

Agricultural Crime in Ireland

**Report 2:
Financial Costs of Agricultural Crime in
Ireland**

**Dr. Kathleen Moore Walsh
Louise Walsh**

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**Dr. Kathleen Moore Walsh
Louise Walsh**

**Kmoore-walsh@wit.ie
Lwalsh@wit.ie
Tel: 051 302272**

College St. Campus | Waterford Institute of Technology | Waterford

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1. INTRODUCTION

Background

Agriculture is a critical part of the Irish economy,¹ yet the extent and nature of agricultural crime in Ireland has never been the subject of a specific crime survey.² The study of agricultural crime relates to crimes that occur solely on farms or relating to farming activities; namely: (i) vandalism / criminal damage / trespass (VCDT); (ii) theft; (iii) criminal assault; and (iv) fraud. Agricultural crime is not the same as rural crime; rural crime is generally understood to be any crime occurring outside of urban areas.

*Report 1: Incidence of Agricultural Crime in Ireland*³ identified agricultural crime as an issue for farmers with 66% of respondents to the survey experiencing agricultural crime in the prescribed period between 1 January 2014 and 31 May 2016. Five activities have been identified as necessary for the prevention and reduction of agricultural crime: (i) the collection and analysis of agricultural crime data; (ii) followed by information sharing; (iii) education about the issues; (iv) marking equipment and (v) promoting an aggressive stance towards enforcement and prosecution of offenders.⁴ This *Report 2: Financial Costs of Agricultural Crime in Ireland* represents the first sharing of the information relating to certain financial costs encountered by farmers arising from agricultural crime that was collected and analysed from the first national independent survey of agricultural crime in Ireland.

Determining costs of agricultural crime is important because it provides a justification for spending scarce resources on reducing agricultural crime.⁵ Measuring costs of agricultural crime over time can also provide the benchmark for evaluating the effectiveness of agricultural crime prevention measures at reducing the impact of agricultural crime.⁶ Agricultural crime has financial and non-financial costs;⁷ arising from anticipation of crime (e.g. security expenditure, precautionary behaviour), as a consequence of crime (e.g. property damaged, provision of victim support services) and as a response to crime (e.g. prosecution costs, compensation payments).

¹ Department of Agriculture Food and the Marine (2016) *Annual Review and Outlook for Agriculture, Food and the Marine 2015-2016*. Dublin.

² The first agricultural crime survey was conducted in West Virginia in 1978 [L. Bean & L. D. Bean (1978) *Crime on Farms in Hampshire County, West Virginia: Pilot Study*. Morgantown: Center for Extension and Continuing Education, West Virginia University (R.M. No. 69)]. Since then repeated surveys have been conducted in other countries including Australia, Kenya and the United Kingdom.

³ K. Moore Walsh & L. Walsh (2017) *Agricultural Crime in Ireland. Report 1: Incidence of Agricultural Crime in Ireland*. available at <https://icsaireland.ie/wp-content/uploads/2017/03/ICSA-WIT-Agriculture-Crime-Survey-Report-1.pdf> [date of access 28 March 2017].

⁴ D. P. Mears, M. L. Scott & A. S. Bhati (2007) "A Process and Outcome Evaluation of an Agricultural Crime Prevention Initiative." *Criminal Justice Policy Review* (18)1 51-80.

⁵ S. Brand & R. Price (2000) *The Economic and Social Costs of Crime. Home Office Research Study 217*. London: Home Office Research, Development and Statistics Directorate [with estimates of the costs of crime against individuals and households as amended by Home Office Online Report 30/05].

⁶ Information relating to crime prevention collected as part of this independent survey of agricultural crime in Ireland is presented in Report 3.

⁷ E. Shapiro (1999) *Cost of Crime: A Review of the Research Studies*. St. Paul: Minnesota House of Representatives Research Department.

This study only collected information relating to certain financial costs of agricultural crime experienced by a farmer; namely the farmer's: (i) direct financial loss arising from an agricultural crime incident; (ii) cost of time spent dealing with the aftermath of agricultural crime; and (iii) expenditure on minimising exposure to financial loss which may arise if agricultural crime were to occur (i.e. expenditure on insurance of farm related assets and crime prevention measures related to the farm and farming activities). Non-financial costs to farmers arising from the impact of fear of crime or the quality of life of potential or actual victims of agricultural crime is outside the scope of this study. As this study relates to the experiences of farmers directly it does not address the financial costs of operating the criminal justice system to deal with the prevention and consequence of agricultural crime.

Methodology of Agricultural Crime Survey

The authors conducted an independent national survey of agricultural crime in Ireland. For the purpose of this study agricultural crime is defined as: (i) vandalism / criminal damage / trespass (VCDT); (ii) theft; (iii) criminal assault; or (iv) fraud experienced by a farmer in the course of their farming activities. The primary objective of this survey was to gather data about the level and cost of agricultural crime experienced by farmers as well as crime prevention measures employed by farmers. The survey was open to all full-time and part-time farmers engaged in farming in any sector(s) in the period 1 January 2014 to 31 May 2016 regardless of whether the farmer experienced crime.

Respondents completed the independent anonymous survey online. The survey was open for four months between June and October 2016. A number of initiatives were employed to bring a request to complete the survey to the attention of farmers. The Irish Cattle and Sheep Farmers Association (ICSA) conducted a media campaign calling on farmers to complete the survey and hosted a link to the survey site on the homepage of their website. The authors also encouraged participation and circulated the survey site address when engaging with farmers through farming newspaper and radio interviews, attending 'farming events' including agricultural shows, the National Ploughing Championship, mart sales, farming information gatherings as well as communicating with over forty specialist farming groups.

All respondents were asked to answer questions across the three parts of the survey: (i) general farm description; (ii) incidents of agricultural crime; and (iii) crime prevention measures. Questions relating to each incident of an agricultural crime were only asked if the respondent indicated the number of times they experienced that agricultural crime. The questions about the incident(s) of agricultural crime were not available to respondents where the respondent recorded zero incidents of the type of agricultural crime. The maximum number of crimes a respondent could indicate under each crime type was ten.

The survey was completed by 861 respondents from across all sectors and counties. This is comparable to the number of farms sampled by Teagasc in the 2015 National Farm Survey⁸ as representative of the nearly 85,000 farms nationally.

⁸ Teagasc (2016) *Teagasc National Farm Survey Results 2015*. Carlow: Teagasc.

2. AGRICULTURAL CRIME VICTIMISATION

Overall Victimization Levels on Farms in Ireland

The agricultural crime survey was open to all farmers engaged in farming activities between 1 January 2014 and 31 May 2016. A third (296) of the respondents did not experience agricultural crime in the prescribed period whereas 565 respondents did experience agricultural crime. 349 of the respondents with experience of agricultural crime experienced more than one incident suggesting chronic occurrence and extensive repeat victimisation.



Figure 1
Whether a Respondent Experienced Agricultural Crime between 1.1.14 and 31.5.16

In total 1,512 incidents of agricultural crime in the prescribed period were recorded. Incidents were recorded across the four categories of agricultural crime namely in descending order: (i) vandalism/criminal damage/trespass (VCDT) 711; (ii) theft 652; (iii) criminal assault 76; and (iv) fraud 73.

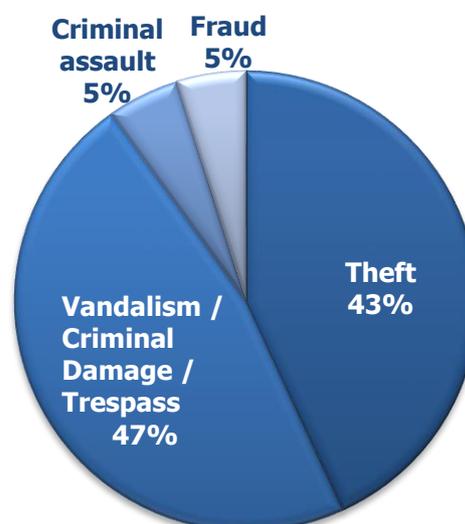


Figure 2
Incidents of Agricultural Crime Experienced between 1.1.14 and 31.5.16 by Category of Agricultural Crime

3. DIRECT FINANCIAL LOSS ARISING FROM AN AGRICULTURAL CRIME INCIDENT

Cost of Theft

849 of the 861 survey respondents recorded whether they experienced theft between 1 January 2014 and 31 May 2016. 351 respondents recorded experiencing 652 incidents of theft of a farm related asset(s) in the prescribed period. Using a list of 33 ranges of value, respondents quantified the value of the asset(s) stolen in an incident of theft for 552 of the 652 theft incidents recorded. The approximate total value of assets stolen in the incidents of theft recorded by these respondents was €963,375.⁹

The average value of assets recorded as stolen in an incident of theft was €1,818. Respondents recorded 14 of these incidents as robbery. Robbery is a more serious crime than theft as the perpetrator used force or threatened to use force in order to steal the asset. The average value of farm related assets stolen in an incident of robbery was €4,375.

Of the 33 ranges of value provided to respondents 368 theft incidents were recorded in the 11 ranges of value less than €1,000. 139 theft incidents were in the 4 ranges between €1,001 and €5,000. 45 theft incidents were recorded across some of the ranges of value of €5,001 and above, although no stolen asset(s) in a theft incident was recorded at a value in the ranges in excess of €75,001.

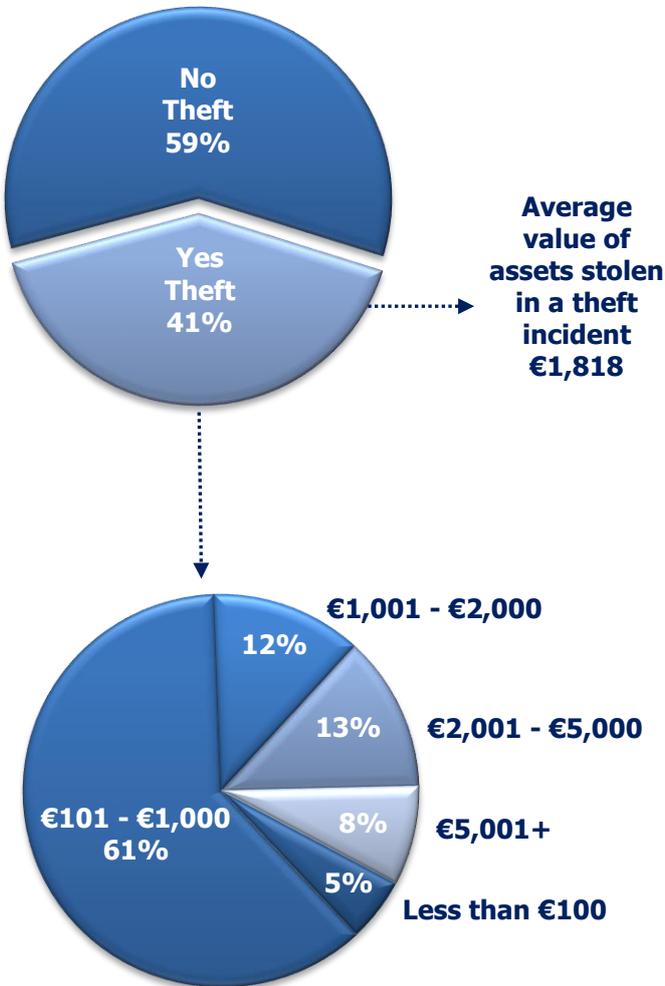


Figure 3
Whether a Respondent Experienced Theft between 1.1.14 and 31.5.16 and the Value of Asset(s) Stolen in a Theft Incident by Grouped Value Ranges

⁹ This figure is approximate because the cost of asset(s) stolen in a theft incident was reported in ranges of value and thus is averaged.

The majority of assets respondents recorded as stolen in a theft incident experienced between 1 January 2014 and 31 May 2016 had a cost towards the lower value ranges. The highest recorded value of asset(s) stolen in a theft incident was a single theft incident recorded in the €50,001 - €75,000 range of value.

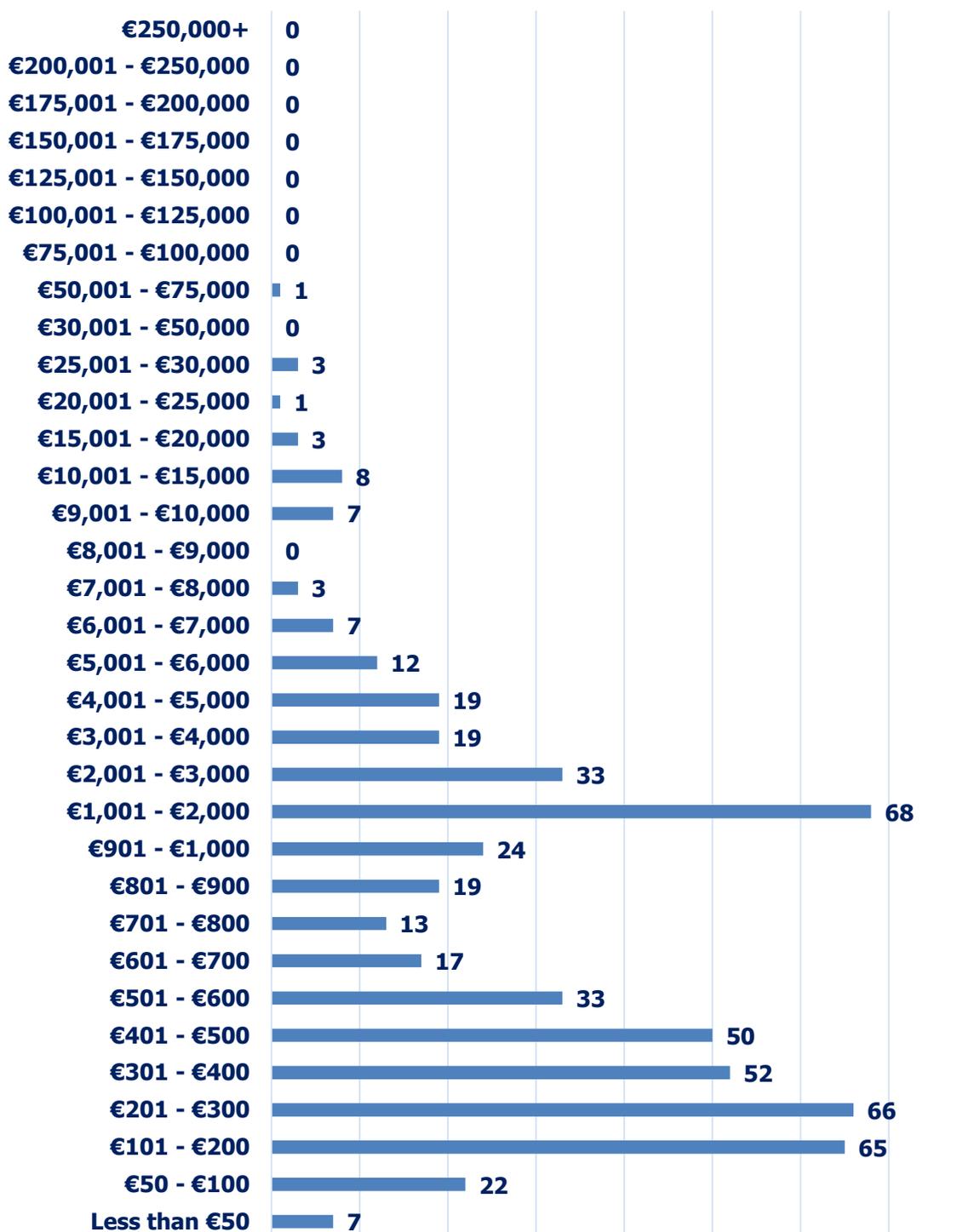


Figure 4
Number of Incidents of Theft Recorded by Respondents as Experienced between 1.1.14 and 31.5.16 Categorised by Value of Asset(s) Stolen

351 respondents recorded experiencing theft in the prescribed period. 191 of these respondents recorded experiencing only one theft incident and their average value of asset(s) stolen was €2,528. However, the results suggest chronic experiences with theft and repeat victimisation with 160 respondents recording experiencing more than one incident of theft accounting for 461 of the 652 theft incidents recorded. The average value of asset(s) stolen in each theft incident recorded as experienced by this cohort of respondents was €1,483.



Figure 5
Respondents Who Recorded Experiencing Theft between 1.1.14 and 31.5.16 Categorised by Number of Theft Incidents Experienced and Average Value of Asset(s) Stolen in a Theft Incident

The farm related assets respondents recorded as stolen in a theft incident (from the menu of 43 options provided) can be broadly divided into 3 groups, namely thefts related to:

- (i) machinery and equipment / vehicles which account for almost half the theft incidents and the highest average value of asset(s) stolen in a theft incident;
- (ii) tools, chemicals, materials & miscellaneous personal property; and
- (iii) livestock/feed/products.

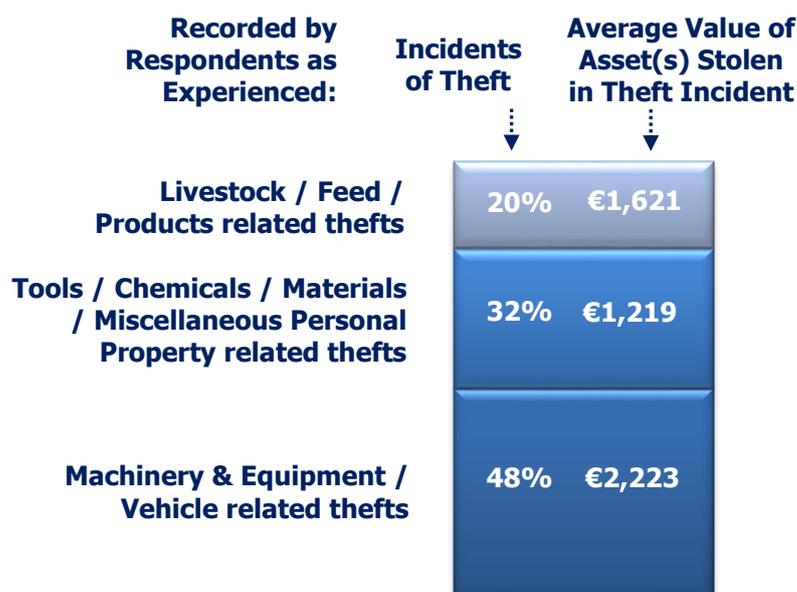


Figure 6
Theft Incidents Categorised by Group and Average Value of Asset(s) Stolen in Theft Incident Recorded by Respondents as Experienced between 1.1.14 and 31.5.16

Incidents of theft of vehicles, including vehicle parts, accounted for one in ten theft incidents and was the type of theft incident with the highest average value of assets stolen at €5,744. By comparison incidents of theft of fuels and oils was the most prevalent type of theft incident (124 incidents) but was the second lowest average value of asset(s) stolen in a theft incident at €579. Theft of fuels and oils mainly comprised theft of agricultural diesel, which was the specific asset with the most incidents of theft recorded (108 incidents). The average value of agricultural diesel stolen in an incident of theft was €560. Incidents of theft of various chemicals was the lowest proportion of the theft incidents recorded (10 incidents) and also the type of assets with the lowest average value of asset(s) stolen in a theft incident at €495.

Average Value of Asset(s) Stolen in Theft Incident	% of All Incidents of Theft Recorded	Type of Theft	Comprising Theft of ...
€5,744	9%	Vehicles	tractor, farm car/jeep/van/pick-up, quad, vehicle parts
€2,428	17%	Machinery & Equipment	livestock trailer, closed trailer, utility trailer, parts for machinery and equipment, computer and other IT
€1,978	10%	Livestock	dairy, beef, poultry, pigs, sheep horses, fish, sheep/cattle dog
€1,791	2%	Other	including shotgun and money as specified by respondents
€1,715	6%	Crops	grown on farm for food chain, grown on farm not for food chain, seeds/plants to grow on farm
€1,240	7%	Materials	for maintenance of buildings, fences etc.
€1,173	21%	Tools	electrical, hand
€655	4%	Fodder	hay, straw, silage, meal
€579	22%	Fuels & Oils	agricultural diesel, hydraulic fluids, heating fuel, coal/briquettes/firewood, machinery grease, motor oil.
€495	2%	Chemicals	fertilizer, biocides, animal health/medicines

No incidents of theft were recorded in the options provided for:
goats, fodder beat, dairy chemicals, combine/harvester or slurry spreaders

Figure 7
Average Value of Asset(s) Stolen in Each Type of Theft Incident Recorded by Respondents as Experienced between 1.1.14 and 31.5.16

Cost of Vandalism / Criminal Damage / Trespass (VCDT)

814 of the 861 survey respondents recorded whether they experienced vandalism / criminal damage / trespass (VCDT) between 1 January 2014 and 31 May 2016. 316 respondents recorded experiencing 711 incidents of VCDT in the prescribed period. Using a list of 33 ranges of value, respondents quantified the cost arising from a VCDT incident for 561 of the 711 incidents of VCDT recorded. The approximate¹⁰ total value of costs arising from the incidents of VCDT recorded by these respondents was €236,100.¹¹

The average value of cost recorded as arising from an incident of VCDT was €359. Respondents recorded 34 of these incidents as arson. Arson is a more serious crime because of the increased risk posed to other properties and life. The average value of cost arising from a recorded incident of arson was €860.

Respondents recorded almost two thirds of VCDT incidents as giving rise to costs in the 2 ranges less than €100 or specified zero cost, i.e. 229 and 136 incidents respectively. 160 VCDT incidents were recorded in the 9 ranges between €100 and €1,000. 36 VCDT incidents were recorded in the 10 ranges between €1,001 and €15,000. No other VCDT incident costs were recorded in higher ranges except for 3 incidents in the range €250,001+ (see footnote 10).

The high level of zero or minimal VCDT costs in conjunction with respondents not specifying a cost arising from 150 of the recorded VCDT incidents may be indicative of difficulty that may arise attempting to identify and quantify VCDT costs as they may be indirect, intangible or not arise immediately when the VCDT is committed.

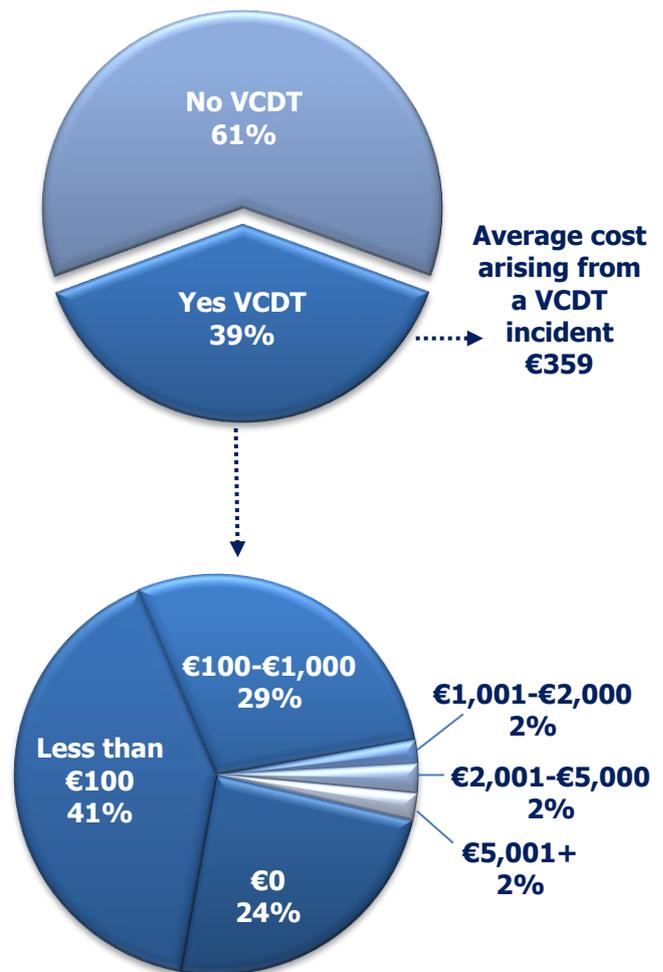


Figure 8
Whether a Respondent Experienced VCDT between 1.1.14 and 31.5.16 and the Costs Arising from a VCDT Incident by Grouped Value Ranges

¹⁰ Note, one respondent recorded experiencing three incidents of VCDT (unauthorised use of farmland) each in July 2014 with costs arising from each incident of VCDT of €250,000+. As no other information was recorded about these incidents of VCDT and no other respondent recorded costs arising from an incident of VCDT in excess of €15,000 the authors took the decision to exclude this respondent from the calculation of average cost of VCDT to minimise the skew of the results.

¹¹ This figure is approximate because cost arising from a VCDT incident was reported in ranges of value and thus is averaged.

The majority of costs arising from a VCDT incident recorded by respondents as experienced between 1 January 2014 and 31 May 2016 were primarily located at the zero or lower value ranges. The VCDT incident costs did not exceed €15,000 except for 3 incidents recorded as €250,001+ (see footnote 10 above).

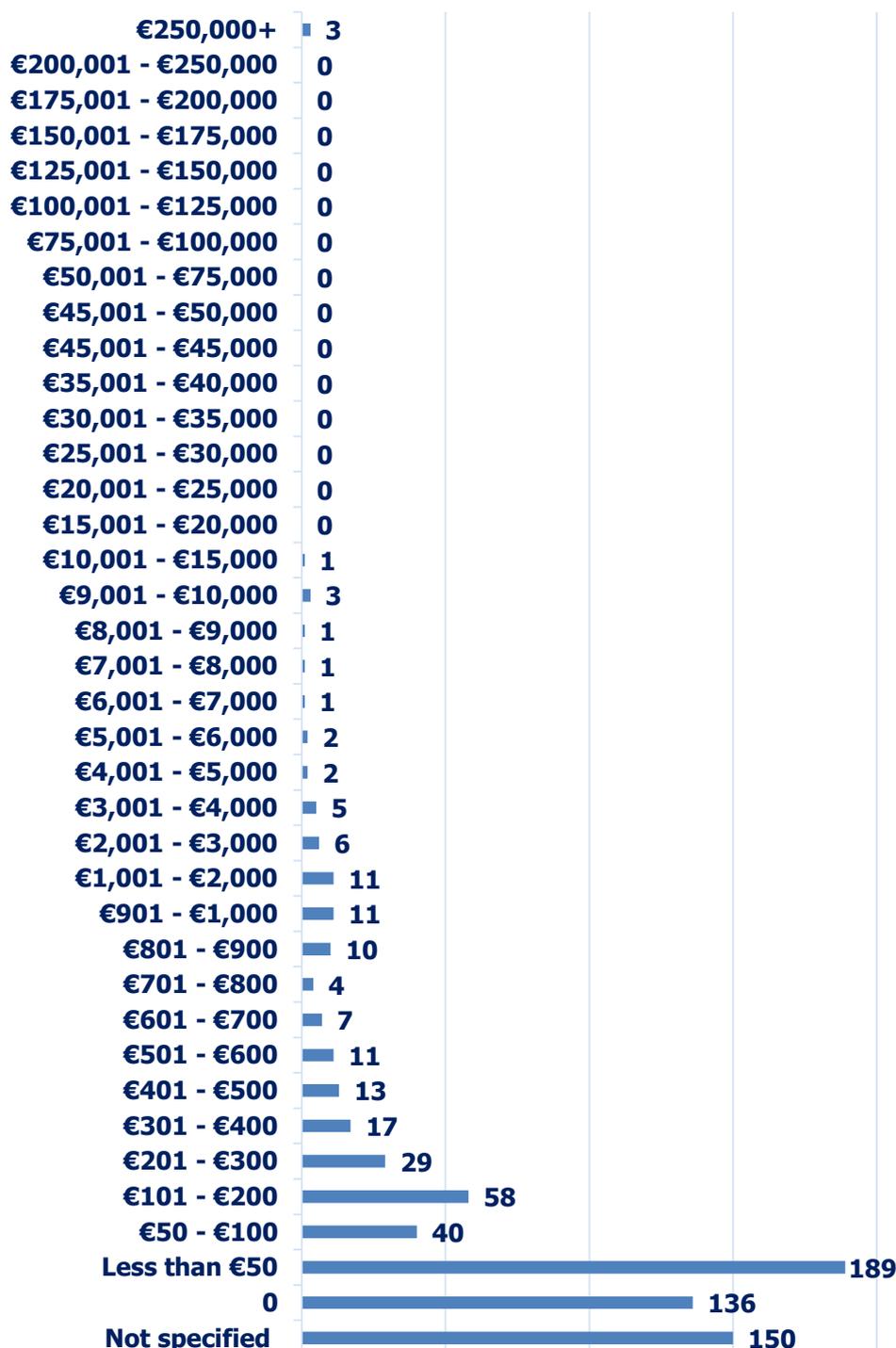


Figure 9
Number of Incidents of VCDT Recorded by Respondents as Experienced between 1.1.14 and 31.5.16 Categorised by Costs Arising from a VCDT Incident

316 respondents recorded experiencing incidents of VCDT in the prescribed period. 164 of these respondents recorded experiencing only one VCDT incident and their average cost arising from the VCDT incident was €383. However, the results suggest chronic experiences with VCDT as 154 respondents recorded experiencing more than one VCDT incident accounting for 547 of the 711 incidents of VCDT recorded. The average cost arising from each VCDT incident experienced by this cohort of respondents was €351.

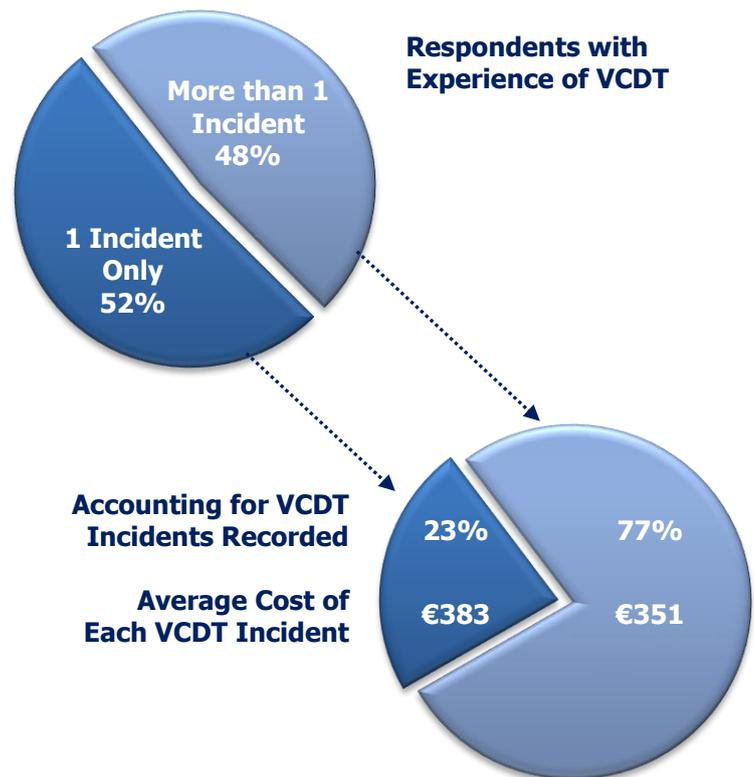


Figure 10
Respondents who Recorded Experiencing VCDT between 1.1.4 and 31.5.16 Categorised by Number of VCDT Incidents Experienced and the Average Cost Arising from a VCDT Incident

Types of VCDT incidents recorded by the respondents from the 29 options provided can be broadly divided into three groups, namely: (i) use of land related crimes more commonly referred to as trespass; (ii) destruction or injury to personal property (including crops); and (iii) destruction or injury to land. Legally land includes anything that is permanently attached to the land such as buildings, walls, fences and gates. Although trespass accounted for almost two thirds of the VCDT incidents it was the lowest average cost arising from a VCDT incident of the three groups.

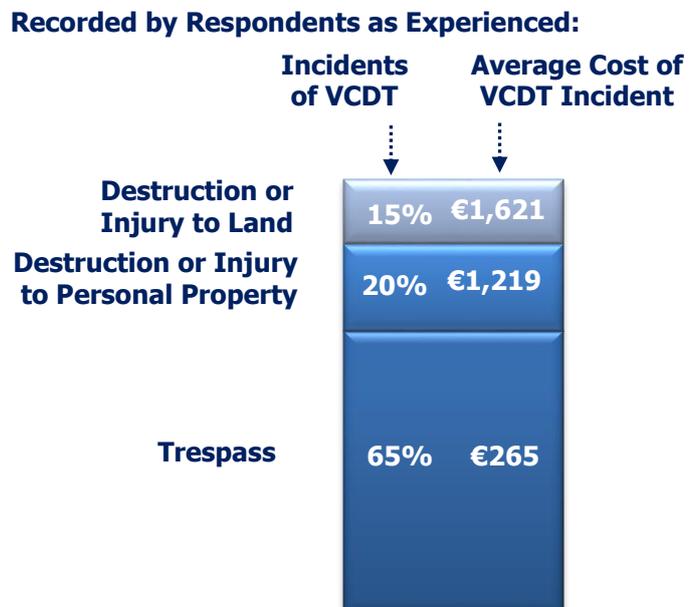


Figure 11
VCDT Incidents Categorised by Group and Average Cost of VCDT Arising from a VCDT Incident Recorded by Respondents as Experienced between 1.1.14 and 31.5.16

Destruction or injury to livestock was the type of VCDT with the highest average cost arising from a VCDT incident at €1,503. By comparison the €168 average cost arising from an incident of rubbish dumping was the lowest average cost of a type of VCDT incident, although with 123 incidents rubbish dumping accounted for the second highest number of VCDT incidents recorded. Unauthorised hunting / fishing / shooting, accounting for nearly a quarter of the VCDT incidents, was the type of VCDT with the most incidents recorded but was the second lowest average costs arising from a VCDT incident at €173.

This survey questioned farmers about the costs they experienced in the prescribed period and it was outside the scope of the survey to determine the costs that councils, environmental agencies or any other authority may have experienced in dealing with rubbish dumping or other types of VCDT reported to them by farmers.

Average Costs Arising from a VCDT Incident	% of All VCDT Incidents Recorded	Type of VCDT
€1,503	7%	Destruction / Injury to Livestock
€1,273	5%	Destruction / Injury to Vehicles / Machinery / Equipment / Trailers
€1,226	3%	Destruction / Injury to Crops and Fodder
€659	3%	Destruction / Injury to Tools
€425	1%	Destruction / Injury to Farmhouse
€408	2%	Destruction / Injury to Fuels and Oils
€377	2%	Destruction / Injury to Land (not for use for crops)
€351	19%	Unauthorised use of Farmland
€340	9%	Destruction / Injury to Fences and Gates
€199	3%	Destruction / Injury to Farm Buildings / Sheds / Yard
€173	24%	Unauthorised Hunting / Fishing / Shooting
€168	22%	Rubbish Dumping

Figure 12

Average Cost Arising from Each Type of VCDT Incident Recorded by Respondents as Experienced between 1.1.14 and 31.5.16

Cost of Fraud

780 of the 861 survey respondents recorded whether they experienced fraud on the farm or during farming related activities between 1 January 2014 and 31 May 2016. 50 respondents recorded experiencing 73 incidents of fraud in the prescribed period across three types of fraud, namely: (i) sold a stolen farm good(s); (ii) sold a counterfeit farm good(s); and (iii) provided with a forged farm related document(s). The total costs arising from the fraud incidents recorded by these respondents was €88,805.¹²

The direct cost of fraud is the amount of money lost in the fraudulent incident. The average cost specified arising from a fraud incident was €2,662.

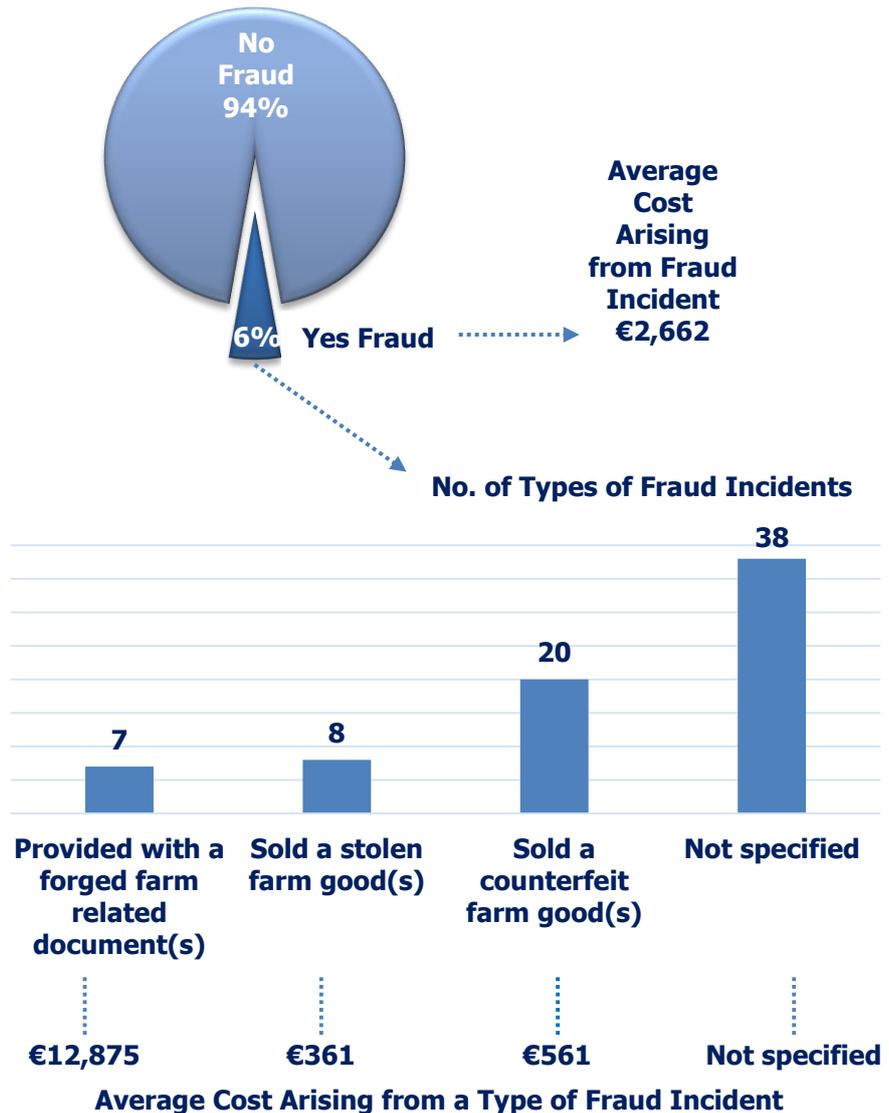


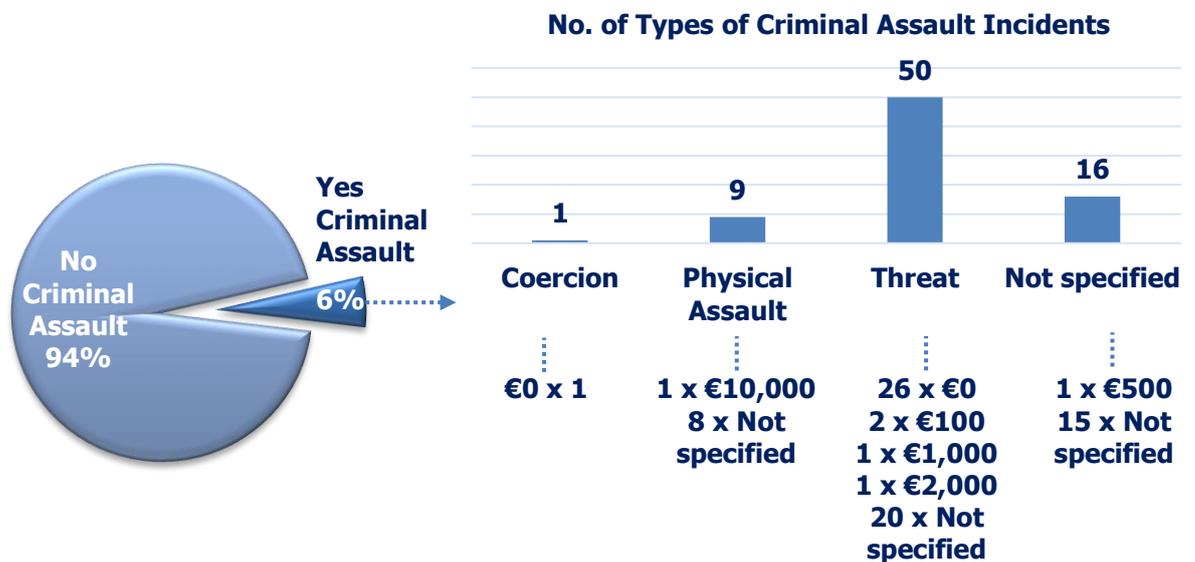
Figure 13
Whether Respondents Experienced Fraud, the Number of Types of Fraud Incident and the Average Cost Arising from a Fraud Incident Recorded by Respondents as Experienced between 1.1.14 and 31.5.16

¹² The respondents were asked to state the value of the loss, rather than use ranges of value. Thus, this figure is the total and not an approximation.

Cost of Criminal Assault

781 of the 861 survey respondents recorded whether the farmer, farmer's family and/or farm employee(s) experienced criminal assault occurring on the farm or during farming related activities between 1 January 2014 and 31 May 2016. 43 respondents recorded experiencing 76 incidents of criminal assault in the prescribed period across three types of criminal assault; namely: (i) coercion; (ii) physical assault; and (iii) threat.

The direct costs arising from a criminal assault suffered are specific lost earnings, medical costs paid because of the criminal assault, and/or legal expenses arising because of the criminal assault. Except for 6 criminal assault incidents, respondents recorded that all criminal assault incidents recorded either incurred zero costs or did not specify any costs arising from a criminal assault incident. The total value of costs arising from the 6 criminal assault incidents where respondents recorded a cost was €13,700.



Costs Arising from a Type of Criminal Assault Incident

Figure 14
Whether Respondents Experienced Criminal Assault, the Number of Types of Criminal Assault Incident and the Costs Arising from a Criminal Assault Incident Recorded by Respondents as Experienced between 1.1.14 and 31.5.16

The lack of direct financial costs arising from a criminal assault incident recorded may be partly due to some respondents having difficulty identifying and quantifying such costs, particularly if the costs do not materialise at the time of the criminal assault but at a later date. For example, one respondent recorded the costs they experienced were "significant, but hard to measure. Suffered from nervous breakdown and serious health affects" and another respondent recorded "not sure but couldn't leave farm to go to mart as planned."

An additional three respondents recorded that the cost of a criminal assault incident was (i) "zero but left fearful;" (ii) "zero but spent a lot of time thinking and worrying about it;" and (iii) "don't know how to value fear." The impact of fear of crime or the quality of life of victims of agricultural crime is not a direct financial cost and is outside the scope of this study.

4. COST OF TIME SPENT DEALING WITH AGRICULTURAL CRIME EXPERIENCED

'Time is money' is a well-known phrase. A farm is a business and a farmer's time is valuable. Yet the value of a farmer's time spent dealing with the aftermath of agricultural crime is not well known. Respondents were asked to indicate¹³ the length of time spent dealing with the aftermath of agricultural crime.

565 of the 861 respondents experienced agricultural crime in the prescribed period between 1 January 2014 and 31 May 2016. 490 of the respondents who experienced agricultural crime indicated a length of time spent dealing with its aftermath, although 40 responses were not a quantifiable number, e.g. respondents indicated "a few months" or "weeks." An additional 17 respondents said that dealing with the aftermath of agricultural crime is either ongoing or they are now fearful of crime and as a consequence always thinking about it or conscious of crime. Five respondents indicated that they were unsure of the length of time.

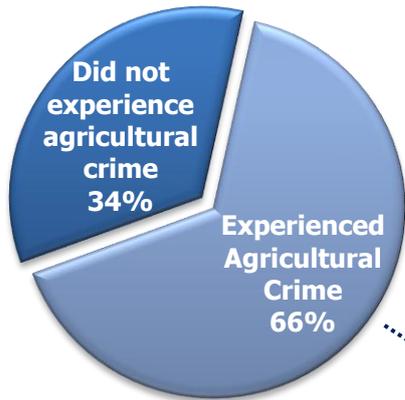
Of the 450 respondents who indicated a numeric length of time 176 recorded not spending any time dealing with the aftermath of agricultural crime whereas 274 respondents did. The average length of time respondents spent dealing with the aftermath of agricultural crime experienced between 1 January 2014 and 31 May 2016 was 14.1 hours. By contrast a farmer worked 49.1 hours on average per week in the first quarter of 2016.¹⁴ Based on approximate farm income per hour worked on average across the prescribed period,¹⁵ the approximate average income that would be earned over a period equivalent to 14.1 hours equates to €248.

Time a farmer lost dealing with agricultural crime experienced also results in an opportunity cost to that farmer. Ordinarily, the time spent on dealing with the aftermath of agricultural crime would be spent on more productive farm activities that have the opportunity to contribute to the generation of output that results in net income. The opportunity cost of the value of the farmer's time dealing with agricultural crime is generally under recognised and a hidden cost of agricultural crime. Determining the opportunity cost of time spent dealing with agricultural crime was outside the scope of this initial research into the extent and nature of agricultural crime in Ireland.

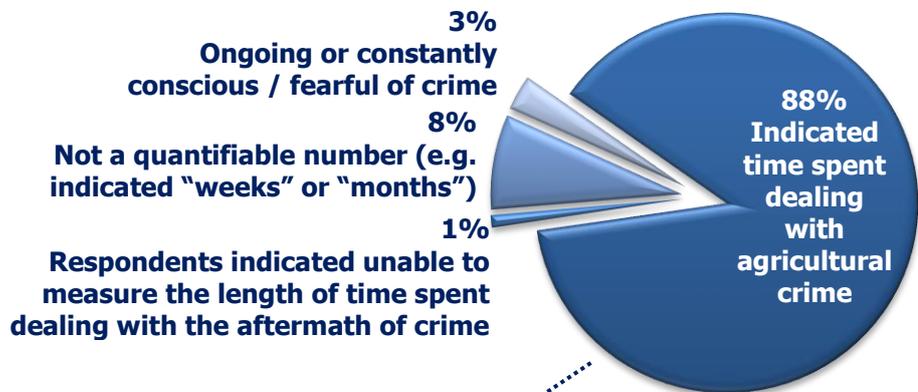
¹³ Respondents were asked to indicate, rather than specify the time, as without farmers maintaining accurate time logs the answer is only ever likely to be an estimate.

¹⁴ Central Statistics Office (CSO) (2016) *Quarterly National Household Survey. Quarter 1*. Dublin.

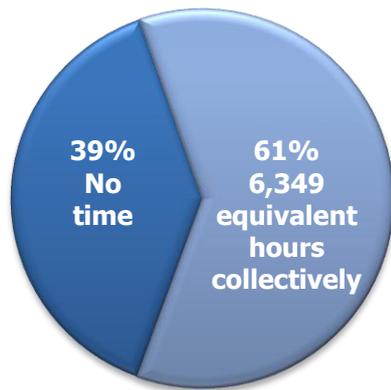
¹⁵ Farm income in the prescribed period is approximated from Teagasc's National Farm Survey (Teagasc (2016) *Teagasc National Farm Survey Results 2015*. Carlow: Teagasc.) and hours worked are approximated from the Central Statistics Office's Quarterly National Household Survey (Central Statistics Office (CSO) (2016) *Quarterly National Household Survey. Quarter 1*. Dublin.).



91% of the respondents who experienced agricultural crime indicated the length of time spent dealing with the aftermath of agricultural crime



Respondents who indicated time spent dealing with the aftermath of agricultural crime spent ...



Average number of hours spent dealing with the aftermath of agricultural crime between 1.1.14 & 31.5.16: 14.1
 Average number of hours worked by a farmer per week: 49.1

Figure 15
Length of Time Spent Dealing with the Aftermath of Agricultural Crime Recorded by Respondents Who Experienced Agricultural Crime between 1.1.14 and 31.5.16

5. COST OF MINIMISING EXPOSURE TO RISK OF AGRICULTURAL CRIME FINANCIAL LOSS

Risk

Risk is a daily fact of life and the word is often used to describe exposure to financial loss. It is generally accepted that farmers are at risk of agricultural crime. A farmer can attempt to minimise their exposure to financial loss which may arise if agricultural crime were to occur by: (i) transferring risk through the acquisition of insurance where the possible loss is financially serious (although in many instances acquisition of insurance may be compulsory rather than optional); and / or (ii) undertaking crime prevention measures. Yet despite the intention behind these means of minimising exposure and financial loss, the methods themselves have a financial cost.

Cost of Insurance

710 respondents recorded whether they insured any farm assets in the period between 1 January 2014 and 31 May 2016 and the types of farm assets insured. 619 of these respondents insured some or all of their farm assets. 538 respondents specified their annual expenditure on insuring farm assets; namely: (i) 204 respondents with no experience of an incident(s) of agricultural crime spent a total of €417,056 annually insuring farm assets, i.e. an average of €2,044 each; and (ii) 334 respondents with experience of an incident(s) of agricultural crime spent a total of €979,855 annually insuring farm assets, i.e. an average of €2,934 each.

The most commonly insured farm assets were vehicles and buildings. This is not surprising as vehicle insurance is compulsory if driving on public roads and buildings insurance is often a condition of a mortgage or loan secured on a building. Conversely it should be noted that farmers would not have insurance on crops or livestock if not involved in either of these sectors.

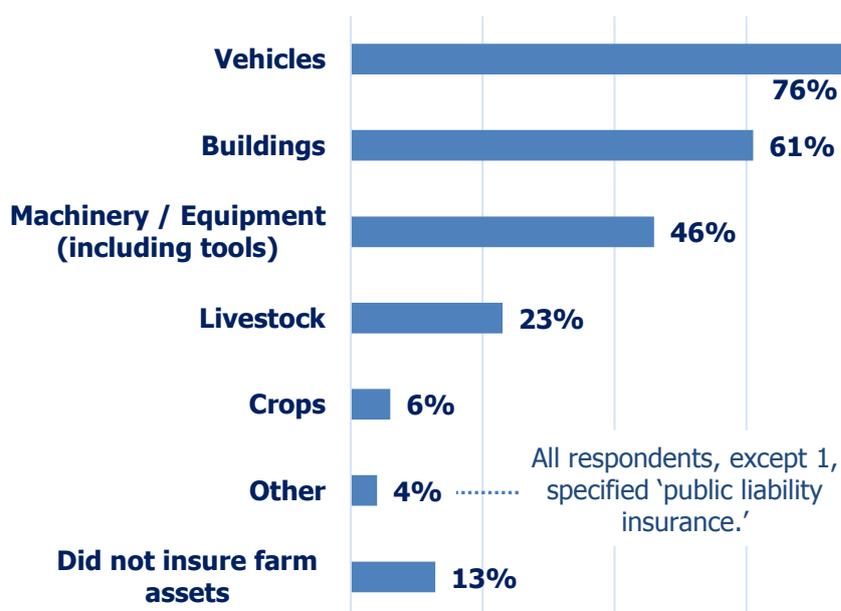


Figure 16
Types of Farm Asset Insurance Held by Respondents
between 1.1.14 and 31.5.16

Average Cost of Farm Assets Insured	No. of Respondents	Farm Assets Insured:					
		Vehicles	Machinery / Equipment (including tools)	Buildings	Crops	Livestock	Other
€7,750	2	✓	✓	✓	✓	✓	✓
€5,713	31	✓	✓	✓	✓	✓	
€5,570	6	✓	✓	✓	✓		
€4,167	3		✓				✓
€3,604	84	✓	✓	✓		✓	
€3,420	5		✓	✓			
€3,290	10	✓				✓	
€3,000	1	✓		✓		✓	✓
€2,850	3	✓	✓	✓		✓	✓
€2,816	139	✓	✓	✓			
€2,750	3	✓		✓			✓
€2,178	26	✓		✓		✓	
€2,044	119	✓		✓			
€2,037	44	✓	✓				
€1,625	10		✓				
€1,513	6						✓
€1,275	7	✓					✓
€1,261	60	✓					
€1,075	5			✓			
€1,000	1			✓	✓	✓	
€917	3	✓		✓	✓	✓	
€833	3			✓			✓
€400	2			✓		✓	
€400	1			✓	✓		
Unspecified	1					✓	
Unspecified	1	✓			✓		
€1,690	43	Insured - but did not specify the type of farm assets insured					
	91	Did not insure farm assets					

Figure 17
Average Cost and Types of Farm Asset Insurance Coverage Recorded by Respondents as Held between 1.1.14 and 31.5.16

91 respondents recorded not insuring farm assets including six respondents who recorded farm assets were not insured because it was too expensive. A further 6 respondents with insurance of farm assets specified they only had insurance because they "have to" but that "insurance is too expensive." Two respondents recorded not being able to insure buildings because of flooding. The respondents mentioned the cost of insurance and issue of flooding despite not being asked to specify why they do or do not insure some or all farm assets. This highlights that the cost of insurance and access to insurance may be an issue for farmers.

Reporting to Insurance

Theft

Respondents recorded whether a theft incident was reported to insurance for 534 of the 652 incidents of theft recorded as experienced between 1 January 2014 and 31 May 2016. The results may indicate high value assets are more likely to be insured and reported to insurance if stolen.

308 theft incidents were not reported to insurance because the asset(s) was not insured and an additional 34 theft incidents were not reported to insurance because the asset(s) was recovered. The average cost of an asset(s) stolen in a theft incident but not insured and thus not reported to insurance was €1,120.

However, of the 192 incidents of theft where the asset(s) was insured only 98 incidents were reported to insurance. Where a respondent recorded reporting a theft incident to insurance the average cost of the asset(s) stolen in the theft incident was €4,156. Although, just under a fifth of these theft incident claims were paid in full and a quarter of such claims resulted in no payment.

For the 94 incidents of theft where the respondents did not report the incident of theft of insured asset(s) to their insurance, the respondents incurred the cost of the insurance in the first instance and an additional cost, rather than receive a benefit, by not making a claim for the incident of theft. The average cost of asset(s) stolen in a theft incident where the asset(s) was insured but not reported to insurance was €1,771. Respondents were not asked to explain their reason for not claiming for theft of an insured asset, regardless, a number of respondents reported that they did not claim insurance for a variety of reasons including: (i) the level of excess on a policy; (ii) risk to no claims status; (iii) fear of an increase in insurance premiums; (iv) fear of insurance discrimination and becoming uninsurable after reporting; and/or (v) severity of claim and the perception that the claim would be too small to be worth the effort of claiming on an insurance policy.

Vandalism / Criminal Damage / Trespass

Respondents recorded whether a VCDT incident was reported to insurance for 490 of the 711 incidents of VCDT recorded by respondents as experienced between 1 January 2014 and 31 May 2016. Respondents not recording whether an incident of VCDT was reported to insurance may be indicative of the difficulty that sometimes arises in attempting to identify and quantify VCDT costs and by extension whether the respondent was even insured against the incident of VCDT. Farms by their nature may be difficult to protect against VCDT and costs arising from an incident of VCDT may be indirect, intangible and not arise immediately when the crime is committed.

Regardless, 348 of the 430 incidents of VCDT were not reported to insurance because the asset(s) was not insured and an additional 21 incidents of VCDT were not reported to insurance because the asset(s) was recovered. For the remaining 121 incidents of VCDT, 27 were reported to insurance and 94 were not reported to insurance although the asset that was the subject of VCDT was insured. The average cost of the 27 VCDT incidents reported to insurance was €1,857. However, more than half of these incidents reported to insurance resulted in zero payment to the respondent. The average cost of the 94 VCDT incidents where assets were insured but not reported to insurance was lower than those reported to insurance at €238. Nevertheless, the respondents who experienced these 94 VCDT incidents incurred the cost of the insurance in the first instance and an additional cost, rather than receive a benefit, by not making a claim for the incident of VCDT.

Recorded by Respondents for Incidents of:

Theft

Vandalism / Criminal Damage / Trespass

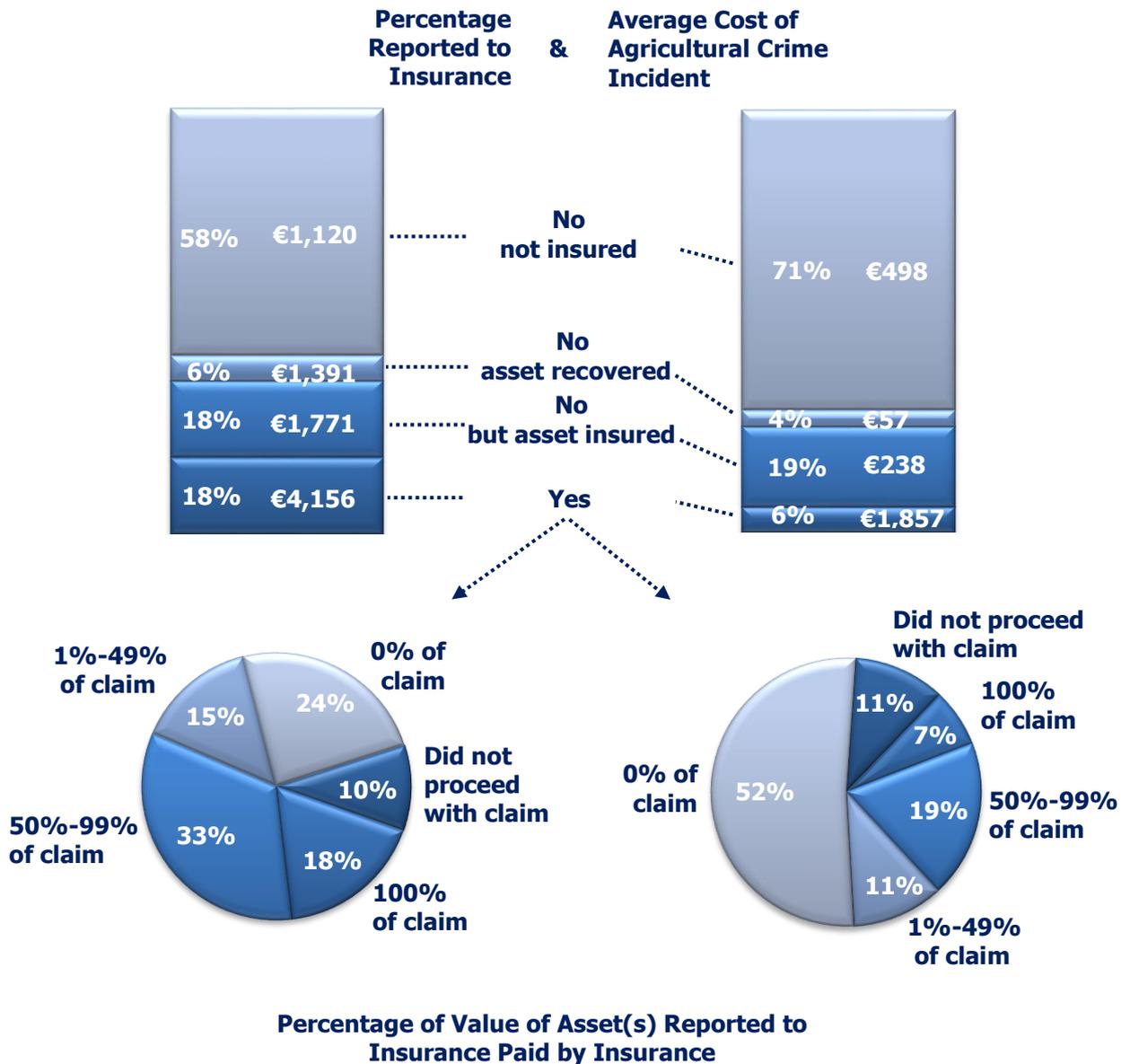


Figure 18
For Incidents of Theft and VCDT Recorded by Respondents as Experienced between 1.1.14 and 31.5.16, Percentage Reported to Insurance, Average Cost of Incident and Amount Paid by Insurance where Reported to Insurance

Cost of Crime Prevention Measures

Crime prevention measures include: (i) locking away moveable farm assets when not in use or at certain times such as at night; (ii) securing immovable farm assets through use of gates, fencing, video surveillance or alarms; (iii) recording a unique asset identifier through serial numbers, livestock id, or assigning own method of identification; and (iv) employing deterrents such as posting signage, use of lighting or sound, notifying a person if away or engaging with a community 'anti-agricultural crime scheme.'

Crime prevention measures incur a cost which may be direct and obvious or indirect and more difficult to quantify. For example, purchasing a lock to secure a farm building has a direct and easily identifiable cost. However, if a farmer erects a fence to primarily denote a land boundary the fence may serve a secondary purpose of securing the land and therefore it is ambiguous whether the cost of the fencing should be recorded as a crime prevention measure cost.

Additionally, the opportunity cost of employing a crime prevention measure may be complicated to appraise. Opportunity cost is the cost incurred by not enjoying the benefit that would have been taken if the next best alternative was chosen. If a farmer spends limited resources on crime prevention measures there is a benefit if the cost of employing the crime prevention measures is less than the direct loss a farmer would incur from the agricultural crime now avoided. Yet there is also an implicit opportunity cost of not spending scarce resources on an alternative farm activity that may generate a greater source of income than the saving from the avoidance of the agricultural crime.

753 of the 861 respondents recorded employing various specified measures to prevent agricultural crime in the period between 1 January 2014 and 31 May 2016.¹⁶ 115 respondents stated the cost of employing crime prevention measures was zero, while 338 specified a cost greater than zero for their annual expenditure on agricultural crime prevention measures. A further 50 respondents stated that they do not know the annual cost of their crime prevention measures. Thus, 250 respondents recorded using crime prevention measures but did not specify whether they incurred an annual cost. The high under-reporting of annual cost of crime prevention measures may be indicative of the difficulty respondents may have identifying and quantifying annual crime prevention measure costs, particularly ambiguous costs and opportunity costs.

223 respondents specified spending more than zero annually on crime prevention measures greater than zero, namely: (i) 55 respondents with no experience of an incident(s) of agricultural crime in the prescribed period spent a total of €14,865 annually on crime prevention measures, i.e. an average of €270 each; and (ii) 168 respondents with experience of an agricultural crime incident(s) spent a total of €95,880 annually on crime prevention measures, i.e. an average of €571 each. Nevertheless, it is likely this figure principally comprised direct costs and omitted indirect costs including opportunity costs of employing measures to prevent agricultural crime.

¹⁶ The nature of the crime prevention measures recorded as employed by respondents will be detailed in *Report 3* which focuses on data relating to the reporting of agricultural crime and agricultural crime prevention measures.

The extent, nature and cost of agricultural crime in Ireland, rather than rural crime, has never been the subject of a specific crime survey. This independent national survey of agricultural crime aimed to address this deficit. This research is important because the collection, analysis and dissemination of agricultural crime data are recognised as the first actions in preventing and reducing agricultural crime. It is envisaged that the results of this survey will form the baseline data against which further study of agricultural crime can be conducted and compared. For the purpose of the survey agricultural crime was categorised as any incident of (i) vandalism / criminal damage / trespass (VCDT); (ii) theft; (iii) criminal assault; and (iv) fraud experienced by a farmer carrying out farming activities.

This report is the second in a series of three reports to disseminate the data collated from this independent anonymous survey. This second report provides data on financial costs experienced by a farmer arising from agricultural crime in Ireland, namely: (i) direct financial loss arising from an agricultural crime incident; (ii) cost of time spent dealing with the aftermath of agricultural crime; and (iii) expenditure on minimising exposure to financial loss which may arise if agricultural crime were to occur. However, the results also indicated some farmers may have difficulty identifying and quantifying various agricultural crime costs consequently the financial costs of agricultural crime is likely to be underestimated and underreported. Nevertheless, the dissemination of this financial costs of agricultural crime data will aid individual farmers, farm organisations and other decision makers to recognise the nature and aggregate amount of the various financial costs of agricultural crime and provide a basis for further research.

Two thirds of respondents experienced incident(s) of agricultural crime between 1 January 2014 and 31 May 2016. The approximate¹⁷ total of all the financial costs of agricultural crime recorded by these respondents was €2,445,105, i.e. an average of €4,328 per respondent with experience of an incident(s) of agricultural crime. Conversely, the one third of respondents who did not experience an incident(s) of agricultural crime still incurred a total cost of €431,921, i.e. an average cost of €1,459 per respondent, on insurance and crime prevention measures to minimise exposure to financial loss if agricultural crime were to occur.

It should be noted that this study only asked questions relating to the respondent farmer's financial costs as they related to agricultural crime. Regardless, many farmers mentioned the negative impact of agricultural crime feared and/or experienced on quality of life and expressed dissatisfaction at the cost of insurance for farm assets. While these subjects are outside the scope of this study they do point to areas for further research.

Report 3 will focus on the data relating to agricultural crime reporting to authorities and crime prevention measures employed by farmers.

¹⁷ This figure is approximate because the direct financial loss arising from a theft or VCDT agricultural crime incident was reported in ranges of value and thus is averaged. The figure also excludes 3 recorded incidents of VCDT exceeding €250,000 each (see footnote 10).