A Review of the Literature on Agricultural Crime

Report to the Criminology Research Council

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A Review of the Literature on Agricultural Crime

Introduction

1.1 INTRODUCTION

This review of the literature on agricultural crime is conducted against a backdrop of rising public concern about the problem of crime on farms in Australia. The current strength of livestock prices has led to a record number of reported livestock thefts across the country. In Queensland alone, statewide complaints have trebled in recent months and the value of missing cattle is estimated at $2.5 million (Hansen, 2001). Australia wide, there has been considerable public and political debate over how best to deal with the problem.

It is interesting to note that crime on farms, in particular cattle rustling, is an age-old problem in this country. Convicts were among the earliest settlers to the new colony and played a vital role in the opening up and settlement of inland Australia. Much of our history and folklore was staged in the bush and centres on the development of a pastoral industry that was to become the economic backbone of the new nation. Life on the land was difficult in a harsh and unfamiliar environment. With light fingering being common in the pasts of many of the new settlers, thefts of sheep, cattle, and horses became endemic, highly lucrative and a shortcut to wealth (McQuilton, 1993). From the jolly swagman stuffing a

jumbuck in his tucker-bag to the bushranger Captain Starlight, who drove 1000 stolen cattle from central Queensland to Adelaide over what was thought to be impassable country, crime on farms has been an integral part of Australia's history and folklore (McCarthy, 1987).

Now more than a century later, little has changed. The problem of crime on farms appears to be widespread, and can often involve serious financial and personal losses for farmers. The isolation of many rural areas, the ease of access to most properties through improved road systems and modern vehicles, the increasing value of chemicals, machinery and equipment on farms, and the portable nature of livestock and equipment means farms are an inviting target for thieves, vandals and other criminals.

The impact of farm crime occurs on three levels in society. Firstly, at an individual level, farmers pay for the loss of the theft of equipment or livestock through high replacement costs, lost work time and higher insurance premiums. Recent reports reveal that some individual producers have incurred stock losses of up to $70,000 in a single incident of theft. Few operations can withstand such losses, particularly in the wake of several years of drought and low commodity prices. Not only do producers incur financial losses; there are the ongoing ramifications of the loss of future breeding herds and bloodlines. Some farmers have sold up, while others have traded out of stock. Many have suffered significant psychological distress as victims of crime. Others have blamed themselves and lost faith in their ability to manage a property (Barclay, Donnermeyer, Doyle and Talary, 2001).

Secondly, agricultural crime threatens and undermines the cohesiveness of rural communities. When a suspected offender is accused who is a neighbour or someone else within a district, rifts occur in the community, which can isolate victims of crime. Thirdly, farm crime can impact at a national level. With Australia so reliant upon an export industry, the increased risk of stolen stock with fraudulent health status papers entering the marketing and processing chain poses an unacceptable risk to Australia's trading regimes (NSW Farmers, 1999). While

governments and farmers are rigorous in their complicity with regulations regarding the health standards to safeguard the spread of stock diseases, such as foot and mouth disease, all of this is to no avail while livestock theft persists (Barclay *et al.*, 2001).

The exact nature and extent of agricultural crime on Australian farms is obscure. Until recently, agricultural crimes have not been separately recorded in official crime data. In addition, the actual extent of agricultural crime is not reflected in recorded crime data due to the fact that many incidents are not reported to police.

There is a need to gather information on this vitally important issue to seek an understanding of the extent and impact of crime on the agricultural industries. It is also necessary to identify those factors that may affect the commission of crime or assist in the prevention of crime.

1.2 SUMMARY OF RESEARCH PRIORITIES

The purpose of the review was to conduct a comprehensive search of the Australian and international literature on agricultural crime. The searches were conducted using the World Wide Web, the University of New England's Library and all electronic databases available. Possible sources of unpublished material were sought through direct contact with law enforcement agencies, farmer organisations, and agricultural extension services or government departments of agriculture. The review also includes a summary of the main findings of the study of farm crime amongst farmers across rural New South Wales recently conducted by the author.

In order to understand the complexity of agricultural crime and the context in which this crime occurs, additional information on the issues surrounding agricultural crime is provided. This includes an overview of the types of crime that can impact upon farm businesses and farm families. Particular attention was

devoted to the theft of livestock, as this type of crime is most complex and has been identified by New South Wales Police as the most significant rural crime. The report provides a summary of the differences in legislation between the states regarding the identification and movement of livestock which impacts on the policing of stolen stock across the country. The report also presents a summary of the differences between the various states in the criminal law regarding livestock thefts and in the recording of criminal incidents which has an impact upon the data relating to rural crime.

The review draws together information on the many and diverse issues relating to agricultural crime. The information provides an overview of a little understood crime that can have serious personal and financial losses for farmers.

1.3 STRUCTURE OF THE REPORT

Chapter two of this report provides an overview of agriculture in Australia highlighting those issues that impact upon the commission of agricultural crime. The various types of crime experienced on farms are also defined. In Chapter three, the literature of property crime on farms in Australia and other countries is reviewed. The findings are summarised, some salient issues are identified, and some suggestions for future research are made.

A Review of the Literature on Agricultural Crime

Background

2.1 INTRODUCTION

Agricultural crime is a unique and complex phenomenon. To provide an understanding of this complexity and the context in which this crime occurs, it is necessary to appreciate the size of the industry to be policed. The purpose of this chapter is to provide a background reference as to the nature of the agricultural industry in Australia, and the types of crime that can impact upon farm businesses and farm families. The chapter also reviews the variations in legislation between the various states regarding the identification and movement of livestock that impact on the policing of stolen stock.

2.2 AGRICULTURE IN AUSTRALIA

The gross value of the agricultural commodities produced in Australia in 1999-2000 was $29.9 billion (ABS, 2001a). This value has been relatively stable for the past five years largely due to the increased diversity in agriculture. Exports of oilseeds, cotton, wine, horticultural products, sugar, dairy, lamb and live cattle have grown over the past decade (ABS, 2001a). Australia exports

around 60 to 70% of its agricultural production each year. Export earnings in 2000-01 are expected to be $27.5 billion (ABARE, 2001).

The number of agricultural operations Australia-wide in 2000 was 146,400 (ABS, 2001b). Figure 2.1 displays the number of farms across the States and Territories. The average sized property ranges between 100 and 499 hectares. These 48,500 holdings comprise 33% of all farms in Australia and consist of mostly beef cattle, sheep, grain and dairy operations. Holdings of less than 49 hectares account for 21% (31,200) of all farms and produce cattle, grapes, fruit, vegetable and plant nurseries. Farm holdings of over 2500 hectares account for 14,100 (10%) of all farms and are mostly confined to large scale grazing and cropping operations.

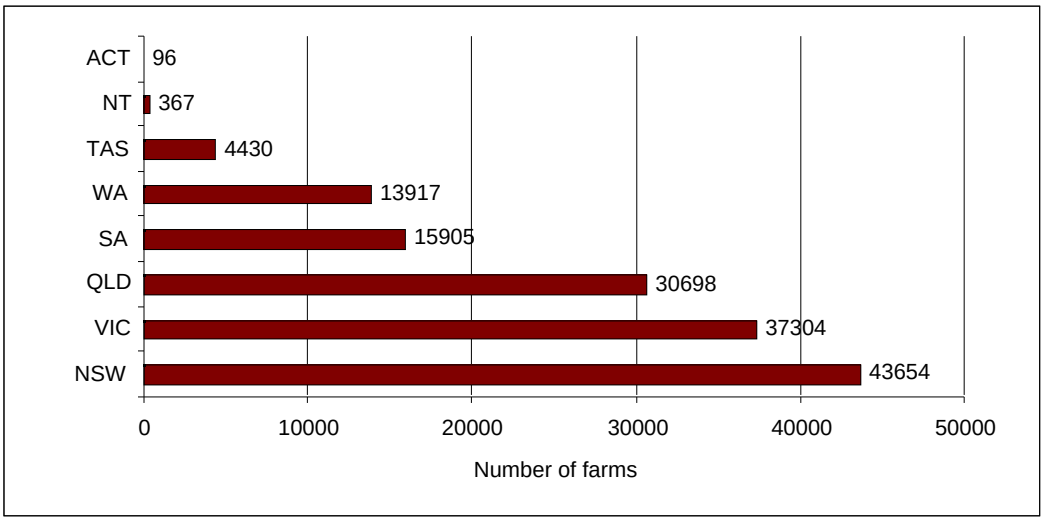

Figure 2.1: Number of farms 1999-2000 by State and Territory

Source: ABS Principal Agricultural Commodities, 7121.0, 1999-2000

In 1999-2000, just over half of all farms (76,000 or 52%) had an estimated value or agricultural operation (EVAO) of less than $100,000. There had been an increase in the EVAO in small cattle farming operations reflecting the improved livestock prices of the past year. At the other end of the scale, there were 9% or 12,700 of farming operations with an EVAO above $500,000 in 1999-2000 (ABS, 2001b). Small operations were primarily beef and sheep producers and fruit growers. Large operations comprised the cotton, meat poultry and poultry egg industries (ABS, 2001b).

2.2.1 The Cropping Industry

The gross value of crops for 1999-2000 was $16.6 billion (ABS, 2001a). The industry was the third largest in numbers accounting for 11% (16,500) of total farming operations. Across Australia in 1999-2000, there were 12.3 million hectares sown to wheat, producing a record 25 million tonnes valued at $4.5 billion. Table 2.1 displays a summary of the hectares sown to various crops across states and territories in Australia for 2000.

Table 2.1:

Area (ha) of crops by State and Territory 2000.

Crops	NSW	VIC	QLD	SA	WA	TAS	NT
	Number of hectares ('000)						
Wheat	3482	1222	1130	1872	4625	6	0
Oats	161	133	11	71	195	6	
Barley	477	580	132	846	545	9	
Lupins	125	36		71	1133		
Canola	523	283	1	200	909	1	
Hay	47	86	33	86	115	2	
Sugar Cane	24		409		2		
Sorghum	207	1	437		2		1
Cotton	263		172		3		
Tobacco		1	2				

Source: ABS Principal Agricultural Commodities, 7111.0, 1999-2000

There were 2.6 million hectares sown to barley, 648,000 hectares of sorghum, 578,000 hectares of oats and 1.9 million hectares of canola. Western Australia had the largest production of wheat with 9.2 million tonnes and also of oats with 432,000 tonnes and canola being 989,000 tonnes. South Australia is the largest producer of barley with 1.4 million tonnes. Grain sorghum is produced mainly in Queensland with 1.3 million tonnes (ABS, 2001c).

2.2.2 Horticulture

In 1999-2000, Australia produced 1.3 million tonnes of grapes, 320,000 tonnes of apples, 510,000 tonnes of oranges, and 257,000 tonnes of bananas. Australian vegetable growers produced 1.2 million tonnes of potatoes, 247,000 tonnes of onions, 414,000 tonnes of tomatoes and 283,000 tonnes of carrots (ABS, 2001b).

The total area of vines was 140,000 hectares following increased production Australia wide. There were 6.1 million apple trees, and 6.9 million orange trees nation wide. Victoria is the main apple growing state producing 98,200 tonnes. Across Australia, there were 11,700 hectares sown to bananas. There were 36,800 hectares sown to potatoes, 5,300 hectares of onions, 8300 hectares of tomatoes, and 7,000 hectares of carrots (ABS, 2001b). Table 2.2 displays the various types of horticultural production across the States and Territories.

Table 2.2:

Horticulture by State and Territory 2000.

Horticulture type	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	Number of trees ('000)							
Citrus	4002	1316	995	1978	213	0	2	0
Apples / Pears	1460	2725	656	723	890	1060	0	1
Stone Fruits	2078	1993	710	609	554	87	0	0
Other Fruit	131	18	1013	26	111	0	102	0
Nuts	1534	395	909	426	0	0	0	0
	Number of hectares							
Berries	348	382	294	53	96	28	0	2
Tropical Fruit	2506	0	11794	0	342	0	256	0
Grapes	32269	36257	2171	59807	8281	761	280	35
Vegetables	17361	31690	39508	12702	10697	15247	234	5

Source: ABS Agricultural Commodities, 7121.0, 1999-2000

2.2.3 The Livestock Industry

Australia is the world's largest exporter of meat and livestock and thus is reliant on international trade. Fierce competition and geographical isolation has required Australian farmers to be innovative in order to survive. Consequently, Australia has the most efficient sheep and cattle production in the world (MLA, 2001). The gross value of livestock slaughterings and other disposals was $7.9 million in 2000. Increases were recorded in cattle and calves ($5.0 billion) and pigs ($792 million) (ABS, 2000a).

- **Beef:** The national meat cattle herd was 24.4 million head as at 30 June 2000, an increase of 5% on the previous year. There were significant increases in production in Queensland and Western Australia. Queensland is the largest producer with 11.8 million head being 48% of the nation's herd. Beef cattle operations are the most common type of activity in Australia with 76,700 operations nationwide (ABS, 2001b). Figure 2.2 presents the beef cattle numbers by State and Territory for 2000.

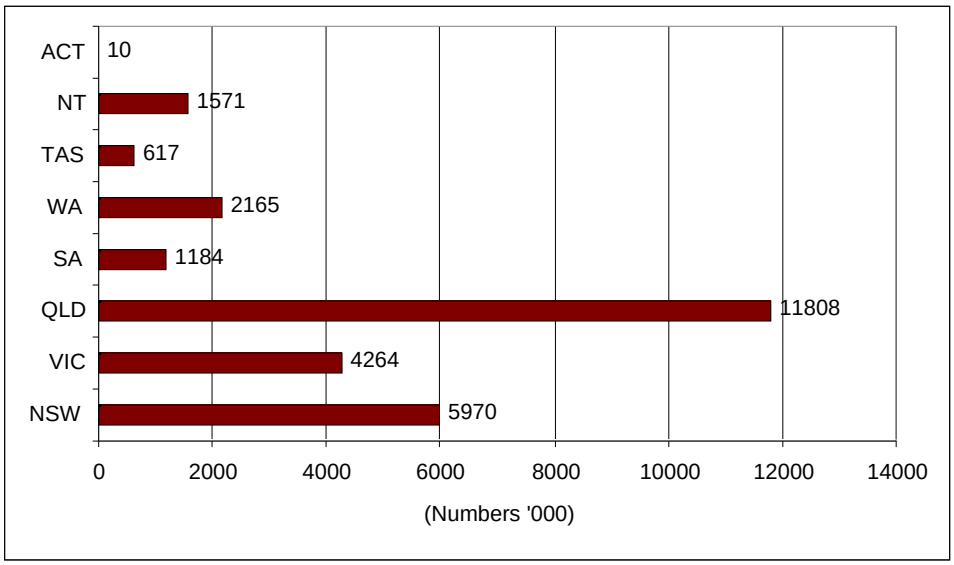

Figure 2.2: Meat Cattle numbers ('000) by State and Territory, 2000.

(Source: ABS Principal Agricultural Commodities, 7121.0, 1999-2000)

The Australian Beef Industry is valued at approximately $4.5 billion with over 2 million tonnes of product produced in 1999. Australia only produces a small percentage of the world's beef supply (3.9%) but it is the largest beef exporter in the world. Almost 65% of the national total beef production is sent overseas to 100 countries. The value of these exports is over $3 billion (MLA, 2001).

- **Dairy cattle:** Nationwide, there were 3.1 million dairy cattle as at 30 June 2000. Victoria with 1.9 million head holds the majority (61%) of the national herd. The number of dairy farms fell by 3% to 14,800 in all states except Victoria, reflecting the changes in the industry as a result of deregulation (ABS, 2001b).

- **Sheep and wool:** The Australian Sheep Industry is valued at approximately $1 billion, with a national sheep and lamb flock of 118.6 million at 30 June 2000. The New South Wales flock of 43.4 million is the largest in the country being 37% of the national total (ABS, 2001b). Figure 2.3 displays the proportions of sheep and lambs by State and Territory. There are 53,200 sheep and lamb operations nationwide (ABS, 2001b). Australia exports about 32% of total lamb production and 64% of total mutton production (ABARE, 2000).

- **Pigs:** There were 2.5 million pigs across the country as at 30 June 2000. New South Wales with 710,000 pigs has the largest proportion being 30% of the national total (ABS, 2001b).

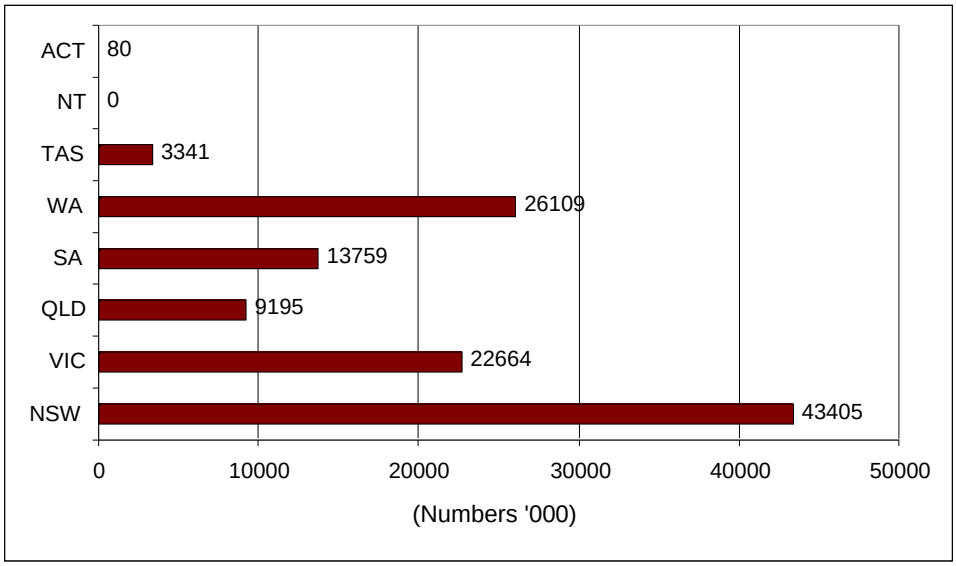

Figure 23: Sheep and Lambs numbers ('000) by State and Territory, 2000.

(Source: ABS Principal Agricultural Commodities, 7121.0, 1999-2000)

- **Goats:** The annual production of goat meat in Australia is valued around $20 million, mohair is valued at approximately $2 million, and goat-milk products bring approximately $1 million (MLA, 2000). The goat meat industry has shown remarkable growth over the past few years and is establishing itself as a significant entity in the red meat industry on both domestic and international markets. Goat-meat is the most widely consumed meat in the world with Australia being the largest exporter of goat-meat. There has also been a shortage on the world market of high quality goat fibres. Feral goats are hardy animals and are now being bred with domestic animals for the genetic benefits. Feral goats are being mustered in outback regions and fetching between $25 and $40 a head. Many producers are finding feral goats are bringing better returns than sheep and are less labour intensive (MLA, 2001).

- **Chickens:** As at 30 June 2000, there were 845 farms with 72.9 million birds for meat production and 508 properties with 12 million birds for egg production. New South Wales is the largest producer of both commodities with 35 million birds for chicken meat and 3.6 million birds for egg production (ABS, 2001b).

- **Other industries:** Alpaca and llama, deer, emus and ostriches, camels, bees, rabbits and horses are among the many other diverse types of livestock production. Figure 2.4 displays the number of establishments by industry type across Australia.

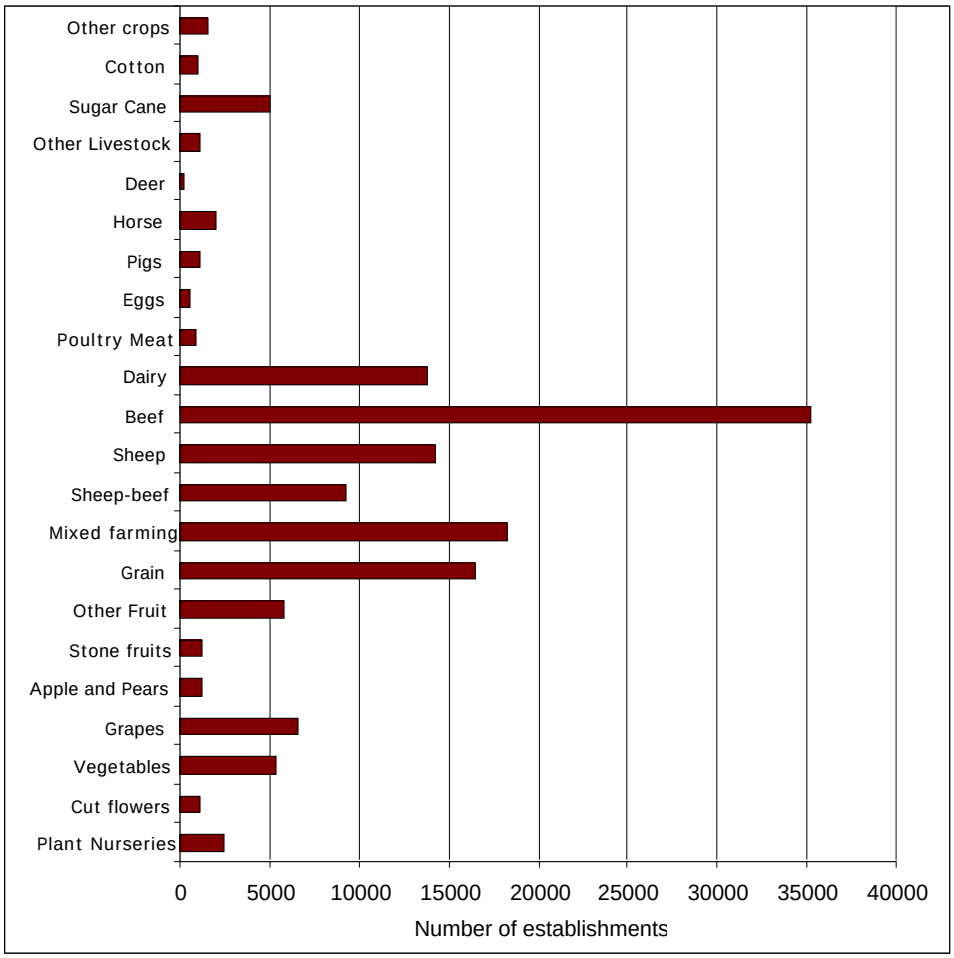

Figure 2.4: Number of establishments by industry type within Australia

(Source: ABS Principal Agricultural Commodities, 7121.0, 1999-2000)

2.3 PROPERTY CRIMES ON FARMS

The following describes the various types of property crime relevant to agricultural industries. These descriptions draw on material within the New South Wales Police Service Rural Crime Investigation Manual (2000) and from interviews conducted with police officers. New South Wales Police define rural crime as: *Crime pertaining to the rural sector and agriculture service industry* (NSW Police, 2000).

2.3.1 Theft

- **Tools and equipment:** Items such as chain saws, angle grinders, whipper-snippers, air compressors, saddles, bridles and harnesses, are stolen from farm sheds; irrigation pipes and sprinkler heads can be taken from paddocks; and lights, radios, and UHF radios are stolen from tractors, headers, utilities or other farm vehicles. Items that are light and easy to carry and can be sold quickly are targeted. Much of this equipment is off-loaded at country clearing sales. The stolen equipment can be entered into a sale by an outside vendor. Agents do not have to submit the same returns as do secondhand dealers.

- **Fuel:** The theft of fuel and diesel is a common problem on farms. Depending upon the size of their operation, farmers usually purchase fuel in bulk from local suppliers. Fuel is stored in drums, or in overhead, or underground tanks on farm. While farmers may padlock and chain fuel outlets, locks, chains, or hoses can be cut, or fuel can be siphoned from vehicles or machinery.

- **Agricultural machinery:** Machinery such as tractors, grain augers, motorbikes, or trikes and quad runners, generators, trucks and utilities are stolen. Machinery left in paddocks while farmers are working in the area can be vulnerable to theft.

- **Agricultural chemicals and pesticides:** Agricultural chemicals include a broad range of products used on farms, such as pesticides, fertilisers and herbicides, stock drenches and vaccines. Pesticides and herbicides, such as *Roundup CT*, *Glean*, *Ivomec* and *Brushoff*, are particularly subject to theft because of their value. This type of crime varies between regions and depends upon the type of crop production. Over the past decade, there have been a series of large-scale chemical thefts across New South Wales. Thefts frequently are in excess of $50,000. These incidents have been primarily break enter and stealing offences upon rural retail outlets in country towns. Some thefts have occurred from city warehouses for sales to markets in rural areas.

- **Fencing materials:** Fencing is a necessary and expensive item on farms. It is an offence to steal, cut, break or damage any part of a fence or gate. The penalty is a fine and an order to pay for the value of the property stolen. Electric fences are also prone to theft and are expensive setups to replace.

- **Timber:** The theft of timber can range from people entering property and cutting firewood without permission through to the theft of valuable trees. It is an offence to steal or destroy dead wood lying on land that is privately owned.

- **Horticulture:** Thefts occur of fruit or vegetables from orchards, vineyards or market gardens. As with many thefts of farm produce, these are very difficult to prove unless there are obvious signs of illegal entry to the property and damage to infrastructure or the environment. It is a crime to steal or destroy the whole or any part of a tree, shrub or plant.

- **Livestock:** NSW Police describe the theft of livestock as the most significant rural crime. There are four types of livestock theft. These include:

  - ‘Killers’ or freezer food. Stealing livestock for food has been a common practice in this country since the earliest days of pastoral settlement. There appears to be a general acceptance amongst farmers of this type of crime is commonplace and there is little that one can do to prevent it. The beast or (killer) may be killed at the site or moved elsewhere.
  - Butchers may steal stock for slaughter to supply their businesses.
  - For breeding purposes: Some farmers will steal stock for economic sustainability or to improve bloodlines. Usually unbranded or unmarked stock is taken or cows may be stolen with calves. Once the calves are weaned, the cows are either shot or returned to the place they were stolen from. The calves are then marked, tagged or branded with the thief's own identification. Frequently these crimes occur between neighbouring properties. When confronted the thief will claim that the cattle must have strayed.
  - Professional stock theft: These crimes usually involve large numbers of stock and are committed by highly skilled, well-equipped, and well-organised thieves with a ready market for stolen stock. Thieves may use helicopters, or ultra light air craft to muster stock quickly across boundary fences leaving no tracks evident on the ground.

In the western districts, poaching feral goats has become increasingly lucrative for thieves. Current legislation regarding trespass and the possession of feral goats is inadequate and fails to deter poachers. NSW Police are seeking a change to the laws to cover the theft, possession, receiving, and disposal of any animal without the owner's consent.

- **Seed or grain:** Seed and grain can be stolen directly from silos or storage sheds on farm. During harvest, trucks or bins full of grain may be taken directly from a paddock. Another scam occurs on properties where there is no weighbridge onsite. Some grain being delivered to silos in towns can be unloaded *en route* and the remainder is delivered for the farmer. The law prohibits thefts or damage to any cultivated crop.
  - In the United States, adding confetti to the grain that has the grower's identification printed on it can ensure proof of ownership of grain. The confetti, being biodegradable, breaks down over time in grain to be used for stock feed, or it can be blown out by fans. This concept is currently being explored in Australia.

- **Wool, hides or skins:** With few exceptions, all those involved in buying or selling wool hides or skins must be licensed to regulate the industry. All licensees' dealings are recorded which provides police with some means of trace back. However, identification of wool is extremely difficult in the case of stolen bales, which can be worth up to $4000 each. A new system of installing electronic identification devices in each wool pack is being introduced. However, wool can be removed from the original bale and repressed into other bales to remove all trace of identification. Thefts vary according to the current value of wool.

2.3.2 Other Types of Crime

- **Vandalism:** Vandalism can be defined as the destruction or defacement of property occurring to a farm house, sheds, machinery or equipment, fences, livestock, crops, timber or other vegetation that is owned, rented, or leased by the farmer.

- **Rural arson:** The deliberate lighting of fires causing the wilful and unlawful destruction, or damage by fire of property in rural Australia is a

serious offence. Crops, stock and other produce as well as farm equipment and infrastructure can be lost.

- **Break, enter and steal of rural premises:** Break and enter involves the illegal breaking into or attempt to do so of houses, sheds or buildings on farm. There has been a recent trend of organised thefts of valuable antique furniture from farmhouses. Often these thefts involve the complete removal of everything in the home. Abandoned or unoccupied homes on farms are also subject to break and enter. These opportunities have been increasing as more farmers have left the land as a result of drought and economic decline over the past decade. Some properties have been bought up by neighbours creating larger holdings but leaving unoccupied houses on the property.

- **Rural fraud:** Farmers are often victims of persons who fail to pay for goods or produce bought or services rendered. Farmers in isolated regions, who must purchase goods in other districts, may be sold defective goods, for example mouldy hay.

- **Illegal trespassers:** Property owners resent the presence of trespassers on their property. Illegal trespassers are seen as responsible for damage to crops, failure to shut gates, environmental damage, vandalism, and disturbance to stock. Farmers are held responsible for stock being on public roads and can be held liable if a vehicle hits an animal. There is also a suspicion that illegal trespassers are potential thieves. There is a conflict with a perception by many urban dwellers that they have a right to enjoy nature irrespective if land is privately owned. Under the *Local Government Act,* it is an offence to deliberately leave a gate open or cut or damage a fence to allow animals to escape. The *Inclosed Lands Act* also proscribes the unlawful entry of persons onto private property.

- **Illegal shooters:** For similar reasons, property owners resent illegal shooters. Illegal shooters may be responsible for the shooting of stock either by accident or by intention, and for having dogs that can attack livestock. Parts of an animal may be taken for human or animal consumption. This type of offence increases according to the price of skins or feral animals. The offender may cut fences or chains or may simply run down fences with a vehicle to enter a property.

Professional shooters commonly seek out wild pigs, kangaroos and foxes. Shooters who are known to the owner, seek permission to shoot on a property, and show respect for the infrastructure, crops and livestock may be welcomed by a property owner, particularly where the numbers of kangaroos or wild pigs etc need to be controlled. Graziers (particularly in the Western Division) have experienced difficulty with a number of shooters trespassing on their property looking to shoot wild pigs or poach feral goats.

- **Dumping of rubbish:** This is a growing concern in rural Australia with the general social awareness of environmental issues. The illegal treatment, storage or disposal of hazardous waste is a threat to public health, crops, livestock and wildlife. The illegal dumping of rubbish, waste, or car bodies on private properties is of concern to landowners.

- **Growing of cannabis or other drug production on rural properties:** Due to the isolation of rural areas and the low numbers of rural police, some regions are prone to certain types of drug offences, such as large-scale drug cultivation, and clandestine amphetamine laboratories. The success of such operations can ultimately impact upon the availability of drugs in rural communities as well as in other locations, including cities. Cannabis can be cultivated in national parks and on some private properties where there are large blocks of scrub that are rarely entered by the owners.

2.4 AGRICULTURAL CRIME STATISTICS

2.4.1 Official Recorded Crime Data

In is impossible to provide a summary of agricultural crime in Australia, as it is has never been separately tabulated in official recorded crime data. The Australian Bureau of Statistics provides no information on agricultural crime. Only in New South Wales, is livestock theft defined as a separate category within state data collections. Livestock theft includes the theft of cattle, sheep, buffalo, horses, mules, camels, pigs, deer, goats, ostriches, alpaca, llama, vicuna, and every hybrid or cross thereof (NSW Police, 2000). However, in national data, livestock theft is incorporated under the category of 'Other theft'. The ABS defines 'other theft' (stealing) as the taking of another person's property with the intention of permanently depriving the owner of the property illegally and without permission, but without force, threat of force, use of coercive measures, deceit or having gained unlawful entry to any structure even if the intent was to commit theft. This offence is the largest category of crime and includes the theft of livestock and domestic animals along with a conglomeration of stealing offences, such as pick-pocketing, bad snatching, stealing, theft from a motor vehicle, theft of vehicle parts, fuel, boats or aircraft (AIC, 2000). In 2000, there were 674,813 incidents of 'Other theft' across Australia (ABS, 2000e).

New South Wales is the only State that is attending to the specific data collection of agricultural crime. Detailed information on all livestock thefts reported to police across New South Wales are flagged as such, and the information is sent to *Operation Nicaragua* for collation by this unit (NSW Police, 1999). There is a very real need for this level of tabulation of data on agricultural crime Australia wide.

2.5 FACTORS AFFECTING THE POLICING OF AGRICULTURAL CRIME

Controlling agricultural crime, particularly livestock theft, is compounded by a number of factors. Firstly, the area that has to be policed is vast. Australia has a land area of 7,692,030 square kilometres and agriculture is the most extensive form of land use. At 31 March 1999, the estimated total area of agricultural establishments in Australia was 453.7 million hectares, representing about 59% of the total land area. Livestock grazing accounts for the largest area of land use in agriculture (ABS, 2000f).

Secondly, the nature of the livestock industry creates significant problems for police when investigating livestock thefts. With modern transport, stock can be stolen in one state, transported overnight to another state, and disposed of long before the theft is discovered. The Livestock Industry has several outlets for disposal. The sheer numbers of stock that are processed makes it easy for thieves to get away with their crimes and hampers police investigations (Barclay, *et al.*, 2001). The following summarises the primary means of disposal of livestock.

- **Sale:** Stock are most commonly sold by live auction at saleyards. However, they may also be sold by direct consignment between the producer and the buyer, usually an abattoir or meatworks. Sales also occur as electronic auctions through the Computer Aided Livestock Marketing System (CALM) where stock are listed by description enabling purchase from anywhere in the country (MLA, 2001).

- **Live export:** Live cattle exports for 1998-1999 were 713,000. The gross value of live cattle exports was $342,667,000. Live sheep exports were 4,958,700 valued at $181,671,000 (ABS, 2000d). NSW Police recently intercepted a theft of approximately 380 bulls that were bound for live export to the Middle East. The stock were stolen in Victoria and they

were found in northern New South Wales. This was a well-organised theft involving the movement of several truckloads of stock (Limb, 2001).

- **Abattoirs and meatworks:** There are approximately 223 Australian abattoirs licensed to slaughter cattle, sheep or lambs for the export or domestic markets. Of these facilities, 116 are licensed to process meat solely for the domestic market; 31 facilities to process beef for export; and nine export facilities only process sheepmeat. Combined, these establishments process around 8 million cattle, 15 million lambs and 15 million sheep each year (MLA, 2001). Processing leaves little trace of evidence for Police.

- **Feedlots:** Feedlots have operated in Australia since the 1960s to finish cattle for market and to ensure a consistent supply of finished cattle. There are currently about 680 accredited feedlots Australia-wide producing approximately 850,000 grain fed cattle. Most feedlots are located in south-east Queensland and in New South Wales in regions accessible to store cattle, grain and other feed sources. Feedlots are an outlet for stolen stock as they are generally not open to the public, stock are turned over in a short period of time and held in feedlots which have the capacity to hold up to 120,000 head at a time (MLA, 2001).

2.6 LEGISLATION

Legislation is in place largely to limit and control the movement of stock to prevent the spread of pests and disease (DPI, 2001). One of the difficulties confronting livestock theft investigations is the variation between the States regarding stock identification and stock movements. The following sections provide an overview of laws governing the livestock industry and a state by state summary of legislation regarding rural crime.

- **Stock movements:** The improvements in modern transport systems allow the movement of large numbers of stock between States for sale. Producers are not restricted to one state for the manufacture and sale of their livestock. Consequently, police experience great difficulty in policing stock offences due to the large movement of stock between states for sale or slaughter. Victoria and South Australia have open borders with New South Wales. Stock transports are required to stop at border crossing checkpoints along the Queensland border. However, the majority are staffed only during daylight hours. There are varying regulations and paperwork regarding stock movements across the various states. This diversity complicates police investigations into livestock theft. Queensland, Western Australia and the Northern Territory are the only states that require waybills to cover the movement of stock between properties, or from sale, or to slaughter. Currently, there is a move to have a National Vendor Declaration form to simplify and unify legislation on stock movements between states, which will greatly simplify police investigations. Each state has certain health regulations that must be complied with before stock can enter that state. The Australian Quarantine and Inspection Service monitors all movements into or out of Australia.

- **Stock Identification:** In all states and territories, all animals for sale must have a tail or ear tag identifying the owner or property they came from. In general, identification is for the principal purpose of providing proof of ownership of animals and enabling a means of traceback to the property of origin when disease and chemical residues are detected. Abattoirs are required to record details of all animals slaughtered by transaction tail or ear tags for traceback purposes. Identification also plays a leading role in the discouragement and detection of stock theft. Methods of stock identification include, ear tagging, wool brands, ear marking, freeze, hot iron or electric branding, electronic identification, and tattooing. Different methods are used for different species of stock. Problems can still occur for police tracing stolen stock even where

producers have been diligent in ensuring their stock are identified. Thieves can cut off earmarks, brands can be defaced, or another brand can be put over the existing brand. There are also difficulties for police investigations caused by the variations between the states in the legal requirements for stock identification.

- **The National Livestock Identification Scheme (NLIS):** One solution to the problem of stock identification is the National Livestock Identification Scheme. Currently NLIS is a voluntary scheme designed to improve trace-back and monitoring systems for stock diseases and chemical residues to allow Australian producers to compete on the international market. The European Union (EU) requires strict quality control of livestock sales and full traceability of all cattle slaughtered for their market. All cattle held on EU accredited properties must be identified with NLIS approved identification devices. All sale transactions of individual animals are automatically recorded and traced. Therefore, the system can aid crime prevention by providing a means of tracing stolen stock (MLA, 2001).

  The basis of the NLIS is a consistent system of property registration, which uses an 8-character property identification code on the identifiers applied to individual animals. These devices contain a radio transponder, which can be read by a machine, and the information is automatically conveyed to a computerised database. In most cases, these devices are ear-tags, but they can also be a bolus, which is inserted down the throat of the animal where it remains lodged in the rumen of the animal for its lifetime. These devices offer unalterable permanent identification and coupled with scanners at saleyards, feedlots and abattoirs, they will enable immediate identification of ownership through a national register and enable each animal to be reliably traced from its property of birth until slaughter. Many saleyards, feedlots and abattoirs throughout Australia are now installing readers and links to the NLIS database (MLA, 2001).

However, the control of livestock theft by this system will be ineffective until all sale outlets are equipped with scanning devices. Until recently, farmer organizations have not generally been supportive of the compulsory participation in a National Livestock Identification Scheme due to the costs to producers, particularly those with large herds. The current cost of a rumen bolus is $7.50; ear-tags are $3.50. However, there are opportunities to lease boluses at $2.00 each, as they can be recycled.

Victoria has been instrumental in encouraging NLIS participation by providing compensation for graziers. Recently, the Victorian Government took steps to ensure all cattle are permanently identified before they leave the property of birth. NLIS tags are subsidised at $2.50 each for graziers and $1 million has been provided for the installation of scanners at saleyards, abattoirs and the administration of tag distribution (Deane, 2001). Implementation of the NLIS in all states will greatly assist police in tracing stolen stock across state borders, and will transcend the problem of varying state laws. The use of the rumen bolus will provide permanent unalterable identification, which will provide proof of ownership in any legal dispute (Barclay, *et al.*, 2001).

2.7 WESTERN AUSTRALIA

Western Australia covers an area of 2,529,880 square kilometres and has a population of 1,897,400. There are 13,917 agricultural establishments with beef cattle being the most common type of production (ABS, 2001g).

2.7.1 Stock Identification

In Western Australia, the livestock industry is governed by the *Stock Identification and Movement Act 1970 WA* and associated regulations to deter theft, assist in the recovery of stolen animals and trace disease. All sheep, goats,

cattle, buffalo, horses, pigs, deer and camelids and ostriches must be identified. There are different identification requirements for each type of animal. A trading company may have one or more brands and each brand may be used on one or more properties. Each of these brands may have one or more tailtags. Stock owners must apply for a brand certificate to the Department of Agriculture. Brands are then valid for five years. Currently, there are 26,000 brands registered in the state. Cattle in the more remote pastoral areas do not have to brand calves until 18 months of age or until they are sold (Agriculture WA, 2001).

To enable stock to be traced in the event of a disease or discovery of chemical residues in meat, all cattle for sale must have a transaction tag as an ear or tail tag. Transaction numbers correspond with a local shire. However, different herds will have different numbers. There are several different colours of tags to identify different health status and quality of cattle (Agriculture WA, 2001).

2.7.2 Stock Movements

The owner of any stock to be moved must complete a livestock waybill. Waybills provide evidence that stock are transported with the owner's consent and also aid in the tracing of disease and chemical residue problems. Waybills must include details of the owner, the number and type of stock, details of the brand and earmarks, tail tag numbers, the date of movement and the details of the consignee and destination. The documentation must be kept for three years. Waybill forms are purchased from Department of Agriculture officers or country Police Stations. The Western Australian cattle industry is in support of a combined waybill and vendor declaration form, which will eliminate the need to fill out separate documents. A West Australian health certificate must accompany stock from interstate. Police and AGWEST Inspectors are authorised to inspect stock in transit for correct identification and waybills (Agriculture WA, 2001).

2.7.3 Legislation

It is an offence for an owner or agent not to supply a stock transporter with a waybill, move stock without a waybill or specific permit, fail to produce a waybill or other documentation when stopped by Police or AGWEST Inspector, or destroy a waybill within three years of being completed (Agriculture WA, 2001). Stock theft is governed under Section 378, *Criminal Code Act Compilation Act 1913* that states.

> *Any person who steals anything capable of being stolen is guilty of a crime, and is liable, if no other punishment is provided, to imprisonment for seven years* (AustLII, 2001).

2.7.4 Stock Theft

More than $500,000 worth of livestock is reported stolen each year in Western Australia (*Farm Weekly*, 2001a). There is no separate category of crime for livestock theft or any other type of agricultural crime. All such crimes are included under the category of 'Property capable of being stolen'. The geographical vastness and isolation of Western Australia facilitates the incidence of livestock theft.

2.7.5 Policing

Currently West Australia Police has a force of 4,795 (AIC, 2001). There are four police regions, 15 districts and 160 police stations. There is a State Crime Stock Stealing Squad to investigate agricultural crime. In 2000, the Squad investigated the organised theft of livestock from remote pastoral leases in the North-west. Pastoral properties in excess of one million acres were mustered, with 880 cattle and sheep valued at $150,000 being recovered and charges preferred against two pastoral leaseholders. An ongoing partnership between the Stock Investigation Unit and the Meat Industry Authority has resulted in the closure of several illegal

abattoirs and prevented the fraudulent sale and supply of meat products to businesses and the general public (WA Police, 2001).

2.8 SOUTH AUSTRALIA

South Australia covers an area of 984,377 square kilometres and has a population of 1,500,500. Approximately one-third of the area of South Australia has no significant economic use. There are 15,905 farming establishments covering a total of 59.4 million hectares, which is more than 60% of South Australia's total land mass. Of this area, 6% is used for crops and 4% for sown pastures and grasses with the remainder devoted to a broad balance of agricultural activities. Agriculture contributes around 50% of the State's annual $4.5 billion overseas exports, with key products being cereals, wine, wool, meat, fish, fruit and dairy products (ABS, 2001h).

2.8.1 Stock Identification

It is compulsory for pig owners who intend to sell their animals through a market or for slaughter to have a brand. With the other livestock species, branding is not compulsory, however if an owner wishes to brand his or her animals, the brand must be registered with the Registrar of Brands (PIRSA, 2001).

All cattle, including calves, must be identified with an approved device before they leave the property for sale or slaughter. Any property running cattle must apply for a Property Identification Code (PIC) or a tail tag number. The identification devices are registered to a property, not to an owner. Cattle can be identified with a permanent identification device, a transaction tag and in some instances both. Permanent identification devices are Radio Frequency Identification Devices, which provide an animal with unique whole-of-life

identification and have been introduced as a result of the National Livestock Identification Scheme (PIRSA, 2001).

Transaction tags are used to identify the last property cattle were grazed on before being sold for sale or slaughter. Transaction tags can be a ratchet tail tag, wrap around tail tag or ear tag. Failure to affix transaction tags on cattle at saleyard or slaughter is illegal (PIRSA, 2001).

For sheep, the State is divided into five sheep districts. A brand and earmark is registered by district in which the property is located. However, if properties are owned in both districts, a brand can be registered for each district. A person must be the registered owner of a sheep brand to be eligible to register an earmark (PIRSA, 2001).

2.8.2 Stock Movements

There is no system of waybills or other documentation to control stock movements in South Australia. However, cattle sent to another State must be identified with either a permanent identification device or a transaction tag. There are no border checks for livestock movements conducted on South Australian borders. Health certificates are also necessary for some interstate stock movement (PIRSA, 2001).

2.8.3 Legislation

The identification of livestock in South Australia is governed by the *Brands Act 1933,* which details the licensing of brands, how and where animals should be marked for identification, and the *Livestock Act 1997* and associated regulations. Both acts allow for penalties for deliberately removing identification from either live beasts or their carcasses with penalties not exceeding $10,000. Stock theft is a crime under Section 136, *Criminal Law Consolidation Act 1935* that states:

Any person who steals any cattle shall be guilty of an offence and liable to be imprisoned for a term not exceeding eight years (AustLII, 2001).

Trespass is covered in the *Summary Offences Act 1953*, with penalties ranging from fines of $750 to $2500. Firearms offences are also covered by this act and the *National Parks and Wildlife Act 1972*, which prescribe penalties for hunting animals without permit ($1000), or firing a firearm with the intent to damage property or to annoy, frighten, or injure any person, with a maximum penalty $10, 000 and two years imprisonment (AustLII, 2001).

Arson and vandalism are covered by the *Criminal Law Consolidation Act 1935* which gives a number of different definitions for the extent of damage caused and the penalties that should be imposed for each level. The maximum penalties include life imprisonment for damage caused by fire or explosive worth more than $25,000. For most minor offences, the maximum is a fine of $2000 and maximum two years' imprisonment (AustLII, 2001).

2.8.4 Stock Theft

Livestock theft is included under the category of 'Other Theft' which combines stealing from a person, theft of a bicycle, boat, vehicles, drugs, as well as theft from schools and failure to pay accounts. Data collected on livestock theft includes theft of chickens, dogs and cats.

2.8.5 Policing

South Australia had a Police Force of 3696 sworn officers as at 30 June 2000 (AIC, 2001). There is no specialist Stock Investigation Squad.

2.9 VICTORIA

The State of Victoria has an area of 227,420 square kilometres. The population as at 30th June 2001 was 4,797,400. Although it is the second most populous State or Territory in Australia, Victoria is ranked sixth in terms of geographic size and accounts for just under 3% of Australia's total area. The climate is suitable for a wide range of agricultural production, including relatively intensive farming. Dairying, cereal and other cropping, horticulture, viticulture, as well as wool and livestock production are all undertaken (ABS, 2001i).

2.9.1 Stock Identification

The *Livestock Disease Control Act 1994* requires that all cattle for sale or slaughter must have an approved tag, which identifies the property of origin. The National Livestock Identification Scheme was launched in Victoria in early 1999 with the issue of one million electronic cattle identification tags to Victorian beef producers and dairy farmers which were free of charge to encourage cattle producers to permanently identify their cattle. A further 100,000 ear tags have recently been made available at a subsidised price of $2.50 per tag. Breeder Tags are 'whole of life' tags and each has a unique identification number. This number is partly made up of the breeder's Property Identification Code and is both visually and electronically readable. Breeder Tags are permanent tags that are attached to the ears of cattle. Under State legislation, once the Breeder or Post-breeder Tags are attached to cattle they must not be removed until the animal is processed at an abattoir or knackery. All cattle consigned to a saleyard, abattoir or knackery will continue to be required to be identified with an approved tail tag or large ear tag printed with the consigner's Property Identification Code (NRE, 2001).

Sheep identification can be tattooing, tagging, notching or hole punching the ear. Electronic methods may also be used (NRE, 2001).

2.9.2 Stock Movements

There is no system of waybills in Victoria. Vendors must complete a National Vendor Declaration prior to sale that declares to the purchaser any chemicals to which the stock have been exposed or treated (NRE, 2001).

2.9.3 Legislation

Identification of animals is detailed in the *Meat Industry Act 1993*, and *Livestock Disease Control Act 1994*. There is no specific legislation for stock theft. Under Section 74, *Victorian Crimes Act 1958:*

> *A person guilt of theft is guilty of an indictable offence and liable to level five years imprisonment (ten years maximum).*
>
> (AustLII, 2001).

Arson and Vandalism are covered by the *Crimes Act 1958* with penalties ranging up to 15 years imprisonment maximum, or 25 years for Arson causing the death of a human being. Trespass on land used for primary production is given a special clause in the *Summary Offences Act 1966* which specifies several exceptions and definitions for trespass, with a maximum penalty of one penalty unit, or five penalty units for second and subsequent offences (AustLII, 2001).

2.9.4 Stock Theft

There are no separate statistics for livestock theft. There have been reports of sheep producers in Western Victoria experiencing losses of up to $30,000 a year from theft (Baggio, 2000).

2.9.5 Policing

As at the 30 June 2000, the Victoria Police force of sworn officers was 9,955 strong (AIC, 2001). The Racing and Livestock Squad was disbanded in 1996. Responsibility now lies with CIB officers.

2.10 NEW SOUTH WALES

New South Wales covers an area of 801,428 sq km and has a population of 6,411,700. There are four diverse agricultural regions, including the coastal lowlands, the eastern highlands, the western slopes, and the vast sparsely populated western plains, which cover about two-thirds of the state. Land use in NSW is dominated by agriculture, however only 8% of the state is under crops; 7% under sown pastures and 15% under native pastures. The remaining area is either large areas of rough grazing in native scrub or small-area hobby farms. The principal agricultural activities in NSW in terms of value of agricultural production are wheat growing, wool growing, the raising of cattle for meat production and increasingly, cotton growing (ABS, 2001j).

2.10.1 Stock Identification

It is not compulsory to brand, earmark or ear-tag stock in New South Wales. However, all pigs and racehorses must be branded. Beehives must also be branded on the breed box. Earmarking of sheep is compulsory to identify the property of origin only. For those producers who wish to brand their stock, all earmarks, brands and tattoos that are used in the registered branding positions, must be registered with the nearest Rural Lands Protection Board (RLPB) in the name of the owner. There are 49 Boards across the state and there is no central brand index. Therefore, there may be several different producers with the same brand registered in the state within different RLPB areas. With saleyards mostly

located in regional areas, it is likely that several Board areas are serviced by one saleyard (NSWAG, 2001).

All stock for sale or slaughter must have a tail tag that shows the registered number (Property Identification Code) of the property on which it last resided. The tail tags are to enable trace-back to the herd of origin for any diseases, chemical residue or other problems that emerge at time of slaughter. There are plans for the Police Service to have a centralised database of tail tag information (NSWAG, 2001).

2.10.2 Stock Movements

- **Vendor declarations:** Although not compulsory, stock for sale or slaughter usually have a vendor declaration to verify their health status and that they are free of chemical residue. Property tail tags must be attached to each animal. Each state has certain health regulations that must be complied with before stock can enter that state (NSWAG, 2001). Currently there is a move to have a National Vendor Declaration form to simplify and unify legislation on stock movements between states, which will greatly simplify police investigations.

- **Transported Stock Statement:** Section 88 of the *Rural Lands Protection Act 1989* requires all cattle, horses, sheep and goats transported within and out of New South Wales to be covered by a Transport Stock Statement (TSS). The TSS system was introduced in 1990, partly to assist the Police Service trace stolen stock and to authorise police to stop and search stock transports. The NSW Police Service has recently renewed its commitment to enforce TSS requirements in an effort to reduce the incidence of stock theft. Under the Act, the driver of the vehicle is deemed to be in charge of the stock. The description of the stock on the form must match the stock on the vehicle. The TSS form relates to one journey only and must be retained for at least 36 months after the journey

by the stockowner (agent or employee). Failure to carry a TSS can incur an Infringement Notice with a penalty of up to $200 or a maximum penalty of $2200 (Alchin, 2001). Problems arise for police checking transports where there are inadequate descriptions of the stock being carried. With so many new breeds of stock available, it is a hard task for police to be aware of them all. Producers who are punters within the stock market (buying and selling stock over short periods) may transport stock with many different breeds, brands, earmarks or tags and identification numbers (Barclay, *et al.,* 2001). Stock that are walked, or grazed on public roads or travelling stock reserves must also carry a specific permit. Routine stock movements require a stock licence (Alchin, 2001).

2.10.3 Legislation

Livestock theft is legislated under Section 126, *NSW Crimes Act 1900* stating that it is illegal to steal cattle, wilfully kill cattle with intent to steal the carcass, skin, or other part of the cattle, for a maximum penalty of imprisonment for fourteen years. Under Section 131, it is an offence to misuse another's stock or fraudulently brand, earmark or deface a brand of any stock. New South Wales Police operate under several Acts of Parliament to investigate and prevent agricultural crimes. These include:

- *Rural Lands Protection Board Act 1989.*
- *Crimes Act.*
- *Prevention of Cruelty to Animals Act.*
- *Companion Animals Act.*
- *Impounding Act.*
- *Local Government Act.*
- *Property Stock and Business Act.*
- *Wool Hide and Skin Dealers Act, 1935.*
- *Inclosed Lands Act.* (NSW Police, 2000)

2.10.4 Stock Theft

As New South Wales provides data on livestock thefts, an overview of the rate of crime is presented. In 2000-2001, 2808 cattle valued at $1,393 million and 24,195 head of sheep valued at $922,900 were reported stolen across New South Wales. Figure 2.5 displays the location of livestock thefts for 2000 by Local Government Area. Over this period, there were 732 cases of reported stock theft in New South Wales (BOCSAR, 2001). Stock theft is more prevalent in LGAs in the north of the state along the Queensland border. New South Wales Police report that it is often the case that stolen stock from New South Wales are disposed of at abattoirs, saleyards and feedlots located just over the border in southern Queensland.

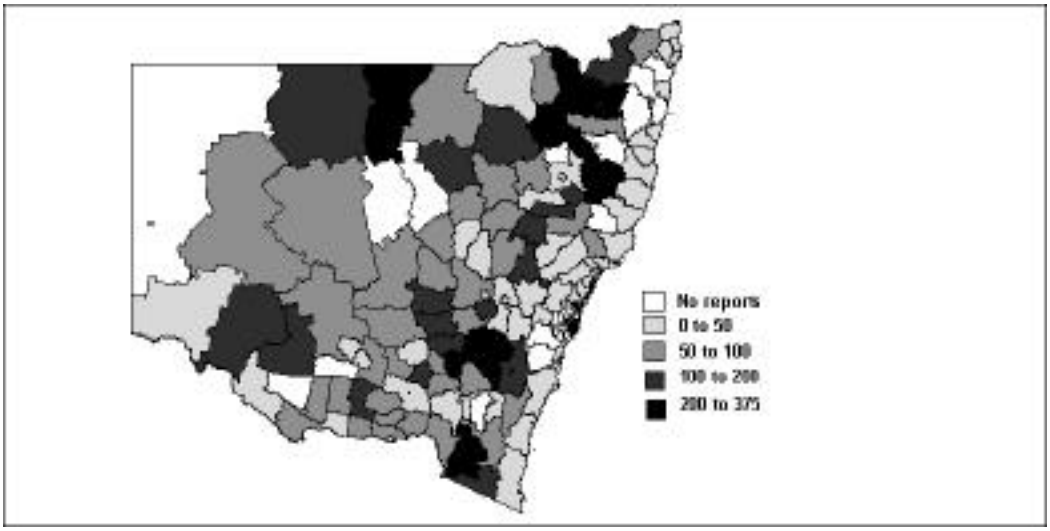

Figure 2.5: Rates per 100,000 population of livestock theft by Local Government Area, 2000

(Source: NSW Bureau of Crime Statistics and Research 2001)

2.10.5 Policing

NSW Police currently has a force of 13,471 (NSW Police Service, 2001). A Rural Crime Unit was established in 1999 in Wagga Wagga, headed by the State Rural Crime Coordinator and assisted by one other officer. Under *Operation Nicaragua*, recorded crime data and mapping techniques have been enhanced to assist in identifying rural crime hotspots throughout the State. This task force also liaises with stock squads in other states. All agricultural crimes reported to police

across New South Wales are flagged as such and the details are sent to *Operation Nicaragua* for collation by this unit (NSW Police, 1999).

The New South Wales Police Stock Squad was dissolved in 1987. Officers now conduct agricultural crime investigations as part of their normal duties. In response to recent public and political concerns, in March 2001, the NSW Police Minister announced the introduction of 32 Rural Crime Investigators in non-metropolitan areas, a five-day specialist-training course for rural police officers, and a dedicated intranet site for Police (Bateman, 2001). While these initiatives demonstrate an increased awareness of the importance of agricultural crimes, there is no increase the numbers of police officers in rural areas. Rural crime officers must still attend to normal duties and therefore cannot devote themselves full time to agricultural crime investigations.

2.11 QUEENSLAND

Queensland covers approximately 1.7 million square kilometres being 25% of Australia's land mass. The population is 3,597,200. In 1998/99, the estimated total value of agricultural commodity production was $6,406,000. Queensland is the leading beef-producing state in Australia. Due to its tropical and subtropical climatic conditions, it is also Australia's main producer of a variety of cereal crops, citrus, tropical and exotic fruits, and vegetables for human consumption (ABS, 2001k).

2.11.1 Stock Identification

Branding and marking of livestock have been practiced in Queensland since 1872. All cattle in excess of 100 kg liveweight being sold in Queensland at a commercial venue must be fire / freeze branded with a registered brand. It is mandatory for cattle, horses and pigs to be branded before sale. Those wishing to

sell stock must register a brand or earmark. Annual registration is required to update the brands register. This register is available to police for their laptops to enable them to check brands on suspected stolen stock when in the field. Three-piece and symbol brands for horses and cattle use hot iron branding. Sheep and goat brands use branding irons dipped in paint. Pig brands are applied by needles dipped in paint or paste to create a tattoo (DPI, 2001).

2.11.2 Stock Movements

A Queensland certificate of health/waybill is required before cattle and buffalo can enter Queensland. A Queensland travel permit will be issued at the border crossing for movement within Queensland for cattle and buffalo that are:

- returning to NSW within 5 days
- proceeding to another state's border
- proceeding to a quarantine facility for export from Australia
- travelling to a cattle tick clearing centre
- travelling out of the Cattle Tick Infected Area
- travelling to the Brisbane Exhibition Grounds
- suspect stock.

An owner waybill is required for all movements of cattle and buffalo within Queensland (DPI, 2001).

2.11.3 Legislation

Under the QLD *Rural Lands Protection Act 1985*, it is an offence to use an unregistered brand or earmark, or allow another to use your brand, possess branding irons or earmark pliers, not registered in your name, make an earmark with other than earmarking pliers or have a branding iron that is not made as specified (DPI, 2001). Under Section 398, QLD *Criminal Code Act 1899*:

> *Any person who steals anything capable of being stolen is guilty of a crime, and is liable, if no other punishment is provided, to imprisonment for five years.* (AustLII, 2001a).

There is no specific legislation for stock theft. In the case that the value of the item stolen is over $5000, the person is liable to imprisonment for ten years. The Queensland Government has recently responded to the massive increase in stock theft by increasing the penalty for offenders from $5000 to a maximum fine of $50,000 (Harpley, 2000).

Arson is covered by the *Criminal Code Act 1899*, which gives provision for penalties up to 14 years and life imprisonment for any person who wilfully and unlawfully sets fire to any of the following:

- a crop of cultivated vegetable produce, whether standing or cut;
- a crop of hay or grass, whether the natural or indigenous product of the soil or not, and whether under cultivation or not, and whether standing or cut;
- any standing trees, saplings, or shrubs, whether indigenous or cultivated;
- any heath, gorse, furze, or fern.

Any person who *attempts* unlawfully to set fire to any such is guilty of a crime, and is liable to imprisonment for 7 years (AustLII, 2001).

The *Nature Conservation Act 1992*, Section 100, provides for trespass, with penalties up to 165 penalty units, (AustLII, 2001).

2.11.4 Stock Theft

Stock theft is estimated to cost Queensland beef producers about $2 million a year. Stock squad police are already investigating numerous recent thefts in Cloncurry, Mareeba, Charters Towers and Julia Creek. Almost 1000 cattle are missing from one North Queensland property. Cattle producers have recorded the fourth consecutive year of improved returns and incomes at attractive levels not

seen for almost 30 years. State-wide complaints have trebled in recent months and the value of missing cattle is estimated to be $2.5 million (Hansen, 2001) .

2.11.5 Policing

Currently Queensland Police has 7,700 sworn officers, (AIC, 2001). The service is divided into eight geographical regions, 25 Police Districts, and 332 Stations. Queensland's ten stock squads have 32 stock squad officers in five regions and one command. Ten of the positions are not filled at present due to a lack of qualified, skilled officers. Stock Investigation Officers are equipped with four-wheel drive vehicles, motor-cycles, horses, radios, cellular telephones, cameras and computers. Besides investigating stock offences and other rural crimes, the Queensland Stock Squad carry out unique duties often mustering livestock, and camping out on operations often for weeks at a time in very remote areas (Phelps, 2001: QLD Police, 2001).

2.12 TASMANIA

The area of Tasmania, including the smaller islands, is 68,114 km, about 0.9% of the total area of Australia. The population as at 30 June 2001 was 470,100. Orchard fruit, mainly apples and pears, as well as berry fruit, are grown in the south for both local consumption and export chiefly to Asian markets. Four vegetables (french and runner beans, greenpeas, onions and potatoes) account for about 90% of the total area of vegetables grown. Other major crops, apart from pastures, include oil poppies, barley and oats grown for grain. Preliminary estimates of total gross value of agricultural production in Tasmania was $690.6million in the year ended 30 June 2000 (ABS, 2001l).

2.12.1 Stock Identification

In Tasmania, ear-tagging, ear-marking, ear-notching, ear-tattooing, udder-tattooing, udder-implanting, freeze-branding, electronic characterisation and photography are the preferred methods of identifying cattle. It is a legal requirement to earmark all sheep (except certain stud sheep) with a registered earmark before attaining the age of six months.

The sale of cattle products is underpinned by the cattle transaction tag system. At present, cattle in Tasmania presented for sale at a public saleyard or for slaughter at an abattoir or slaughterhouse, must be identified to the last property of residence by the use of tail tags or ear tags. These tags must bear the registered property code of the last property on which the animals were present before they were sent to the saleyard or abattoir. The use of tail tags supports the National Vendor Declaration system, which also underpins market access by allowing processors to certify that cattle have not been treated with veterinary chemical products within the relevant Withholding Period or Export Slaughter Interval (TAS DPIWE, 2001).

Sheep identification for traceback (the equivalent to tail tags in cattle) is not yet required. However, the necessary legal instruments are already in place in the event that future events require its adoption at short notice. Sheep will also be covered by the NLIS in the future (TAS DPIWE, 2001).

The pig tattooing system allows pigs to be traced to the most recent owner. Tracing of pigs can be crucial to the success of exotic disease control programs. A number of important pig disease surveys have been conducted in Tasmania in recent years using the pig tattoo system (TAS DPIWE, 2001).

2.12.2 Stock Movements

There is no system of waybills or movement requirements in Tasmania. Over 60% of the beef produced in Tasmania is exported. Livestock offered for sale are to be covered by a vendor declaration form. The National Vendor Declaration (NVD) for cattle is regarded as essential by Tasmanian meat processors. The National Vendor declaration (Sheep and Lambs) was launched in late 2000. Use of this form is voluntary but certain markets will only be accessed with the use of this form (TAS DPIWE, 2001).

2.12.3 Legislation

The *Animal (Brands and Movement) Act 1984* underpins all animal traceback programs, including the NLIS. It also allows sheep, cattle, pig and horse breeders to use a brand, tattoo, tag or earmark to prove ownership of their animals. There are heavy penalties for knowingly including false information on a vendor declaration (TASDPIWE, 2001). The Tasmanian Criminal Code legislates against stock that and unlawful killing with intent to steal. The *Police Offences Act* legislates against the unlawful possession of hides.

2.12.4 Stock Theft

As a consequence of high prices currently being received for livestock, there has been an increase in livestock theft in several areas of the state. A number of thefts of merino wethers have occurred in the Runnymede, Woodsdale, Oatlands, Coal River/Campania, Bothwell and Highlands-Lakes areas (Llewellyn, 2001).

2.12.5 Policing

Tasmania has a Police Force of 1,109 officers (AIC, 2001). There are two part-time stock officers in the North and South. However, as part of recent initiatives by Tasmanian Police, more resources have been allocated for the prevention and investigation of stock theft. One extra designated police officer has been assigned to this area. The officers regularly attend stock sales in an effort to locate stolen stock and also meet regularly with wool buyers, stock agents and stock carriers. Officers are also randomly stopping trucks carrying livestock to ascertain the details of the drivers and the owners of sheep or cattle being transported. Tasmanian Police officers are being trained in livestock identification, to try to curb stock theft. Twenty-two officers from around the state recently attended an education seminar to learn about the different breeds of livestock (Llewellyn, 2001).

2.13 NORTHERN TERRITORY

The Northern Territory covers an area of 1,349,130 square kilometres. It is the third largest of the States and Territories after Western Australia and Queensland. Yet it has the smallest population and population density with 196,300 people. Climatic regions include the tropical top end in the north, and the arid interior of Central Australia. Primary industries include pastoral, other livestock (including crocodile, poultry and camel), horticulture (fruit, vegetables, nursery and cut flowers), other agriculture (field crops, hay and seeds) and fishing (ABS, 2001m).

2.13.1 Stock Identification

The Northern Territory Stock Movements and Certification project provides a stock certification and inspection service to facilitate the sale of livestock to export and to domestic markets; and to provide Property of Origin certificates to

facilitate live exports and any inspections required by an authorised AQIS officer. All cattle, eight months and older, moving from a property must be branded. A Property Identifier Code is assigned to every property on which cattle or buffalo are kept. Identification devices are either: permanent devices which carry the Property Identifier Code of the property where the stock were bred; or transaction tags which carry the Property Identifier Code of the last property of residence of cattle prior to going to saleyards or slaughter. The National Livestock Identification Scheme (NLIS) is being developed in the state, which will identify all cattle herds by a Property Identification Code (PIFNT, 1999).

2.13.2 Stock Movements

Waybills are used to document the movement of cattle and buffalo in the Northern Territory. The waybill system acts as a deterrent to stock stealing, provides records to help control the spread of disease, provides certification of the property of origin for abattoirs and export, and provides detailed documentation for station management. The use of waybills is compulsory under the *Stock Routes and Travelling Stock Act*. Horses, sheep, goats, pigs, camels, and deer do not require a waybill (PIFNT, 1999).

A person in charge of travelling cattle must ensure that all animals over the age of eight months in the mob are branded. Branding of other travelling stock (ie. buffaloes, camels, horses, sheep and swine) is optional (PIFNT, 1999).

2.13.3 Legislation

Under Legislation Section 210, NT *Criminal Code Act*:

> *Any person who steals is guilty of a crime and is liable, if no other punishment is provided, to imprisonment for 7 years* (AustLII, 2001a).

There is no specific legislation for stock theft. In the case that the value of the item stolen is $100,000 or greater, the person is liable to imprisonment for 14 years (AustLII, 2001a).

2.13.4 Stock Theft

Informal conversations with police suggest that there are few cases of reported livestock theft in the Northern Territory. Properties are so large that graziers may only muster once a year and missing stock may be written off, as it is too difficult to do anything about it. There is little or no fencing on these stations and therefore it is impossible to get a clean muster.

2.13.5 Policing

By Australian standards, the Northern Territory Police force is small, with an authorised sworn strength of 896 Police, 110 Auxiliaries and 49 Aboriginal Community Police Officers. The Stock Squad was disbanded in 1995. Local Police now cover all investigations. The Territory's 24 bush stations have from two to four Police and Aboriginal Community Police Officers. Many bush stations are hundreds of kilometres from back up and as the Top End may be cut off for months in the Wet, police are expected to be resourceful and independent. Bush station police often assist Fire Service and Emergency Service volunteers and may spend days away from home patrolling with a swag on top of a four-wheel drive (NT Police, 2001).

2.14 SUMMARY

This chapter has presented an overview of the agricultural industries in Australia to provide an understanding of the scope of the industry to be policed. The difficulties experienced in policing the industry can be appreciated when

considering the size and the complexity of the industry and the legislation that governs it. The number and diversity of industry types and breeds of livestock requires police to absorb a large amount of information.

The chapter also presented a summary of the types of agricultural crime that can occur. Official recorded crime data provides no national data on livestock theft or on the broader category of agricultural crime. In addition, state recorded crime data varies from state to state making it difficult to estimate the true extent of agricultural crime across Australia. Data collections are also complicated by the varying methods of categorisation and collection methods between the states. It is difficult to achieve recognition of the pervasiveness of agricultural crime without the availability of specialised data.

The various types of legislation that govern the livestock industry were also reviewed. One of the greatest obstacles confronting livestock theft investigations is the variation between the states regarding stock identification and stock movements. There is a need for uniformity in legislation between states to avoid confusion in police investigations and to aid in the trace back of stolen stock. Police operate under several Acts of Parliament to investigate and prevent agricultural crimes. There is a need for a revision of these laws particularly as many were devised in the early 1900s. Ideally, there is a need for all states to have in place a stock squad, with trained officers who would have the time, resources and knowledge to effectively deal with agricultural crime.

A Review of the Literature on Agricultural Crime

The Research

3.1 INTRODUCTION

This chapter presents a review of the Australian and international literature on agricultural crime. The literature searches utilised the World Wide Web, the University of New England's Library and various electronic databases available. The findings are presented according to several themes that were evident within the literature. These included the strong historical context of agricultural crime in Australia, the current issues surrounding crime on farms, the incidence and types of crimes committed on farms, the security practices employed by farmers, the failure of farmers to report crimes to police, and farmer attitudes in general to agricultural crime.

3.2 THE HISTORY OF AGRICULTURAL CRIME IN AUSTRALIA

There has been a long history of agricultural crime in this country. Throughout the 1830s, as squatters took up large holdings across southern parts of Australia, police reports of the time identified stock theft as a constant problem. The

fortunes of many of rural Australia's leading families were believed to have been built on such criminal activity (McQuilton, 1993). In the 1860s, the first selection acts were passed to encourage permanent settlement in small-scale agricultural land use. The concept was based upon the yeoman ideal that the true source of wealth lay in the land, and that farming would encourage permanency in settlement, independence, self-sufficiency and democratic values. However the intrusion of the selectors into the squatters' domain led to fierce competition for land and water. The selectors struggled against a harsh and unfamiliar environment, inadequate infrastructure, and against the economic and political power of the squatters. The failure of selection brought poverty and social antagonism between the two groups. Police reported an increase in crimes traditionally associated with agrarian Ireland: squatters' fences and haystacks were burnt and the theft of stock became a regional tradition (McQuilton, 1993).

Livestock were stolen for food, a practice some squatters were prepared to tolerate, as well as for a livelihood. Selectors' sons, who were great bushmen, formed gangs that were often involved in the stolen stock trade. Australia's most famous bushranger, Ned Kelly, was well known as a leader of such a stock theft ring or what he preferred to call, 'wholesale and retail horse and cattle dealing' (McQuilton, 1993). A lively inter-colonial trade in stolen stock utilised the mountainous backbone to move stock between Victoria and New South Wales (McQuilton, 1987). The squatters formed Stock Protection Associations, held meetings across the region, and offered substantial rewards to the police for the arrest of suspects. They also used their judicial powers at the local level to ensure offenders were severely punished (McQuilton, 1993). Some of those convicted for livestock theft were sentenced to hang. In June 1828, Justice Dowling sentenced John Curtis to hang for the theft of a bullock (Supreme Court of New South Wales, 2001). On 1 October 1828, Justice Forbes when sentencing James Henery to death for stealing a heifer, stated:

> *This offence is one that has increased to such an extent, and is such a prolific source of crime and perjury, that the Court has come to the resolution to visit offenders who may be convicted thereof, with the*

severest punishment known to the law. (Supreme Court of New South Wales, 2001).

Never the less, despite a full-scale police crackdown, the incidence of stock theft continued to rise. In 1878, the regional press reported that the morality of the rural districts had reached 'an all time low' (McQuilton, 1993).

The police were outclassed, out-mounted and ill equipped for pursuing bushrangers. Prior to 1862, they were also confined by laws that prevented them from pursuing criminals into neighbouring districts. They were also few in numbers. In 1863, there were 400 officers to police the entire State of New South Wales and most were poorly skilled for the task (Stackpool, 2001). Victoria's Police force was similarly disadvantaged. The pay was minimal and with the discovery of gold, the authorities accepted anyone willing to wear the uniform. Inadequate bush skills hampered their effectiveness in curbing the stolen stock trade (McQuilton, 1987). However, what concerned authorities most was the widespread sympathy and support that these criminals, particularly the Kelly gang, commanded from the regions' selectors (McQuilton, 1993).

One of the most famous cattle thefts, which became part of outback folklore, concerned the bushranger Henry Readford, more popularly known as 'Captain Starlight'. In 1870, in the company of two others, Readford stole one thousand head of cattle from Bowen Downs in central western Queensland. At the time, Bowen Downs Station covered 1.75 million acres and ran a herd of about 70,000 cattle. Readford took the stock from yards at many locations along the Thomson River, and drove them 1300 km through the largely unchartered channel country to the Blanche Water Station in northern South Australia where he sold them for £5000 (McCarthy, 1987; Walkabout, 2001).

The mob included an imported white bull that Readford sold at Hill Hill Station in South Australia so that he could purchase supplies. The bull was easily recognised as belonging to Bowen Downs, which led to Readford's subsequent arrest and trial in Roma in Queensland. Locals captivated by Readford's consummate bushcraft and daring, packed the courtroom. Forty-one of the forty-

eight people called as possible jurors were dismissed because they were prejudiced. The evidence against Readford was overwhelming. The defence offered no witnesses and complained that Readford had been gaoled without trial. The jury retired for an hour and then delivered their verdict of not guilty. This verdict so outraged the judiciary that the Governor of Queensland subsequently ordered that the criminal jurisdiction of the District Court at Roma be withdrawn for two years. The one positive outcome from the incident was the introduction of the central system of cattle brand registration in Queensland. On the 1st May 1872, Bowen Downs registered their brand (McCarthy, 1987; Walkabout, 2001).

3.3 CURRENT ISSUES IN AUSTRALIA

As we enter the new millennium, much has remained unchanged. The problem of crime on farms appears to be widespread in all states in Australia. Numerous newspaper articles over the past year have highlighted the concerns of graziers and the severe financial losses they are experiencing through crime: cattle rustling in particular. In one incidence alone, a farmer lost 94 head of cattle, valued at over $62,000 from an unoccupied block that bordered the busy Newell Highway in central New South Wales. The cattle included calves, and cows and heifers in calf. The cattle were earmarked, ear-tagged and some were branded. The gates to the block were locked and chained. The yards on the block were not visible from the highway and there were no neighbours in the vicinity. Police emphasised the sheer scale of this crime, suggesting that the theft of this number of cattle would have required making multiple trips in a double deck semi-trailer and at least three hours to muster the cattle by motorbike and a further hour to load them. The thieves obviously had knowledge of the property, and had the skills and resources to carry out the theft (Hurley, 2000).

In addition to these larger and more organised thefts, farmers are also experiencing repeated losses of a few cattle at a time. A farmer in the New England District of New South Wales has experience repeated incidences of stock

theft that have cost over $100,000 (Limb, 2001). In one incident, cattle were being drenched and were held in the yards overnight to complete the task the next day. In the morning, 16 cows and calves were missing. The thieves drove up the main driveway and loaded the stock into the back of a truck without using the loading ramps in the yards. The owners were concerned that the cattle were full of chemical. If one beast reached the market with chemical residue, the ramifications for international trade would be enormous. They believe the introduction of a National Livestock Identification scheme (NLIS) using a rumen bolus will go some way to reducing theft. While their stock were tattooed, branded, and ear marked, thieves can change these methods of identification (Limb, 2001).

Another grazier has experienced a series of thefts on his 5,000 acre sheep property located in central New South Wales. Over a 14-month period to November 2000, 413 sheep were stolen. The greatest concern for the owner is that his property is under quarantine due to the presence of Ovine Johnes Disease. Despite the producer complying with precautions, sheep losses persist ranging between 30 and 50 at a time, often just prior to shearing. The owner believes an organised gang is behind the thefts. Although not a large property, the terrain is very hilly so monitoring is difficult. At one time, 238 sheep disappeared out of one paddock. Sometime later, the sheep were found about three kilometres away in scrub on a neighbour's property and 43 were missing. To move the sheep this distance, they needed to travel across four paddocks or three separate neighbour's properties either way, crossing several fences. This would not have been possible without assistance. All of the missing sheep were branded, earmark and tagged. The grazier now rigorously musters his sheep and conducts monthly counts. The property also uses nighttime surveillance although not all of the property can be monitored every night. For this reason, he has installed electronic surveillance. (NSW Farmers Magazine, 2001).

In western Victoria, ongoing thefts of sheep have seen producers incurring losses of up to $30,000 a year. Young weaner sheep about to be shorn are taken, preferably twenty at a time to fit in a trailer. Stud sheep have also been targeted.

Thieves appear to be well organised and are highly skilled in handling livestock and sheep dogs (Baggio, 2000).

In Queensland, soaring beef prices had led to a record number of stock theft investigations in recent months and the value of missing cattle is estimated to be $2.5 million. Almost 1000 cattle were missing from one North Queensland property. Sheep, goats and horses are among other livestock missing. Police report that professional thieves have the equipment and transport to make quick getaways over huge distances, often crossing state borders to offload stolen cattle at abattoirs or through export markets. Thieves usually strike at night, frequently taking advantage of outer western districts with small, unmanned police stations (Hansen, 2001).

One of the largest thefts of stock worth $150,000 occurred in May 2000 in Western Australia. A pastoralist from the far north Kimberley region was charged with the thefts of more than 800 cattle from neighbouring stations over a six-month period in 1998 (ABC, 2000). More than $500,000 worth of livestock is reported stolen each year in Western Australia (*Farm Weekly*, 2001a).

Police in Western Australia are also concerned at discrepancies between the numbers of sheep reportedly leaving farms, to those counted on arrival at, and on leaving, saleyards. While human error is sometimes blamed, there also have been allegations of theft as a result of the variation of sheep numbers. In a recent incident, a farmer who bought 460 sheep at the saleyards found he was 20 short when they were unloaded into the yards at his property. As sheep are often loaded straight into a paddock, stock losses may go unnoticed. If only two sheep per truckload at saleyards are 'siphoned off' during the unloading and reloading process, there could be a potential windfall of 200 sheep at the end of the day (*Farm Weekly*, 2001a).

One other type of crime occurring in rural areas, which is of concern to police and farmers, is drug trafficking by air. In the Western Australian Kimberley area, pastoralists are being asked to report any sightings of unmarked planes or

suspicious four-wheel drives in remote or isolated areas. Increasing amounts of drugs probably brought in by light aircraft to remote areas of the Kimberly were being intercepted further south. There had been evidence of the black flights, so called due to the aircraft being unmarked, black, and coming in at night, along 80-Mile Beach as well as into South Australia and on remote airstrips. Rough flares for lighting airstrips and four-wheel drive tracks had been found (*Farm Weekly*, 2001b).

In response to the apparently escalating problem of livestock theft, a number of crime prevention and monitoring initiatives are being examined. In particular, the National Livestock Identification Scheme (NLIS), which incorporates electronic tagging, has been put forward as a means of consistent identification and tracking of stock (Cawood, 2001). Articles in Australian Police journals discuss the recent rise in the incidence of stock theft and describe police responses to these concerns (Margetts, 1998; Wockner, 1998; NSW Police Service, 1999). For example, in New South Wales, under *Operation Nicaragua*, recorded crime data and mapping techniques have been enhanced. This task force also liaises with stock squads in other states (NSW Police, 1999).

A ministerial rural crime working party was formed in New South Wales to seek solutions to the problem of crime on farms namely, stock, wool and chemical theft and trespassing on farmland. The working party reported to the Minister in March 2001. The working party found there was a need for increased penalties and enforcement for the problem of trespass, which causes serious concern for safety and security on isolated properties. However, most of the working party's recommendations focused primarily on stock theft, as this was the area of primary concern. Some of the main recommendations in the report included:

- Requirements for record keeping for agents under the *Wool, Hide and Skin Dealers Act* be tightened.
- Support for compulsory stock identification (preferably with an approved National Livestock Identification Scheme device) and recommendations that the Government look at appropriate incentives for farmers to participate.

- That a standardised National Vendor Declaration form be implemented which satisfies the requirements of the Transported Stock Statement.
- That NSW Police appoint a Rural Crime Investigator in each rural Local Area Command who would have the appropriate training to understand the agricultural industries (Pastoral and Agricultural Crime Working party, 2000).

In Queensland, the penalty for stock theft has been increased from $5,000 to a maximum of $50,000. There is also renewed support for specialised police units, such as the Queensland Stock Squad that has training relevant to stock theft and other rural issues (Harpley, 2000). Joint police border operations on the New South Wales/Queensland border have targeted stolen stock and property and drug movements as well as transport infringements. The operations have revealed that organised crime is involved in the rural industries. Recent police efforts have resulted in the arrest of an offender for $1.3 million of stock related fraud, the location of a $2.3 million cannabis plantation, and the recovery of 22 stolen motors vehicles (Crook, 2000).

In Western Australia, the Pastoralists and Graziers Association (PGA) has been receiving at least one complaint a week from members regarding law and safety issues on farms. These include stock theft, arson, trespassing, the use of firearms, and the rights of property owners. Farmers complain that some people perceive that they have a right to enter private property and light fires, remove cattle and shoot kangaroos or livestock. With the help of the police, a program run in conjunction with Rural Watch has been implemented that will involve signs being placed at vantage points around pastoral properties to educate the public about what they can and can't do on the property, as well as the potential dangers to the environment when these property restrictions are broken. Approximately 2500 signs will be distributed to PGA members and through rural police stations (*Farm Weekly*, 2001c).

Agricultural crime in Australia has increased for several reasons. Australian farmers are the most efficient in the world (MLA, 2001). That efficiency depends

on more sophisticated and expensive technology, larger holdings, larger and more expensive machinery, and more chemicals, pesticides and fertilizers. These technological improvements make farms lucrative targets for thieves. Improvements in road systems and the advent of modern vehicles and transports means even remote properties are easily accessible. For example, modern day stock thieves will utilise gyrocopters, UHF radios, motorbikes, stock transports plus various other means of technology, to steal stock and transport them overnight to sale outlets across one or more state boundaries. On the other hand, some crimes are committed in the city for ready markets in rural areas. These include the theft of farm chemicals from city warehouses or the theft of farm machinery from wharves (Barclay *et al.,* 2001).

Social, economic and technological changes in rural Australia have also led to an increase in crime. Over the past decade, severe drought and economic decline, as well as social change in rural Australia has been devastating for farm families and many have left the land. The rural downturn has contributed to closure and shrinkage of business and community services in rural towns leading to an increase in unemployment and more people leaving the district (Walker and Battye, 1996). Decreases in Agricultural employment have been shown to be associated with increases in property crime rates (Carcach, 2000). Jobes, Barclay, Donnermeyer, and Weinand (2000) found rural communities that had greater residential instability experienced higher rates of break and enter crimes.

Those farm families that tenaciously remain on the land are placed under continuous pressure to 'adjust' by making a range of changes in their business and households. Traditional responses have included the expansion of farm scale through land purchase and investment in capital-intensive technology. Other responses include a reduction of farm labour and more family participation in farm work, income supplementation with off-farm income, and reductions in non-essential farm business expenditures (Stayner and Crosby, 1999). These measures culminate in a reduction of the guardianship of the property. Livestock placed on agistment or grazed on roadsides are more vulnerable to theft. There are fewer people for surveillance with the retrenchment of farm employees and more farm

family members taking up off-farm employment. Guardianship is reduced with less attention paid to the repair and maintenance of gates and fences and security generally on farm. Increasing operation size means there is more property to guard and often the costs are at the expense of other areas of farm management. Where neighbouring farms are bought up, often there are unoccupied farmhouses that are left vulnerable to break and enter and vandalism (Barclay *et al.*, 2001).

3.4 RESEARCH IN AGRICULTURAL CRIME

3.4.1 Australian Studies

It was surprising to discover that despite a long and colourful history and persistence of livestock theft in this country, there has been relatively little published Australian research on agricultural crime. In the review of the literature, only one unpublished study that focused upon agricultural crime in Australia was discovered. Torning (1991) investigated agricultural crimes in the Goulburn District of New South Wales. Nearly 16% of Torning's 428 respondents reported the theft of stock and farm animals within the past year. This was followed by 12.2% for the theft of farm machinery and equipment, 7.9% for the theft of fruits and vegetables, 2.6% for stolen saddlery, 2.4% for the theft of wool and hides, and 2.3% for grain or stock food. Other types of items stolen included chemicals, fuel, fencing and gates, radios, tyres and motors. The financial losses for property stolen ranged from $20 for a single sheep through to $13,000 for the theft of 180 sheep.

A large proportion of crimes (55%) were not reported to police. The main reasons the farmers gave for not reporting crimes were that they considered many incidents to be trivial, or that the police would not be able to help. In addition, the amount of time between a crime's probable occurrence and its detection was a deterrent for reporting thefts. This was especially true for the theft of stock. The large size of farms and the difficulty of continuously checking stock meant that it

was difficult for farmers to become aware of an incident of stock theft and report it in a timely fashion to the police. Two out of five reports of arson were not reported; one because the victim believed the incident to be too trivial and the other because the offence was committed by a juvenile known to the property owner and he wanted to keep the problem a private matter (Torning, 1991).

In a survey of crimes against Australian businesses conducted in 1993, primary industry was included as one of five types of industry examined (Walker, 1995). Burglary and theft were the most common type of crime affecting a quarter of the total sample of 966 businesses. Only one quarter of the sample reported a crime during the past year. Primary producers were least likely to perceive crime as serious for their businesses. With the exception of equipment identification numbers, farmers were less likely than others to use crime prevention measures. Primary producers along with retail businesses however, were more likely to participate in some form of community crime prevention activities.

It was interesting to note that the non-reporting of crime was evident amongst those businesses that were victims of shoplifting. Less than one in four victimised businesses reported all or most of the incidents. Lack of evidence and 'not serious' were the most common reasons for not reporting to police. There was also some recognition that police effectively 'could do nothing' to help (Walker, 1995). These reasons for non-reporting are similar to those found by Torning (1991) amongst farmers in Goulburn.

Research conducted previously by the authors, which examined the relationship between the economic and social characteristics of Australian rural communities and crime (Jobes, Barclay, and Donnermeyer, 2000), investigated agricultural crime in one inland rural community. Police were most concerned about the level of crime on farms in the district and believed local farmers were complacent about security and did not check their stock often enough. Large machinery, such as headers, were left in paddocks during the off-season. Springs were taken from disk ploughs. Header lights and radios were stolen from vehicles or tractors.

Two of the four farmers interviewed had been victims of stock theft. One farmer reported the theft of over a hundred sheep and in a separate incident; sheep valued at $3000 had been stolen. Although they stressed that crime was not an issue, all of the farmers interviewed had heard of theft from other properties in their district, such as the theft of toolboxes and radios from vehicles or sheds.

Two farmers saw no point in spending money on security measures or taking precautions, as they believed it was impossible to prevent crime. One saw no reason to lock a tractor to prevent theft because it is more expensive to replace a tractor window than a radio. One farmer believed his property was secure, as it was some distance from the road and most of the sheds, fuel and equipment were near the house. Three other farmers did take precautions by locking farm utilities and ensuring tractors and fuel were not left near the road.

The farmers expressed a dislike of strangers on their properties. Trespassers left gates open and farmers were suspicious of their motives for being there. Shooters were of particular concern. One did not mind people on the property if they came to the house to seek permission to be there (Jobes, *et al.*, 2000).

The most recent research conducted by the authors (Barclay, *et al.,* 2001) surveyed 1100 farmers across rural New South Wales to investigate the extent and impact of property-related crime on farms. Telephone interviews were held with farmers who had been victims of crime, as well as police officers, country magistrates, and agricultural professionals, such as stock and station agents and sale-yard managers.

The response rate to the mail survey of farmers was 62%. Of the total sample of 620 respondents, 69% reported experiencing some type of property crime. The sample comprised a main survey sample of 393 respondents of which 87% reported a crime occurring in the past two years, and 227 respondents to a close of survey form, of whom 54% also reported experiencing a crime in the past two years.

Within the main sample, the most common type of theft experienced over that time was the theft of tools and other small equipment, with 33% reporting a theft of this type. Stock theft was reported by 23% of respondents while 21% reported the theft of fuel. While individual financial losses were significant, the incidence of stock theft was not as high as the theft of tools and equipment. Other crimes experienced over the past two years included break and enter of farm buildings (14%), dumping of rubbish (11%), and vandalism (13%). Six per cent reported discovering cannabis growing illegally on their property. Illegal trespassers (30%) and shooters (25%) were the most common type of crime. Farmers were asked to estimate the financial losses they incurred through criminal incidents on farm. Only 105 (27%) responded to this question reporting losses totalling $728,403. Individual losses were reported up to $110,000. The average loss was $7191.

Livestock thefts were seasonal, often preceding calving, lambing or shearing, when stock are at a premium. However, there were no consistent patterns in the time of day that thefts occurred. Farmers seem to be resigned to the fact that there is little they, or the police, can do to prevent crime occurring. In particular, illegal trespassers and shooters appeared to cause producers considerable concern. The offenders have little respect for farm property, frequently damaging crops, livestock and farm infrastructure. There was a close association between the presence of illegal trespassers and shooters and the occurrence of other types of crime.

However, when asked to rate the seriousness of crime on farms in their district, only 13% of respondents described it as serious or very serious, 30% described it as somewhat serious, while 40% thought it was not serious at all. Never the less, 31% believed there had been an increase in farm crime in their district in the past year while 40% believed it remained much the same. Seventy per cent admitted they worried about the safety of their property when they were away for any length of time.

The survey found crimes covered by insurance, such as the theft of household items or large items of machinery were more likely to be reported to police. However, under reporting of crime was evident within the sample. Only half of all stock thefts in the study were reported.

Several reasons why farmers failed to report crimes to Police were identified.

- Fifty-six per cent failed to report a crime because of lack of proof. It can be difficult to prove what and how much livestock, crops, fuel or timber have been stolen.
- Fifty-five per cent of respondents could not be sure that a theft or crime had actually occurred. With small stock losses, there are always doubts about whether stock have merely strayed or have died from natural causes.
- The fact that too much time had passed was reported by 53% of respondents as the reason that they did not report a crime. It is common for livestock to be stolen, transported and disposed of long before the theft is discovered. Producers can remain unaware of stock losses until mustering, which can be as infrequent as once a year on large properties. Unless stock are taken in large numbers, farmers accept such losses as inevitable and do not report them.
- Forty-four per cent believed that police are unable to catch offenders or recover stolen property and therefore it is a waste of time reporting crimes.
- Twenty-five per cent believed it is a waste of time reporting crimes because police (especially those from the city) have little knowledge or understanding of agricultural industries.
- Thirty per cent would not want the hassles of the legal process.
- Seventeen per cent were concerned about the media getting hold of their story.
- Others (14%) would rather deal with the problem themselves. Several reported that where they became aware of their stock in a neighbour's property, they just rounded them up and brought them home.
- Twenty-eight per cent reported that living in a small community would make reporting a suspect in the district very difficult. Police complained that there is a code of secrecy among farmers in rural communities, which

deny them the information required to secure a warrant and target offenders. Some people withhold information fearing retribution. Some will provide information to police on some criminal activity but will not name the suspect. Many of the farmers reported that they were experiencing ongoing livestock theft at the hands of a neighbour or someone in the close vicinity. Two farmers had reached the point of selling their properties because they could no longer withstand the financial loss. The interviews with farmers who were victims of crime found that many victims of agricultural crime suffer in silence. In some rural communities, victims are placed under pressure to conform, keep the peace, and not accuse someone in the community of theft. Great importance is placed on the strength of a united community in times of bushfire or flood. Victims would rather trade out of stock or sell up their properties than be subject to exclusion within their community.

Analyses of the survey data revealed that farm crime is highly situational. Fuel, tool and machinery theft, and break and enter crimes occurred more frequently on properties where there was less visibility of farm sheds and buildings to the farm residence. Livestock theft occurred more often on properties that were physically isolated, had dense cover, and contained places where thieves could operate without being seen by the owners. Malicious damage and the presence of illegal trespassers and shooters occurred on farms distant from an urban centre, yet easily accessed from a highway, and had areas that were not visible from the farm residence. Rubbish dumping was found to be more prevalent on properties that were unoccupied but in close proximity to town and a highway.

The study also explored the security measures farmers employed on farms. Most respondents (64%) reported that they locked their house when gone for the day. However, other areas of the property were generally left unsecured. Other precautions taken were the maintenance of fences, the storing of fuel tanks out of sight and ensuring someone watched over the property when the occupants were away. Of concern is that 65% of respondents reported never having identification

on tools, equipment or machinery and only 46% had identification on farm produce.

An important finding was the lack of association between crime prevention on farm and crime. A total of 22 security measures were compared with the nine most frequent types of crime. With only one exception, none of the precautions were found to reduce victimisation. Sixteen of the comparisons were statistically significant, but the associations were positive, indicating more crime, not less. Interviews with farmers qualified this finding. It would appear that a small proportion of the security practices were more of a reaction to experiencing crime, rather than a way of reducing victimisation.

The one and only prevention measure that reduced crime was the presence of a watchdog. Twenty per cent of farmers who reported that they rarely or never have a good watch dog, reported a break and enter crime during the past two years, compared to only 12% of farmers who reported the presence of a watch dog most or all of the time. As dogs and farms usually go together, the presence of a dog on a farm is unlikely to be a reaction to crime.

The sample was divided upon the issue of where the responsibility lay for preventing crime on farms. While a larger proportion believed that the responsibility lay with farmers themselves, a sizeable proportion portrayed a sense of helplessness in safeguarding their property and possessions. Many despaired about the difficulty in controlling illegal trespassers and shooters on farm. The majority called for tighter legislation regarding agricultural crime along with tougher enforcement of laws within the court system.

The study revealed that there is widespread respect for police in rural New South Wales. Respondents believed the police were effective although there was an appreciation that they are short staffed. Most did not believe however, that police had the problem of crime on farms under control. The majority called for a greater police presence at sale yards, clearing sales, patrolling rural roads, and

checking stock transports. Most respondents believed police officers need skills and training in agricultural industries to effectively deal with agricultural crime.

The study concluded that agricultural crime is widespread in New South Wales and causes considerable financial and personal losses for farmers. Crime prevention will require better security measures on farms and more resources and support for the policing of agricultural crimes (Barclay *et al.*, 2001).

3.4.2 Overseas Research

In the United States, agricultural products are worth $1000 billion annually. In a review of agricultural crime in that country, Swanson, Chamelin and Territo (2000) estimate that the economic impact of agricultural crime to be as high as $5 billion annually. Thefts from farms include tools, equipment, machinery, chemicals, timber, livestock and other farm produce. When the prices of commodities increase, thefts may increase 20% or more. For example, when crops are reduced due to climatic extremes, the price of a product increases and consequently the product becomes more vulnerable to theft. Nationally, there is approximately $100 million worth of timber stolen annually. Cattle thieves steal about 20,000 cattle worth $121 million. The authors maintain that this figure may underestimate the actual losses as at least half of all livestock thefts go unreported. In California and surrounding states, thieves are stealing cattle to support drug addictions as they can realise full market value for their stolen goods. Between 30% and 40% of all cattle thefts in California are drug related. (Swanson, Chamelin and Territo, 2000).

In Texas and Oklahoma, 1133 cases of stolen livestock were investigated in 2000. A Texas association of cattle growers has employed 31 inspectors to check for stolen stock at sales. Last year the inspectors successfully recovered $5.7 million worth of stolen livestock and farm equipment (TSCRA, 2001). In California, Tulare Country Sheriff's Department has formed an Agricultural Crime Unit,

which has six deputies who work full time in agricultural law enforcement. The deputies wear jeans and work shirts and drive unmarked pickup trucks. They also are trained and have knowledge of the agricultural industries. The unit was formed based on the discovery of the extent of farm crime and the level of unreporting of crime by farmers. A survey of farmers in the county was conducted, an education program was developed for farmers, legislation was reviewed, and several police operations were conducted. The outcomes have been a 95% conviction rate, in excess of $3 million in stolen property recovered, and the incidence of farm crime has been reduced. The success of the program has encouraged eight other counties to form similar units (Cline, 2000a; Cline, 2000b).

Artificial semen worth thousands of dollars has also been subject to theft. Weisheit and Donnermeyer, (2000) reported on the theft of two US$80,000 nitrogen tanks with stored semen. Vandalism is also a major problem in the United States. O'Block, Donnermeyer and Doeren, (1991) described a case of vandals playing hide and seek in tall corn fields at night using off-road vehicles which destroyed the crop at a substantial cost.

Weisheit and Donnermeyer (2000) maintain that improved highway systems and more efficient vehicles make rural areas more accessible for criminals. In addition, as farming has become more reliant on technology that requires greater capital investment, farms become increasingly attractive to thieves. Swanson, Chamelin and Territo, (2000) claim there is evidence that urban-based criminals are both planners and perpetrators of crimes in rural areas, including those on farms. With increasing numbers of conglomerate farms and orchards, there has been a growing reliance on migrant or city based labour. Some workers have been responsible for crimes on farms or have passed information to criminals for a fee. Urban centres are also conduits for the disposal of stolen property from rural areas.

Empirical research on agricultural crime in the United States has been confined to a small cluster of studies conducted in the 1980's, with little subsequent research.

One early study of 100 farmers in West Virginia (Bean and Lawrence, 1978) found theft was the most frequent type of crime experienced. Vandalism and trespass were also common events. The majority reported many incidents of trespass mostly involving hunters and fishermen. The greatest financial costs to producers were caused by arson. Few incidences of crime were reported to police It was also evident that offenders are seldom apprehended.

Crime prevention for more than three quarters of the farmers in the study involved removing keys from vehicles, keeping dogs and firearms, locking the house at night and when gone for the day, and notifying someone when gone overnight. However, less than 60% of respondents removed keys from tractors. Less than half left lights or a radio turned on when gone for the night or operated security at night. Almost two thirds had locks on fuel tanks but few locked farm buildings, gates or machinery. Very few of those who had livestock used identification. Only three grain farmers were concerned with using confetti for identification in grain and very few farmers bothered with identification on machinery, tools or equipment. Only 25% maintained an inventory with serial numbers. Most had household insurance cover against fire and theft while two thirds insured some farm machinery against theft and half insured livestock and poultry (Bean and Lawrence, 1978).

Donnermeyer (1987) in a survey of crime on farms and ranches in Ohio found that vandalism was the most frequently reported type of crime by 14% of all respondents. Nearly all incidents were against farm property. Incidents ranged from being fairly minor to severely costly damage to farm machinery. The second most common type of crime reported by ten per cent of respondents was theft mostly of tools, fuel, seed and chemicals. Items such as radios, batteries and cassette players were frequently taken from vehicles. There were few reports of livestock theft or the theft of farm machinery. Break and enters were reported to farm buildings (6%) and farm houses (2%). Seven per cent reported incidences of fraud, namely the receipt of bad checks for sale of farm commodities or the purchase of defective farm inputs such as fertiliser, seed, pesticide and other supplies for animals, machinery and building materials. Following this research,

O'Block, *et al.,* (1991) developed a zone approach to agricultural operations that divided properties into four areas, each with a unique set of security challenges. These included the property boundaries, central work areas, storage areas and outlying paddocks.

In the late 1980s, several states participated in the Southern Regional Research Project S-193 'Victimisation and Prevention of Rural Crime in the South' to research agricultural crime. In the statewide survey of farmers across Alabama (Dunkelberger, Clayton, Myrick and Lyles, 1992) 58% of the sample of 428 farmers who responded reported some type of victimisation of their property at least once in their lifetime of farming. Many had experienced multiple incidences of crime. The theft of farm property was the most common type of victimisation (47%), followed by vandalism (43%) and burglary (32%). Livestock theft was rated the least serious of all crimes rated. Larger farm operations were more susceptible to crime than were smaller holdings. More than one-third of respondents believed crime had increased during the past two years. Operators of large farms and those who had been victims of crime were more likely to hold this opinion. Crimes involving property theft, vandalism and burglary were less likely to be perceived as serious as the nuisance crimes of poaching, trespassing and rubbish dumping on farmland. Many reported some fear for the safety of their property, particularly those who had been victims of crime. However, few of the farmers had initiated security measures on farm. Operators on large farms or those who had experienced previous victimisation were more likely to install security devices. However, apart from security lights, more than half the sample had not given enough attention to farm security. Few used locks even if they were in place. The authors concluded that the solution to farm property crime lay in better on-farm prevention (Dunkelberger, *et al.,* 1992).

A similar survey of 144 farmers in Mississippi (Deeds, Frese, Hitchner and Solomon, 1992) found farmers who had been victims of crime in the previous year reported vandalism (24%), break and enter (18%), and theft (22%). Sixty eight per cent of victims of vandalism reported more than one occurrence. Farm machinery, buildings, fences and gates were the most common targets of

vandalism. Break and enter occurred to farm buildings (49%), farm homes (26%) and barns (25%). Thefts occurred of crops (17%), livestock (13%) farm equipment (43%) and materials such as fuel, chemicals and seed (50%). Twenty three per cent had experienced more than one type of farm theft. Trespassing on farmland was the greatest concern of respondents (80%), followed by poaching (77%), break and enter (67%), dumping rubbish (64%) and vandalism (59%).

Most (63%) believed vandalism was more prevalent than it had been in the past. A majority (62%) were concerned about damage caused by hunters on their property and 77% were concerned about their property when they are away. One third feared their property would be victimised in the near future. Only 20% were satisfied with the performance of their local police service. Most farmers (71%) believed the courts were too lenient with offenders (Deeds, *et al.,* 1992).

The study found the most common types of security on Mississippi farms were having farm buildings visible to neighbours (73%), outside lights on farm buildings (60%), no trespass and warning signs (60%), locks on barns and other buildings (56%), security lights (54%), and locks on gates (44%). Fifty seven per cent had a watchdog. Seventy per cent had a handgun for protection. Most participants had a neighbour watch the farm while they were away. Just over half attended to locks on doors of farm buildings and maintained records of machinery and equipment. However, the majority failed to have any form of identification on farm produce. While forty per cent believed crime on farms had increased over the previous two years. Yet only 13% had invested in insurance or security measures on farm over the previous three years (Deeds, *et al*., 1992).

The study of farm crime in Arkansas (Farmer and Voth, 1989) found high levels of victimisation with significant financial losses for farmers. Across the three diverse counties included in the study, the total cost to farmers was US$4.5 million. Twenty-three per cent of the 442 participants reported vandalism, 27% reported the theft of car or truck parts while 26% experienced theft around the home. Twelve per cent reported burglaries.

Properties closer to urban settlements had higher rates of vandalism. In particular, the theft of equipment and machinery was more likely to occur amongst farms located near the Mississippi River. The authors noted that farm machinery and equipment theft represented the most serious incidents of agricultural crime because of the dollar amount stolen, that these crimes were occurring in areas where farms were large and widely scattered, and that the owners often did not live on the land they cultivated. Areas with small holdings, where farmers lived on their properties and urbanisation was low, experienced the lowest rates of crime (Farmer and Voth, 1989).

In the area of small farm holdings, only 55% of crimes were reported to police. The reasons given by farmers were that they believed nothing could be done (67%), the crime was not important (29%), it was inconvenient (10%), the police would not want to be bothered (22%), or they were afraid of reprisal (10%). The authors concluded that this community where there was a high level of in-migration and a large non-farming population, farmers had less faith in the ability of local police to serve them (Farmer and Voth, 1989).

The study in Tennessee (Cleland, 1990) found that within a sample of 531 farmers, one fourth had experienced problems with vandalism over the previous twelve months. Farm fences and gates were most commonly targeted. Some farmers also reported roadside littering and vandalism to livestock, farm buildings, equipment and materials. Nine per cent had experienced burglary while one-sixth reported theft. Farm equipment was the most common target of theft followed by feed, fertilizer and livestock. Larger farms were more prone to victimisation. The reported financial losses associated with victimisation were small, although there was one report of US$15,000. The study found that respondents' perceptions of the frequency and seriousness of farm crime and vandalism were greater than the actual experience. Cleland surmised that events on farm or in the neighbourhood had become etched in the respondents' memory and generated feelings that crimes occurred more frequently than they actually did.

Security measures on farms in Tennessee involved ensuring farm buildings were visible from a neighbour's house, locks were on fuel tanks and security lights were installed. Larger farms used 'No Trespass' signs. Locks on farm buildings and farm gates were not common. Few invested in security devices or insurance to protect their property. However, two thirds reported having a handgun for protection. More than half reported having a watchdog. The most common protective actions taken were having a neighbour watch the farm when away, using ear tags or notches to identify livestock, and having insurance on farm machinery. The majority of Tennessee farmers believed that crime had remained much the same over the past two years. The remainder believed that vandalism had increased. The farmers believed judges were far too lenient with offenders. Some were disappointed in the efficiency of police attending to reports of crimes on farms (Cleland 1990).

While the above studies suggest that agricultural crime is widespread in the United States, the study conducted with 1200 farmers in Kentucky (Peale 1989) found that crime on farms was **not** a primary concern for farmers in that state. Of the 462 respondents, 77% reported they had not been victims of crime over the previous year. The study found 42% believed crime had increased over the past two years while the majority believed the rate had remained much the same. Yet most were becoming increasingly worried about their personal and property safety. House burglary was the most frequently reported crime. Barns and farm buildings were also targeted. Twenty-three per cent reported incidences of vandalism. Gates and fences were the most common target of vandals (38%). This was followed by crops (mostly grain and vegetables) (25%), farm buildings (24%), farm machinery (21%) and livestock (20%). Most victims had experienced multiple incidences of vandalism. Financial losses due to crime ranged up to US$10,000. However the average losses ranged between $125 and $1,200. Most victims were not covered by insurance. The study in found 31.3% of respondents did not report any crime to police. However, 49% reported they *sometimes* informed the law and 19% stated they *always* reported crimes. Most were reasonably satisfied with police support and service delivery but called for tougher penalties for offenders.

The study found most farmers did not use protection devices. Security on farm was limited to outside and security lights and a reliance on the fact that farms were small enough to be in sight of a neighbour. Few respondents reported using locks. Just over half had a watchdog. Other security measures included insurance on farm machinery followed by brands and tags for livestock and having a neighbour watch over their property. However, awareness of, and participation in Neighbourhood Watch groups was minimal (Peale 1989).

One other American study (Satiel, Gilchrist and Harvie, 1992) examined farmers' fear of crime with a sample of 1,171 Montana farmers. Participants were asked to indicate how concerned they were that they would be victims of physical assault, damage caused by vandalism or trespassers, theft of farm machinery, livestock, crops, or household goods, or theft from farm buildings or vehicles. The greatest concern was associated with the most frequently occurring crimes, thefts from farm buildings and vehicles and damage by trespassers and vandals. Age and size of operation had no influence on these results. However, previous victimisation, distance from police and confidence in the reliability of police influenced farmers' fear of crime. Previous victims were more likely to perceive police patrolling as insufficient leading to more concern about crime. The results showed that the closer farms were to police, the greater the fear. The authors concluded that close proximity to urban centres and the greater likelihood of victimisation increased the concern of these farmers. Those who were more isolated were more dependent upon support from neighbours and were more concerned about reliable support from the police.

A search of studies conducted in other countries revealed a study of farm crime in Scotland conducted in 1998 (George Street Research Ltd., 2000). Telephone interviews were conducted with 1,022 randomly selected farmers to gather information on the their victimisation experiences since 1993 and their perceptions of the changing nature of crime on farms. The survey found that one in three farmers (32%) across all farm types, and in all regions of Scotland, reported experiencing crime on their farm over the past five years. Frequently occurring crimes included vandalism, petty theft and the illegal dumping of

rubbish or toxic waste. In some areas, these crimes were ongoing problems for farmers. Thefts occurred of fuel, livestock, machinery, gates, all-terrain-vehicles, chainsaws, fencing and tools, tractor radios and computers from farm offices. Some farmers also experienced arson and housebreaking. The average cost of these incidents was £1400. Livestock theft caused the greatest financial loss to farmers. Vandalism and rubbish dumping were ongoing problems and the petty or nuisance nature of these crime meant that many incidents were not reported to police. However, time and labour in repairs were costs to farmers. Small properties, or properties located in semi-urban areas or near main roads, were particularly vulnerable to crime. Urban-fringe farms experienced repeat incidences of crime. Farms in remote locations, or in scattered communities experienced the lowest levels of crime.

The studies found just under half of all crimes were reported to Police and this was particularly the case for repeat victims. Farmers failed to report crimes because they believed the crime was 'trivial' or the sort of crime that the police would not be able to resolve. The farmers surveyed believed those responsible for petty farm crime were 'young people' and 'local children' and acknowledged the difficulty police face in taking action against such suspected perpetrators. Where farmers had reported crime to the police, the majority were satisfied with the overall response. The farmers appeared to accept a certain amount of farm crime as an unwelcome, but inevitable, part of farming (George Street Research, 1999).

Seventy-six per cent of the participants reported that they were now more security conscious than five years ago and many had taken active steps to protect their properties. The farmers believed common sense, traditional crime prevention measures, such as securing farm buildings and farm dogs, were more effective than sophisticated and costly security systems. Vehicle immobilisers were thought to be particularly effective, although the cost was a prohibitive factor. Farmers recognised the need for increased vigilance on farm and most were supportive of the 'Farm Watch' scheme. Non-farming neighbours were viewed as a security asset. The majority were satisfied with the police response to crimes. Most did not believe farm crime was a major problem for the industry but

nevertheless implemented common sense, and workable crime prevention measures (George Street Research, 1999).

Research conducted in the United Kingdom (BBC, 1999) found that more than half of farmers who own land on the fringes of towns and cities have been victims of crime in the past year. Farmers risk burglary, vandalism and attacks on animals and machinery. The survey of 120 farmers conducted for the BBC by Broadcasting Support Services, found that almost half (45%) had encountered vandalism and 20% had suffered arson attacks. One in five said they feared attack and 40% said they thought crime on the urban fringes was increasing. The survey, also showed that 55% had suffered burglary, with farm machinery being the most popular target. Animals and crops were also targeted. Farmers in the North East and Yorkshire experience the greater proportion of crime. One farm family near Sunderland, reported they had noticed the changes since their farm was engulfed by a main road and sprawling housing estates. The family have had pregnant cows shot and butchered in their fields, bales of straw set alight, 85 acres of corn destroyed by fire, and repeated thefts of farm equipment and fences damaged. In an effort to curb the attacks, 60% of farmers said they had joined crime prevention schemes (BBC, 1999).

A report from the Mutual Insurance Group in Ireland (BBC, 2000) claims rural crime has increased by up to 200% in Northern Ireland over the past seven years. Farm equipment and animals are being targeted by professional thieves who are capable of stripping a farmyard in minutes. The report maintained that widespread use of close circuit television combined with tougher security and better policing in urban areas is shifting crime to the countryside. A County Londonderry farmer who had 63 sheep stolen, dyed his entire flock bright orange in order to discourage rustlers. Social change in farming has meant the traditional farming wife no longer exists. Women are more likely to be employed in off-farm work and the farmyard is likely to be empty all day leaving it vulnerable to crime. Local police stations were likely to be closed at night and policing was dependent on patrol cars. Farmers close to urban areas were more likely to be victimised. Farms near the edge of Belfast or any of the major towns, experience more

vandalism and petty theft of small items that can be readily converted into cash. Insurance companies had estimated that rural crime was costing up to £8m annually with a resulting increase in premiums.

3.4.3 Research in Specific Agricultural Crimes

Environmental crimes

Crimes against the environment range from the illegal dumping of toxic wastes through to the illegal harvesting of valuable trees. The isolation of rural areas makes dumping of waste relatively easy. In the United States, due to the increased value of timber, the theft of timber from farm lands has become a lucrative business (Hooker, 2000). In Federal forests alone it is estimated that timber theft totals US$100 million each year. As only a small percentage of trees are in national forests, the true extent of timber theft may be significant. There is an emerging trend of the theft of valuable trees. For example, a single cedar tree can bring as much as US$20,000 (Weisheit and Donnermeyer, 2000). Timber theft can occur by thieves intentionally crossing property lines and continuing to cut timber on an adjoining property owner's land. Payment by a logger to a farmer may be well below the market rate. (Hooker, 2000).

Illegal trespassers and shooters

One particular aspect of security on farms, which is of concern in Australia, is illegal trespass and shooting. A study of 350 landholders in central west New South Wales (Jenkins, Ravenscroft, Philips & Bennett 1998), investigated farmer attitudes to the increasing use of rural areas for tourism and recreational activities. The study found that the landholders were concerned about the general public using their land in relation to the possible damage to crops, disturbance to stock, failure to shut gates, environmental damage, vandalism and indiscriminate shooting. Irresponsibility with fire and control of dogs was also a concern. Respondents were particularly concerned about illegal trespassers on their properties with sixty-one per cent reporting some experience with this problem.

Sixty-eight per cent reported they would not allow public access to their properties for recreational purposes. Respondents who had been victims of crime were particularly reticent to allow access to their land. The authors reported on an earlier survey by the Graziers Association of New South Wales that was conducted with its members in 1975. The survey found less than 50% of the graziers would grant access to their land. Access was only provided according to specific conditions being met. Graziers were concerned about shooting, litter, gates, arson, and disturbance to stock, violence, vandalism and theft. These concerns were based on evidence of incidences that had occurred which were damaging and potentially dangerous (Graziers Association of NSW 1975, cited in Jenkins *et al.,* 1998).

There were similar findings in a British Study of 147 farmers in Berkshire on their attitudes to public right of way on their properties (Bell, Dorward, Edwards and Tranter, 1998). Over 80% reported experiencing problems with the general public on their land. These included dogs, litter, trespass, and vandalism, gates left open and poaching. Farmers strongly opposed any future moves to increase public access to farm land. Even financial incentives would not change their opinion.

In the United States, Jobes (1992) in a study of two rural communities in Montana and Wyoming, found problems of illegal trespass, poaching and vandalism were increasing, exacerbated by the urbanisation of rural areas and the increase in the number of young recreationists using rural areas. The geographical scale of land and the differing perceptions of the landowners and offenders made rural violations less understood than those in the city. People coming to rural areas believed that a different and more lax set of rules applied there than in more densely populated places. Properties in some parts are so large that only those with local knowledge recognised where one property began and another ended. Patrolling several thousand acres was difficult where labour was limited and workloads high. Farm buildings, sheds and equipment were frequently left unattended leaving them vulnerable to vandals. Trespass, poaching and vandalism frequently occurred simultaneously as offenders cut fences, destroyed locks or demolished ‘No Trespass’ signs. Destruction of livestock and other

property using firearms occurred with hunting on properties. The senseless destruction of old buildings and signs were frequent examples of vandalism. Such buildings were fair game to offenders who saw nothing of adding another cracked window to what they viewed as junk.

Traditional ranch owners, who freely granted permission for hunting on their property, experienced fewer problems with property violations. They preferred to meet the people hunting or fishing on their land and direct them where to go and limit their numbers. Many received gifts or help with farm labour as expressions of appreciation. Illegal poachers or trespassers were an annoyance and many ranchers viewed it as unnecessary. Other ranchers, who had been victims of property violations, were concerned about protecting wildlife, and put 'No Trespass' signs along their property borders and gave permission very selectively. Others restricted access to family members only. Often these ranchers had previously had fences and buildings vandalised and stock shot and they were experiencing intense feelings of violation of their personal property and life (Jobes, 1992).

The new approach to the problem was to lease hunting rights. However, this approach had created anger amongst recreationists and property violations had increased. Landowners felt their right to control their property was being threatened. Traditionalists resented the pressure they were placed under to remain open. Meanwhile legal confrontations argued over the right of public access to private property and the public ownership of game (Jobes, 1992).

Arson

Since early settlement in Australia, bushfires have been the cause of substantial loss of life, livestock and wildlife as well as property. A study of fires in rural Victoria (Kapardis, Rawson, & Antonopoulos 1983) found that most forest fires in Victoria were started by people either through carelessness or by arson. Over the decade 1973 to 1983, arson was responsible for 18% of fires and 11% of the total area burnt. Analysis of data across twenty years to 1983 revealed a marked increase in the proportion of fires caused by arson. The study examined records

from the Forest Commission of Victoria of 1057 offenders over the period 1938 to 1981 and found only 9 of the 432 persons prosecuted received prison sentences. The authors also conducted a survey of 271 members of the general public and found the majority viewed arson as extremely serious but that most were unaware of the extent of arson offences in the state.

Drug production

In the United States, rural areas are the preferred sites for the production of methamphetamines, designer drugs, crack cocaine and marijuana (see Weisheit and Donnermeyer, 2000). A recent trend in America is the theft of Anhydrous Ammonia from properties for use in the production of amphetamines. The chemical is being stolen in very small amounts and farmers are usually unaware that a theft has occurred. It is the only ingredient illegal drug laboratories cannot readily purchase in the U.S. (Netzel, 2001). Due to the chemical odours and toxic wastes associated with the manufacturing process of methamphetamines, isolation is the best defence against detection. This is a problem that could well affect Australian farmers in the future.

Rural areas have also become important transhipment points for drugs destined for cities (Weingarten and Coates 1989 cited in Weisheit and Donnermeyer, 2000) aided by improved highway systems and the proliference of isolated airstrips on farms. Technical developments in agriculture has seen a greater reliance on pesticides, herbicides and concentrated fertilisers. The theft of chemicals is likely to become more serious. Concentrated chemical to the value of $500,000 can fit in the back of a pickup truck. A recent theft to the value of US$1.5 million was reported. Despite the magnitude of these losses, little is known about the structure of these operations.

3.5 SUMMARY AND CONCLUSIONS

In this chapter, the literature on agricultural crime was reviewed and discussed. The exercise revealed that empirical research in agricultural crime is relatively rare here in Australia as well as overseas. The literature review highlighted the fact that crime on farms has been a part of agriculture in Australia since the early days of settlement, and yet the problem persists today with considerable economic and social cost for the agricultural industry. The lack of research into this type of crime in Australia is therefore surprising and emphasises the need for ongoing research into this issue.

The few studies that have been conducted revealed that livestock theft and the theft of tools and equipment were the main types of crime experienced by Australian farmers. Studies overseas, in both the United States and Scotland, revealed that vandalism and the theft of tools and equipment were the most common types of crime experienced on farms. Within the empirical studies conducted, livestock theft appears to be of primary concern to Australian producers only. However, a more realistic comparison of victimisation between countries will require further research in the United States in states such as Texas, where livestock is a more significant part of the agricultural industries.

However, apart from these differences in the types of crime experienced in various countries, there are several common experiences surrounding crime on farms in all countries reviewed. Illegal trespassing and shooters appears to be a common concern to producers in all countries. Participants in most of the studies expressed similar resentment to the presence of trespassers and shooters on their property. There appears to be a similar conflict of interest in all countries between farmer's perceptions of their right to privacy on their land and city dwellers' perceptions that they have a right to enjoy the environment regardless of who owns the land.

In particular, the non-reporting of crimes to police was evident in several studies and is clearly a common problem in each of the countries. There were similar reasons for the non-reporting of crimes, such as the crime being too trivial to report or because farmers believed that it was a waste of time reporting crimes because nothing would be done. The literature suggests that there is a certain reluctant acceptance amongst farmers worldwide that crime on farms, particularly livestock theft is part of life and there is little that farmers or the police can do about it. There were similar problems with farmers in Australia and the United States failing to report crimes because of fear of reprisal. In some rural communities in Australia, victims are suffering in silence. Great importance is placed on the strength of a united community in times of bushfire or flood. Victims would rather trade out of stock or sell up their properties than be subject to exclusion within their community. This extraordinary influence upon victims makes crime within Australian rural culture quite unique.

It as interesting to note that despite considerable victimisation and substantial financial losses due to crime, study participants in most of the countries did not describe the rate of agricultural crime in their area as serious. It appears there are common perceptions that crime is still an urban problem and that rural areas are safer places to reside. The studies conducted in Britain and Ireland were the exception with respondents expressing considerable concern about the serious nature of crime in their locale. It is likely that farmers in these countries, which are smaller and more urbanised, may suffer higher victimisation because of their accessibility to urban criminals.

Another common factor amongst the studies was that farmers generally were quite complacent about security on their properties. In particular, farmers were unlikely to attend to locking and securing their properties or mark tools, equipment and machinery with some form of identification.

3.5.1 Research Priorities

There is a need to conduct an Australia-wide investigation into this complex crime to expose the variances in victimisation experiences across the country. Further research is necessary to definitively determine how crime prevention strategies employed by farmers are related, if at all, to the reduction of crime against farms. Investigation into the different types of crime prevention programs in varying types of farming areas and community settings would be useful to identify innovative approaches to combating crime.

There is also a need for further investigation of the structure and impact of less common types of agricultural crime, such as the illegal drug laboratories and cannabis plantations found on properties. Likewise, the illegal dumping of waste or rubbish on farms is an issue worthy of further investigation. The incidence and impact of fraud upon farm businesses particularly in rural Australia's volatile economic climate would be of interest to pursue further. The theft and traffic in native flora and fauna would also be important to investigate.

3.5.2 Conclusion

The Australian studies suggest that agricultural crime is widespread and is extremely costly to producers, to rural communities, and ultimately to the national economy. Of paramount concern is that stock theft increases the risk of the spread of disease, or the possibility of contaminated meat reaching the domestic or international markets. There is a definite need for more research into the unique, costly and little understood nature of agricultural crime in Australia.

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