

Shutting the Gate: A Preliminary Study of Farm Crime Prevention Methods Used by the Police in Rural England and Wales

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Abstract

Rural crime is an issue for farms across the United Kingdom. The costs of farm crime are at their highest level in eight years and impact on both farmers and consumers. Past research has examined farmers' attitudes towards farm crime prevention but the attitudes of the police have been little explored. Police forces in rural England and Wales were surveyed about their views on farm crime prevention (e.g. prevention methods used, efficacy of methods, future of farm crime prevention). Traditional and community-based prevention methods such as regular patrols, proactive operations, prevention initiatives and community education were widely used, as were technological prevention methods such as CCTV. Just over half of respondents perceived these methods to be effective though concerns were raised that their efficacy was affected by limited police resources. The majority of respondents felt that the future of farm crime prevention would involve better physical security, more CCTV and more crime prevention initiatives.

Keywords: farm crime; crime prevention; police; community; England and Wales; rural



Introduction

Farming is an important industry within the United Kingdom. Farmland comprises 72 percent of land in the United Kingdom and is used for both crops (6.1 million hectares) and livestock. Large numbers of sheep (34 million), pigs (5.1 million) and cattle (1.9 million) are kept as livestock (DEFRA 2020). There are 109,000 employed or self-employed farmers in the United Kingdom and the agricultural industry employs 466,200 people (ONS, 2018; Statista, 2020).

Rural, or farm, crime can be broadly defined as “any crime and anti-social behaviour occurring in rural areas” (CPS, 2017). Crime is an issue for farms across rural regions of the United Kingdom and is highly damaging to rural properties and businesses. This crime not only impacts farmers but also can affect consumers due to resultant higher food prices (Chalfin et al., 2007). In 2019, rural crime cost the United Kingdom £54.3 million with costs of £9.3 million for agricultural vehicle theft and £3.0 million for livestock theft. This is the highest total cost in eight years with increases in the cost of rural crime being seen across all regions of the United Kingdom (NFU Mutual, 2020).

The main prevention methods for farm and rural crime are rooted within situational crime prevention. This approach involves methods which involve the management or design of the environment to make crime more difficult and risky or make crime less rewarding and excusable (Clarke, 1983; Clarke, 1997). This approach aims to reduce the physical opportunities for offending (e.g. via increased physical security measures; defensible space architecture) and/or increase the likelihood of offenders being apprehended (e.g. via increased surveillance; watch schemes) (Clarke, 1980; Clarke, 1983). Many police forces produce materials which promote the use of situational crime prevention on farms and encourage farmers to adopt a proactive approach towards preventing farm crime (e.g. Lancashire Constabulary, 2020; Norfolk Constabulary, 2020; Suffolk Constabulary, 2020). Along with the crime prevention methods that can be implemented by farm owners, several crime prevention initiatives have also been implemented by the police, and these can work in conjunction with other methods. These initiatives include increased rural patrols, running rural crime forums, ad-hoc crime prevention advice at beat surgeries and community events, and the use of drones or closed-circuit television (CCTV) for surveillance.

Despite the information provided by the police and attempts to encourage a proactive approach to preventing farm crime, the use of crime prevention methods is still low in rural areas in the United Kingdom (Smith & Byrne, 2017). Smith and Byrne (2017) report that most farmers only used standard padlocks and membership of local Farm Watch groups. The reasons for farmers' lack of use of additional methods to help prevent crime on their farms may be multifactorial. This may be due to farmers choosing to utilise cheaper or less time consuming methods (Smith & Byrne, 2017) or not perceiving other methods as effective or necessary. Alternately, lack of implementation could be due to a lack of confidence in the police which may lead to their advice on crime prevention not being fully considered. Morris,

Norris and Dowell (2019) found that while 91 percent of victims had reported farm crimes to police, only half of the farmers surveyed were satisfied with how the police responded to farm crime. Farmers perceived the police as having limited resources, time and motivation to combat farm crime and concerns about conviction rates and the likelihood of prosecution for offenders were also evident (Smith, 2018; Morris et al., 2019).

Similar findings can be seen when the international literature is considered. For example, Australian farmers commonly use crime prevention methods such as locking their residence, gates and vehicles, keeping valuables and goods out of sight, counting livestock regularly and maintaining sound fencing (Mulrooney, 2021). The factors that restricted them from implementing crime prevention methods chiefly related to the costs, difficulty of implementation and lack of available information on the efficacy of crime prevention methods (Mulrooney, 2021). A lack of confidence in the police was also evident with Mulrooney (2021) reporting mid-low levels of confidence in the police and Harkness and Larkins (2019) finding that only just over half of farmers in rural Victoria in Australia were satisfied with the standard of policing in their local area. Mixed findings in terms of reporting crime were also evident with Mulrooney (2021) noting that only 42 percent of farmers would always report farm crimes, though this did depend on the crime committed (Mulrooney, 2021), while the majority of Victoria farmers (67.5%) would report any theft from their farms to the police (Harkness & Larkins, 2019). This reluctance to report crimes was due to concerns about police resourcing, capacity to solve the crime and barriers to investigating crime in rural spaces, as well as concerns about retaliation from the offenders (Harkness & Larkins, 2019; Mulrooney, 2021). These concerns have a number of parallels with those raised by farmers in the United Kingdom (Smith, 2018; Morris et al., 2019).

Previous research (e.g. Smith & Byrne, 2017; Morris et al., 2019) has examined United Kingdom farmers' attitudes towards farm crime and its prevention, but there has been little research to date to the authors' knowledge examining the attitudes of the police towards farm crime prevention. Smith (2018) interviewed police from four different forces considering questions of strategy and definitions of rural crime, policing practice, why the police are addressing rural crime and how the police are measuring the effectiveness of their strategies. Smith's study highlighted that there were differences in the ways the forces approached and defined rural crime. It also identified a number of key factors relating to the police's addressing of rural crime including understanding the effect on farmers, the need for better liaison, the provision of individualised crime prevention advice, improving partnership working, encouraging farmers to take responsibility for protecting their farm and understanding rural criminals. It highlighted that approaches such as vehicle marking, joint patrols and engagement with the rural communities were used.

Smith (2018) provides a useful initial study of the way police are addressing rural crime and the approaches they use, however further study focusing on the attitudes of police towards farm crime prevention is of value. It is important to identify the views of the police as this may help to bridge the gap between the methods recommended by police, and those used by farmers. Understanding this could help to develop strategies to increase the use of

crime prevention methods by the rural community. This study aims to identify the farm crime prevention methods used by the police in rural England and Wales and their views of the efficacy of these methods and the future of farm crime prevention.

Methods

Participant recruitment

Participants were required to have rural areas (e.g. farms and countryside) within their force area, to follow the same legal framework and judicial system and to have a team of rural crime officers. Based on these requirements, the British Transport Police, the Civil Nuclear Constabulary and the Ministry of Defence Police were excluded as they do not investigate rural crime. The City of London Police and the Metropolitan Police were also excluded as rural areas in these regions are virtually non-existent. Police forces in Scotland and Northern Ireland were also excluded due to the differences in Scottish and Northern Irish laws and legal systems when compared to Westminster law and the legal system of England and Wales.

After exclusions, 38 police forces were contacted and were asked to complete an online survey about farm crime prevention. The survey was promoted to these forces via emails, Twitter and Facebook. The study thus involved targeted web-based recruitment and utilised a self-selected convenience sampling method due to it being left up to the respondents to choose whether to participate in the survey. Participants were reassured that all responses were voluntary, data remained anonymous, and all information collected was held securely. Participants also provided informed consent. The study abided by the guidelines of the Institutional Research Ethics Committee.

Questionnaire design

A mixed methods approach was utilised to survey police forces for their views on farm crime prevention. The questionnaire had two sections and comprised 19 questions, including both open and closed-ended questions and Likert scale questions. The first section collected demographic information such as location, force area, how many years they had been a rural police officer and the main types of farm crime dealt within the force. The second section collected information on farm crime prevention including the traditional and community-based prevention methods and technological prevention methods used in the force, the perceived efficacy of these methods, initiatives used by the force to combat farm crime and whether they attended rural crime forums and worked with other organisations or watch schemes.

Information was also collected on who they felt should be responsible for implementing prevention methods, whether they thought there was an economic resource limitation in policing regarding farm crime prevention and what they thought the future of farm crime

prevention would be. Participants' agreement with five Likert style statements was also assessed: (i) prevention is more important than enforcement; (ii) prevention methods need to improve; (iii) more people need to utilise prevention methods; (iv) farm crime prevention methods have changed for the better over the years; and (v) my force shares information with local farmers and groups about prevention methods.

Data analysis

Data were analysed using descriptive statistics (e.g. counts and percentages; summary of responses to open ended questions). All statistical analyses were performed using Microsoft Excel.

Results

Respondent profile

Thirty-three responses were received from police forces across rural England and Wales (refer to Table 1). Respondents had served between 14 months and 38 years (mean: 13.64 years) on the force and between 11 months and 36 years (mean: 6.89) as a rural police officer. The main types of farm crime dealt with in the force were livestock theft (n=8; 24.24%), livestock destruction (n=8; 24.24%), illegal poaching (n=28; 84.85%) and sheep worrying (n=19; 57.58%).

Respondents (n=20) also commented that they encountered farm crime such as farm machinery and equipment theft (e.g. electric fencing, tools, fuel, tractors, gates), poaching and fruit theft, livestock worrying, fly tipping, hare and deer coursing, speed enforcement and illegal off-roading, burglaries and criminal damage.

Farm crime prevention methods

Traditional and community-based farm crime prevention methods that were used by the forces included regular patrols (n=30; 90.91%), proactive operations (n=29; 97.88%), prevention initiatives (n=27; 81.82%) and community education (n=27; 81.82%). Respondents (n=8) also highlighted other approaches used such as digging trenches, police drive-throughs of at risk areas, farm barn meets, initiatives to keep the community up to date (e.g. by newsletters, community alert systems, crime reduction survey visits) and property marking.

Technological farm crime prevention methods that were used by the forces included CCTV (n=26; 78.79%), thermal imaging (n=14; 42.42%), drones (n=15; 45.45%) and Ultraviolet (UV) marking (n=23; 69.70%). Respondents (n=10) also highlighted other approaches used such as property marking via paint pens, alarms, driveway alerts, SmartWater, TecTracer, wildlife CCTV cameras, microdot marking and DataTag.

Table 1: Force area and location of respondents (n=33)

Force Area	Location(s)	Count	Percentage
Avon and Somerset	Avon and Somerset, Somerset	2	6.06%
Bedfordshire	Bedfordshire, Dunstable	4	12.12%
Cumbria	Cumbria	1	3.03%
Devon and Cornwall	Plymouth	3	9.09%
Dorset	Dorset, Sturminster Newton, Blandford, Weymouth	5	15.15%
Gloucestershire	Cirencester	1	3.03%
Kent	Faversham, Kent, Ashford, Aylesford	5	15.15%
Lincolnshire	Lincoln, Market Rasen, Boston, Lincolnshire	4	12.12%
Norfolk	Norfolk	1	3.03%
Northamptonshire	Daventry, Towcester, Northamptonshire	3	9.09%
North Yorkshire	Thirsk	1	3.03%
West Yorkshire	Holmfirth	2	6.06%
Wiltshire	Wiltshire	1	3.03%

The farm crime prevention methods used by the forces were perceived to be effective by 57.58% (n=19) of respondents while 33.33% (n=11) of respondents were unsure, 6.06% (n=2) thought these prevention methods were ineffective and 3.03% (n=1) thought that they were very ineffective. No respondents thought that these methods were very effective. Respondents (n=23) provided positive comments that these methods (e.g. practical prevention, drones, CCTV) may help discourage crime or help the investigation and detection of crime. However, they also highlighted that while these methods helped deter crime there is more that can be done, that the efficacy of these methods were affected by limited police resources and that while methods may be effective for one farm they likely just lead to the offender committing crime in another area. They also commented that the efficacy of the methods relies on farmers taking on board the police's recommendations and being proactive, that methods are effective when several agencies work together and that it is very hard to judge how effective prevention methods are as many factors affect this. Finally, it was also highlighted that these methods even if used may not always be effective (e.g. marked property may still be stolen, offenders caught on CCTV may not be identified).

A number of farm crime initiatives were run in the forces including rural crime forums (n=26; 78.79%), community stalls or events (n=25; 75.76%), and watch schemes (n=29; 87.88%). Respondents (n=12) also commented that other farm crime initiatives were used. In addition to highlighting some traditional initiatives (such as patrolling and poaching

operations) and technological initiatives (such as property marking, installation of alarm and prevention equipment, SmartWater schemes), they also commented that watch schemes such as Farm Watch were used. They also highlighted the use of community updates (via meetings, WhatsApp groups, rural crime updates, Farm Watch text message groups, alert messaging systems, twitter, email alerts, seasonal magazines and weekly newsletters). Liaison with key stakeholders and partners such as rural crime advisory groups and the National Farmers Union were also mentioned as were inter-force and cross-border patrol operations and meetings.

Nearly eighty percent (n=26; 78.79%) of respondents attend or had attended rural crime forums and 21.21% (n=7) had not done so. Of all these respondents, including both those who have attended rural crime forums and those who have not done so, 21.21% (n=7) strongly agreed that rural crime forums are useful, 48.48% (n=16) agreed, 9.09% (n=3) neither agreed nor disagreed, 21.21% (n=7) felt that this was not applicable to them and no respondents disagreed nor strongly disagreed.

A number of respondents (n=6) also provided additional comments about rural crime forums. Respondents highlighted that these forums are valuable because they help facilitate information sharing between police and farmers and allow interactions with the local communities helping farmers to learn what the police are doing to tackle issues and allowing the police to get their input and listen to their concerns. They also commented that these forums help strengthen a 'one team' approach by bringing a network of people and partner agencies together and help build good open communication networks between police and farmers. Nearly ninety-seven percent (n=32; 96.97%) of respondents stated that they work closely with other organisations (such as the National Farmers Union) or watch schemes (such as Neighbourhood Watch, Farm Watch, Rural Watch, Horse Watch) while 3.03% (n=1) stated that they did not work closely with other organisations or watch schemes.

Implementation of farm crime prevention methods

Nearly 70 percent of respondents (n=23; 69.70%) thought that the onus should be on the police to ensure the implementation of good prevention methods; 72.73% (n=24) thought that the onus should be on the National Farmers Union; 60.61% (n=20) thought that the onus should be on the National Rural Crime Network; 42.42% (n=14) thought that the onus should be on the National Wildlife Crime Unit; and 87.88% (n=29) thought that the onus should be on individuals to ensure the implementation of good prevention methods. Respondents (n=14) provided comments that were largely split between stating that there needs to be a joined up approach and that everyone has a part to play and needs to work together, or that the onus is on individuals but they should be guided by information, advice and assistance from the police and informed organisations such as the National Farmers Union.

Nearly 82 percent (n=27; 81.82%) of respondents thought that there was an economic resource limitation in the police regarding prevention of farm crimes, while 18.18% (n=6) of respondents reported that they did not know. Of these respondents, 51.52% (n=17) felt that

economic resource limitation affected their work negatively, 15.15% (n=5) felt that it affected their work positively, 6.06% (n=2) did not know, 6.06% (n=2) felt that it does not impact their work, and 21.21% (n=7) felt that this was not applicable to them.

Table 2: Agreement with five statements relating to prevention of farm crime

Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Prevention is more important than enforcement	46.88% (n=15)	43.75% (n=14)	3.13% (n=1)	6.25% (n=2)	0% (n=0)
Prevention methods need to improve	33.33% (n=11)	60.61% (n=20)	6.06% (n=2)	0% (n=0)	0% (n=0)
More people need to utilise prevention methods	69.70% (n=23)	30.30% (n=10)	0% (n=0)	0% (n=0)	0% (n=0)
Farm crime prevention methods have changed for the better over the years	24.24% (n=8)	60.61% (n=20)	12.12% (n=4)	3.03% (n=1)	0% (n=0)
My force shares information with local farmers and groups about prevention	60.61% (n=20)	33.33% (n=11)	6.06% (n=2)	0% (n=0)	0% (n=0)

Note: n=33 with the exception of the first statement where one respondent did not answer this question

Respondents (n=7) also provided comments that they have no budget and have to rely on donations and support from organisations such as the National Farmers Union. They also highlighted that limited resources impact on the reported crimes and losses, and that reduced police numbers means it is difficult for them to respond to crime and that this restricts the availability of crime prevention aids and proactive prevention work. They highlighted that they cannot carry out as many visits to victims as they would like, that funding is not always available for crime prevention initiatives and that they patrol large areas by themselves and need more assistance. They also commented that the cuts to policing have meant that they have struggled to provide the rural community with the support they need, however one stated that while the limitation impacts their work negatively they felt the onus should be on individuals.

Views on prevention of farm crime

Participants varied in their agreement with five statements relating to prevention of farm crime (see Table 2).

When asked what they felt the future of farm crime prevention was, 48.48% (n=16) felt that there would be more patrols, 63.64% (n=21) felt that there would be more CCTV, 75.76% (n=25) felt that there would be more crime prevention initiatives and 84.85% (n=28) felt that there would be better physical security, e.g. padlocks and fencing. A number of respondents (n=8) also provided additional comments about the future of farm crime prevention. Respondents highlighted that farmers and police working together was needed, more officers are needed to provide these services, that rural communities need to take some responsibility and action to help prevent farm crime, that better use of technology such as Global Positioning System (GPS) tagging of livestock and trackers for machinery and vehicles, and increased use of Automatic Number Plate Recognition (ANPR) and drones was needed and that the future involved all of the suggested options.

Discussion

This study aimed to identify the farm crime prevention methods used by the police in rural England and Wales and their views of the efficacy of these methods and the future of farm crime prevention. Across the respondents there was agreement evident that prevention is more important than enforcement with various methods being utilised consistent with the tenets of situational crime prevention (Clarke, 1980; Clarke, 1983). Traditional and community-based farm crime prevention methods were most used by forces with various methods being highlighted such as regular patrols, as well as drive-throughs of at risk areas and proactive operations; prevention initiatives such as digging trenches and property marking; and community education such as newsletters, crime reduction survey visits and community alert systems.

These findings are consistent with research by Smith (2018) who also found approaches such as vehicle marking, joint patrols, and community engagement to be used by the police when tackling farm crime. These traditional and community-based methods were more widely utilised than technological farm crime prevention methods, which, with the exception of CCTV and UV marking, were used by less than half of respondents. The focus on traditional and community-based farm crime prevention methods (e.g. regular patrols; prevention initiatives; community education) may be due to a resistance by police forces to the implementation of new untried and untested methods or a desire to use established approaches which have previously been successfully utilised.

The results are also similar to those seen in farmers who tended to also use crime prevention methods such as standard padlocks and membership of local Farm Watch groups (Smith & Byrne, 2017). Farmers' use of these methods has been suggested to be driven primarily by their choosing to utilise convenient, cheaper or less time consuming methods (Smith & Byrne, 2017; Smith 2018) due to the barriers they face when implementing farm crime prevention methods. Farmers face barriers such as inconvenience (e.g. a locked gate may help with crime prevention but be inconvenient for general farm duties), cost (both the

initial outlay as well as the cost of updates and add-ons), time (e.g. the time required to ensure prevention methods are working correctly), the difficulty of implementation (e.g. the complexity of the method) and the lack of information available on the efficacy of the methods, all of which may make farmers less likely to utilise a crime prevention method (Smith, 2018; Mulrooney, 2021). Similar explanations may be evident in rural police forces who can be suggested to face very similar barriers due to the monetary, time and resource constraints they operate under (e.g. Smith, 2018).

In addition, concerns about the efficacy of farm crime prevention methods were evident in the police forces with only just over half of respondents believing prevention methods were effective. Concerns were raised about the difficulty of assessing the efficacy of prevention methods, and the fact that even if used methods may not be effective. This concern about the efficacy of farm crime prevention methods is echoed by farmers when choosing which methods to implement (Smith, 2018; Mulrooney, 2021). These concerns by both the police and farmers highlight the importance of further research to investigate the efficacy of existing traditional and community-based approaches and new technological approaches (such as drones, thermal imaging etc.) in preventing crime. Dissemination of successful findings to police forces and the farming community may help to encourage forces to consider where best to focus their efforts by providing an evidence base to support their use as well as encourage engagement with these methods by both police and farmers. The fact that the majority of respondents agreed that prevention methods need to improve is suggestive that police forces are open to utilising new or different methods but that they need convincing of their efficacy.

Another concern raised regarding the efficacy of farm crime prevention methods related to limited police resources, with the majority of respondents highlighting that there was an economic resource limitation in the police regarding prevention of farm crimes. Over half of respondents felt that this economic resource limitation affected their work negatively. Similar concerns were evident in Smith (2018) where it was highlighted that the issues of underfunding, reducing budgets and increasing demand affected the police's response to farm crime.

The points raised by the respondents regarding lack of funding for crime prevention initiatives, reduced police numbers and the challenges this poses to providing the rural community with the necessary support are concerning. This is especially so as this coincides with farmers' perceptions that the police have limited resources and time to combat farm crime (Morris et al., 2019). There are no easy solutions to funding issues but this does highlight the difficulties resulting from a more metropolitan based funding model (National Rural Crime Network, 2016; Rural Services Network, 2018) and that greater rural crime funding is needed. One practical implication of this finding is that it may be beneficial for forces to implement less costly or resource-intensive methods to try and prevent farm crime, for example the use of volunteer rural Special Constables and watch scheme volunteers. However, there are concerns with this approach such as that volunteers may be distrusted or

seen as informers by the farming community, and that farmers may not feel that the police are showing a commitment to rural policing by using volunteers (Smith, 2018).

The majority of respondents believed that the implementation of prevention methods should primarily be on the individual and that more people need to utilise prevention methods, though large numbers of respondents also believed that the onus for prevention should be on the police and National Farmers Union. This finding coincides with earlier research where interviews with the police highlighted their belief that farmers needed to take greater responsibility for the prevention of farm crime (Smith, 2018). It also, it is important to note, coincides with the belief of many farmers that they need to take personal responsibility for crime prevention efforts (Smith 2018; Mulrooney, 2021). One practical implication of this finding is that, considering both police and farmers believe that farmers should be primarily responsible for preventing crime on their farms, a focus by police on providing guidance and information to enable farmers to effectively make decisions about what crime prevention methods to use would be a valuable approach that is likely to be found useful by both parties.

The use of community initiatives can play an important part here in helping, and encouraging, farmers to protect themselves. To that end it was pleasing to see that a joined up approach between farmers, police forces and key stakeholders and partners such as the National Farmers Union was highlighted as an important consideration and key to the successful prevention of farm crime. The majority of respondents stated that their force shared information with local farmers and groups about prevention methods and reported that their force ran community initiatives such as rural crime forums, community events and watch schemes. Most respondents felt that these rural crime forums were useful. The need for greater partnership working was also highlighted when asked about the future of farm crime prevention. The value of these community initiatives in sharing information between police and farmers and developing open communication networks seems evident and it is good to see their wide use by rural police forces. Further study into the uptake and engagement with these events by farmers and the local community would be of value though, as would more evidence-based study of the success of these initiatives in crime prevention.

The future of farm crime prevention is also a key consideration. While the majority of respondents felt that farm crime prevention methods had changed for the better over the years, the current costs due to farm crime (NFU Mutual, 2020) as well as the concerns about the efficacy of existing methods highlighted in this study, suggest that there is room for further improvement. Suggestions about the future of farm crime prevention tended towards broad approaches such as more crime prevention initiatives or better physical security, or greater use of such as CCTV or patrols. Increased and better use of technology, such as GPS and automatic number plate recognition, was also highlighted as a key consideration. It is difficult to predict the future of farm crime prevention; new technological approaches are increasingly being utilised in crime prevention but funding, resources and efficacy are important considerations when utilising these methods as well as when assessing existing approaches and initiatives.

While this is the first study, to the authors' knowledge, to investigate the farm crime prevention methods used by the police in rural England and Wales and their views of the efficacy of these methods and the future of farm crime prevention, it is important to note that the study has several limitations. The sample size utilised in this study was limited with data only being obtained from 33 respondents. While responses were received from police forces across rural England and Wales, concerns could be raised about whether these data are representative and whether they can be generalised across the United Kingdom. Further research using a larger sample of police forces would be of value. Limitations were also evident due to the closed-ended question approach used within parts of the study where respondents were presented with a choice of options. Further qualitative research via face-to-face interviews with representatives from police forces throughout rural England and Wales may be helpful to increase our understanding of this topic and to expand on some of the comments noted in the open-ended questions. Despite these limitations, we believe that this study makes a useful contribution to the literature and that the findings of this study suggest some beneficial areas of future rural criminological research for four key reasons.

First, this study focused on prevention of farm crime from the perspective of police forces. Future study combining this with a study of farm crime prevention from the perspective of farmers would be valuable to provide a more holistic overview of farm crime prevention and elucidate the overlaps between farmer and police perspectives. Investigating similarities in the concerns and perspectives of farmers and police, as well as the barriers they both face, is likely to be beneficial when considering how to practically and effectively implement joint strategies to prevent farm crime.

Second, this study highlighted a number of policing approaches used to combat farm crime, however further research into the reasons for the current approaches that are used (e.g. efficacy, tradition, resistance to new untested techniques) and factors that affect the utilisation of new technologies (e.g. resource limitations, lack of evidence base) would be of value.

Third, building from this, research investigating the efficacy of both established and newer approaches proposed to be useful in the prevention of farm crime would help ensure that there is an evidence base available to police and farmers when determining what farm crime prevention methods to use.

Fourth, considering the widespread use of rural crime forums and community events and the belief evident in this study that these are useful, further research into the success of these approaches in preventing farm crime would be of value. Investigation of whether the farming community also believe these forums and community events to be helpful as well as into methods that would encourage the local community to engage with these events would also be beneficial.

Conclusion

This study highlights that police forces widely use traditional and community-based farm crime prevention methods, with lesser use of technological methods. In addition, only just over half of respondents perceived these methods to be effective suggesting that further research to investigate the efficacy of these methods and provide an evidence base for their use is needed. Greater funding of farm crime prevention initiatives and rural police forces, as well as synergistic approaches between police, farmers and key stakeholders would be beneficial to help support efforts to prevent farm crime.

References

- Chalfin, A., Roman, J., Mears, D.P., & Scott, M.L. (2007). *The costs and benefits of agricultural crime prevention: a primer for estimating the costs and benefits of the Agricultural Crime Technology Information and Operations Network (ACTION)*. Washington, D.C.: Urban Institute, Justice Policy Center.
- Clarke, R.V. (1980). Situational crime prevention: Theory and practice. *British Journal of Criminology*, 20(2), 136-147. <https://doi.org/10.1093/oxfordjournals.bjc.a047153>
- Clarke, R.V. (1983). Situational crime prevention: Its theoretical basis and practical scope. *Crime and Justice*, 4, 225-256. <https://doi.org/10.1086/449090>
- Clarke, R.V.G. (Ed.). (1997). *Situational crime prevention*. Monsey, NY: Criminal Justice Press.
- Crown Prosecution Service. (2017). *Wildlife, Rural and Heritage Crime*. Retrieved from <https://www.cps.gov.uk/crime-info/wildlife-rural-and-heritage-crime>
- Department for Environment, Food & Rural Affairs (DEFRA). (2020). *Agriculture in the United Kingdom 2019*. Retrieved from <https://www.gov.uk/government/statistics/agriculture-in-the-united-kingdom-2019>
- Harkness, A. & Larkins, J. (2019). Farmer satisfaction with policing in rural Victoria, Australia', *International Journal of Rural Criminology*, 5(1), 47-68. <https://doi.org/10.18061/1811/88729>
- Lancashire Constabulary. (2020). *Farms, machinery and tools*. Retrieved from <https://www.lancashire.police.uk/help-advice/protecting-rural-communities/farms-machinery-and-tools/>
- Morris, W., Norris, G., & Dowell, D. (2020). The business of farm crime: evaluating trust in the police and reporting of offences. *Crime Prevention and Community Safety*, 22, 17-32. <https://doi.org/10.1057/s41300-019-00083-5>

- Mulrooney, K.J.D. (2021). *The NSW Farm Crime Survey 2020*. The Centre for Rural Criminology, University of New England. Retrieved from <https://spark.adobe.com/page/zsV05pknxXI7N/>
- National Rural Crime Network. (2016). *Fair funding for rural policing*. Retrieved from <https://www.nationalruralcrimenetwork.net/content/uploads/2016/07/Fair-Funding-for-Rural-Policing.pdf>
- NFU Mutual. (2020). *A challenging time for the countryside: Rural Crime Report 2020*. Retrieved from <https://www.nfumutual.co.uk/farming/ruralcrime/>
- Norfolk Constabulary. (2020). *Farms*. Retrieved from <https://www.norfolk.police.uk/advice/rural-crime/farms>
- Office for National Statistics (ONS). (2018). *Labour in the agriculture industry, UK: February 2018*. Retrieved from <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/labourintheagricultureindustry/2018-02-06>
- Rural Services Network. (2018). *Rural police receive less funding*. Retrieved from <https://www.rsonline.org.uk/rural-police-receive-less-funding>
- Smith, K. (2018). *Behavioural science and farm crime prevention decision making: understanding the behavioural culture of farmers in England and Wales* (Unpublished doctoral dissertation). Harper Adams University, Newport. Retrieved from <https://hau.repository.guildhe.ac.uk/id/eprint/17339/>
- Smith, K. & Byrne, R. (2017). Farm crime in England and Wales: A preliminary scoping study examining farmer attitudes. *International Journal of Rural Criminology*, 3(2), 191-223. <https://doi.org/10.18061/1811/81047>
- Statista. (2020). *Total number of farmers in the United Kingdom (UK) from 2011 to 2020*. Retrieved from <https://www.statista.com/statistics/319325/number-of-farmers-in-the-uk/#:~:text=Data%20on%20the%20total%20number,amount%20in%20the%20previous%20year>
- Suffolk Constabulary. (2020). *Farms*. Retrieved from <https://www.suffolk.police.uk/advice/rural-safety/farms>