



No. 266

Results from the 2001–2002 National Farm Crime Survey

Marissa McCall

Farm crime has a significant effect on the farming industry and community as a whole, especially in times of hardship such as drought. In order to understand how significant farm crime is in Australia, the Australian Institute of Criminology is conducting three annual surveys on farm crime. This paper summarises the results from the second National Farm Crime Survey (NFCS). A total of 1309 broadacre and dairy farms were surveyed about their experiences of crime between 1 July 2001 and 30 June 2002. Overall, 13 per cent of these farms experienced crime, a slight decrease from the comparable number that experienced farm crime in the first survey. In financial terms, farm crime was estimated to cost broadacre and dairy farmers \$72 million in 2001–2002.

The most common type of farm crime experienced was livestock theft (6 per cent of all farms) followed by theft (5 per cent) and vandalism/damage (3 per cent). Moreover, victims from particular types of farms experienced different types of crime. Large and remote farms more commonly experienced higher levels of livestock theft whereas smaller and highly accessible farms more commonly experienced higher levels of damage/vandalism. The majority of farms were only victimised once during the survey period. However, of the farms that were victimised, 28 per cent were repeat victims. Only half of all crime experienced on farms was reported to the police. Based on the results of the survey, the next NFCS will expand its scope to measure the effectiveness of crime prevention strategies on farms.

Toni Makkai
Acting Director

Recent research has shown that a significant proportion of farms experience crime (Barclay et al 2001; Carcach 2002; & Laird Granville & Montgomery 1999). However, it is not just the farmers who are victims of these crimes that are directly affected. The entire rural community and the wider agricultural industry feels the effects of farm crime. Furthermore, the impact of crime on farmers can be intensified when combined with other uncontrollable factors such as drought. This can lead to seasonal variations in crime. For example, criminals may target farm produce during a drought whereas livestock may be targeted after a drought due to inflating prices (Brown 2003; Jarred 2002; & Stephenson 2003).

The Australian Institute of Criminology (AIC) in collaboration with the Australian Bureau of Agricultural and Resource Economics (ABARE) conducted the inaugural National Farm Crime Survey (NFCS) in 2000–2001 (funded by National Crime Prevention Program). The survey provided the first nationwide data on broadacre and dairy farm crime (Carcach 2002). This study revealed that 27 per cent of broadacre and dairy farms had been the victims of some form of property crime during the twelve-month survey period. Whereas the 2000–2001 survey measured the prevalence of dumping of rubbish on farm land, trespassing on farm land and unauthorised hunting or fishing on farm land, the 2001–2002 survey did not measure these crimes. For comparison purposes between the surveys, exclusion of the above crimes reduces the prevalence rate of the 2000–2001 survey to 15 per cent.

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Australian Institute
of Criminology
GPO Box 2944
Canberra ACT 2601
Australia

Tel: 02 6260 9221

Fax: 02 6260 9201

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This paper discusses the main results from the second of three national surveys conducted annually by the AIC on farm crime in the broadacre and dairy industry. Farm crime (for the purpose of the survey) is defined as crimes against property involved in the agricultural industry. This can include theft of crops, livestock, equipment, farm materials, tools and spare parts, farm vehicles and machinery, and vandalism and arson of farm property. The survey primarily focused on the prevalence, incidence and reporting of crime against Australian farms.

About the 2001–2002 National Farm Crime Survey

The survey was conducted as a supplement to the Australian Agricultural and Grazing Industries Survey (AAGIS) and the Australian Dairy Industry Survey (ADIS). The period covered by the survey was from 1 July 2001 to 30 June 2002. The main focus of the survey was crime occurring on property that belonged to the farm or was directly related to its operation. This included incidents involving property used for work in the main activity of the farm as well as off-farm crimes that impacted on the farm's operation.

Target population

The target population comprised 83,822 agricultural establishments (75 per cent of all farms in Australia) from the broadacre and dairy industries with an estimated value from agricultural operations of \$22,500 or more per year. The sample was selected from a framework drawn from the Business Register, maintained by the Australian Bureau of Statistics (ABS), that includes agricultural establishments classified by size and major industry. Industry definitions were based on the Australian and New Zealand Standard Industrial Classification (ANZSIC)¹.

Response rate

The response rate for the parent surveys was 73 per cent, giving a sample of 1,407 properties, or 1.7 per cent of the total number of

farms in the scope of the main surveys (that is, AAGIS and ADIS). Ninety-three per cent of these farms responded to the crime supplement, resulting in a final sample size of 1,309 farms. The distribution of the sample is outlined in Table 1 below.

Methodology

All interviews were carried out face-to-face, with the survey schedule answered by the person deemed to be the operator or manager of the farm. The survey sought information on the farms' experiences of the following types

Table 1: *Distribution of the population and sample for the 2001–2002 National Farm Crime Survey*

	Population	Sample	Sampling fraction (%)
New South Wales	26,818	337	1.3
Victoria	23,402	275	1.2
Queensland	13,258	264	2.0
South Australia	9,132	174	1.9
Western Australia	9,204	158	1.7
Tasmania	1,864	78	4.2
Northern Territory	144	23	16.0
Australia	83,822	1,309	1.6

Source: AIC National Farm Crime Survey 2001–2002 [Computer file].

of crimes between 1 July 2001 and 30 June 2002:

- livestock theft or rustling
- theft of farm vehicles
- theft of machinery and equipment
- theft of materials
- farm produce
- theft of fuel
- theft of small tools or spare parts
- damage/vandalism (including arson) to dwellings, vehicles, machinery, tools, spare parts, materials, produce or goods.

The survey results are based on weighted data. The farm weights were calculated to the known target population (as supplied by ABS) by state. The weights also incorporated physical variables that took into account the region's main agricultural activities as closely as possible to that of the target population. The survey weights accounted for the effects of sample selection and non-response to the survey.

Changes from the previous survey

The 2001–2002 NFCS contained several changes to the first survey. Due to changes in the questions in the previous survey, many of the findings from the 2001–2002 survey cannot be directly compared. Apart from the greater number of crimes measured, the 2000–2001 survey asked questions on the seriousness of farm crime and the reasons for reporting crime to the police. The 2001–2002 survey asked questions on the number of incidences of farm crime in the past year; who was thought responsible for the crime;

location of the crime; the prevalence of the branding of livestock; and whether farmers have insurance.

Socio-demographic factors were used to measure whether different types of broadacre and dairy farms experienced crime. These factors included farm size, farm income, farm capital, farm debt, number of farm employees, number of sheep and cattle, and farm remoteness. Remoteness was measured using the Accessibility/Remoteness Index of Australia (ARIA). The index combines road distance to population centres of various sizes as a measure of service access. For example, farms that have the least access to service centres are classified as very remote, whereas farms with the most access to service centres are classified as highly accessible (see Commonwealth Department of Health and Aged Care, 2001 for further discussion on ARIA). The ARIA values are grouped into five categories of remoteness outlined below.

Highly Accessible

(ARIA score 0 - 1.84): –relatively unrestricted accessibility to a wide range of goods and services and opportunities for social interaction.

Accessible

(ARIA score >1.84 - 3.51): –some restrictions to accessibility of some goods, services and opportunities for social interaction.

Moderately Accessible

(ARIA score >3.51 - 5.80): –significantly restricted accessibility of goods, services and opportunities for social interaction.

Remote

(ARIA score >5.80 - 9.08): –very restricted accessibility of goods, services and opportunities for social interaction.

Very Remote

(ARIA score >9.08 - 12): –very little accessibility of goods, services and opportunities for social interaction.

Table 2: Comparison of selected characteristics between those farms who experienced crime and those who did not, 2000–2001 to 2001–2002

	2000–2001		2001–2002	
	Crime (N=213) Average	Crime (N=1251) Average	Crime (N=207) Average	Crime (N=1102) Average
Farm debt (\$)	215,201*	181,276	238,377*	178,302
Farm cash income (\$)	66,987	70,908	120,365	98,516
Farm business profit (\$)	4,374	8,442	60,478	43,938
Farm capital (\$)	1,578,516***	1,362,133	2,051,789***	1,484,892
Farm area (ha)	3,551	4,316	7,930	3,741
Farm Remoteness (ARIA)	3.39	3.49	3.7	3.42
Number of Labour on farm	113**	105	115**	103
Number of cattle	241	249	322	235
Number of sheep	1,892***	1,249	2,307***	1,237

* p>.05, **p<.01, ***p<.001

Source: AIC National Farm Crime Survey 2001–2002 [Computer file].

Types of farms experiencing crime

Generally, the broadacre and dairy farms more likely to experience farm crime were those with higher levels of debt, farm capital, employees working on the farm, and a large quantity of sheep (Table 2). While larger and more remote farms also experienced farm crime more frequently, these factors were not statistically significant.

Prevalence of crime on farms

Overall, 13 in 100 broadacre and dairy farms across Australia experienced some type of crime in 2001–2002 (Figure 1). This is a decrease in prevalence of comparable types of farm crime measured in the 2000–2001 survey (15 per cent), however this decrease is not statistically significant. The most common crime was livestock theft (6 per cent of all farms), a decrease of 2 per cent from last year. Theft of farm vehicles, farm machinery, equipment materials and farm produce, tools and spare parts ('other theft') occurred on 5 per cent of all farms and damage/vandalism occurred in 3 out of 100 farms. Both figures are similar to that of the 2000–2001 survey.

In particular, of the broadacre and dairy farms that experienced crime, the variables of farm size and remoteness were analysed (Table 3).

This was done in order to determine whether the physical variables of farm location and size were related to certain aspects of farm crime. The majority (51 per cent) of crime occurred on accessible farms. In particular highly accessible broadacre and dairy farms experienced higher levels of damage/vandalism (37 per cent) whereas very remote broadacre and dairy farms experienced higher levels of theft of livestock (61 per cent). The pattern for other theft and damage/vandalism was more like a 'U' shape with the highest levels experienced by either highly accessible or very remote areas. This finding supports previous research conducted on accessibility and property crime in regional Australia (Carcach, 2000).

The prevalence of crime experienced varied by farm size. Broadacre and dairy farms that are between 500 and 5000 hectares were most likely to experience crime (48 per cent). Smaller farms (less than 500 hectares) were more likely to experience damage/vandalism (29 per cent), whereas larger farms (more than 15,000 hectares) were more likely to experience other types of theft (62 per cent) and livestock theft (47 per cent).

Incidence of farm crime

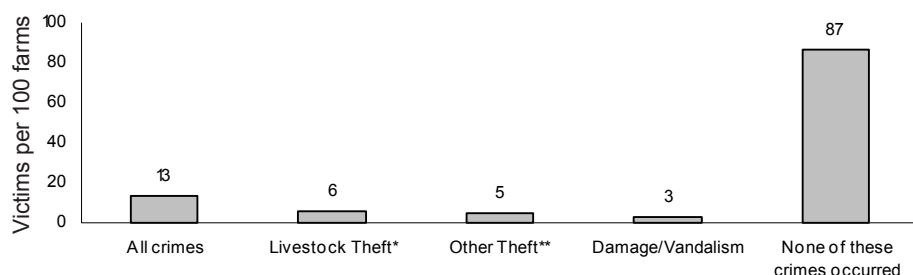
The majority of broadacre and dairy farms, that experienced

crime in the last 12 months, did so only once. However, of the broadacre and dairy farms that did experience crime, 28 per cent were repeat victims. Repeat victimisation was highest on broadacre and dairy farms in very remote areas (59 per cent) and/or on large farms (60 per cent). The crimes that broadacre and dairy farms were a victim of more than once were livestock theft (37 per cent experiencing this crime at least twice) followed by other theft (17 per cent) and damage/vandalism (16 per cent). The highest levels of repeat victimisation for livestock theft were in remote areas (49 per cent). Larger broadacre and dairy farms were also more likely to suffer repeat victimisation of livestock theft and vandalism (52 per cent respectively) whereas the most common crime experienced more than once by victims on smaller broadacre and dairy farms was livestock theft (17 per cent).

What was stolen

Livestock was the most common item stolen from dairy and broadacre farms (sheep 33 per cent and cattle 14 per cent), followed by fuel and small parts and tools and farm machinery and equipment (Figure 2). In total there were 186,777 livestock stolen from broadacre and dairy farms in

Figure 1: *Victimisation against Australian broadacre and dairy farms*



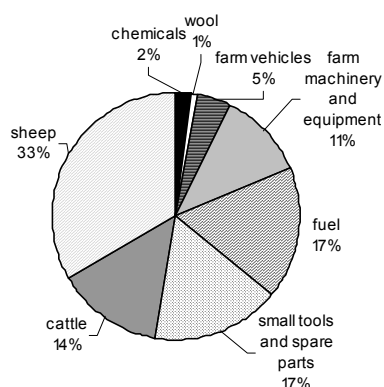
*Livestock theft includes livestock not sure if stolen or missing. ** (includes theft of farm vehicles, farm machinery, equipment, materials and farm produce, fuel, tools and spare parts)
Source: AIC National Farm Crime Survey 2001–2002 [Computer file].

Australia (12,513 cattle and 174,264 sheep)—an average of 56 per incident. This equates to approximately 1 head of cattle from 1000 and almost 2 out of every 1000 sheep that were stolen in Australia last year (ABS, 2003). Large (47 per cent) and/or very remote (62 per cent) broadacre and dairy farms had the largest proportion of cattle stolen. The highest proportion of sheep were stolen from broadacre and dairy farms that were either in accessible locations (39 per cent) and or between 500 and 5000 hectares in area (44 per cent). Of all livestock stolen, almost all (97 per cent) of the cattle were branded, tagged or identified in some way compared to 85 per cent of sheep.

Location of crime

The survey asked farmers where on the farm the crime was thought to have occurred.² The highest

Figure 2: *The percentage of the particular items stolen (N=163)*



Source: AIC National Farm Crime Survey 2001–2002 [Computer file].

proportion of farm crime was reported as having occurred 'within sight of public roads' (39 per cent), followed by 'around the survey farms residences and sheds' (37 per cent). Crime was thought least likely to occur 'within sight of the farm residences' (18 per cent) or 'within sight of sheds or residences from other farms' (9 per cent). This supports Barclay et al's (2001) research, which found that the lack of visibility of farm buildings to the residence was associated with crime.

Particular types of farm crime were more likely to occur in similar locations. For example:

- Theft of farm machinery and equipment (55 per cent) and livestock (53 per cent) was thought to occur within sight of public roads.
- Theft of materials, damage/vandalism (70 per cent each) and theft of farm machinery and equipment (60 per cent) was most likely to occur around the farm residence/s.
- Theft of farm produce was believed to have happened 'within sight of the farm and residences' (60 per cent).

The location of the crime varied by farm accessibility and farm size. Crime that was committed on highly accessible broadacre and dairy farms was most often thought to take place within sight of public roads (60 per cent). The larger or more remote the broadacre and dairy farm was, the more likely the crime was thought to have been committed away from the sight of the farm or public roads. In contrast, crime was likely to have occurred within sight of public roads or the farm sheds and

residences on smaller broadacre and dairy farms.

Responsibility for the crime

The majority of victims of farm crime had no idea who the offender might be (37 per cent). The next most common responses were that the perpetrator/s were likely to be residents from local towns (19 per cent), followed by other farmers (13 per cent). Organised criminals (4 per cent) and survey farm employees (1 per cent) were the least likely to be considered responsible for any crime.

The person/s considered responsible for perpetrating the crime varied according to type of crime, for example:

- Other farmers were most often thought responsible for theft of farm machinery and equipment and livestock theft (21 per cent each).
- Residents from local towns were thought to have been responsible for crimes such as theft of fuel and theft of materials (46 per cent each).
- Itinerant workers/travellers were most often thought responsible for the theft of farm vehicles (26 per cent).
- Theft of small tools or spare parts (68 per cent) was the crime about which victims were least likely to have any idea who may have been responsible.

Victims on broadacre and dairy farms in highly accessible areas most commonly thought itinerant workers and travellers were likely to be responsible (28 per cent) for crime on their properties. By comparison, farmers in very remote areas were more likely to attribute blame to residents from local towns (52 per cent). Respondents from smaller farms were more likely to have a view about who committed the crime (71 per cent) than those did from larger farms. Those on larger farms more commonly believed that either residents from local towns (25 per cent) or employees' of/people from other farms (18 per cent) were responsible for crime.

Table 3: Percentage of people experiencing livestock theft, other theft and damage/vandalism by level of remoteness and farm size

		Livestock Theft (N=98) (%)	All other (theft N=104) (%)	Damage/ vandalism (N=31) (%)
Remoteness	Highly Accessible	44	50	37
	Accessible	42	37	25
	Moderately Accessible	52	38	12
	Remote	59	40	3
	Very Remote	61	43	32
Farm Size	<500 ha	37	48	29
	500-4999ha	56	27	20
	5000-14999ha	47	54	0
	>15000ha	47	62	17

Note: Livestock theft includes 'unsure if stolen or missing'. All other theft includes theft of farm vehicles, farm machinery, equipment, materials, farm produce, fuel, tools and spare parts. Row percentages may not add up to 100 as more than one type of crime could have been experienced by each victim.

Source: AIC National Farm Crime Survey 2001–2002 [Computer file].

Insurance coverage of losses

On average, only 18 per cent of victims of farm crime were insured. This figure is low possibly because in most cases general livestock (ie. not stud animals) can not be insured against theft. However, the majority of those victims that were insured made a claim to their insurance company (82 per cent). The most common crimes that victims were insured for were theft of farm vehicles (64 per cent), theft of materials (54 per cent) and theft of farm produce (47 per cent).

Reporting of crime to the police

Only half (50 per cent) of victims of farm crime reported the crime to police—a very similar rate to that of the 2000–2001 National Farm Crime Survey and Barclay et al. (2001). Theft of farm vehicles (82 per cent) and theft of farm machinery and equipment (73 per cent) were the incidents most likely to be reported whereas theft of fuel (29 per cent) and livestock (51 per cent) were the crimes that were least likely to be reported to police. Fuel and livestock were also the least likely to be insured.

As shown in Figure 3, the most common reason for victims of any type of farm crime not reporting it to police was that they believed that the 'police could do nothing/lack of proof' (37 per cent), followed by 'the incident not being serious enough' (17 per

cent). 'Police could do nothing/lack of proof' was also the most frequent reason for not reporting livestock theft (60 per cent), damage/vandalism (67 per cent), theft of farm machinery and equipment (47 per cent) and theft of small tools or spare parts (47 per cent). The crime 'not being serious enough' was the most common reason for theft of materials (86 per cent), fuel (45 per cent) and small tools and spare parts (44 per cent).

The rate of reporting crime to the police was relatively similar regardless of remoteness and size of the farm. In general, reporting rates of livestock theft increased as remoteness increased.

Financial impact of crime for farmers

The total loss to farms as a result of crime in Australia in 2001–2002 was \$72 million, an increase of \$9 million (13 per cent) over the 2000–2001 figure. Sixty-eight per cent of this figure is the estimated value of loss or damage to the farm and 32 per cent is the loss of income to the farm.

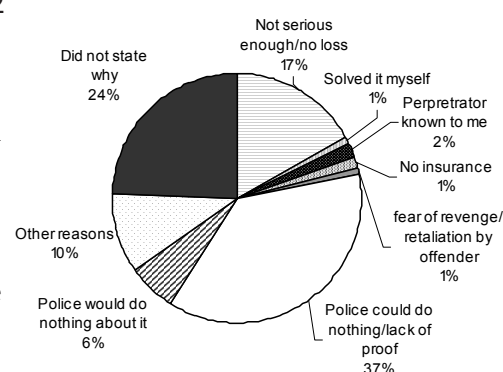
The average damage/loss for each farm was \$3,922, an increase of \$2,576 per farm (66 per cent). Damage/vandalism to dwellings recorded the highest value of damage/loss at \$25 million (51 per cent) followed by livestock theft at \$16 million (32 per cent). The average value of damage or loss was highest for the theft of farm

vehicles (\$13,076) followed by damage/vandalism (\$11,589) and livestock theft (\$4,993). Furthermore, loss of livestock cost more on average for very remote farms (\$7,865) than highly accessible farms (\$242). The average loss or damage to livestock increased by 38 per cent since the previous survey.

The total net cost of repair or replacement due to farm crime was \$25 million, an average of \$2,235 per farm. Repairs for damage/vandalism to dwellings cost farms the most at \$10 million (average \$4,783 per farm) followed by livestock theft at \$9 million (average \$2,531 per farm). The average net cost to replace livestock theft was once again highest for very remote farms (\$5,192).

The estimated total loss of income for farmers due to crime in 2001–2002 was \$23 million, an average of \$1,043 per farm. The total loss of income to the farm decreased slightly from \$1,279 from 2000–2001. Livestock theft had the highest average loss of income for farmers, totalling \$18 million (79 per cent). This amounts to an average of \$5,104 per farm, an increase of 22 per cent from the previous survey year. Very remote farms had, on average, the highest income loss for livestock theft (\$7,019) and damage/vandalism (\$2,360).

Figure 3: Reasons for not reporting any type of farm crime to police (N=93)



Note: Excludes cases where more than one reason for not reporting to police was given (N=21).

Source: AIC National Farm Crime Survey 2001–2002 [Computer file].

Conclusion

Overall, the results from the 2001–2002 NFCS show that crime on dairy and broadacre farms has decreased slightly but is costing farmers more financially. The results also show that the rate of repeat victimisation experienced by farmers is quite high (28 per cent). This is likely to indicate that the same offenders are targeting the same properties and/or the crime prevention strategies being employed by farms and police are not effective. Furthermore, the rate in which farms report crime to the police is unsettling, with only half all farm crimes experienced being reported. The lack of reporting is likely to make the police and the farming community under-estimate the extent of the problem.

The experience of crime varied by farm accessibility and farm size. This is consistent with the findings of previous research (Barclay et al., 2001; Carcach, 2000; Donnermeyer & Jobes, 2000; Laird et al., 1999). There are some possible reasons why different types of crime occurs on different types of broadacre and dairy farms:

- Small and/or highly accessible broadacre and dairy farms were more likely to experience vandalism/damage. This could be due to reasons such as the greater visibility of farms from highly accessible public roads and a larger number of people from urban regions travelling within close proximity to farms. A higher transient population in accessible areas may also have less emotional attachment to their location (Jobes & Donnermeyer 2000). Hence vandalism may be a symptom of elevated levels of social disruption due to high resident mobility.
- Large and/or highly accessible broadacre or dairy farms had a higher prevalence of livestock theft. Previous research in New South Wales has also shown that the prevalence of stock theft is related to population sparsity (Jobes & Donnermeyer 2000). Furthermore, large broadacre and dairy farms in remote areas are not likely to be close to public roads or neighbouring properties, making it difficult for perpetrators to be seen. Larger broadacre and dairy farms are also more likely to have

greater levels of capital, produce and livestock, thus being creating additional incentives for thieves.

Further research should focus on what needs to be done to prevent crime from occurring on farms. First and foremost, the third NFCS will survey more farms, enabling access to a greater sample size and provide better opportunity for statistical analysis. The survey will also have additional questions probing crime prevention strategies currently used by farmers and crime prevention officers and police in rural and regional Australia. These will measure: current crime prevention practices used; how effective the crime prevention strategies are; and where farmers get information from about crime prevention. By measuring the effectiveness of these strategies and tools the final survey will substantially strengthen the existing work being done to address farm crime in Australia.

Notes

- 1 The broadacre industries in the Australian Agricultural and Grazing Industries Survey (AAGIS) are: wheat and other crops industry (ANZSIC class 0121), mixed livestock-crops industry (ANZSIC class 0122), sheep industry (ANZSIC class 0124), beef industry (ANZSIC class 0125), and sheep-beef industry (ANZSIC class 0123). The Australian Dairy Industry Survey (ADIS) includes the dairy industry (ANZSIC class 0130).
- 2 Farmers indicated the location for each incident of crime they had experienced, therefore the totals may not add up to 100.

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Marissa McCall is a Research Assistant at the Australian Institute of Criminology.



General Editor, *Trends and Issues in Crime and Criminal Justice* series:
Dr Toni Makkai, Acting Director
Australian Institute of Criminology
GPO Box 2944
Canberra ACT 2601 Australia

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