle rustling and insecurity in rural communities of Kaduna state, Ngeria: an empirical study. *Asian Journal of Multidisciplinary Studies*, 6(5), 35–39.

- BFAP. (2022). *Towards a Red Meat Industry Strategy 2030*. Bureau for Food and Agricultural Policy. <https://www.rmis.co.za>
- Boehme, H., Adams, I. T., Metcalfe, C., Leasure, P., & Nolan, M. S. (2023). Does scientific research change minds? linking criminology and public perceptions of policing. In *CrimRxiv*. <https://doi.org/10.1111/1745-9133.12644>
- Boitumelo, B., Moreki, J. C., Boitumelo, W., Tlotleng, K., & Lesaba, K. (2018). A survey of livestock theft at Mogonono village in Kweneng District of Botswana. *Journal of Animal Science and Veterinary Medicine*, 3(4), 94–104. <https://doi.org/10.31248/JASVM2018.100>
- Breetzke, G. D., Mosei, N., & Bester, P. (2022). The ‘contestation of crime’: Using a spatial theory of crime to examine livestock theft among small-scale farmers in Swartruggens, North West province. *South African Geographical Journal*, 105(2), 262–275. <https://doi.org/10.1080/03736245.2022.2102062>
- Budhram, T., & Geldenhuys, N. (2017). A losing battle? Assessing the detection rate of commercial crime. *South African Crime Quarterly*, 61, 7–18. <https://doi.org/10.17159/2413-3108/2017/v0n61a2046>
- Bunei, E. K., McElwee, G., & Smith, R. (2016). From bush to butchery: cattle rustling as an entrepreneurial process in Kenya. *Society and Business Review*, 11(1), 46–61. <https://doi.org/10.1108/SBR-10-2015-0057>
- Bunei, E. K., Rono, J. K., & Chessa, S. R. (2013). Factors influencing farm crime in Kenya: Opinions and experiences of farmers. *International Journal of Rural Criminology*, 2(1). <https://doi.org/10.18061/1811/58846>
- Buys, J. (2021). The role of organised agriculture in rural safety. *Stockfarm*, 11(2), 8–9. [https://doi.org/10.10520/ejc-vp\\_stock\\_v11\\_n2\\_a3](https://doi.org/10.10520/ejc-vp_stock_v11_n2_a3)
- Ceccato, V., & Abraham, J. (2022). Reasons why crime and safety in rural areas matter. In V. Ceccato & J. Abraham (Eds.), *Crime and Safety in the Rural: Lessons from research* (pp. 9–28). Springer International Publishing. [https://doi.org/10.1007/978-3-030-98290-4\\_2](https://doi.org/10.1007/978-3-030-98290-4_2)
- Clack, W. (2013). The Extent of Livestock Theft in South Africa. *Acta Criminologica*, 26(2), 77–91.
- Clack, W. (2014). What is livestock theft? *The Dairy Mail*, 21(8), 40–41.
- Clack, W. (2016, August 16). *Livestock theft: lies, damn lies and statistics*. National Red Meat Producers Congress, Parys. <http://www.stocktheftprevent.co.za/wp-content/uploads/2016/09/Livestock-Theft-Report.pdf>
- Clack, W. (2018a). *Livestock Theft a Global and South African Perspective*. Red Meat Producers Congress, Pretoria. <http://www.stocktheftprevent.co.za/wp-content/uploads/2016/07/Livestock-Theft-Report-2018-Final.pdf>
- Clack, W. (2018b). Rural crimes: Non-reporting of livestock theft by farmers: editorial. *Acta Criminologica : African Journal of Criminology & Victimology*, 31(4), i–vii.
- Clack, W. (2020). Livestock theft prevention. In A. Harkness (Ed.), *Rural Crime Prevention: Theory, Tactics and Techniques* (pp. 205–219). Routledge.



- Clack, W. (2022). Cross-border Livestock Theft. In A. Harkness, J. R. Peterson, M. Bowden, C. Pederson, & J. Donnermeyer (Eds.), *The Encyclopedia of Rural Crime* (pp. 137–140). Bristol University Press.  
<https://bristoluniversitypressdigital.com/display/book/9781529222036/ch036.xml>
- Clack, W. (2024). Crime and safety in rural South Africa (North West). In V. Ceccato & A. Harkness (Eds.), *Rural perspectives on crime and justice*. Routledge.
- Clack, W. J. (2019). A comparison of rural crimes in Australia (NSW) and South Africa. *International Journal of Rural Law and Policy*, 9(2), ID 6467-ID 6467.  
<https://doi.org/10.5130/ijrlp.2.2019.6467>
- Clack, W., & Minnaar, A. (2018). Rural crime in South Africa: an exploratory review of ‘farm attacks’ and stocktheft as the primary crimes in rural areas. *Acta Criminologica: Southern African Journal of Criminology*, 31(1), 103–135.
- Cline, L. E. (2020). War on the hoof: regional security in Africa and livestock conflicts. *Small Wars & Insurgencies*, 31(1), 87–105. <https://doi.org/10.1080/09592318.2020.1672965>
- Cousins, B. (1996). Livestock production and common property struggles in South Africa’s agrarian reform. *The Journal of Peasant Studies*, 23(2–3), 166–208.  
<https://doi.org/10.1080/03066159608438612>
- Curtis-Ham, S., Bernasco, W., Medvedev, O. N., & Polaschek, D. (2020). A framework for estimating crime location choice based on awareness space. *Crime Science*, 9(1), 23.  
<https://doi.org/10.1186/s40163-020-00132-7>
- DeKeseredy, W. S. (2022). Gathering data on male-to-female violence in rural and remote places. In W. DeKeseredy, J. R. Peterson, & A. Pytlarz (Eds.), *Research Methods for Rural Criminologists* (pp. 55–66). Routledge.
- Department of Agriculture, Land Reform and Rural Development. (2022). *National Spatial Development Framework*. Department of Agriculture, Land Reform and Rural Development.  
[https://www.gov.za/sites/default/files/gcis\\_document/202302/47999gen1594.pdf](https://www.gov.za/sites/default/files/gcis_document/202302/47999gen1594.pdf)
- Department of Agriculture, Land Reform and Rural Development. (2023, February). National Livestock Statistics. *Newsletter: National Livestock Statistics*.
- Department of Justice. (1959). *Stock Theft Act 57 of 1959*. Government Printer, Pretoria.  
[https://www.gov.za/sites/default/files/gcis\\_document/201505/act-57-1959.pdf](https://www.gov.za/sites/default/files/gcis_document/201505/act-57-1959.pdf)
- Donnermeyer, J. F. (2018). The impact of crime on farms: an international synthesis. *Acta Criminologica: African Journal of Criminology & Victimology*, 31(4), 1–22.  
<https://doi.org/10.10520/EJC-159757c387>
- Doorewaard, C. (2020). *Livestock theft: A criminological assessment and sample-specific profile of the perpetrators*. <http://uir.unisa.ac.za/handle/10500/26792>
- Doorewaard, C., Hesselink, A., & Clack, W. (2015). Livestock theft: Expanding on criminological profiling and offender assessment practices in South Africa. *Acta Criminologica: Southern African Journal of Criminology*, 2015 (Special Edition 4), 37–49.

- Geldenhuys, Ko. (2020). Agricultural crimes are crippling the economy. *Servamus Community-Based Safety and Security Magazine*, 10, 4.
- Gray, S., Sundal, M., Wiebusch, B., Little, M. A., Leslie, P. W., & Pike, I. L. (2003). Cattle raiding, cultural survival, and adaptability of East African pastoralists. *Current Anthropology*, 44(S5), S3–S30. <https://doi.org/10.1086/377669>
- Greiner, C. (2013). Guns, land, and votes: cattle rustling and the politics of boundary (re)making in Northern Kenya. *African Affairs*, 112(447), 216–237. <https://doi.org/10.1093/afraf/adt003>
- Grote, U., & Neubacher, F. (2016). Rural crime in developing countries: theoretical framework, empirical findings, research needs. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2756542>
- Harkness, A., Drenkhahn, K., Clack, W., & Smith, K. (2024). Crime prevention practices: The cases of Australia, Germany, South Africa and England. In *Rural perspectives on crime and justice*. Routledge.
- Institute of Security Studies. (2021). *SA crime reductions during COVID-19 lockdown may be short lived* [Research Institute]. ISS Africa. <https://issafrica.org/about-us/press-releases/sa-crime-reductions-during-covid-19-lockdown-may-be-short-lived>
- Kempen, A. (2019, November). Crime statistics 2018/2019. *Servamus Community-Based Safety and Security Magazine*, 10–12.
- Khoabane, S., & Black, P. (2012). On the economic effects of livestock theft in Lesotho: An asset-based approach. *Journal of Development and Agricultural Economics*, 4(5), 141–146. <https://doi.org/10.5897/JDAE11.120>
- Lancaster, L., & Kamman, E. (2016). Risky localities: measuring socioeconomic characteristics of high murder areas. *SA Crime Quarterly*, 56, 27–35. <https://doi.org/10.17159/2413-3108/2016/v0n56a51>
- Leweri, C. M., Msuha, M. J., & Treydte, A. C. (2021). Rainfall variability and socio-economic constraints on livestock production in the Ngorongoro Conservation Area, Tanzania. *SN Applied Sciences*, 3(1), 123. <https://doi.org/10.1007/s42452-020-04111-0>
- Lombard, W. A. (2016). *The financial impact of sheep theft in the Free State Province of South Africa*. <https://doi.org/10.1080/03736245.2022.2102062>
- Lombard, W. A. (2020). Livestock theft: The short end of the stick. *Stock Farm*, 10(5), 9–7.
- Lötter, C. (2020). The Tenuous Link between Crime and incarceration: Bosasa's public-private partnership. *Phronimon*, 21(1), 1–24. <https://doi.org/10.25159/2413-3086/7000>
- Malnekoff, E. (2013). *Cattle Smuggling from India to Bangladesh* [Western Michigan University]. [https://scholarworks.wmich.edu/honors\\_theses/2378](https://scholarworks.wmich.edu/honors_theses/2378)
- Maluleke, R. (2018). *Victims of Crime Survey 2017/18*. Statistics South Africa. <http://www.statssa.gov.za/publications/P0341/presentation.pdf>
- Maluleke, W. (2021). Perspectives on stock theft prevention in the selected provinces of South Africa: Failures and Successes. *International Journal of Criminology and Sociology*, 10, 1029–1038. <https://doi.org/10.6000/1029-1038.2021.05.25>

- Maluleke, W., Mokwena, R. J., & Motsepa, L. L. (2016). Rural farmers' perspectives on stock theft: police crime statistics. *South African Journal of Agricultural Extension*, 44(2), 256–274.
- Maluleke, W., Mphatheni, R., & Nkosi, S. (2022). A systematic study on stock theft contributory factors during the South African lockdown. *International Journal of Research in Business and Social Science* (2147- 4478), 11, 462–476.  
<https://doi.org/10.20525/ijrbs.v11i2.1675>
- Maluleke, W., Obioha, E. E., & Mofokeng, J. T. (2014). Assessment of policing and prevention strategies of stock theft in South Africa: a case study of Giyani policing area, Republic of South Africa. *Mediterranean Journal of Social Sciences*, 5(23), 2148.
- Manganyi, F. M., Maluleke, W. M., & Shandu, S. N. (2018). An examination of co-operative strategies towards policing stocktheft in the Kwazulu-Natal province. *Acta Criminologica : African Journal of Criminology & Victimology*, 31(4), 97–122.  
<https://doi.org/10.10520/EJC-159777fbd1>
- Manyeruke, K., Musemwa, L., & Masamha, T. (2023). Determinants of stock theft and its implication on household dietary diversity in semiarid regions of Zimbabwe: the case of Gwanda District. *The Scientific World Journal*, 2023, 2258042.  
<https://doi.org/10.1155/2023/2258042>
- Meserve, R. I. (2000). Legal and illegal livestock theft. *Central Asiatic Journal*, 44(1), 45–66.
- Morris, I. (2010). *Why the West rules – for now: The patterns of history, and what they reveal about the future*.
- Müller, G. S. (2016). *Magnitude of Livestock Theft in Kwa Sani and Factors That Could Influence It*. Free State.
- Neubacher, F., Kissoly, L. D., Faße, A., & Grote, U. (2024). “You sleep with your eyes open”: understanding rural crime and its implications for community well-being. *Journal of Rural Studies*, 106, 103213. <https://doi.org/10.1016/j.jrurstud.2024.103213>
- Olaniyan, A., & Yahaya, A. (2016). Cows, Bandits, and Violent Conflicts: Understanding Cattle Rustling in Northern Nigeria. *Africa Spectrum*, 51(3), 93–105.  
<https://doi.org/10.1177/000203971605100305>
- Pasiwe, Q. S., Earl-Tyler, M., & Sinefu, A. (2021). Unintended consequences of stock theft on victims: findings from Alice, Amathole District, Eastern Cape, South Africa1. *Acta Criminologica*, 34(1), 154–169.
- Peires, J. B. (1994). Unsocial bandits: The stock thieves of Qumbu and their enemies. *History Workshop*. Democracy Popular Precedents Practice and Culture, Johannesburg.
- Pullen, P. (2023, October 10). *Saps Livestock Return Summary: 2022/2023*. South African Police Service.
- Rafolatsane, A. (2013). *The Role of Police and Civil Society in Combating Cross-Border Stock Theft* [Witwatersrand]. <https://core.ac.uk/download/pdf/39671842.pdf>

- Rennison, C. M., & Mondragon, H. P. (2022). Defining rural. In R. A. Weisheit, J. R. Peterson, & A. Pytlarz (Eds.), *Research Methods for Rural Criminologists* (1st ed., pp. 1–14). Routledge. <https://doi.org/10.4324/9781003118657-1>
- Saner, E. (2014, September 26). *Raiders of the night: How farmers are being targeted by livestock thieves* | *Environment* | *The Guardian* [News paper]. The Guardian. <https://www.theguardian.com/environment/2014/sep/26/raiders-of-night-farmers-livestock-thieves-rustling>
- SAPS. (2018, February 21). *The National Rural Safety Strategy*. South African Police Service. [https://www.saps.gov.za/resource\\_centre/publications/national\\_rural\\_safety\\_strategy\\_2019.pdf](https://www.saps.gov.za/resource_centre/publications/national_rural_safety_strategy_2019.pdf)
- SAPS. (2022, June 27). *E2-A rural perspective*. Rural Safety Summit, Parys South Africa. [https://www.saps.gov.za/resource\\_centre/nscs/ea\\_rural\\_perspective.pdf](https://www.saps.gov.za/resource_centre/nscs/ea_rural_perspective.pdf)
- SAPS. (2023). *Police Recorded Crime Statistics Republic of South Africa*. South African Police Service. [https://www.saps.gov.za/services/downloads/April-2022\\_23-presentation.pdf](https://www.saps.gov.za/services/downloads/April-2022_23-presentation.pdf)
- Scholtz, M. M., & Bester, J. (2010). Off-take and production statistics in the different South African cattle sectors: Results of a structured survey. *Rural Development*, 3, 5.
- Schutt, R. (2004). *Investigating the Social World: The Process and Practice of Research* (4th ed.). SAGE Publications.
- Shackleton, C. M., Shackleton, S. E., Netshiluvhi, T. R., & Mathabela, F. R. (2005). The contribution and direct-use value of livestock to rural livelihoods in the Sand River catchment, South Africa. *African Journal of Range & Forage Science*, 22(2), 127–140. <https://doi.org/10.2989/10220110509485870>
- Sidebottom, A. (2013). On the application of CRAVED to livestock theft in Malawi. *International Journal of Comparative and Applied Criminal Justice*, 37(3), 195–212. <https://doi.org/10.1080/01924036.2012.734960>
- Sihlobo, W. (2023, June 3). South Africa's agricultural growth story. *Wandile Sihlobo*. <https://wandilesihlobo.com/2023/06/03/south-africas-agricultural-growth-story/>
- Smith, K. (2020). Desolation in the countryside: How agricultural crime impacts the mental health of British farmers. *Journal of Rural Studies*, 80, 522–531. <https://doi.org/10.1016/j.jrurstud.2020.10.037>
- Stats SA. (2013, August 5). *A giant step in agriculture statistics* | *Statistics South Africa* [Government]. Department of Statistics, South African Government. <https://www.statssa.gov.za/?p=1447>
- Stats SA. (2020a). *Census of commercial agriculture, 2017: Financial and production statistics* (11-02-01 (2017); p. 104). Statistics South Africa. <http://www.statssa.gov.za/>
- Stats SA. (2020b). *Population characteristics* | *Statistics South Africa*. <http://www.statssa.gov.za/?cat=15>
- Stats SA. (2023, October 13). *MEDIA RELEASE: Census 2022 Population Count Results 10 October 2023* | *Statistics South Africa*. StatsSA, Department of Statistics, Republic of South Africa. <https://www.statssa.gov.za/?p=16716>

- Straf, M. (2005). Government statistics -- an overview | ScienceDirect Topics. In N. J. Smelser & P. B. Baltes (Eds.), *International Encyclopedia of the Social & Behavioral Sciences (Second Edition)* (2nd ed.). Elsevier Ltd. <https://www.sciencedirect.com/topics/social-sciences/government-statistic>
- Tustin, D., & van Aardt, C. (2018). *Agri SA 2018 National Agricultural Sector Crime Survey*. Bureau of Market Research, University of South Africa.
- UNODC (Ed.). (2015). *UNODC, International Classification of Crime for Statistical Purposes, Version 1.0*. United Nations Office on Drugs and Crime. <https://unstats.un.org/unsd/statcom/doc15/BG-ICCS-UNODC.pdf>
- Visser, K. (2023, June 1). *Food security at risk as rural communities face daily threats*. Daily Maverick. <https://www.dailymaverick.co.za/opinionista/2023-06-01-food-security-at-risk-as-rural-communities-face-daily-threats/>
- Weisheit, R. A., & Donnermeyer, J. F. (2000). Change and continuity in crime in rural America. In G. LaFree, J. F. Short, R. J. Bursik, Sr., & R. B. Taylor (Eds.), *The Nature of Crime: Continuity and Change, 1*, 310–355.
- Wild, H., Jok, J. M., & Patel, R. (2018). The militarization of cattle raiding in South Sudan: How a traditional practice became a tool for political violence. *Journal of International Humanitarian Action*, 3(1), 2. <https://doi.org/10.1186/s41018-018-0030-y>