

# FARM THEFT IN KENYA: FARMERS' EXPERIENCES AND RESPONSES

Emmanuel Bunei

Moi University

## 4.1 Abstract

Research into crimes against agricultural operations has grown exponentially in the 21<sup>st</sup> century. However most literature concentrate on nature, extent, causes and perpetrators of farm theft with little focus on understanding on the consequences of criminal onslaught to agricultural operations. Even worse most researches in Kenya have concentrated on global and regional factors such as soil fertility, climate change and fluctuating commodity and less on the plague of theft of farm produce and property. In light of this, this paper seeks to gain insight into experiences, responses and impact of farm thefts from perspectives of farmers in Kenya. A qualitative approach (case study) was employed, including interviews, narratives and document analyses. The results indicates that farm theft victimization has multiple domains, including strained famer's personal relationship with children, relatives and community; impaired continued investment in farming and abandonment of farming or targeted farm property.

**Key words: Farm theft, victims; monetary loss; psychological impact, family life, disinvestment**

## 4.2 Introduction

Agriculture continues to play a significant role in Kenya's economy by contributing to around a quarter of the total Gross Domestic Product (GDP) of the country. The sector remains to be the main livelihood provider, foreign earner and employer with seven out of ten households deriving their livelihoods from agriculture and approximately four million people indirectly working on agricultural value chain addition (Republic of Kenya, 2010). Out of the 47 counties across the country, 10 counties including Uasin Gishu, Trans Nzoia, Narok, Kakamega, Nyandarua and Kiambu, practice agriculture as the major activity. Despite the glowing image of agriculture in the country, the sector is witnessing numerous challenges such as fierce global competition, creeping climate change, insurgent pest, prolific herbs, globalization, diminishing land, soil infertility and increasing cost of inputs which farmers have no or little control over most of farmers. Surprisingly, thefts of farm property and produce (farm theft) is fast emerging as a one of the hindrance to agricultural development in Kenya in the 21<sup>st</sup> century with over 90% of farmers being victims of farm theft (Bunei 2014 and Bunei, Rono & Chessa 2013).

Indeed, it is an archaic vice that is tainting the image of the agricultural industry in Kenya. Most of farm thefts that have occurred in Kenya include thefts of livestock, coffee, grain, fuel, green maize, tools, equipment and illegal plantation of marijuana and yet, they are not correctly captured and recorded by police to depict the true state in the country (Bunei, Rono & Chessa, 2014; *Daily Nation* 2013 and *The Standard* 2014, 2013a & 2013b). There are also increasing cases of criminality on farms or farm fraud (sale of fake crop seeds, supply of bogus artificial insemination (AI) service, deceitful agricultural consultants, weigh scale tempering and use of fake currency to buy farm produce among others). Although there is a growing body of rural

criminology and specifically criminology of food and agriculture (Barclay 2001; Bunei 2014; Bunei *et al* 2013; Deeds 1992; Gichamo 2011; Jones 2008; Mears, Scott & Bhati 2007 and Osborn 2015); much of it dwells on the nature, extent and cause of farm theft and less on the impacts of farm theft as experienced by farmers in Kenya (Chiwona-Karlton, Lemenin, Berisso & Karlton 2009; Graham 2010; Fafschamps & Minten 2003 and Maloken 2005). Even worse, most farmers rarely report farm thefts and therefore contributes to continued neglect by criminal justice practitioners and limiting statistics needed by criminological scholars (Bunei, Rono & Chessa 2012 and Barclay & Donnermeyer 2002).

Against this backdrop, the purpose of this paper is to analyze reported impact of farm thefts (crop and livestock theft) on continued farming and family relationship and simulated academic studies into neglected part of rural criminological research. The main contribution of this paper is to highlight the intricate reactions and decisions victims of farm thefts opt for when they are victimized repetitively as well bringing Kenyan experiences into mainstream criminological literature in the world. It is a micro-level study that embodies a discussion on how farm theft can be a grim reaper of relationship among family members, neighbourhood co-existence, community cohesiveness and national economy. The paper is also intended to bring forth another side of farm theft, much darker side which few know about.

This paper consists of six sections. The first section of the paper provides the context of the study by defining the problem and purpose. In the second section, a review of literature on farm theft is provided taking cognizance of farm theft in Kenya and the world in general and document impacts of farm theft from other parts of the world. The third section discusses the methodology and methods used in gathering data for this study. Thereafter, a presentation on the impacts of farm theft based on monetary loss, family life, continued investment and neighbourhood cohesiveness is provided. The fifth and last section offers concluding observation and thoughts.

### **4.3 Conceptualizing Farm Theft**

Farm theft is any property crime that directly or indirectly affects agricultural production and distribution (Mears *et al* 2007 and Barclay 2001). This includes any property crime against farms, ranches, agricultural related businesses or other designated industry. Such crimes include the theft of livestock, pesticides, spare parts, tractors, farm inputs, plants, fuel, taps, tyres, sprinkler heads, spanners, and agrichemicals. It also includes other petty thefts such as the minor theft of farm implements such as machetes, hoes and farm produce such as milk, eggs, maize; wheat and so on. It is a deviant behaviour that has emerged as a critical threat to the development and investment potential of agricultural production. Research reveals that agricultural crime has changed from a highly opportunist activity to a planned one and is on the increase with thieves taking advantage of the relative low risk and lucrative pay off. Such criminal activities may be organized and well-coordinated against farm operations (McCall & Homel, 2003). In this paper, the terms farm theft and farm thievery are used interchangeably.

### **4.4 A Review of Literature on Impacts of Farm Thefts**

Farm theft has been identified as one of the major concerns to rural criminologist in the 21<sup>st</sup> century and is proving to be key sociological and economical concern in the world (Barclay 2001; Barclay, Donnermeyer Doyle & Talary 2001; Anderson & McCall 2003 and Jones 2008). Perhaps because of a perplexing nature of these crimes, very little research has been studied on the impacts of farm thievery at individual level in Africa and Kenya specifically but a notable effort has been put at developed nations such as Australia, USA and Britain (Deeds 1992; Barclay 2001, Mears *et al* 2007; Jones 2008 and Graham 2010).

In Africa, theft of farm property has been identified as one of the challenges hampering the development of agriculture (Chiwona-Karlton *et al* 2009; Foeken & Mwangi 2000 and Malekano, 2000). Farm theft causes serious damage to small-scale farmers who have neither the means to set up security measures nor the resources to weather losses and prompting some farmers to give up altogether. Worse still, the impact of such crimes extends not only to farmers who may absorb the loss in terms of lower profits but also to the consumers who may have to pay higher cost for commodities or consume uncertified products such as meat (Graham 2010 & Mears *et al* 2007 and Chafin, Roman, Mears & Scott 2007). Further, as Fafschamps and Minten (2003) argues that theft of livestock and crops can send shock waves to other members of community who may respond out of fear by abandoning farming.

Graham (2010) found out that farm theft is the most discouraging and disincentive factor to agricultural investment in Caribbean nations. In line with Graham's observation, Fafschamps and Minten (2003) and Maloken (2000) observed that cattle owners may resort to selling part of their livestock as a pre-emptive measure to reduce their exposure of cattle to thieves or reduce further victimization. In Zimbabwe, it was found out that farmers are abandoning sheep farming in favour of other farming that are less attractive to thieves (Nel & Davies, 1999). In Ethiopia, bean theft is a more pressing problem than soil fertility management (Chiwona-Karlton *et al* 2009). According to Inkoom and Nanguo, (2011), theft of farm produce is a serious disincentive to irrigation farming in Ghana with over 21.5% of dry season irrigation farmers being victim of farm thefts.

Research by Barclay (2001) in Australia found out that livestock theft contributes the greatest individual losses to farmers which were similar to the study conducted by Anderson and McCall (2005) in the same country. Farm theft cost per individual should be treated with caution since estimated figures depends on the farm size, type of theft and farm remoteness and in most cases, cost related to repair are mostly omitted (McCall 2003). In a study by Deeds *et al* (1992) carried in Mississippi, United States, farm theft was found out to have triggered a lot of fear on the farmers with 32% reporting to have experienced a good bit or very much fear about burglary of farm building. Barclay (2001) argues that some victims of farm theft in small Australian communities suffer in silence and may be forced to conform than to accuse anyone in the community. This increases frustration, stress and depression among farm theft victims. In particular, crime against any business enterprises can have devastating effects on profitability. Moreover, crime can hamper morale amongst the affected employees which makes it more difficult to return to work following an incidences (McDonald 2008). Compounding the psychological impact is the difficulty of estimating the total financial impact of farm theft. More often, the reported losses are conservative figures based on the victim's approximation of cost of item at historical price and loss of income due to farm theft. Across the world, farm theft is estimated to be as high as \$ 5 billion annually (Swanson *et al* 2000). In Australia, the estimated financial cost of farm theft as at 2002 was \$ 72 million with 68 percent of these loses being the value of loss or damage to farm while the rest is loss of income as result of theft (McCall 2003). Across Caribbean nations, praedial larceny or farm theft is estimated to cost \$83 million annually (Graham 2010).

While farm theft in Kenya may have received little attention partly because it has been construed as one of the inconsequential problems unworthy of academic scrutiny, there is enough evidence to show that theft of farm produce and livestock is discouraging and destructing the spirit and efforts of the Kenyan farmers. Further, farm theft in Kenya is not only affecting food production but also posing a serious disincentive to investment, employment creation and poverty

reduction (Bunei *et al* 2013; Foeken & Mwangi 2000; Juma, Nyangena & Yesuf 2009 and The Standard 2014). And in fact according to Foeken and Mwangi (2000), theft of farm produce is undoubtedly the most pressing challenge to most farmers in Kenya.

## **4.5 Methods**

### **4.5.1 Research Design**

The study adopted an exploratory design so as to provide an understanding of phenomenon of farm theft from the perception of victims of farm thefts. Exploratory design was used in this study so as to enable the assessment of the practical experience of farm victimization as expressed by victims in a more in-depth manner. It was also used to obtain an insightful understanding of the relationship between study variable (being a victim) and simulating experiences of farm theft.

A multi-stage sampling technique was employed to randomly select 200 farming households in Uasin Gishu County of Kenya. In the first stage of sampling, Uasin Gishu County was purposively selected because it is the county in Kenya which has the highest livestock and crop production. Within Uasin Gishu County, Soy Division was purposively sampled because it was the biggest division in the county and agriculture was most practiced. Four locations were purposively selected within Soy Division based on area size, population density, proximity to town and remoteness as all the locations had different characteristics. After selecting four locations from the whole division, two villages were randomly selected from each sampled location. Twenty five farming households were then selected for the survey in each of the eight selected villages to form the target sample. Using the household list provided by village elders in each selected village as a sampling frame, random sampling was used to select respondents from each village. This was suitable because each village was assumed to have a heterogeneous population.

### **4.5.2 Data collection and analyses**

Data for this study were collected in the months of February and March, 2012. Prior to identification of target household, screening was done to select respondents who had farmed at least five acres and/or reared some livestock. The study relied on data from semi-structured interviews with selected farmers using a structured questionnaire. The instruments asked farmers about agricultural crime victimization during the last five years prior to the study. Further, an interview was used to guide conversations with 20 key informants who were selected from the county. Interviews sought to know the challenges faced by farmers in relation to farm theft. This method was suitable in that it provided in-depth information and allowed the gathering, validation and collaboration of information that farmers provided. Qualitative data collected from key informants and semi structured interviews were analysed for content and issues related to the major themes of the study. Direct quotes from respondents were presented to support and illustrate quantitative data.

### **4.5.3 Data collection procedure and ethics approval**

Before the actual collection of data, permission was sought from National Institute of Science and Technology of Kenya to conduct research. Upon receiving the permit, the researcher delivered the permit to District Commissioner of Eldoret West and County Director of Agriculture for further communication to the chiefs of the sampled locations. Verbal consent was sought from each respondent after they were assured of the voluntary nature of their participation, their right to refuse to answer questions, and the confidentiality of their responses.

## 4.6 Results

From this study, four themes emerged from farmer's interviews and key informant's discussion. These were monetary loss, psychological impacts of farm theft, farm theft and family life and farm theft and disinvestment in agriculture.

### 4.6.1 Monetary Loss

The monetary loss from crop and livestock theft was mentioned as key concern of the farmers. The study was concerned with the total direct losses of stolen livestock or crops in the past five years prior to study at market price. Most of the farmers were in agreement that farm theft is a nagging issue that causes a lot of pain to their continued investment in agriculture. As it was found from interviews, the highest loss from theft came from cattle theft in which a farmer lost four cattle (three cows and one bull) costing a total of KES 495,210 (\$5,826) in one single incident. Theft of grain and farm produce posed a difficulty to some farmers since most of grains were stolen on farms before being weighed or packed. The most serious incident of grain theft was the stealing of 10 bags of 90 Kilograms worthy KES 29,920 (\$ 352). This took place while the grains were en route to the farmer's premises. However, in the opinion of the farmers, incidents of grain theft and that of green maize may be higher because some are not discovered nor reported. Generally, farmers were in agreement that farm theft is costly not only in terms of the cost of item stolen but also in other factors such as loss income and time. Socially, it leads to mistrust, pain and emotional suffering, sleep difficulties, worry, anger and resentment.

### 4.6.2 Psychological Impacts of Farm Theft

Farmers in this county are known to be passionate about their assets (land and livestock). Though with time, the number of livestock and acreage of land is decreasing as results of increasing population, escalating cost of production and other challenges; farm theft is quickly emerging as a frustrating factor in relation to what to produce, where to farm, when to grow and whom to employ. Farmers were disturbed by the rate at which they were losing their valued investment and yet there was no much input from critical players of criminal justice system especially police. Further, emotional disturbances tended to vary with the cost and the degree of attachment to the stolen item. As such, those farmers who lost livestock were the mostly disturbed than those who had experienced grain theft. Livestock among Kalenjin community (major crop growers and livestock keepers in north western Kenya) is treasured but though it has wane with time. But for this study, majority of farmers came from older generations and therefore had both cultural and emotional attachment to livestock especially cattle.

One farmer expressed this reaction when he lost a bull:

*Why does somebody want to harvest what he has not sowed? It was on 15<sup>th</sup> of August, 2009, I still remember this day up to now. I had a well fed bull which if I had sold, it could give me an income of KES 40,000 (\$471) and I planned to sell and pay my son's fees. On that fateful day, unknown people "moved away" with my bull during the night. The following morning, my wife reported that our bull was missing. I could not believe my eyes when I looked at the cow shed the fence had been cut. I felt as if I had been finished with nothing to do. I was stressed. I was Kshs 40,000 (\$471) backward*

Moreover aging farmers were more likely to be stressed as compared to young farmers. Majority of those aged 50 years and above were infuriated by the increasing rate of farm theft over their life

time in farming. They were particular concern with inability of the police who frequently acquitted suspects on the pretext of lack of evidence. Worse still, some farmers were angered by continuous categorization of farm theft especially theft of grain as petty theft which does not warrant seriousness of police time and resources. Another psychological issue which was mentioned by farmers was sleep difficulties as a result of thefts in the farm. Sleep difficulties tended to increase with onset of ripening of green maize, when maize is staked and at night. It was even worse, if stock does not return to farmer's homestead after grazing in open fields during the day. Further, farmer residing near urban centres were more likely to experience sleep difficulties especially when green maize is ready. One such farmer remarked thus:

*... This behaviour (farm theft) is bad and makes us (farmers) to suffer more. Whenever my herd of cattle fails to return home or I have harvested and due to unavoidable circumstance, I cannot ferry my maize to store or home. I usually do not sleep. It even becomes worse if dogs continuously bark during night.*

Some of farmers interviewed reiterated that farm theft is not inevitable and it is part of expenses of production. Surprisingly, those farmers who were farming on large scale basis were not bothered by farm theft. More often, these large scale farmers take costs of farm theft as extra expenditures in the farm and may not be concern by the theft. This inability shows farmers as helpless individuals as demonstrated by the following farmer.

*... Even if you want to protect your farm from thieves, you can't succeed since some farms are large and remote. Simply, it is impossible to protect farms from thieves. You just need to pray and hope they will not steal more.*

Yet another farmer reported that:

*I will never employ a night guard because these guards usually cooperate with prospective offenders. So why employ a thief?*

#### **4.6.2.1 Farm Theft and Family Life**

Some farmers were disappointed and were lost on what to do when suspected individual tended to come from family lineage. Farmers were specifically disturbed when suspects were known to them especially if it was involving their relatives, neighbours or friends. Some farm thefts especially those which occur at farm premises may involve former employees or close relatives. This tended to increase stress among farmers who see it as betrayal by people who are supposed to protect what they are stealing. It is even worse, if the offenders are immediate relatives to the farmer such as children as remarked by the following farmer.

*What do you do when your child or relative is implicated in theft from your farm or worse still, steals your farm property? Do you report to police and if you report how will feel, will you celebrate that you have put a thief behind bars. What will your other children think? It is a dilemma*

Further, these sentiments were supported by some of the key informants who argued that farm theft presents a difficult and dilemmatic situation to farmers who have to continue providing for the dependants who are stealing their property. In fact, to the key informants, farmers were enraged by long judicial and investigative process which tends to tear the family apart when the suspect is from the family. This prompted farms to withdraw court case and prefer to keep quiet and preserve already strained family relationship.

#### **4.6.2.2 Farm Theft and Disinvestment in Farming**

Just under half (N = 97) of the farmers had contemplated leaving their properties to nature; depicting that a greater proportion of farmers are able to cope with life after victimization. One in

five farmers were considering abandoning farming especially rearing of bulls and rams. While others were shying away from growing crops that are attractive to thieves such as beans and opting for less attractive ones. One in five of farmers who participated in this study were considering opting out of farming in favour of other income generating activities especially real estate investment citing inability to secure farms and farm property and riskiness of losing a valued property like bulls.

Most of those who were considering opting out of farming due to farm theft resided near or within urban centres. In fact, respondents residing near urban centres were finding farming as unattractive investment due to challenges facing urban farmers including farm theft. Others have had to do a perfect timing with other farmers so as to spread risk of farm theft and other challenges of farming as remarked by one farmer as shown below.

*“I have to do a perfect timing so as to avoid losing my cereals through theft. If I plant early, I risk sharing my green maize with thieves and stray dogs and if I plant late, I have to share my maize with unforgiving weather and farm thieves. The only saviour is your plant with people”*

Yet another respondent observed;

*“There are two things, we are crumbling with, bad weather and crime. For weather, we have no problem but for thefts, you need to think and plan. You either take advantage of early rains, plant and risk theft of your farm produce especially theft of green maize or plant late and you risk having less production due to weather”*

Some farmers have had to endure cold and chill nights guarding their harvested grains especially maize so as to prevent thieves from taking advantage of ready grains. Worse still, others have resorted to harvesting their crops before it fully matures so as to reduce or avoid farm theft. Yet others out of panic have sold their bulls and rams in an effort to avoid or minimise loss through theft or have shied away from rearing bulls or growing certain crop types.

#### **4.7 Observation and Discussion**

This paper adds knowledge to growing field of rural criminology. The research is of important as it first highlights an ignored aspect of farm thefts and secondly it demonstrates that the case study and narrative methodology can provide a window opportunity of activating exploratory study where more robust empirical qualitative methods cannot be used. This type of methodology can be applied in understanding adverse crime related incidences which otherwise could remained untold (Smith 2004). It also helps to inform policy and practice.

The study also fills a gap in the rural criminology literature as there is limited empirical research on impact of farm theft and Kenyan farming economy and thus demonstrating that impacts of farm theft are worthy an academic scrutiny. The growing knowledge of rural criminology has veered off like urban criminology by dwelling on the nature, extent, cause and perpetrators of rural crimes. However, this paper has taken another perspective by investigating the consequences of farm theft: a neglected segment of rural criminology.

This study has shown that the continuing incidences of farm theft pose a danger to society in general at four levels. First, to the farmers themselves, secondly to family stability and cohesion, thirdly to community co-existence and lastly, low investment in agriculture. Like other studies on crime victimization; farm theft with its associated sophistication impairs the functioning of community and adversely affects quality of life of victims and close associate. Like other constraints such as changing weather conditions, soil infertility and acidity, unfavourable commodity prices and unforgiving emerging diseases; farm theft is fast emerging as a key challenge to sustainable farming.

As well, the findings have shown that the cost of farm theft can vary enormously between individuals and there are both direct and indirect costs. The direct costs are made up of the value of goods stolen and/or the cost of damage to property and goods while indirect costs include the cost of the disruption to continuity of farming, strained family relationship, abandonment of farming, loss of staff, emotional pain and suffering, fear, and other intangible outcomes. The conservative estimate of total monetary loss through farm theft clearly shows that it is serious concern.

As it has emerged, majority of small scale farmers in this study are finding it hard to continue investing in agriculture due to unattractive returns caused by increasing cases of farm theft. Theft of farm property has emerged as one of the discouraging factors to continued farming in Kenya. It is costly and frustrating action to most farmers who may not be having means of control and prevention. Worse still some farmers are harbouring anger and resentment towards their suspected individuals which can fuel mutual hatred and suspicion in the family and the large society.

Further, theft of livestock is more likely to generate more stress than theft of grains and green maize. Livestock as compared to grain is greatly treasured and theft of these animals, especially the most valuable like bulls and rams arouse strong feelings of betrayal and anger especially if suspects can be traced back to community or family lineage. Male farmers, in particular older ones become more emotional about such thefts, which render them more helpless and frustrated.

What was most infuriating to most farmers was when offender was known to the farmer especially if it was a family member, neighbour or friend. Farmers becoming incessantly frustrated by the fact that they have to continue living or supporting the offender in the same community or worse more same family. In most cases, most farmers preferred to bear the pain rather than strained relationship with the offender whom they may need in future (Barclay 2001). Further, some found it easier to trade off some farm properties that were targeted by thieves at an early possible time so as to avoid loss through theft and more so to prevent damaging family and community relationship and support (Fafschamps & Minten 2003 and Maloken 2000).

Besides emotional suffering and pain, abandonment of farming and certain crop types is increasing becoming a key output of farm theft. Farmers are becoming more hesitant to continue growing beans and maize or rearing bulls and rams. What is emerging in this article is that small scale farmers are more likely to be bothered by farm theft than large scale farmers who have the resource and ability weather losses through theft. More often small scale farmers have small land size and herds of cattle, sheep or goats to which single incident of farm theft serves a serious blow to their investment. But for large scale farmers who farm acres and acres of land, a single incident or series of theft may represent a drop in an ocean of the size of the loss of property through theft. As such, farm theft may not become a serious issue to them.

With increasing scourge of farm thefts and the inability of players of criminal justice system to sufficiently address it; more farmers were finding no benefit to report farm theft. Continued lack of reporting mechanism coupled with inability of police to sufficiently investigate farm theft and delays in court cases caused more anger to farmers who were not able to secure their property. As a result, farmers were becoming desperate and resorting to tactics that aimed at eliminating suspected person such as killing which may create a wave of violence.



## 4.8 Conclusion

This article has successfully demonstrated that farm theft is not only economic problem but also social and psychological concerns. Indeed farm theft is not only financial straining but also a grim reaper and strainer of relationship; conflict starter, stress producer, and fear inducer. For instance farmers are hesitant to invest and expand their agriculture preferring to channel their money to less theft prone activities. It also create serious havoc to the everyday functioning of farming families who have to farm and live with surging incidences of stealing both from within and outside their families and community. Hence, farm theft like other crime is a factor in development and no one can continue to invest or reinvest in areas where you are not sure of attractive returns.

Furthermore, the impact of farm theft needs not to be dismissed as inconsequential and of little importance. On the contrary, the pleas and tears of farmers as it has been shown by this study need to be a wakeup call to Kenya's criminal justice practitioners that there is more than what meets the eye.

In sum, farm theft is costly to farmers economically, socially and psychologically. However, more research is necessary to understand post trauma of farm theft victimization and how it manifests itself in terms of age; gender and repetitive victimization. In doing so, the study of farm theft victimization will provide another dimension which may help in redefining policies and prevention efforts and possibly improve quality of life of farmers and economy of the country.

## References

- Anderson, K.M. and McCall, M. (2005), "*Farm crime in Australia*," Canberra, AU: Australian Institute of Criminology, retrieved on 7<sup>th</sup> February, 2011 from: [www.aic.gov.au/publications/current%20series/cfi/101-120/cfi119.aspx](http://www.aic.gov.au/publications/current%20series/cfi/101-120/cfi119.aspx).
- Barclay, E. M. (2001) "*A review of related literature on agricultural crime*" Institute for Rural Futures, University of New England, retrieved on 21<sup>st</sup> November, 2010 from: [www.criminologyresearchcouncil.gov.au/reports/barclay.pdf](http://www.criminologyresearchcouncil.gov.au/reports/barclay.pdf)
- Barclay, E.M, Donnermeyer, J. F., Doyle, B. P., & Talary, D. (2001), "*Property crime victimisation and crime prevention on farms*," Report to the NSW Attorney General's Crime Prevention Division (Report No. 01.2). Armidale, New South Wales: Institute for Rural Futures, University of New England.
- Barclay, E.M. and Donnermeyer, J.F. (2002), "Property crime and crime prevention on farms in Australia", *Crime Prevention and Community Safety: An International Journal*. Vol. 4 (2): 47-61.
- Bunei E. K., Rono J and Chessa S (2013) "Factors influencing farm crimes in Kenya: Opinions and Experiences from Farmers". *International Journal of Rural Criminology* 2(1): 75-100. Available online at <http://hdl.handle.net/1811/58846>
- Bunei, E. (2014), "*Factors influencing agricultural crimes in Kenya*," MA-dissertation, Moi University, Eldoret, Kenya.
- Bunei, E. K., Rono J and Chessa S (2014). *Crime prevention on farms: the opinion of farmers*. *International Journal of Rural Criminology*, Vol. 2(2): 209-224. Available online at <http://hdl.handle.net/1811/61594>
- Bunei, E.K., Rono J and Chessa S (2012) "Factors influencing reporting of agricultural crimes in Kenya". *International Journal of Current Research* 4 (12):119-124
- Chafin A., Roman J., Mears, D.P., & Scott, M.L. (2007), "*The costs and benefits of agricultural crime prevention*," Washington, D.C.: The Urban Institute

- Chiwona-Karlton L, Lemenih M, Tolera M, Berisso T & Karlton E. (2009). *“Soil fertility and crop theft: changing rural dimensions and cropping patterns”*. Proceedings of seasonality revisited: 8–9 July, Institute of Development Studies: Brighton; 3–18.
- Daily Nation (2013), *“Poor youths team up with butcheries to drive spate of cattle theft in Kisumu,”* Nation Media: Nairobi: 11. Publish on 30<sup>th</sup> November, 2013.
- Deeds, J., Frese, W., Hitchner, M. and Solomon, M (1992), *“Farm Crime in Mississippi,”* Mississippi State, MS: Mississippi State University
- FafChamps, M and Minten, B., (2003). *“Theft and rural poverty: result of a natural experiment”*. Proceeding of the 25th International Conference of Agricultural Economics (IAAE).
- Foeken, D. and A. Mboganie Mwangi (2000), "Increasing food security through urban farming in Nairobi", in: *Growing Cities, Growing Food - Urban Agriculture on the Policy Agenda* (Ed.: N. Bakker, M. Dubbeling, S. Guendel, U. Sabel-Koschella and H. de Zeeuw), DSE, Eurasburg, Germany, 303-327
- Gichamo, T. Z. (2011) *“Dispute or residing together in harmony? Bean cultivation and theft in rural Ethiopia”*, unpublished thesis, Swedish University of Agricultural.
- Graham, B., (2010) *“Analysis of the state of praedial larceny in member states of CARICOM”*. A report presented to CARICOM Council of Ministers for Trade and Agriculture during the recently completed Ninth Annual Caribbean Agriculture Week on 9-15 October, 2011, Windsor Park, Dominica
- Inkoom D. K.B. (2011), *“Utilisation of irrigation facilities towards poverty reduction in the upper western region of Ghana,”* *Journal of Sustainable Development in Africa*, Vol. 13, No. 2: 335–350.
- Jones, J. (2008), *“Farm crime on Anglesey: local partner’s and organisations’ views on the issue, second report, January 2008.* Retrieved on 7<sup>th</sup> December, 2011 from <http://www.aber.ac.uk/en/media/jane-jones---second-report.pdf>
- Juma M., Nyangena, W., and Yesuf, M. (2009), *“Production risk and farm technology in rain-fed semi arid lands of Kenya,”* Environment for Development, Nairobi; Kenya.
- Malekano, L. B., (2000) *“The social-economic impact of stock-theft and disease in the lower shire districts of Malawi”* A Paper Presented at the International Conference on Historical and Social Science Research in Malawi” 26 –29 June 2000, Chancellor College, Zomba, Malawi.
- McCall, Marissa. (2003). *“Results from the 2001-02 National Farm crime Survey.”* Australian Institute of Criminology, Trends and Issues in Crime and Criminal Justice, No.266.
- Mears, D.P., Scott, M.L. and Bhati, A.S. (2007), *“Opportunity theory and agricultural crime victimization,”* *Rural Sociology Journal*, Vol. 72(2): 151–184.
- Nel, E and Davies, J. (1999) *“Farming against the odds: an examination of the challenges facing farming and rural development in the Eastern Cape province of South Africa,”* *Journal of Applied Geography* Vol. 19(3): 253-274
- Osborn, E. (2015), *“Examining Macro-Level Correlates of Farm Equipment Theft: A Test of Routine Activity Theory and Social Disorganization Theory,”* PhD-dissertation, University of Louisville, Louisville, Kentucky Available online at [http://ir.library.louisville.edu/etd/2248?utm\\_source=ir.library.louisville.edu%2Fetd%2F2248&utm\\_medium=PDF&utm\\_campaign=PDFCoverPages](http://ir.library.louisville.edu/etd/2248?utm_source=ir.library.louisville.edu%2Fetd%2F2248&utm_medium=PDF&utm_campaign=PDFCoverPages) (retrieved on 16<sup>th</sup> October, 2015)
- Republic of Kenya (2010), *“Kenya Population and Census: 2009.”* Government Printer, Nairobi.
- Smith, R. (2004), *“Rural rogues: a case story on the smokies “trade”,* *International Journal of Entrepreneurial Behavior & research.* Vol. 10 (4) pp 277-294. Available online at <http://dx.doi.org/10.1108/13552550410544231>

Standard Newspaper (2013a), "Agony of farmers losing millions of shillings to bloody livestock merchants," in *The Business Beat Magazine*, Standard Group: Nairobi: 3. Publish on 2<sup>nd</sup> July, 2013.

Standard Newspaper (2013b), "*Why residents sleep a step away from their cattle,*" Standard Group: Nairobi: 27. Publish on 10<sup>th</sup> August, 2013.

Standard Newspaper (2014), "*Thieves leave farmers with no option but to brand bananas,*" Standard Group: Nairobi: 17. Publish on 17<sup>th</sup> January, 2014.

Swanson, C.R. Chamelin, N.C. and Territo, L. (2001), "*Criminal investigation.*" Boston: McGraw Hill.