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Criminological theories and technologies to address stock theft in South African rural areas (Eastern Cape Province)

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Abstract

To adequately apply the selected criminological theories to effectively police stock theft, the Rational Choice Theory (RCT) and Routine Activities Theory (RAT) are offered in this study. This is supported by the existing technologies to aid this attempt in the South African rural areas. From a qualitative standpoint, this study adopted the exploratory research design to purposively review documentary studies, using the non-empirical research design: Systematic review. It was restricted to 1979-2025 (not in sequence). The study findings confirm that stock theft is becoming specialised, with limited unique and innovative approaches adopted. It is also established that the selected criminological theories and technologies can be best used to respond to this scourge in the selected rural areas of South Africa, Eastern Cape (EC) Province included (the stock theft hotspot across South Africa), with the help of the National Government and the applications of multidisciplinary approaches of policing this crime, involving the local public and private Law Enforcement Agencies (LEAs), including the South African Police Service (SAPS), National Prosecuting Authority (NPA), private technological savvy companies, livestock farmers, community members and anti-stock theft stakeholders.

Key words: Criminological theories, Rational Choice Theory, Routine Activities Theory, Technologies, Stock theft, South African rural areas

Introduction

Beneath the surface of the province, like EC Province, lies a persistent and devastating stock theft problem; this crime is not new and it is often overlooked, despite its far-reaching consequences for the country's economy and the livelihoods of its people, especially in provinces like EC Province. Even though it is pronounced in the EC Province, it is a country wide problem that has far reaching socio-economic effects. According to Bezuidenhout (2023), one of the most prominent motives behind livestock theft identified in this study was financial, either as the need for self-enrichment (immediate gratification), financial difficulties and desperation, or for survival. Other motives included revenge taken by disgruntled workers on farmers, substance abuse, a yearning for wealth and status, and a desire to own livestock. Bezuidenhout (2023) further relates that the motives could overlap, such as when the perpetrators felt pressured to live up to what society demanded of them, or where their decisions were influenced in other ways. Causes also entailed unemployment, an opportunistic attitude, a previous criminal history (learnt behaviour), negative peer association, low or no formal education, and a large family size. The analysed case dockets revealed that the perpetrators were often driven by the need to

acquire livestock for traditional ceremonies and customs, such as Lobola. Importantly, Table 1 illustrates the motives and causes of stock theft in South African rural areas.

Table 1
Motives and causes of stock theft

Motives	**Causes**
Perpetrators	
• Financial (74.2%) • Greed (37.1%); • Need for survival (34.2%) • Substance abuse (2.8%) • Revenge (2.8%) • Own livestock (11.4%)	• Opportunistic behaviour (60%) • Previous criminal history (57.1%) • Negative peer association, influence and pressure (54.1%) • Low or no formal education (45.7%) • Unfavourable childhood development (conflict within family and an absent parent) (42.8%) • Unemployment (25.7%) • Large family size (17.1%)
Dockets	
• Financial intent (resell meat and livestock) (46.2%) • Need for survival • Livestock for traditional ceremony and lobola (7.1%)	

Source: Doorewaard-Janse van Vuuren (2022)

In reference to the existing policies and legislation for policing stock theft, Clack (2024) provides that legislation plays a pivotal role in regulating society and establishing a governance framework. It sets clear guidelines and regulations for individuals and institutions to follow, protects the rights and freedoms of individuals, and promotes justice by establishing a legal system through which justice is exercised. Whiteside, Brennan and Mulrooney (2023) highlight that a deficiency that may occur over time regarding policies and legislation to ensure that enforcement and compliance agencies can perform their role to the maximum standard. This is important to ensure that rural stakeholders are provided clear and concise instructions so they understand how to comply with the law, where to go to seek guidance and what will occur if they do not comply. It has become evident that significant legislative and policy amendments are required.

Whiteside, Brennan and Mulrooney (2023) add that the volume and complexity of the legislation governing land owners, primary producers, livestock transport and various other rural industries cannot be overstated. The development of programmes to ensure it increases the understanding of what rural crime is, how to correctly record crime incidents and how to interact with rural crime victims, as well as to provide basic knowledge on how to investigate rural crime, the resources and agencies available to assist with investigations and the various key fundamental aspects necessary to improve the services provided to rural communities. This type of training is especially important, not only as a means to aid in the prevention and response to rural crime but also in the capacity to better serve victims of rural crime, Whiteside, Brennan and Mulrooney (2023).

Mulrooney and Harkness (2023) establish that the innovations in policing and agricultural technology appear to offer some promising progress to combat farm crime. For example, the New South Wales (NSW) [Australian] Police Force dedicated Rural Crime Prevention Team (RCPT), comprising officers with cultural and practical knowledge of rural industry and necessary training, skills and expertise to deal with farm crime. This team deployed innovative techniques to fight rural crime and their efforts contributed to increases in community satisfaction with the local police and reporting of rural crime by the livestock farmers. Mulrooney and Harkness (2023) confirm that despite this, the local police in question are still operating in an environment that presents serious difficulties in preventing, investigating and clearing farm crimes.

Whiteside, Brennan and Mulrooney (2023) provide that there are two (02) key issues at work, namely: 1) The rural livestock farmers may check on stock only intermittently, and so be unaware of a theft for some time, and 2) The difficulty in tracking and identifying stolen stock. The Operational Officers within the RCPT are experts within the NSW Police Force, specifically trained to investigate rural crime, maintain a high level of knowledge regarding legislation pertinent to crimes committed against rural industries and established to safeguard these industries, Whiteside, Brennan and Mulrooney (2023). Likewise, the Intelligence Analysts and the Policy and Projects Officer, who serve as a support mechanism for the RCPT to complement the overall response to rural crime is trained to analyse and research crime trends, technology, policy, legislation and many more aspects impacting rural industries, summarily, the RCPT are Experts in preventing and responding to crimes that impact on the function of the pastoral, agricultural and aquaculture industries, and this extends to their specialised training, Whiteside, Brennan and Mulrooney (2023). Resulting from the cited literature studies in this section, this study explored the applications of criminological theories and technologies to respond to stock theft in South African rural areas, using the anecdotes of EC Province, South Africa.

Methodology

This qualitative study employed the non-empirical research design: Systematic review. This research design is often used to identify and describe existing literature studies using systematic and explicit accountable methods and pre-specified formalised tools for searching and integrating the identified literature on a specific subject (Gough, Oliver & Thomas, 2012; Punch, 2014). The documentary sources were used, enabling the researcher to collect data from the qualitative documents. In support of this procedure, Creswell (2014) provides that Social Sciences researcher may collect qualitative documents to compile a study, while targeting public documents, including newspaper articles, minutes of meetings or other official documents. It is also advised that one can ask hanging questions to the documents, using the same way of posing questions to the study participants (Matthews & Ross, 2010).

For this study, SAPS media releases, South African online newspapers and media reports, journal articles, internet searches, using the electronic databases, limited to the 'Google Scholar, EbcoHost, Emerald Insight, Jstor, ProQuest, Sabinet, Sage Online and Science Direct.' (Creswell, 2014:190). The 'non-probability: Purposive (judgmental, selective or subjective) sampling' focuses on data primarily relevant to the study subject. The keywords/phrases, such as 'criminological theories – The use of RCT and RAT to address stock theft, Stock theft in South African rural areas, the use of technologies to combat stock theft, and stock theft in South African rural areas/EC' were used to filter information relevant to the study topic until data saturation was reached in reference to the guiding research problem, while applying the Qualitative Content Analysis (QCA) to identify the study themes to respond and verify the study objective. This was applied to present honesty reporting relating to the consulted literature studies, Liamputtong (2013:246). The reviewed data were restricted to 1979-2025 (Not in sequence) to demarcate the inclusion/exclusion criterion. The inductive Textual Content Analysis (TCA) was adopted for data analysis (Maluleke, 2020).

Literature review and thematic identifications, results and discussions

In this section, the focus is geared on consulted literature reviews in reference to the projected restrictions (1979-2025, not in sequence). The emanating discussions inform the identified study themes. This was accomplished by providing a synthesis of relevant literature studies on this subject (the applications of criminological theories and technologies to respond to stock theft in South African rural areas). This demonstrated that the researcher was familiar with the key authors, texts and central concepts relevant to this study. This procedure showed that this study contributed to what was already known about the phenomenon under research to fill the niche/gap identified in the introduction section of this study. The researcher situated this study within the academic domain, guided by the study objective. The old and recent sources were targeted, especially those with high academic standings, peer-reviewed and accredited. These sources are discussed and present integrated ideas on this subject.

Technological benefits for policing stock theft

The SAPS reported that by the end of the Third Quarter of the 2024/2025 financial year, between April 2024 and February 2025, a total of 23 679 stock theft cases were recorded. From the indicated numbers, about 4 889 remain under investigation and 2 068 were found to be unfounded, with 4 842 proceeded

to court and a total of 791 cases resulted in convictions, while 125 ended with not guilty verdicts (Seeletsa, 2025). Ndzungu and Jaja (2024) stress that the policing strategy must be adaptive and technology-driven to fast-track detection, prevention, and reduction of stock theft crime.

The EC Province is characterised by a diverse agricultural landscape, with numerous small-scale farmers relying heavily on their livestock for income and subsistence (Lovarelli, Bacenetti and Guarino, 2020). Demeke and Ryan (2021) highlight that the impact of stock theft on these farmers is far-reaching, as it not only results in financial losses but also undermines the region's agricultural productivity and market competitiveness. Furthermore, the indirect consequences of stock theft, such as reduced market effectiveness and increased transaction costs, contribute to a complex web of challenges for farmers (Demeke & Ryan, 2021). The direct and indirect impacts of stock theft also result in decreased market effectiveness and smaller agricultural networks, which reduce the availability of goods and raise prices and transaction costs (George, Adelaja and Awokuse, 2021). Farming promotes and supports disadvantaged people's livelihoods across the continent (Kingdon & Knight, 2024). Some of the challenges experienced by SAPS STUs members in the detection and apprehension of perpetrators include the following aspects: Loss of evidence (livestock consumed), Identifying main perpetrators (instigators), Reporting of cases by victims, Leaking of information by corrupt police officials, Proof to link a suspect to the stolen livestock and Community participation and involvement (Doorewaard-Janse van Vuuren, 2022).

Maluleke (2020), Maluleke and Dlamini (2019) agree that the EC Province experiences a high prevalence of stock theft amongst the other provinces in South Africa because EC Province is bordered by the Western Cape to the West, Northern Cape (NC) to the Northwest, Free State (FS) and Lesotho to the North, KwaZulu-Natal (KZN) to the Northeast, and the Indian Ocean to the Southeast and South, with the rural areas of NC, FS, Lesotho and KZN Province reportedly prone to stock theft (Encyclopaedia Britannica, 2025). Among the most affected by stock theft areas are *Qumbu, Tsolo,* and *Mthatha,* which all fall under the OR Tambo district municipality (Mabasa and Olutola, 2021). With stock theft becoming a problem in EC Province, cattle, goats, and sheep are the most vulnerable livestock animals to thieves because of their market value and easy trade in the black market (Zantsi and Nkunjana, 2021). Most EC Province small-holder farmers consider doing rituals with livestock before they intend to sell them, especially goats, as they are the ones that people usually use to perform rituals (Ndzungu & Jaja, 2024).

Maluleke (2016); and Maluleke (2018) confirms that different technologies, such as; Radio Frequency Identification (RFID), Wireless Fidelity (Wi-Fi), Wireless Sensor Node / Network (WSN), ZigBee, Deoxyribonucleic Acid (DNA) technology can be adopted in combating stock theft, and these strategies are becoming increasingly valuable to the operationalisation of the South African Criminal Justice System (CJS). However, the value of using technology in combating stock theft is vague to most livestock farmers. Instead, they revert to conventional methods, such as branding and tattooing. These conventional techniques have not really proffered an enduring solution to the menace of stock theft in South Africa. With increasing regulation and demands for traceability, the need for newer technologies is escalating. Different types of electronic devices that can be used for animal identification purposes, as suggested by (Germain, 2003; Food and Agricultural Organisation - FAO, 2003; Evans and Van Eenennaam, 2005), namely: Boluses, DNA fingerprinting, Microchip implants, Tags with chips and transponders and Retinal imaging. This is inclusive of the *Virtual fencing,* Electric fence steel/rope, Cattle/animal solar collar GPS tracker, as well as the Automatic livestock tracking, which is necessary and suitable for countries facing stock theft problems, like South Africa and Kenya (Stojkoska, Bogatinoska, Scheepers & Malekian, 2018).

Their study (Stojkoska *et al.* 2018) postulates a conceptual design of Architecture for real-time wireless livestock tracking based on the Internet of Things (IoT) paradigm. It is a hierarchical model consisting of three building blocks, where the first block is represented by a wireless sensor network. Additionally, they developed a low-power device for livestock tracking in an outdoor environment. The animal tracking device (AnTrack) is self-sustainable with a watertight solar panel(s), designed as a collar to be worn by the animals. A detailed analysis of the AnTrack power consumption proves that the device is capable of generating enough supply power, even when there is no sunshine for a week. This device can be used as a robust building block of future real-time IoT livestock tracking solutions. A study by Maluleke and Mokwena (2022) establishes that the IoT allows livestock farmers to improve their livestock management through activity and movement-monitoring. The IoT-based technologies

refer to a significant boost to the country's ecosystem, as they can be used to combat stock theft. This application can best manage livestock smartly and it can also accurately monitor livestock behaviour and detect livestock [current] status in terms of health, physiological and risk status.

The industry stakeholders within the Livestock Identification and Traceability System South Africa (LITS SA) urgently request the South African Government to honour the commitments made by the minister during our crucial meeting. Swift and unwavering Government support is imperative to implement the LITS SA fully. This must involve the active engagement of the competent authorities responsible for animal health and trade in developing and implementing the system. South Africa must seize this opportunity to establish an unparalleled LITS SA that safeguards animal health, facilitates secure trade, and enhances the nation's global reputation. Failure to act promptly and resolutely on these commitments would be detrimental to our country, its people, and the livestock industry. Time is of the essence. We urge prioritisation and the immediate and efficient implementation of the LITS SA within the livestock sector (Clack & Olivier, 2023). To curb the spate of livestock theft in the EC Province, the provincial Government this week unveiled the LITS SA to be used by rural farmers.

The LITS SA is a technology-based ear tag device that the EC Government is distributing to 120 cattle farming enterprises, with 30 000 cattle across the province. The Provincial Government states that all the ear-tagged animals and the identities of their owners are registered in a central database, where animal movement is recorded to make it easy to trace the animal back to the owner. More than 250 veterinarians, scientists, animal health technicians and extension advisors have been trained to lead the implementation of the system, Staff Writer, Information Technology [IT] Web (2024). The South African Broadcasting Corporation [SABC] News (2024) provides that as part of its efforts to curb stock theft, the EC Government has launched the LITS SA in *Tsolo*, which is one of the towns marred by stock theft in the province. As livestock traceability becomes a global standard, Agri EC took a proactive approach in launching a voluntary traceability system that will be fully compatible with the LITS SA system when it is implemented (Agri EC, 2024).

The EC Premier Lubabalo Oscar Mabuyane and the Rural Development and Agrarian [DRDAR] Reform Member of the Executive Council (MEC) Nonkqubela Pieters introduced a ground-breaking LITS SA in *Tsolo* to combat stock theft in the province and to strengthen bio-security measures to improve international trade of cattle by installing this gadget into the cattle (EC Department of Agriculture, 2024). According to Masiza Mazizi (2023) (in Spandiel, 2024), spokesperson for the provincial government, LITS SA is a technology-based ear tag device marking a significant step forward in securing the livelihoods of farmers in the EC Province and beyond, demonstrating the transformative potential of integrating cutting-edge technology into traditional agricultural practices. The LITS SA is the National initiative that was agreed upon by the government and industry. The scourge of stock theft in the rural areas of EC Province is a serious threat to the lives of the rural livestock farmers. As a result, the ability of this system in fighting stock theft is based on identifying the livestock owners through the branding and animal identification number.

According to Mabuyane (2024) (in News24, 2024) states that more than 18 000 livestock/animals, worth in excess of R58 million, were stolen in the EC Province. Spandiel (2024) highlights that this system is good for the rural livestock farmers as it can help them to locate/trace stolen livestock and it can also be used to determine the locations within the province and districts the livestock are from. Moreover, connecting livestock without brand marks to the rightful owners can be hard. Thus, this system is a powerful tool against stock theft; it enables the rural livestock farmers to track the movement of their livestock, use drones for livestock monitoring, and use livestock RFID. Moreover, the benefits of the Livestock Identification Trace-back System (LITS) to the Botswana Nation are depicted in Table 2.

Table 2:
The benefits of the Livestock Identification Trace-back System to the Botswana Nation

Area of interest(s)	Description
Nation	• Long-term security for our established beef export market; and

	• An additional marketing edge for Botswana beef in new export markets.
Three types of Botswana digital tagging systems	1) Injected microchip. 2) Digital ear-tag. 3) Reticular bolus.
Cattle owners	• Computerised brands certificates and herd cards available on demand from district offices; • Computerised movement permits printed on the spot at kraals and cattle posts; • Easy, on-the-spot access to detailed management information about your cattle from Department of Veterinary Services (DVS) staff; • Reduced likelihood of cattle theft because of easy and tamper-free identification of stolen cattle; and • Easy identification of stray *(Matimela)* cattle.
Government	• Accurate information on the demographics of the National cattle herd • Accurate disease information to assist DVS in livestock disease management. • A simple, tamper-proof identification system available to the police, DVS and other Government organs with an interest in cattle ownership. • A linkage between cattle ownership records and the *Omang* National registration system.
Number of cattle inserted so far?	• 2,4 million cattle out of 2,5 million.
Number of boluses recycled so far?	• Over 600 000 boluses recycled over the last 2 years.

Source: DVS (2008)

From Table 1, it can be deduced that the DVS evaluation team in Botswana conducted a scientific evaluation and decided to introduce a system based on the reticular bolus. This decision is in line with those of several other European Union (EU) beef-supplying Nations where the device is seeing increasingly widespread commercial usage. The DVS evaluations provided that the 'injected microchip' chip; it is difficult to read, as it can migrate and be difficult to find after slaughtering. Negatively, the likelihood of a ban on their use by the EU in the coming years is envisaged (DVS, 2008). The 'digital ear-tag' is widely recommended for use in Europe, but the high field losses in Botswana's farming conditions were considered and it was determined that this system is not suitable for recycling. It does little to deter cattle thieves (DVS, 2008). The 'reticular bolus' is recommended for use in many EU beef-supplying nations where hardly any field losses are experienced, since no criminal tampering is possible and it is easy to read because it is always in the same place, and it is ideal for saving costs because it can be recycled, which in turn leads to rural job creation and improved collection of information about informal slaughtering (DVS, 2008).

Criminological theoretical responses: Rational Choice Theory and Routine Activities Theory

Routine Activities Theory

Theoretically, the RAT is regarded as the modern theory, which developed from the Classical School of Thought by Cohen and Felson (1979). The premise of this theory puts together various theoretical ideas and empirical study findings to provide a clear understanding of stock theft and related victimisations

(Clack, 2015). Cohen and Felson (1979) highlight that this theory describes the spatial-temporal arrangements of societal events, which often encourage stock thieves to commit stock theft, by looking at the daily activities of the targets and behavioural patterns. In essence, as potential stock thieves converge in-time and space, the opportunities for committing stock theft increase. This theory proposes that for stock theft to occur, three (03) elements should be present, namely: 1) Suitable targets, 2) Absent guardians, and; 3) Motivated offender (Cohen & Felson, 1979; Smith & Clarke, 2012). This applies to this study as follows:

The availability of a suitable target: The suitable targets in reference to this study are linked to the targeted 'livestock' by stock thieves, such as Cattle, Goats and Sheep. This element refers to various livestock, limited to 03 in this study and individuals (livestock farmers) offering their protection. Clack (2014) mentions that all stolen livestock (Cattle, Sheep, and Goats in this regard) have factors which render them more or less suitable targets. The availability of livestock in a specific location needs to be considered. In illustrations, cattle are large and difficult to transport; sheep are regarded as dumb (not intelligent) livestock that flock together when herded and normally do not make a noise at night when disturbed, while Goats likes making noise (Maluleke, Mokwena & Olofinbiyi, 2019). Felson and Clarke (1998) provide that four (04) factors influence the targeting of livestock and risk of attack: 1) Value, 2) Inertia, 3) Visibility, and 4) Access. Livestock are regarded as a product that does not lose financial value, and this makes them suitable targets and attracts the interest of stock thieves. As a result, Clack (2015) states that the effortlessness relating to some livestock being easily accessible and movable to the stock thieves shows how the perpetrators operate.

The absence of capable guardians: This element covers the 'absent guardians' that relate to the 'livestock owners and herd boys.' Clack (2014) refers to this element as also linked to available legislation and security personnel, such as the livestock legal owner and other relevant stakeholders (private and public) and the CJS administration and their ability to respond to stock theft. The adherence to the legislative frameworks, such as the Stock Theft Act (No. 57 of 1959) and the Animal Identification Act (No. 6 of 2002), is pivotal, even though they are outdated. The primary objective of the Guardians (livestock owners, police and neighbours) is very important to police this crime. Clack (2015) shares that other role players, other than the livestock owner, should perform a function of guardianship, including the abattoirs, auctioneers and barter agents. Siegel (2016) argues that if valuable targets are appropriately guarded, even the most motivated offender will be discouraged from pursuing the target.

The presence of motivated offenders: The motivated offender refers to the 'stock thief.' This can be related to unhappy or financially challenged stock thieves or herd boys (Clack, 2014). Clack (2014) and Maluleke, Mokwena and Olofinbiyi (2019) confirm that limited research on profiling stock thieves to reveal offenders' motivations contributes negatively to this element. The study that examined the *criminological assessment and sample-specific profile of the perpetrators* by Mrs Cecili Doorewaard-Janse van Vuuren, a Lecturer in the Department of Criminology and Security Science of the University of South Africa (UNISA), remains a focal point to effectively address this element. Various related factors that motivate stock theft offenders to steal livestock (drug addiction, unemployment, and poverty), and another main reason for the occurrence of stock theft is the profitable nature of this crime, KZN Department of Community Safety and Liaison [KZN DCSL] (2008). In support of this statement, the financial gain or profit resulting from stock theft is used for certain needs, such as buying drugs or reducing poverty and unemployment (Dzimba & Matooane, 2005). Except for stealing livestock for private use or consumption, to this end, livestock are not just a food source (Clack, 2013).

Rational Choice Theory

Another theory to emerge from the Classic School of Thought is the RCT. Promoted by Derek Cornish and Ronald Clark in their work on the reasoning criminal in 1986, rational choice theory explains how criminals make decisions about their involvement in crime (Taylor, 2016; Doorewaard, 2020). By considering the geographical settings, the RCT Cornish and Clark (1986) suggest that offenders make decisions to commit crimes by weighing available risks and rewards. Therefore, the goal of 'crime prevention' is applied to increase risks and lower rewards. In urban areas, crime prevention might include tools, such as locks, motion lights or Closed-Circuit Television (CCTV), while the availability of native residents and visitors may deter potential criminals simply by being present. Moreover, the presence of formal guardians, such as the police or security guards, may serve to deter various crimes in the urban and rural areas as well. The urban environment can also be designed and built in such a

way as to discourage crime by limiting hiding places, exit points and escape routes (Cohen & Felson, 1979). The rural environment flips all of this on its head; it is often not possible to implement traditional crime prevention tools given the vast amount of wide-open space and unmonitored locks or gates in the rural settings (Cohen & Felson, 1979). Stock theft manifests as a result of the stock thief's decision to commit this crime or not. This decision is influenced by the costs (getting caught) and benefits (earning money), as well as the potential stock theft offender's personal (moral view) and situational (poverty) factors (Cullen & Agnew, 2011; Siegel, 2016). The perspectives shared by the RCT suggest that the offender's decision-making process occurs in two phases, namely, 1) Initial involvement, and; criminal event stage (Taylor, 2016).

The stock theft offender's decision to engage in committing this crime takes place within the *initial involvement stage*, which is dependent on a range of factors and motivations, including the stock theft offender's decision to engage in this crime influenced by learning and experience (previous committed crimes and contact with the law), planning (such as time constraints) and future provision (a need for money), as well as individual traits, such as impulsiveness, and several background factors, for example, childhood upbringing and socio-economic status (Taylor, 2016; Doorewaard, 2020). The *criminal event* is based on weighing the potential pitfalls (punishment) and the potential value (financial incentive) of committing the crime (Siegel, 2018). When the stock theft offender makes a decision to commit this crime, he or she decides to commit it. This decision is often influenced by the stock theft offender's immediate situation. For example, having a desperate need for money or being out with friends who suggest stealing livestock. The stock theft offender then selects a target (for example, a specific farm) based on the costs of being sighted and apprehended in relation to the benefits, for example, easy access to the livestock farm and poor policing (Wortley & Townsley, 2016; Doorewaard, 2020). Williams and McShane (2014) highlight that the criminal event comprises tactics and demands placed on the offender to carry out the crime.

Conclusion and recommendations

The LITS SA, developed over the course of six years, aligns with the World Organisation for Animal Health (WOAH) traceability guidelines and SAPS World Trade Agreement standards, making it a crucial step toward meeting the Biosecurity Task Team's recommendations. To ensure their products are traceable and meet the required animal health and trade standards, producers are strongly advised to utilise the government-developed LITS SA instead of investing in systems that may not comply with necessary guidelines. Furthermore, effective animal identification and traceability are integral to the Red Meat Vision 2030, which aims to position South Africa's red meat industry as a leading player in local and international markets. By implementing a robust animal identification and traceability system, South Africa can demonstrate its commitment to meeting the necessary standards and guidelines for animal health and trade, ultimately contributing to the long-term success of the Red Meat Vision 2030 (Clack & Olivier, 2023).

However, the successful implementation of the LITS SA hinges on strong National Government support and resource allocation to ensure comprehensive animal identification and traceability across the Nation. Thus, some of the proposed recommendations are limited to the following: awareness campaigns, reporting of stock theft cases and training of SAPS Stock Theft Unit (STUs) members, continued use of informants, multi-collaboration of stakeholders and recruitment of SAPS STUs Investigators, Doorewaard-Janse van Vuuren (2022). Additionally, efficient criminological theoretical comprehension of the elements of RAT (Livestock as the suitable targets, Capable guardianship in relation to the protection, safety and security, as well as the motivated stock thieves) can offer positive strategies of policing this crime, together with the clear understanding of the initial involvement and criminal event stage, in reference to the submission that stock is often caused by the way stock thieves thinks, not by their environment. The criminal behaviour is largely a product of thinking. In essence, everything the stock thieves do is preceded, accompanied and followed by thinking (Awake, 2008).

The future directions present that the accessibility and usage of the selected criminological theories (RCT and RAT) and technologies against stock theft can establish effective partnerships between the South African CJS and relevant stakeholders in the rural setting by using systematic interventions within the rural areas of EC Province to break a culture of isolation, while moving to the collaborative approaches towards effective policing this crime. To further respond to the future, the technological standards should be underpinned by policies and tailored programmes, suitable for rural

areas, aligned with the international standards, like the 'WOAH' aimed at enhancing the current traditional and technological strategies for the policing, prevention and combating stock theft in the rural areas of EC Province and other South African rural provinces, as mostly affected by this scourge.

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