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1 Shutting the gate: A preliminary study of farm crime prevention methods used by the 2 police in rural England and Wales

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7 Abstract

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

21 **Keywords:** farm, crime, prevention, police, community

23 Introduction

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

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

37 The main prevention methods for farm and rural crime are rooted within situational
38 crime prevention. This approach involves methods which involve the management or design
39 of the environment to make crime more difficult and risky or make crime less rewarding and
40 excusable (Clarke 1983; Clarke 1997). This approach aims to reduce the physical
41 opportunities for offending (e.g. via increased physical security measures; defensible space
42 architecture) and/or increase the likelihood of offenders being apprehended (e.g. via
43 increased surveillance; watch schemes) (Clarke 1980; Clarke 1983). Many police forces

44 produce materials which promote the use of situational crime prevention on farms and
45 encourage farmers to adopt a proactive approach towards preventing farm crime (e.g.
46 Lancashire Constabulary 2020; Norfolk Constabulary 2020; Suffolk Constabulary 2020).
47 Along with the crime prevention methods that can be implemented by farm owners, several
48 crime prevention initiatives have also been implemented by the police, and these can work in
49 conjunction with other methods. These initiatives include increased rural patrols, running
50 rural crime forums, ad-hoc crime prevention advice at beat surgeries and community events,
51 and the use of drones or closed-circuit television (CCTV) for surveillance.

52 Despite the information provided by the police and attempts to encourage a proactive
53 approach to preventing farm crime, the use of crime prevention methods is still low in rural
54 areas in the UK (Smith and Byrne, 2017). Smith and Byrne (2017) report that most farmers
55 only used standard padlocks and membership of local Farm Watch groups. The reasons for
56 farmers' lack of use of additional methods to help prevent crime on their farms may be
57 multifactorial. This may be due to farmers choosing to utilise cheaper or less time consuming
58 methods (Smith and Byrne, 2017) or not perceiving other methods as effective or necessary.
59 Alternately, lack of implementation could be due to a lack of confidence in the police which
60 may lead to their advice on crime prevention not being fully considered. Morris, Norris and
61 Dowell (2019) found that while 91% of victims had reported farm crimes to police, only half
62 of the farmers surveyed were satisfied with how the police responded to farm crime. Farmers
63 perceived the police as having limited resources, time and motivation to combat farm crime
64 and concerns about conviction rates and the likelihood of prosecution for offenders were also
65 evident (Smith 2018; Morris et al 2019).

66 Similar findings can be seen when the international literature is considered. For
67 example, Australian farmers commonly use crime prevention methods such as locking their
68 residence, gates and vehicles, keeping valuables and goods out of sight, counting livestock
69 regularly and maintaining sound fencing (Mulrooney 2021). The factors that restricted them
70 from implementing crime prevention methods chiefly related to the costs, difficulty of
71 implementation and lack of available information on the efficacy of crime prevention
72 methods (Mulrooney 2021). A lack of confidence in the police was also evident with
73 Mulrooney (2021) reporting mid-low levels of confidence in the police and Harkness and
74 Larkins (2019) finding that only just over half of farmers in rural Victoria in Australia were
75 satisfied with the standard of policing in their local area. Mixed findings in terms of reporting
76 crime were also evident with Mulrooney (2021) noting that only 42% of farmers would
77 always report farm crimes, though this did depend on the crime committed (Mulrooney
78 2021), while the majority of Victoria farmers (67.5%) would report any theft from their farms
79 to the police (Harkness and Larkins, 2019). This reluctance to report crimes was due to
80 concerns about police resourcing, capacity to solve the crime and barriers to investigating
81 crime in rural spaces, as well as concerns about retaliation from the offenders (Harkness and
82 Larkins 2019; Mulrooney 2021). These concerns have a number of parallels with those raised
83 by UK farmers (Smith 2018; Morris et al 2019).

84 Previous research (e.g. Smith and Byrne 2017; Morris et al 2019) has examined UK
85 farmers' attitudes towards farm crime and its prevention, but there has been little research to
86 date to the authors' knowledge examining the attitudes of the police towards farm crime
87 prevention. Smith (2018) interviewed police from four different forces considering questions
88 of strategy and definitions of rural crime, policing practice, why the police are addressing
89 rural crime and how the police are measuring the effectiveness of their strategies. Their study
90 highlighted that there were differences in the ways the forces approached and defined rural
91 crime. It also identified a number of key factors relating to the police's addressing of rural

92 crime including understanding the effect on farmers, the need for better liaison, the provision
93 of individualised crime prevention advice, improving partnership working, encouraging
94 farmers to take responsibility for protecting their farm and understanding rural criminals. It
95 highlighted that approaches such as vehicle marking, joint patrols and engagement with the
96 rural communities were used. Smith (2018) provided a useful initial study of the way police
97 are addressing rural crime and the approaches they use, however further study focusing on
98 the attitudes of police towards farm crime prevention is of value. It is important to identify
99 the views of the police as this may help to bridge the gap between the methods recommended
100 by police, and those used by farmers. Understanding this could help to develop strategies to
101 increase the use of crime prevention methods by the rural community. This study aims to
102 identify the farm crime prevention methods used by the police in rural England and Wales
103 and their views of the efficacy of these methods and the future of farm crime prevention.

104

105 **Methods**

106 ***Participant recruitment:*** Participants were required to have rural areas (e.g. farms
107 and countryside) within their force area, to follow the same legal framework and judicial
108 system and to have a team of rural crime officers. Based on these requirements, three
109 privately funded forces (the British Transport Police, the Civil Nuclear Constabulary and the
110 Ministry of Defence Police) were excluded as they do not investigate rural crime. The City
111 of London Police and the Metropolitan Police, were also excluded as rural areas in these
112 regions are virtually non-existent. Police forces in Scotland and Northern Ireland were also
113 excluded due to the differences in Scottish and Northern Irish laws and legal systems when
114 compared to Westminster law and the legal system of England and Wales. After exclusions,
115 38 police forces were contacted and were asked to complete an online survey about farm
116 crime prevention. The survey was promoted to these forces via emails, Twitter™ and
117 Facebook™. The study thus involved targeted web-based recruitment and utilised a self-
118 selected convenience sampling method due to it being left up to the respondents to choose
119 whether to participate in the survey. Participants were reassured that all responses were
120 voluntary, data remained anonymous, and all information collected was held securely.
121 Participants also provided informed consent. The study abided by the guidelines of the
122 Institutional Research Ethics Committee.

123

124 ***Questionnaire design:*** A mixed methods approach was utilised to survey police forces for
125 their views on farm crime prevention. The questionnaire had two sections and comprised 19
126 questions, including both open and closed-ended questions and Likert scale questions. The
127 first section collected demographic information such as location, force area, how many years
128 they had been a rural police officer and the main types of farm crime dealt within the force.
129 The second section collected information on farm crime prevention including the traditional
130 and community-based prevention methods and technological prevention methods used in the
131 force, the perceived efficacy of these methods, initiatives used by the force to combat farm
132 crime and whether they attended rural crime forums and worked with other organisations or
133 watch schemes. Information was also collected on who they felt should be responsible for
134 implementing prevention methods, whether they thought there was an economic resource
135 limitation in policing regarding farm crime prevention and what they thought the future of
136 farm crime prevention would be. Participants' agreement with five Likert style statements
137 (prevention is more important than enforcement, prevention methods need to improve, more
138 people need to utilise prevention methods, farm crime prevention methods have changed for

139 the better over the years, my force shares information with local farmers and groups about
 140 prevention methods) was also assessed.

141

142 **Data analysis:** Data were analysed using descriptive statistics (e.g. counts and percentages;
 143 summary of responses to open ended questions). All statistical analyses were performed
 144 using Microsoft Excel (Microsoft Inc. 2016).

145

146 **Results**

147 **Respondent profile:** Thirty-three responses were received from police forces across rural
 148 England and Wales (Table 1). Respondents had served between 14 months and 38 years
 149 (mean: 13.64 years) on the force and between 11 months and 36 years (mean: 6.89) as a rural
 150 police officer. The main types of farm crime dealt with in the force were livestock theft (n=8;
 151 24.24%), livestock destruction (n=8; 24.24%), illegal poaching (n=28; 84.85%) and sheep
 152 worrying (n=19; 57.58%). Respondents (n=20) also commented that they encountered farm
 153 crime such as farm machinery and equipment theft (e.g. electric fencing, tools, fuel, tractors,
 154 gates), poaching and fruit theft, livestock worrying, fly tipping, hare and deer coursing, speed
 155 enforcement and illegal off-roading, burglaries and criminal damage.

156

157 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%

158

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

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

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

186 A number of farm crime initiatives were run in the forces including rural crime
187 forums (n=26; 78.79%), community stalls or events (n=25; 75.76%), and watch schemes
188 (n=29; 87.88%). Respondents (n=12) also commented that other farm crime initiatives were
189 used. In addition to highlighting some traditional initiatives (such as patrolling and poaching
190 operations) and technological initiatives (such as property marking, installation of alarm and
191 prevention equipment, SmartWater schemes), they also commented that watch schemes such
192 as Farm Watch were used. They also highlighted the use of community updates (via
193 meetings, WhatsApp groups, rural crime updates, Farm Watch text message groups, alert
194 messaging systems, twitter, email alerts, seasonal magazines and weekly newsletters).
195 Liaison with key stakeholders and partners such as rural crime advisory groups and the
196 National Farmers Union were also mentioned as were inter-force and cross-border patrol
197 operations and meetings.

198 Nearly eighty percent (n=26; 78.79%) of respondents attend or had attended rural
199 crime forums and 21.21% (n=7) had not done so. Of all these respondents, including both
200 those who have attended rural crime forums and those who have not done so, 21.21% (n=7)
201 strongly agreed that rural crime forums are useful, 48.48% (n=16) agreed, 9.09% (n=3)
202 neither agreed nor disagreed, 21.21% (n=7) felt that this was not applicable to them and no
203 respondents disagreed nor strongly disagreed. A number of respondents (n=6) also provided
204 additional comments about rural crime forums. Respondents highlighted that these forums are
205 valuable because they help facilitate information sharing between police and farmers and
206 allow interactions with the local communities helping farmers to learn what the police are

207 doing to tackle issues and allowing the police to get their input and listen to their concerns.
 208 They also commented that these forums help strengthen a ‘one team’ approach by bringing a
 209 network of people and partner agencies together and help build good open communication
 210 networks between police and farmers. Nearly ninety-seven percent (n=32; 96.97%) of
 211 respondents stated that they work closely with other organisations (such as the National
 212 Farmers Union) or watch schemes (such as Neighbourhood Watch, Farm Watch, Rural
 213 Watch, Horse Watch) while 3.03% (n=1) stated that they did not work closely with other
 214 organisations or watch schemes.

215

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

227 Nearly eighty-two percent (n=27; 81.82%) of respondents thought that there was an
 228 economic resource limitation in the police regarding prevention of farm crimes, while
 229 18.18% (n=6) of respondents reported that they didn’t know. Of these respondents, 51.52%
 230 (n=17) felt that economic resource limitation affected their work negatively, 15.15% (n=5)
 231 felt that it affected their work positively, 6.06% (n=2) didn’t know, 6.06% (n=2) felt that it
 232 doesn’t impact their work, and 21.21% (n=7) felt that this was not applicable to them.
 233 Respondents (n=7) also provided comments that they have no budget and have to rely on
 234 donations and support from organisations such as the National Farmers Union. They also
 235 highlighted that limited resources impact on the reported crimes and losses, and that reduced
 236 police numbers means it is difficult for them to respond to crime and that this restricts the
 237 availability of crime prevention aids and proactive prevention work. They highlighted that
 238 they cannot carry out as many visits to victims as they would like, that funding is not always
 239 available for crime prevention initiatives and that they patrol large areas by themselves and
 240 need more assistance. They also commented that the cuts to policing have meant that they
 241 have struggled to provide the rural community with the support they need, however one
 242 stated that while the limitation impacts their work negatively they felt the onus should be on
 243 individuals.

244

245 **Views on prevention of farm crime:** Participants varied in their agreement with five
 246 statements relating to prevention of farm crime (Table 2).

247 Table 2: Agreement with five statements relating to prevention of farm crime (n=33 with the
 248 exception of the first statement where one respondent did not answer this question).

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)

249

250 When asked what they felt the future of farm crime prevention was, 48.48% (n=16)
251 felt that there would be more patrols, 63.64% (n=21) felt that there would be more CCTV,
252 75.76% (n=25) felt that there would be more crime prevention initiatives and 84.85% (n=28)
253 felt that there would be better physical security, e.g. padlocks and fencing. A number of
254 respondents (n=8) also provided additional comments about the future of farm crime
255 prevention. Respondents highlighted that farmers and police working together was needed,
256 more officers are needed to provide these service, that rural communities need to take some
257 responsibility and action to help prevent farm crime, that better use of technology such as
258 Global Positioning System (GPS) tagging of livestock and trackers for machinery and
259 vehicles, and increased use of Automatic Number Plate Recognition and drones was needed
260 and that the future involved all of the suggested options.

261

262 Discussion

263 This study aimed to identify the farm crime prevention methods used by the police in
264 rural England and Wales and their views of the efficacy of these methods and the future of
265 farm crime prevention. Across the respondents there was agreement evident that prevention is
266 more important than enforcement with various methods being utilised consistent with the
267 tenets of situational crime prevention (Clarke 1980; Clarke 1983). Traditional and
268 community-based farm crime prevention methods were most used by forces with various
269 methods being highlighted such as regular patrols, as well as drive-throughs of at risk areas
270 and proactive operations; prevention initiatives such as digging trenches and property
271 marking; and community education such as newsletters, crime reduction survey visits and
272 community alert systems. These findings are consistent with research by Smith (2018) who
273 also found approaches such as vehicle marking, joint patrols, and community engagement to
274 be used by the police when tackling farm crime. These traditional and community-based
275 methods were more widely utilised than technological farm crime prevention methods,
276 which, with the exception of CCTV and UV marking, were used by less than half of
277 respondents. The focus on traditional and community-based farm crime prevention methods
278 (e.g. regular patrols; prevention initiatives; community education) may be due to a resistance
279 by police forces to the implementation of new untried and untested methods or a desire to use
280 established approaches which have previously been successfully utilised. These findings are

281 similar to those seen in farmers who tended to also use crime prevention methods such as
282 standard padlocks and membership of local Farm Watch groups (Smith and Byrne, 2017).
283 Farmers' use of these methods has been suggested to be driven primarily by their choosing to
284 utilise convenient, cheaper or less time consuming methods (Smith and Byrne, 2017; Smith
285 2018) due to the barriers they face when implementing farm crime prevention methods.
286 Farmers face barriers such as inconvenience (e.g. a locked gate may help with crime
287 prevention but be inconvenient for general farm duties), cost (both the initial outlay as well as
288 the cost of updates and add-ons), time (e.g. the time required to ensure prevention methods
289 are working correctly), the difficulty of implementation (e.g. the complexity of the method)
290 and the lack of information available on the efficacy of the methods, all of which may make
291 farmers less likely to utilise a crime prevention method (Smith 2018; Mulrooney 2021).
292 Similar explanations may be evident in rural police forces who can be suggested to face very
293 similar barriers due to the monetary, time and resource constraints they operate under (e.g.
294 Smith 2018).

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

310 Another concern raised regarding the efficacy of farm crime prevention methods
311 related to limited police resources, with the majority of respondents highlighting that there
312 was an economic resource limitation in the police regarding prevention of farm crimes. Over
313 half of respondents felt that this economic resource limitation affected their work negatively.
314 Similar concerns were evident in Smith (2018) where it was highlighted that the issues of
315 underfunding, reducing budgets and increasing demand affected the police's response to farm
316 crime. The points raised by the respondents regarding lack of funding for crime prevention
317 initiatives, reduced police numbers and the challenges this poses to providing the rural
318 community with the necessary support are concerning. This is especially so as this coincides
319 with farmers' perceptions that the police have limited resources and time to combat farm
320 crime (Morris et al 2019). There are no easy solutions to funding issues but this does
321 highlight the difficulties resulting from a more metropolitan based funding model (National
322 Rural Crime Network 2016; Rural Services Network 2018) and that greater rural crime
323 funding is needed. One practical implication of this finding is that it may be beneficial for
324 forces to implement less costly or resource-intensive methods to try and prevent farm crime,
325 for example the use of volunteer rural Special Constables and watch scheme volunteers.
326 However, there are concerns with this approach such as that volunteers may be distrusted or
327 seen as informers by the farming community, and that farmers may not feel that the police are
328 showing a commitment to rural policing by using volunteers (Smith 2018).

329 The majority of respondents believed that the implementation of prevention methods
330 should primarily be on the individual and that more people need to utilise prevention
331 methods, though large numbers of respondents also believed that the onus for prevention
332 should be on the police and National Farmers Union. This finding coincides with earlier
333 research where interviews with the police highlighted their belief that farmers needed to take
334 greater responsibility for the prevention of farm crime (Smith 2018). It also, it is important to
335 note, coincides with the belief of many farmers that they need to take personal responsibility
336 for crime prevention efforts (Smith 2018; Mulrooney, 2021). One practical implication of this
337 finding is that, considering both police and farmers believe that farmers should be primarily
338 responsible for preventing crime on their farms, a focus by police on providing guidance and
339 information to enable farmers to effectively make decisions about what crime prevention
340 methods to use would be a valuable approach that is likely to be found useful by both parties.
341 The use of community initiatives can play an important part here in helping, and encouraging,
342 farmers to protect themselves. To that end it was pleasing to see that a joined up approach
343 between farmers, police forces and key stakeholders and partners such as the National
344 Farmers Union was highlighted as an important consideration and key to the successful
345 prevention of farm crime. The majority of respondents stated that their force shared
346 information with local farmers and groups about prevention methods and reported that their
347 force ran community initiatives such as rural crime forums, community events and watch
348 schemes. Most respondents felt that these rural crime forums were useful. The need for
349 greater partnership working was also highlighted when asked about the future of farm crime
350 prevention. The value of these community initiatives in sharing information between police
351 and farmers and developing open communication networks seems evident and it is good to
352 see their wide use by rural police forces. Further study into the uptake and engagement with
353 these events by farmers and the local community would be of value though, as would more
354 evidence-based study of the success of these initiatives in crime prevention.

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

367 While this is the first study, to the authors' knowledge, to investigate the farm crime
368 prevention methods used by the police in rural England and Wales and their views of the
369 efficacy of these methods and the future of farm crime prevention, it is important to note that
370 the study has several limitations. The sample size utilised in this study was limited with data
371 only being obtained from 33 respondents. While responses were received from police forces
372 across rural England and Wales, concerns could be raised about whether these data are
373 representative and whether they can be generalised across the UK. Further research using a
374 larger sample of police forces would be of value. Limitations were also evident due to the
375 closed-ended question approach used within parts of the study where respondents were
376 presented with a choice of options. Further qualitative research via face-to-face interviews
377 with representatives from police forces throughout rural England and Wales may be helpful

378 to increase our understanding of this topic and to expand on some of the comments noted in
379 the open-ended questions. However, despite these limitations, we believe that this study
380 makes a useful contribution to the literature and that the findings of this study suggest some
381 beneficial areas of future rural criminological research. Firstly, this study focused on
382 prevention of farm crime from the perspective of police forces. Future study combining this
383 with a study of farm crime prevention from the perspective of farmers would be valuable to
384 provide a more holistic overview of farm crime prevention and elucidate the overlaps
385 between farmer and police perspectives. Investigating similarities in the concerns and
386 perspectives of farmers and police, as well as the barriers they both face, is likely to be
387 beneficial when considering how to practically and effectively implement joint strategies to
388 prevent farm crime. Secondly, this study highlighted a number of policing approaches used to
389 combat farm crime, however further research into the reasons for the current approaches that
390 are used (e.g. efficacy, tradition, resistance to new untested techniques) and factors that affect
391 the utilisation of new technologies (e.g. resource limitations, lack of evidence base) would be
392 of value. Thirdly, building from this, research investigating the efficacy of both established
393 and newer approaches proposed to be useful in the prevention of farm crime would help
394 ensure that there is an evidence base available to police and farmers when determining what
395 farm crime prevention methods to use. Finally, considering the widespread use of rural crime
396 forums and community events and the belief evident in this study that these are useful, further
397 research into the success of these approaches in preventing farm crime would be of value.
398 Investigation of whether the farming community also believe these forums and community
399 events to be helpful as well as into methods that would encourage the local community to
400 engage with these events would also be beneficial.

401

402 **Conclusion**

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

410

411 **References**

- 412 Chalfin, A., Roman, J., Mears, D.P., and Scott, M.L. (2007). *The costs and benefits of*
413 *agricultural crime prevention: a primer for estimating the costs and benefits of the*
414 *Agricultural Crime Technology Information and Operations Network (ACTION)*.
415 Washington, D.C.: Urban Institute, Justice Policy Center.
- 416 Clarke, R.V. (1980). Situational crime prevention: Theory and practice. *British Journal of*
417 *Criminology*, 20, 136-147. <https://doi.org/10.1093/oxfordjournals.bjc.a047153>
- 418 Clarke, R.V. (1983). Situational crime prevention: Its theoretical basis and practical scope.
419 *Crime and Justice*, 4, 225-256. <https://doi.org/10.1086/449090>
- 420 Clarke, R.V.G. (Ed.). (1997). *Situational crime prevention* (pp. 225-256). Monsey, NY:
421 Criminal Justice Press.

422 Crown Prosecution Service (2017). *Wildlife, Rural and Heritage Crime*. Retrieved 15/01/22
423 from: <https://www.cps.gov.uk/crime-info/wildlife-rural-and-heritage-crime>

424 Department for Environment, Food & Rural Affairs (DEFRA) (2020). *Agriculture in the*
425 *United Kingdom 2019*. Retrieved 07/11/20 from:
426 <https://www.gov.uk/government/statistics/agriculture-in-the-united-kingdom-2019>.

427 Harkness, A., and Larkins, J. (2019). Farmer satisfaction with policing in rural Victoria,
428 Australia', *International Journal of Rural Criminology*, 5, 47–68.
429 <https://doi.org/10.18061/1811/88729>

430 Lancashire Constabulary (2020). *Farms, machinery and tools*. Retrieved 07/11/20 from:
431 [https://www.lancashire.police.uk/help-advice/protecting-rural-communities/farms-](https://www.lancashire.police.uk/help-advice/protecting-rural-communities/farms-machinery-and-tools/)
432 [machinery-and-tools/](https://www.lancashire.police.uk/help-advice/protecting-rural-communities/farms-machinery-and-tools/)

433 Morris, W., Norris, G., and Dowell, D. (2020). The business of farm crime: evaluating trust
434 in the police and reporting of offences. *Crime Prevention and Community Safety*, 22, 17-32.
435 <https://doi.org/10.1057/s41300-019-00083-5>

436 Mulrooney, K. J. D. (2021). *The NSW Farm Crime Survey 2020*. The Centre for Rural
437 Criminology, University of New England. Retrieved 15/01/22 from
438 <https://spark.adobe.com/page/zsV05pknxX17N/>

439 National Rural Crime Network (2016). *Fair funding for rural policing*. Retrieved 22/12/20
440 from: [https://www.nationalruralcrimenetwork.net/content/uploads/2016/07/Fair-Funding-for-](https://www.nationalruralcrimenetwork.net/content/uploads/2016/07/Fair-Funding-for-Rural-Policing.pdf)
441 [Rural-Policing.pdf](https://www.nationalruralcrimenetwork.net/content/uploads/2016/07/Fair-Funding-for-Rural-Policing.pdf)

442 NFU Mutual (2020). *A challenging time for the countryside: Rural Crime Report 2020*.
443 Retrieved 07/11/20 from: <https://www.nfumutual.co.uk/farming/ruralcrime/>.

444 Norfolk Constabulary (2020). *Farms*. Retrieved 07/11/20 from:
445 <https://www.norfolk.police.uk/advice/rural-crime/farms>

446 Office for National Statistics (ONS) (2018). *Labour in the agriculture industry, UK:*
447 *February 2018*. Retrieved 07/11/20 from:
448 [https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internation](https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/labourintheagricultureindustry/2018-02-06)
449 [almigration/articles/labourintheagricultureindustry/2018-02-06](https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/labourintheagricultureindustry/2018-02-06).

450 Rural Services Network (2018). *Rural police receive less funding*. Retrieved 22/12/20 from:
451 <https://www.rsnonline.org.uk/rural-police-receive-less-funding>

452 Smith, K. (2018). *Behavioural science and farm crime prevention decision making:*
453 *understanding the behavioural culture of farmers in England and Wales* (Unpublished
454 doctoral dissertation). Harper Adams University: Newport. Retrieved 11/01/22 from:
455 <https://hau.repository.guildhe.ac.uk/id/eprint/17339/>

456 Smith, K., and Byrne, R. (2017). Farm Crime in England and Wales: A Preliminary Scoping
457 Study Examining Farmer Attitudes. *International Journal of Rural Criminology*, 3, 191-223.
458 <https://doi.org/10.18061/1811/81047>

459 Statista (2020). *Total number of farmers in the United Kingdom (UK) from 2011 to 2020*.
460 Retrieved 07/11/20 from: [https://www.statista.com/statistics/319325/number-of-farmers-in-](https://www.statista.com/statistics/319325/number-of-farmers-in-the-uk/#:~:text=Data%20on%20the%20total%20number,amount%20in%20the%20previous%20year)
461 [the-](https://www.statista.com/statistics/319325/number-of-farmers-in-the-uk/#:~:text=Data%20on%20the%20total%20number,amount%20in%20the%20previous%20year)
462 [uk/#:~:text=Data%20on%20the%20total%20number,amount%20in%20the%20previous%20](https://www.statista.com/statistics/319325/number-of-farmers-in-the-uk/#:~:text=Data%20on%20the%20total%20number,amount%20in%20the%20previous%20year)
463 [year.](https://www.statista.com/statistics/319325/number-of-farmers-in-the-uk/#:~:text=Data%20on%20the%20total%20number,amount%20in%20the%20previous%20year)

464 Suffolk Constabulary (2020). *Farms*. Retrieved 07/11/20 from:
465 <https://www.suffolk.police.uk/advice/rural-safety/farms>