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PERCEIVED EFFECTIVENESS OF PUNISHMENTS FOR FOREST OFFENCES

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ABSTRACT

The purpose of this paper is to determine if the law currently in force is ineffective and thus contributes to the occurrence of forest offences. The paper analyses the punishments under the National Forestry Act 1984 based on the perceptions of related stakeholders on the effectiveness of those punishments in addressing illegal logging and other forest offences. A questionnaire was utilized to obtain responses from 240 purposively selected stakeholders. The collected data were analysed in the context of measures of central tendency to identify the extent to which the respondents agreed with the stated items. The results demonstrate that the law was generally perceived to be acceptable. The findings also identified compensation payment based on the value of tree or wood as the

most significant item, while longer imprisonment term was rated as the least significant item.

Keywords: Illegal logging, forest offences, fine, imprisonment, compound.

INTRODUCTION

A World Bank study on illegal logging reported that across the globe a football field of forest is clear-cut every two seconds. The report also estimated that illegal logging accounts for as much as 90 percent of all the logging activities, generating between $10 and $15 billion annually worldwide, with underpayment of royalties and taxes on legal logging amounting to an additional US$5 billion. The estimates did not include the environmental costs of the crimes in terms of threat to biodiversity, carbon emissions and landslides (Goncalves et al., 2012). Illegal logging and forest offences are prevalent environmental issues in timber-producing countries, undermining efforts undertaken by the respective governments to achieve sustainable forest management (Hoare, 2015). Uncontrolled illegal logging can have an impact on soil erosion, forest biodiversity and water resources. Logging activities carried out without considering the importance of environmental sustainability would result in catastrophic degradation of vital forest resources and livelihoods (Brack & Bailey, 2013; Goncalves et al., 2012; Reboredo, 2013; World Bank, 2006). Causes of illegal logging include global demand for logs, lack of transparency, corruption, inefficient allocation of harvesting rights, insufficient enforcement activities, poor timber-tracking systems as well as weak legal framework (Food and Agriculture Organization of the United Nations (FAO), 2005; Hoare, 2015; Lawson and MacFaul 2010; Mohd Gani, 2013; Mohd and Yaman, 2001; Rosander, 2008;).

Illegal logging, according to previous studies, occurs due to ineffective laws and regulations (FAO 2005; Rosander, 2008; World Bank, 2006;). The main attributes of ineffective law are weak penalties and punishments which might not have a deterrent effect on prospective criminals (World Bank, 2006). The low fine might not sufficiently scare the offenders if the rewards of the crimes far outweigh the legal sanctions, since illegal loggers operate to gain profit and income

maximization. The low cost of noncompliance and the prospect of high economic rewards promote offenders to engage in these illegal forest activities (Tacconi et al., 2003).

Prior research, surveys and wood-balance analysis indicate that in Malaysia illegal logging accounts for 14-25 percent of the total timber production (Lawson & MacFaul, 2010). Illegal logging and forest encroachment in the late 80s and the early 90s had necessitated a review of the National Forestry Act (1984), which resulted in the 1993 amendment, the objectives of which included increasing penalties for forest offences (FDPM, 2019). The data for the 1991-2016 period in Peninsular Malaysia showed that the rate of illegal logging[1] had dropped. A drastic decrease occurred between 1993-1994 where the number of cases declined from 211 to 92. On the other hand, between 1991 and 2016, forest offences[2] showed an uneven rate. The highest number of cases was recorded in 2007 with 344 cases, and the lowest in 1991 with 122 cases. Generally, the number of forest offences followed an upward trend from 1991 to 2016 (FDPM, 2017). The literature has highlighted that, despite the introduction of higher penalties, forest offences continue to take place (Mohd & Yaman, 2001). This situation raises concerns about whether the law has been effective in controlling and restraining illegal forest activities. This study therefore seeks to determine the extent to which the punishment factor is perceived to contribute to the occurrence of illegal logging and forest offences. The law was amended nearly three decades ago, and the punishments are presumably outdated with values eroded by inflation and may no longer carry the deterrent effect. This study evaluates if the hypothesis that the size of punishment is no longer effective is supported. Doctrinal legal research, which is research analysing judgements of courts through decided cases, would clarify the questions of adequacy and efficacy of the related provisions, but we are not aware of any such research being available. An extensive search in the Lexis Nexis and Current Law Journal (CLJ) database produced no data on reported cases relating to illegal logging offences. A feasible way to investigate the issue is by using empirical evidence. The investigation of the extent to which the scenario is attributable to the weak law, and whether the observations of scholars in the literature that the law contributes towards the occurrence of forest offences is

[1] The term refers to unlicensed logging activities carried out in an organized manner using heavy machinery (Hansard Report, 2015).

[2] The term covers other offences of forest encroachment (Hansard Report, 2015).

true in Malaysia, can be carried out through analysis of perceptions of stakeholders towards the issues. A perception study may not provide conclusive findings on whether the law is actually effective, but an evaluation of regulations based on empirical evidence can complement the doctrinal approach. Inputs collected from empirical evidence are thought to provide insights and understanding of the issues associated with the effectiveness of the punishments.

METHODOLOGY

The specific focus of this study is examination of the perceived effectiveness of the National Forestry Act 1984. Key issues include increments in penalties and compound rates, rewards, informer protection, and related provisions.

Data were collected from 240 related stakeholders in Peninsular Malaysia through a closed-ended questionnaire. These respondents were people engaged in the enforcement operations of forest offences. The reason they were chosen as respondents in this study was mainly due to their involvement in the day-to-day operation of controlling illegal forest activities. The respondents were selected based on experience, with the majority of them having served for more than ten years, and trainings received relating to forest legislation, investigations and raids. The training criteria were to help ensure the respondents' understanding of the related legal provisions in the questionnaire. An interview was also conducted with a small number of respondents to provide additional insights into the issues.

The questionnaire was developed to reflect the respective statutory provisions, with a view to inquiring about the respondents' responses to the issues under consideration. The statutory provisions covered included increased fines and compensation, increased compound, and longer terms of imprisonment. Additional provisions introduced under the amendment were also included in the study.

The questionnaire employed a 5-point Likert scale that offered five options for the participants to express their agreement in relation to the items within each set of questions (1 = totally disagree, 2= disagree, 3=just agree, 4=agree, and 5= totally agree). The results are presented

in the same order as each individual item in the questionnaire. The measure of central tendency was used to analyse the central location of the distribution. The strength of a particular item was determined by the highest mean score for a particular item, since it reflected the respondent's agreeableness with the item. Items with low mean score were considered less relevant as they demonstrated that the respondents disagreed with these items. In this context, mean was the primary measure of central tendency employed since it is the most appropriate statistical tool to describe continuous data. In this study, the mean is represented by an x-bar ($\bar{x}$). The median and mode would add further depth to the analysis as both measures provide a different approach in describing the data. While mean is a suitable measure of central tendency in describing continuous and normally distributed data (Sharma, 2007), median is an appropriate measurement if the data set is skewed when the mean score is heavily influenced by outliers. Mode is the best measure of the central tendency to describe a nominal dataset. In certain cases, the measure of dispersion is also applied to describe the spread of the data in comparison with the mean scores. Throughout the article, standard deviation which measures the spread of data from the mean is represented by an 's' and variance which measures the distance of each data from the mean score is depicted as an 's^2'. The mean score is applicable if the value of standard deviation is close to 0. A large value of standard deviation indicates the spread of the data away from the mean score. A small variance indicates that the data set are spread close to each other. The validity and reliability of the questionnaire were tested with a *Cronbach* value of 0.858.

RESULTS AND DISCUSSION

Increased Penalties and Compensation

Offences under the Act comprise illegal taking of forest produce from permanent reserved forest or state land (section 15), removal of forest produce without the removal pass (section 40), and counterfeiting marks on trees and timber and altering boundary marks (section 86). Other offences include unlawful activities such as illegal possession of forest produce (section 84), unlicensed operation or occupation in the permanent forest reserved (section 32), controlling or possessing forest produce without the removal pass (section 68), removing the

place of measurement of forest produce from the license area (section 66(1)), unauthorized entrance into closed forest (section 47), and unlicensed usage of motor vehicles on any forest road (section 50(4)).

The amendment to the Act resulted in increased penalties and compensation values. The maximum fine of RM10,000 or 3 years' imprisonment was increased to a fine not exceeding RM500,000 and 1 to 20 years' imprisonment. Fines not exceeding RM5,000, RM2,000, RM1,000 and RM500 were raised to a maximum amount of RM50,000, and the term of imprisonment was extended to a maximum of 5 years from the previous terms of 2 and 1 year, as well as 6 and 3 months. Penalties not exceeding RM1,000 and RM500 or imprisonment not exceeding 6 and 3 months were raised to a maximum amount of RM10,000 or imprisonment not exceeding 3 years. Additional compensation was also increased from an amount not exceeding 5 times the value of royalty and other charges to 10 times the value. Compensation not exceeding 3 times the amount of forest produce was increased to 10 times the amount, and compensation based on the value of trees was raised to 10 times the value[3].

The results are presented in Table 1. The questionnaire first sought general opinions from the respondents on whether the provisions in the Act 313 were effective in reducing illegal logging, and then asked specific questions on increased penalty and compensation. The responses obtained were positive since the respondents generally agreed with the items as shown by the high mean score of 4.07, and the clustering of scores around the mean, as indicated by the low value of standard deviation, which was close to 0 ($s = 0.76$; $s^2 = 0.58$). The item that scored the highest mean score by respondents was related to increment in compensation payment based on the value of trees or wood ($\bar{x}=4.24$; $s = 0.82$; $s^2 = 0.67$). The role of a longer imprisonment term in reducing illegal logging and forest offences was also agreed upon by the respondents, but this item obtained the lowest mean score of ($\bar{x}=4.13$; $s = 0.80$; $s^2 = 0.63$). The other three items that were agreed with by the respondents obtained mean scores ranging from 4.16 to 4.22. These include statements that an increment in the amount of fine has successfully reduced illegal logging cases ($\bar{x}=4.22$), an increment

[3] See sections 15(2), 40(2), 86, 25(2), 32(2), 66(4), 67(2), 68(4)(a), 69(3)(a), 81(2)(b), 82(2), 84(1), 85(2), 87, 92(3), 93(2), 96(2), 97(2), 98(2), 100, 107, 15(3), 40(3), 81(3), 47(4), 68(4)(b), 69(3)(b), 81(2)(c) and 83(2).

in compensation payment according to the amount of royalty and other charges could have the impact of restraining illegal logging ($\bar{x}$=4.18), and an increment in compensation payment based on the value of forest produce could reduce illegal logging cases ($\bar{x}$=4.16). In addition to measures of central tendency, the values of standard deviation and variance for those items were found to be less than 1. This suggests that there were minor variations in the dataset and most scores were clustered around the mean.

Table 1

Provisions Under the National Forestry Act 1984 and Mean Scores

Item	Provisions under the National Forestry Act 1984	Mean score ($\bar{x}$)
1.	General effectiveness of punishments	4.07
2.	Increased fines	4.22
3.	Longer imprisonment term	4.13
4.	Increased compensation based on royalty, premium, cess and other charges	4.18
5.	Increased compensation based on the value of forest produce	4.16
6.	Increased compensation based on the value of trees	4.24
7.	Compound rate	4.12
8.	Compound condition	4.11
9.	The transfer of burden of proof	3.94
10.	Rewards to informers	3.89
11.	Protection of informers	4.21
12.	Revocation of license	4.17
13.	Accountability of licence or permit holders	4.07

In general, the respondents agreed that the provisions could have a deterrent effect on the prospective forest offenders. The most significant provision rated by the respondents was related to the increment in compensation payment based on the value of trees or wood, followed by the increment in penalty and increment in compensation payment based on the amount of royalty. The mean scores of all items relating to increment in fines, imprisonment term and compensation payments were higher than 4, which reflected the respondent's agreement

with the items. However, inputs from five interviewed respondents indicated mixed results, where two respondents viewed the amount of fine as sufficient, the remaining three considered the amount of punishment as inadequate considering that the amount is generally affordable, and the offenders can meet the financial sanction without much difficulty.

According to the previous theory of punishment, the best form of deterrence can be achieved by setting fines as high as possible and reducing the level of expensive monitoring. This is because increasing the amount of a fine is free and raising the likelihood of a fine being imposed is costly, since it requires resources for monitoring and arresting criminals. However, the later theory predicts that the optimal level of enforcement is likely to require a relatively high probability of detection and relatively low fines. Large fines are not desirable for a number of reasons, including their association with avoidance activities that reduce the probability of arrest, and greater incidence of bribe taking (Robinson et al., 2010).

Respondents viewed that the imposition of increased fines (an increase of up to RM500,000) is an effective way to reduce forest offences. The fine of RM500,000 is quite severe (Mohd & Yaman, 2001), but the sum can easily be met in cases involving billionaire timber tycoons (Yaakob, 2014). Despite the respondents' positive perceptions on the effectiveness of the punishment, it is often profitable to pay the fine because the value of the timber is higher than that of the fine (Blakeney, 2001). Despite the respondents' positive perceptions, the amount has been viewed as far from adequate, and there has been a suggestion to increase the amount so that the punishment would be proportionate to the value of timbers stolen. An increase of the fine to RM10 million has been suggested by the Association for the Protection of Natural Heritage of Malaysia. The offenders make profits of hundreds of millions in a year, and the low amount of fine compared to the profits obtained will not prevent logging syndicates (Abu Hassan, 2019).

Further, the increased fine may well be perceived as effective, but the risks of arrest and prosecution as well as conviction are equally important factors. Studies on the impact of criminal sanctions on environmental pollution indicate that increased punishment alone

does not work if there is a low detection rate (Faure & Visser, 2003). Economists consider that criminals decide their actions based on cost and benefit analysis (Marsh et al., 2008). They engage in illegal forest activities if the benefits obtained outweigh the costs. In addition to the size of the punishment, the expected costs of crime also include the probability of arrest and the probability of prosecution (Mohd, 1999). The benefits of increased fines can only be invoked in cases of successful convictions. In reality, offences committed may not be detected, investigation may not end up with prosecution, and even if prosecutions are filed, cases might probably be withdrawn or conviction may not be successfully secured in courts. Low risk of detection, prosecution and conviction can reduce the deterrent value of increased penalties. The probability of obtaining acquittal and case dismissal on technicalities as well as minimal fines awarded in judgements may also have the impact of reducing the deterrent effect expected from the increased punishment. The probability of detection for forest offences is low with logging operations being located in remote areas (Mohd Gani, 2013; Mohd & Yaman, 2001,). Arrest is difficult and requires rapid follow-up of the detected cases (Wells et al., 2008). Respondent 5 in this study indicated that the likelihood of arrest is 10 percent or 1 in 10 incidences of the crime. Investigations are often found to be inconclusive, resulting in only a few cases taken to courts, with even fewer cases securing convictions and receiving significant penalties (Goncalves et al., 2012). The rate of conviction in Malaysia (Peninsular and Sabah) stands at 60 percent – 70 percent (Lawson & MacFaul, 2010). A study showed that the rate of prosecution between 1995 and 1998 in Sarawak was less than 20 percent of detected cases, and the frequency of conviction for filed prosecution was less than 30 percent (Blakeney, 2001). A study in 2005 in Papua, Indonesia, showed that only 13 out of 186 identified suspects were convicted. In Cambodia, the failure to try agriculture, forestry and fishery crimes in court has amounted to 70 percent of the cases. A four-year study conducted in Brazil, Mexico, Indonesia and the Philippines showed that the cumulative probability of punishing illegal logging crimes is less than 0.082 percent. In Papua, Indonesia, the probability of conviction for illegal timber shipping is 0.006 percent. In practice, most forest crimes go undetected and are ignored, despite the data concerning illegal logging (Goncalves et al., 2012). Detection challenges relate to enforcement factors, and like any other offences, enforcement is undeniably an important

issue if offenders are to be made to pay for their crimes. Increasing the likelihood of detection and enhancing the efficiency of criminal justice, which include investigation, prosecution, and conviction of cases, are critical for suppressing illegal logging in addition to the increased size of punishment.

Compensation payment based on ten times the value of royalty, premium, cess, the value of forest produce and tree, was viewed by respondents as a plausible measure to reduce forest offences. The maximum rate is an increase from the previous capping of five or three multiplications of the value of the royalty, forest produce, or the value of trees. These are additional punishments apart from the penalties of fines and imprisonment, which can be invoked to punish the offenders more severely. The increased value of compensation can address issues of inadequate fines (the maximum of RM500,000) in which payment of fine is rendered more profitable with rising timber prices. The provision facilitates the imposition of punishment that is proportional to the value of the timber products obtained and the environmental damage caused. The higher compensation provides a sterner sanction and may encourage prospective perpetrators to comply with the regulations. In the case of environmental pollution, research observed that there is a relatively high degree of damage and a relatively low degree of catching the offenders. Since the probability of being caught is lower than 10 percent, effective sanctions for deterring potential offenders should be correspondingly higher. Deterrence only works if the sanction provided is much higher than the amount of damage caused (Faure & Visser, 2003). In relation to environmental damage, the Act also allows for the recovery of costs for repairing damage caused by the offence. For example, section 81(3) (b) with respect to acts prohibited in permanent reserve forest (e.g., cutting trees and removing forest produce), and section 101(3) (c) with respect to the compounding of offences, provide that the person convicted of the offence can be ordered to pay the cost of repairing damage.

Environmental crimes are aggravated through their impact on the environment, depriving governments of much-needed revenues. Losses incurred by the authorities include loss of revenue and forest degradation. Although no research has been found to assess such losses, a study found that the amount of compensation is not sufficient to cover losses of biodiversity and environmental damage.

Compensation collected only amounted to an average of RM20,000 per offence and the amount is unlikely to cover forest damage (Mohd & Yaman, 2001).

Longer imprisonment (up to 20 years with minimum one year under certain provisions) was viewed by respondents as an effective penalty. Under the Act, forest offences are typically punished by a fine or an imprisonment, or by a combination of the penalties. Many economists oppose the prison sanction given that the costs for the implementation are much higher than in the case of fines. However, imprisonment can be a better deterrent when offenders do not have the money to pay fines (Faure & Visser, 2003). However, imprisonment is seen to be a better sanction by a chief judge suggesting that fine alone is an inadequate sanction and forest offenders should face imprisonment (Ling, 2015). To ensure an effective deterrent value of the sanction, an increase in the term of imprisonment to up to 30 years has been suggested by the Association for the Protection of Natural Heritage of Malaysia (Abu Hassan, 2019). Longer imprisonment, in addition to a higher amount of fine can have stronger deterrent value against the lucrative profits in the illegal business. Some past research, however, has highlighted a number of drawbacks associated with longer imprisonment terms. A longer period in the prison is seen to have delayed repetition of offences rather than preventing the crime. Prisoners would lose their jobs, families and colleagues when they are imprisoned, and the imprisonment has the impact of isolating criminals from law-abiding communities, which could later increase the possibility of reoffending (McDowell, 2012). The severity of punishment may deteriorate over time in the prison facilities. This is explained by the 'adaptation calculation' scenario, where inmates become familiarized with isolation and segregation, making their suffering gradually decrease over the period of imprisonment term. A shorter imprisonment term has been seen as a better option to ensure that the prisoners will suffer from individual segregation (Wolf, 2016). Another shortcoming associated with longer imprisonment is that the longer time spent in the prisons could entail more cost to be borne by the governments and the societies in terms of the maintenance and management of the prison facilities (Boyd, 2008; Cohen, 1992). The severity of punishment would also worsen when offenders are placed in crowded prisons (Billiet & Rousseau, 2014).

Increased Compound Rate

The compounding of offences is provided under section 101 of the Act 313. The amount of compound is no longer limited to a fixed value of RM2,000, but is commensurate with the amount of fine provided for the offence. Offenders may be imposed higher amounts of compounds, ranging from RM10,000 to RM500,000. The position before the amendment might not adequately scare the prospective criminals as the amount of merely RM2,000 would not be too hard for the criminals to meet, given the potential profits they might earn from the illegal activities. In relation to compound conditions, the provision makes repeated criminals vulnerable to prosecution because it restricts the scope of compounding offences to the first-time offences. Respondents generally agreed that the punishment relating to the two aspects of compound could result in a lower rate of illegal logging and forest offences cases, as reflected in the scores of ($\overline{x}$=4.12) and ($\overline{x}$=4.11) respectively. The values of standard deviation and variance for both items, which were close to 0 indicate that the mean score was reliable, and the data were dispersed close to the mean. This is consistent with the mean and mode scores of both the items, which stood at 4 respectively, indicating that respondents regarded the punishments as important in facilitating reduction of illegal logging and forest offences.

The high mean score for this item indicates agreement among respondents that increments in compound rates and conditions could result in better law compliance by all parties. With higher amounts of compounds, potential offenders may be discouraged from engaging in any form of illegal forest activities that might contribute to environmental degradation. Since compound is only applicable for the first time offences, and subsequent offenders may no longer be allowed to enjoy this form of sanction, potential repeat offenders are expected to exercise more vigilance to avoid detection and hence prosecution in courts. However, being a pecuniary penalty and as with the case of fines, punishment through compounding would not carry much deterrence if offenders can simply pay the amount imposed. Since August 2005, the National Forestry Council has recommended that cases under section 15 of the National Forestry Act 1984 dealing with unlicensed removal of forest produce from permanent reserved forests and state land should be excluded from compoundable

offences and must be brought to court (Wells et al., 2008). A study conducted in Sarawak showed that most of the forest law violations were settled through compound payments (93%), and only serious cases were filed for prosecution (7%) (Blakeney, 2001). It has been suggested that more cases should be referred to courts instead of being settled by means of compounds (Ling, 2015). Illegal loggers should be punished as severely as possible, and such offences should not be compounded but dealt with in court (Mohd & Yaman, 2001). Subject to the availability of evidence, prosecuting offenders in court can have a better deterrent effect of preventing illegitimate forest activities that would cause disturbance towards the supply of forest produce. Prosecution through the courts involves a relatively lengthy procedure (Wells et al., 2008), but the prospect of being prosecuted in courts is believed to frighten prospective criminals from engaging in the offences.

Rewards, Informer Protection and Related Provisions

The provisions relating to rewards, informer protection, revocation of licence and accountability of licence or permit holders are laid down in sections 100A, 100B, 101A and 110A[4]. The significance of the provisions in reducing illegal logging and forest offences received positive feedback from the respondents as reflected in the high mean scores, which ranged between 3.89 and 4.21. Rewards and incentives were rated as the least important aspect of the provisions ($\bar{x}$=3.89; s = 0.86; s^2= 0.75). In practice, detection relies on information from a variety of sources including forest department staff, forest licence holders, anti-corruption agencies and the general public. Rewards are given to the teams of police and forest department officers who arrest

[4] Section 100A states "the Director may order such rewards as he may deem fit to be paid to any forest officer or other person for services rendered in connection with any offence or seizure made under this Act". Section 100B states "(1) ….no witness in any civil or criminal proceedings shall be obliged or permitted to disclose the name or address of an informer or the substance and nature of the information received from him or to state any matter which might lead to his discovery. (2) If any books, documents or papers which are in evidence or are liable to inspection in any civil or criminal proceedings contain any entry in which any informer is named or described or which might lead to his discovery, the court shall cause all such passages to be concealed from view or to be obliterated so far only as may be necessary to protect the informer from discovery. Section 101A provides "(1) …where any person is convicted of an offence under this Act, the court may, in addition to any other penalty that may be imposed, order that any licence or permit issued under this Act in relation to which the offence has been committed be revoked. Section 110A states "where any forest offence is committed by any person in relation to any licence or permit issued under this Act, such licensee or holder of permit shall be deemed to have committed that offence".

the offenders, using the proceeds from the sale of illegal timber and equipment (Blakeney, 2001). The literature reported that, in 2005, the forestry department received up to 170 reports of alleged violations from members of the public, with more than half (80 reports) found to be substantive. Rewards were paid commensurate with the fines issued, or quantity of timber seized (Wells et al., 2008).

The respondents agreed that protection of informers was the most significant aspect of the provisions to reduce illegal logging ($\overline{x}$=4.21; s = 0.73; s^2= 0.54). Section 100B allows non-disclosure of the name or address of an informer or the substance and nature of the information received from him and obliteration of such information in any books, documents or papers which are in evidence in civil or criminal proceedings. More than a decade later, Malaysia enacted the Witness Protection Act 2009. The witness protection programme under this Act provides a range of measures that can ensure the safety of a protected witness, including accommodation, relocation, new identity, funds for living expenses or relocation costs, as well as assistance in obtaining employment[5]. The literature agrees that witness protection is an important tool in dealing with the criminal organizations involved in illegal logging. Often, valuable evidence is provided by people within the syndicates who would encounter threats if their cooperation with the authorities became known. Witness protection measures may also be required to protect witnesses who provide information as part of a negotiated plea agreement. In cases involving organized crime and corruption offenses, obtaining information from a cooperating defendant through a plea agreement can assist in the

5 See section 13 which states "(1) The Director General shall take such actions, as he considers necessary and reasonable, to protect the safety and welfare of participant. (2) The action may include─ (a) providing accommodation for the participant; (b) relocating the participant; (c) applying for any document necessary to allow the participant to establish a new identity; (d) providing transport for the transfer of the property of the participant; (e) providing payment equivalent to the remuneration that the participant was receiving before being included in the Witness Protection 15 Programme including any increment to the remuneration which the participant would have been entitled to, if he was not included in the Programme; (f) where the participant is unemployed before being included in the Programme, providing payments to the participant for the purpose of meeting the reasonable living expenses of the participant including, where appropriate, living expenses of the family of the participant and providing, whether directly or indirectly, other reasonable financial assistance; (g) providing payments to the participant for the purpose of meeting costs associated with relocation; (h) providing assistance to the participant in obtaining employment or access to education; (i) providing other assistance to the participant with a view to ensuring that the participant becomes self-supporting; and (j) any other action that the Director General considers necessary".

very difficult task of collecting evidence against masterminds of the criminal operation. The cooperation offered by the defendant typically includes information that may lead to the arrest of other co-offenders, or information that enables authorities to locate and confiscate the proceeds of the crime. Evidence may also be provided by members of the public who might not be willing to come forward unless they are given necessary protection (Goncalves et al., 2012). The need to safeguard witnesses with criminal records arises from the fact that minor criminals are protected in order to prosecute the major ones. In major mafia crimes, the witness is sometimes a member of the organization who wants to exit the syndicate (Kaur, 2011). The provision on the protection of the informer has been perceived to be a laudable move and can assist the authorities to secure information regarding suspicious activities in the forest area. Protection granted to informers may alleviate their fear and is seen as a good measure in encouraging them to supply necessary information about illegitimate activities.

The two items related to revocation of licence and accountability of licence or permit holders (sections 101A and 110A) obtained the mean scores of 4.17 and 4.07 respectively. In addition, the mode and median scores for all items under this category stood at 4. The standard deviation and variance for all items were less than 0, which further supported the reliability of the mean score. Section 101A allows the court to order the revocation of the licence, in addition to any other penalty that may be imposed. This additional punitive measure may be thought to have provided additional deterrent effects to the existing punishments in the form of fine and imprisonment. Considering the severity of the offence, the provision about licence revocation can help ensure licensee compliance. According to the Act, a person subjected to revocation of license will be disqualified from holding any licence or permit for a period not exceeding 5 years (section 101A (4)). Section 110A states that if any forest offence is committed by a person in relation to any licence, the licensee will be deemed to have committed that offence. Since the licensees are allocated the responsibility, they are expected to exercise more vigilance towards forest activities occurring within their permit areas.

The objectives of the amendment also include transferring the burden of proof to the defence (Mohd & Yaman, 2001). Section 104 provides that until proven otherwise, it shall be presumed that a person found

in possession of any forest produce has taken or removed such forest produce without a licence or permit, and a person found in possession of any machine or equipment intends to take or remove the forest produce (subsections (d) and (e)). The presumption also applies to forest produce as the property of the state authority, to map, plan or chart as accurate, and to mark placed on trees, timbers or boundary mark of an area under a licence or permit as accurate (subsections (a), (b) and (c)). The use of the presumptions shifts the burden of proof to the defendants. The transfer of the burden of proof was seen by the respondents to have a commendable impact in terms of facilitating a more efficient investigation and prosecution. This may explain why the respondents agreed with this provision ($\bar{x}$=3.94), with the mode score of (Mode=4). In the context of measure of dispersion, the standard deviation showed that the data set was clustered close to the mean (s = 0.72), while the small variance of (s^2= 0.67) indicated that the data were reliable. The quantitative results were also confirmed by interviewed respondents. Reversal of the burden of proof is used when the legislative body determines that the measure is necessary and appropriate in view of the threat of crime to society. It is pertinent to note that, with the emergence or escalation of organized crime and corruption, the reversal of burden of proof is considered necessary for effective administration of criminal justice. The provision is significant in reducing the prosecutors' burden as operation of the principle of presumption of innocence requires that the prosecutor bears the duty of proving the case beyond a reasonable doubt (Woodage, 2014). Simply by being in possession of forest produce, the presumption under the law is that the person has taken or removed such forest produce illegally. The provision is believed to have the likelihood of increasing the success rate of prosecution, and thereby increasing the deterrent effect on future criminals. This could reduce timber theft and help achieve the long-term policy of promoting sustainability, by allowing immature trees and protected species to survive, sustaining the stock of timber and eventually improving the overall health of the forest ecosystem.

CONCLUSION

Overall, this study found that the respondents agreed that the punishments were workable to reduce the crime. Their responses were ranked according to the mean scores to determine the most or least important aspects of the punishments. Compensation payment based

on the value of trees/wood was identified as the most significant, while longer imprisonment term was rated as the least significant. Increments in compound rates and firmer compound requirements were agreed upon as the means to reduce illegal logging, with the protection of informers being viewed as the most relevant provision.

Previous studies associated weak laws with the occurrence of forest crimes, and the results of this study have provided insights on the extent to which the punishment factor can be ruled out as the cause of the offences. The law is almost four decades old, but the quantitative results provided by this study have shown that the reform is generally still regarded as acceptable today by the majority of the respondents. This does not mean that the law is perfect and does not need further improvement, but suggestive evidence in respect of size of punishment indicates that the respondents generally perceived that the amendment resulted in an overall more effective punishment for illegal logging and forest offences. Other researchers, however, have urged for higher amounts of fine and longer terms of imprisonment. The perceived effectiveness is heavily associated with implementation issues; the existing punishments may well be considered effective, but the benefits of increased penalty can only be brought into play if prosecuted cases culminate with convictions. The findings of this study should be viewed as preliminary, and more studies may be conducted to verify the results. Future research can evaluate other factors, including enforcement and criminal justice issues in determining causes of the offences.

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