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Understanding illegal logging in Ghana: A socio-legal study on (non)compliance with logging regulations

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Enforcement of logging regulations in Ghana: Perspectives of frontline regulatory officers

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5.1 INTRODUCTION

Law enforcement is an integral component of any regulatory regime and that no matter how well regulations and laws are drafted, they are unlikely to achieve their purpose without some form of enforcement. Studying enforcement of pollution control regulations in Australia, Gunningham (2011) observed that for regulation to work or achieve its purpose it must not only be well designed but also efficiently and effectively enforced. Several empirical studies show that enforcement actions in the sense of detection of violations and legal sanctions are crucial to regulatory compliance (Catedrilla et al., 2012; Harrison, 1995; May and Winter, 1999). Catedrilla et al. (2012) attribute a reduction in the number of fisheries laws violations in the Philippines to the strengthening of enforcement actions. Research in the US has shown that violations of occupational safety and water pollution regulations were less frequent in firms that have recently been visited by regulatory inspectors and fined for violations (Gray and Scholz, 1993; Scholz and Gray, 1990). In all this, enforcement acts as a negative incentive that induces regulated actors to refrain from unlawful practices. Enforcement is thus considered as an important tool that can help to ensure or increase compliance, which is central to any regulatory regime.

However, in most jurisdictions, the deterrent effect of enforcement is often weak or intermittent (Kagan, 1994). Stern (2008) reports that even in developed countries enforcement is only capable of detecting a small fraction of infringements. In developing countries, enforcement is commonly weak across all regulatory regimes (Akella and Cannon, 2004). Additionally, enforcement is significantly expensive. McCook et al., (2010) observe that, in the Great Barrier Reef Marine Park, Australia, enforcement accounts for approximately 30% of the management costs and in India, approximately 60% of the forest department's budget is spent on enforcement (Robinson et al., 2010). It is not surprising, therefore, that over the years, a good many regulatory systems have failed to prevent illegal and harmful business practices, from overfishing by fishers to 'over-lending' by financial institutions, and serious violations are common in virtually all regulatory regimes (Thornton et al., 2009).

In the forestry sector, violations are not lacking particularly in the context of developing countries. It is a trite knowledge that illegal forest activities have contributed to deforestation, forest degradation, economic losses and injustices for forest communities in many developing countries. These violations include illegal forest occupation, illegal logging, evasion of forest related taxes, illegal transport and trade in forest products. Studies that have investigated noncompliance with forest sector regulations in developing countries point to weak law enforcement as a major contributory factor (Contreras-Hermosilla, 2007; Contreras-Hermosilla and Peter, 2005; Kishor and Damania, 2007; Schmidt and McDermott, 2015; Tacconi, 2007). Similarly, some empirical studies in Ghana on what accounts for the persisting violation of logging regulations (i.e., low level of compliance) point to weak enforcement as a critical factor (Boakye, 2015; Hansen, 2011; Marfo, 2010).

However, there is insufficient ground knowledge about what accounts for the weak enforcement. Put differently, there is less scholarly research that has examined what accounts for the weak law enforcement in the Ghanaian forestry sector despite a clear intent to tackle illegal logging on the legislative and (thus) political level. This raises the question of why is legislation not followed up with strong implementation and enforcement actions? This is the focus of this study. First, the study examines how the Forestry Commission conducts its enforcement functions regarding detection of violations and sanctioning of offenders. Specifically, it examines how the frontline regulatory officials (i.e., the street level bureaucrats-Lipsky, 1980) who undertake actual enforcement work at the forest level perceive and carry out their enforcement role. The focus on frontline officials is important because they directly interact with the regulated actors, who are the objects of enforcement action. Again, street level bureaucrats who do not perceive a regulation or policy as meaningful for either themselves personally, the target actors or society at large are less willing to implement it (Lipsky, 1980). However, in the field of regulatory enforcement, few studies have explored the role street-level bureaucrats play (May and Winter, 1999; Nielson, 2006; Seva and Jaggars, 2013). Second, it investigates how these enforcement practices influence compliance behaviour of loggers in Ghana.

This case study about Ghana is significant for two reasons. First, in the Ghanaian forestry sector, very little is known about how various enforcement theories have been applied to understand what shapes weak enforcement. This study, therefore, helps to better understand the sector-specific factors and contributes to the broader enforcement literature, which presently is dominated and shaped by views and experiences from the West, with perspectives from a developing country. Second, experiences and insights (both theoretical and empirical) gained from this study could be shared with other countries where enforcement of logging regulations has had limited to none effect on compliance behavior

The remainder of the manuscript is structured as follows. Section 2 introduces the theoretical framework underpinning the study whereas

section 3 explains how data was sourced and analysed. Section 4 presents the empirical findings. Section 5 discusses the findings in relation to the existing literature and the policy implications.

5.2 THEORETICAL FRAMEWORK

Central to improving enforcement effectiveness is to understand what influences the compliance behavior of actors subject to regulations. The deterrence theory on compliance behaviour suggests that actors are mostly motivated to obey regulations by fear of legal (state) sanctions, fear of social sanctions and by threat of guilt feeling or shame for doing something which the actor considers morally wrong (Thornton et al., 2009). This means that successful enforcement work is about the deterrence effect or the risk perception regulated actors have about the probability of being caught and the severity of expected sanctions from multiple state and non-state sources (Rooij, 2016). Put differently, effective enforcement work is about the promptness with which violations are detected, severity of sanctions imposed on violators to bring about compliance with regulations (Thornton et al., 2005). For regulatory agencies therefore, enforcement effectiveness largely depends on investment in resources to improve detection probability and sanction severity.

In contrast, the normative compliance theory suggests that regulated actors do obey regulation predominantly because they believe it is morally correct or socially acceptable or because of the legitimacy of institutions that make or implement the regulation (Arias, 2015; Tyler, 1990; Vandenberg, 2003). Research in the conservation context ranging from Fisheries in Malaysia (Kuperan and Sutinen, 1998) to protected forest areas in Indonesia and Papua New Guinea (McClanhan et al., 2006) supports the value of normative motivations and social pressure to influencing compliance. According to Kuperan and Sutinen (1998), to the extent that this view is valid, enforcement authorities must be fair, and should be able to determine what laws are judged reasonable by segments of the population subject to regulations.

Generally, for successful enforcement work, the role of street level bureaucrats who on daily or regular basis have to interpret and adapt regulations to different contexts is crucial (Lipsky, 1980). Also, Kagan (1994) observes that, enforcement work is endangered when the regulatory agencies are poorly resourced in terms of personnel, logistics and funds. He further notes that, if the inspector-to-site ratio is far lower, it affects frequency of inspection and hence detectability of violations. Studies show that even when sufficient enforcement officials exist, regulatory agencies' having fewer or lacking logistics including transport cannot achieve much enforcement success (Kagan, 1994; McCarthy, 2000). This is mainly because without the requisite logistics violation detection will be problematic and thus undermine enforcement effectiveness. Research demonstrates

that funding plays an important role in enforcement work. Studying the challenges of enforcing a smoke-free workplace regulation in California, Satterlund et al. (2009) reported that counties that received extra funding for enforcement recorded higher detection leading to compliance than their counterparts without extra funding. In some cases, lack of funding has resulted in regulatory capture especially where the agency resort to the very actors they are supposed to regulate for financial or material support (Contreras-Hermosilla, 2001).

Regulatory scholars suggest that regulatory agencies could mitigate the impact of scarce detection resources through collaboration with third party actors (Bardach and Kagan, 1982; Rooij, 2012). According to Bardach and kagan (1982), there could be many kinds of collaboration with state and non-state actors for instance to increase detection or social pressure or even provide alternative livelihood for regulated actors. However, some scholars caution that such collaborations could be risky including potential capture of the enforcement process by third parties who seek to promote their own self-interest and/or that of the regulated actors at the expense of the regulatory agency (Gunningham, 1987; May and Winter, 1999).

Apart from the enforcement work of detecting violations, literature shows that regulatory agencies' capacity to respond to violations through imposition of severe sanctions, together with relatively frequent use of that capacity, is crucial to effective enforcement of regulations (Gray and Scholz, 1991; Thornton et al., 2005). They argue that regulatory effectiveness suffers when violations are infrequently and lightly sanctioned. Studying fishery's regulation in Denmark, Raakjaer-Nielsen and Mathieson (2003) observed that sanction certainty and severity are essential prerequisites for compliance with regulations. Some regulatory scholars point to sanctions certainty and severity as the most important elements in the deterrence logic for enhancing compliance (Paternoster and Simpson, 1983; Sampson and Rorie, 2011). Thornton et al. (2005) have suggested that severe sanctions have both specific and general deterrent effects on violators and the local community respectively. Against this backdrop, May and Winter (1999) warn that law enforcers who are reluctant to invoke sanctions when violations are detected and violators caught will not induce compliance unless there is already a high commitment to comply. Lacking this, sanction is required to alter the decision calculus in favor of compliance. Research has revealed that enforcement work of sanctioning could originate from sources other than the state. Strong social controls from community members and by third party non-state actors and peer-pressures have been shown to affect compliance behavior of regulated actors (Grasmick and Bursick Jr., 1990).

Again, research has shown that effective enforcement is about strong institutions, in the sense of having the legitimacy to ensure deterrence. Tyler (1990) observe that positive opinions about the regulating institution will generate a sense of legitimacy and in turn increase voluntary compliance. A major issue that undermines the legitimacy of most regulating institutions and in turn weakens enforcement effectiveness worldwide is corruption.

Blundo and Olivier de Sardan (2001, 2006) have developed a useful typology of corruption that captures and describes its varied forms in Africa. They include commission for illicit services (i.e., payment by users to officials who then grant access to unwarranted advantages), unwarranted payments for public services (i.e., officials forcing users to pay for services that are ostensibly provided for free, or inflating the cost), gratuities (i.e., kind of payment for services, but usually after the act, and commonly couched in the idiom of “thank you”), string pulling (i.e., using social and political influence to gain unwarranted advantages) and levies and tolls (i.e., payments that officials can extract from ordinary citizens). Efforts to strengthen law enforcement in corrupt contexts often pose a huge dilemma for street level bureaucrats who in most instances are lowly remunerated but have to deal with powerful economic and social actors. The resultant effect has been that they get captured by these actors and are unable to perform their duties effectively (Contreras-Hermosilla, 2001). Corrupt practices can also affect the substantial stringency of regulatory laws and policies as their implementation is affected by bribery and lobbying from powerful actors in corrupt societies (Cerutti et al., 2013; Sundstrom, 2012). Within the forestry sector, Contreras-Hermosilla (2001) observes that corrupt practices allow violators to evade responsibilities for their illegal acts and thus, encourage overexploitation.

Also, available literature on developing countries reveals contextual factors play a crucial role in influencing enforcement effectiveness in the sense that they have direct and/or indirect consequences on what frontline enforcement officials can and cannot do. Examples include insecurity, politics of patronage, nepotism, ineffective state institutions, legal or normative pluralism as well as broader features of socio-political structures indirectly, but strongly, influencing enforcement work (Ascher, 2000; Baldwin, 2016; Rooij, 2006; World Bank, 2012). Some studies including Ascher (2000), indicate that governments sometimes prefer that there is lack of capacity, weak enforcement and ignorance in resource agencies if it can help reduce visibility and accountability. Other research points to limited enforcement autonomy (i.e., freedom of action) for regulatory staff either due to socio-cultural challenges (Oposa, 1996), influence from powerful business entities with political links at various levels of the governance structure or dominant employers at the local levels (Rooij, 2006). Also lack of societal support for enforcement work and issues bordering on legitimacy of regulatory institutions have been documented as challenging effective enforcement in developing countries (Boakye, 2018; Sundstrom, 2012).

5.3 METHODS

This study seeks to examine how the Forestry Commission (FC) enforces regulations that prohibit illegal logging with the hope to understand how that influences compliance behaviour of loggers in Ghana. It does so by

drawing on the perspectives and experiences of fifty (50) front line officials directly engaged in enforcing the law against logging actors in the Ashanti Region of Ghana. The two main logging actors of focus here are logging firms who are licensed to undertake legal logging operations and chainsaw operators, who lack the legal locus to engage in logging activities but do so underground, using fuel-powered chainsaw machines to harvest trees and convert them in-situ into lumber. Enforcement is used here to denote the regulatory agency's activities of detecting violations and reacting to such violations through sanctions to bring about compliance with the logging rules.

5.3.1 Selection of study area and respondents

In case studies of this sort, the selected case should represent or elucidate the features of broader population (Seawright and Gerring, 2008). Consequently, this study concentrates on the Ashanti Region (one of the sixteen administrative regions of Ghana) which has the features that make it an ideal place for the study of enforcement of logging regulations. It is the second most forested and important timber production area in Ghana (Affum-Baffoe, 2011). According to TIDD (2011), the capital city of the selected region, Kumasi, houses about 60% of all the logging firms in Ghana, and also boasts of the largest domestic market for timber products, accounting for about 30 percent of total annual supply (Marfo et al., 2017). Finally, the region is strategically located at the centre of the tropical forest zone with a good road network for the distribution of timber products to the southern and northern parts of Ghana and the neighboring Sahelian countries.

The study focuses on the front-line regulatory officials. These are, in a hierarchical order, the District Managers (DM), the Range Supervisors (RS) and the Forest Guards (FG). Their specific enforcement responsibilities are set out in Box 1. There are eight forest districts in the region with a total technical staff population of 293 and the breakdown is as follows; District Managers 8, Range Supervisors 70 and Forest Guards 215. Respondents were selected through stratified random sampling technique. This approach was important to ensure that all the three key subpopulations constituting the frontline regulatory officials are included and their distinct roles captured (Bernard, 2011). For District Managers, 6 out of the 8 were randomly selected whilst 20 out of the 70 Range Supervisors were randomly sampled. Of the 215 Forest Guards, 24 were randomly chosen. The number of forest guards could have been higher but the researcher achieved saturation around the twentieth respondent. In other words, there was no new information after this number. In all cases, deliberate attempt was made to ensure that at least two RSs and two FGs were selected from each forest district. All respondents have had at least five years of enforcement experience. See Table 5.1 for overview of respondents.

Table 5.1 Overview of respondents (N=50)

Staff category	No. of respondents	Mean age	Education level	Average monthly salary (GhC) ¹
District Managers	6	49	BSc (Natural Resource Management)	1,710.00
Range Supervisors	20	49	Post-secondary (Certificate in forestry)	1,240.00
Forest Guards	24	45	Basic or No formal	871.00

Box 1. Logging enforcement responsibilities of different frontline staff

District Managers

A District Manager (DM) heads a forest district, which covers a number of forest reserves. There are presently 46 forest districts that cut across the 216 political/administrative districts of Ghana. They perform the following enforcement duties: supervise all enforcement actions at the district, conduct periodic logging area inspections to promote rule-adherence, determine whether a case goes to the court or is settled administratively and assist the police to investigate and prosecute cases that head to court.

Range Supervisors

They are middle-level frontline personnel who report directly to the DM. They manage a range, which is a sub-division of a forest district. For this study, a range covers up to 80 km² and could be a number of forest reserves, a single forest reserve or even part of it. Their duties include the following: monitor and supervise the work of Forest Guards, undertake logging area inspections to certify the legality of trees harvested by loggers and issue documentation to cover them, arrest offenders and assist the Police in investigating and prosecuting cases.

Forest Guards

Forest Guards are the first frontline personnel and the most junior in the technical grade. They take charge of a beat, which is part of a reserve or whole reserve of approximately 10 km in length and report directly to a RS. The entire beat is supposed to be cleaned twice yearly. Their principal duties are to clean and patrol/inspect the boundaries of the reserves in good condition and to detect, arrest and report offences.

5.3.2 Data sources and analysis

The principal data sources are responses from fifty in-depth qualitative interviews and official documents. The primary data was collected through a semi-structured interview technique that uses pre-determined interview guide containing a set of open-ended questions derived from the frame-

¹ Ghanaian cedi (GhC) (4.00=1.00 USD) as at 2017

work used and the research objectives (Bernard, 2011). The researcher's knowledge and understanding of the regulatory agency as an enforcement official for over twenty-five years helped in couching very specific main and follow-up questions that drew upon responses by other respondents.

Normally the interviews commenced with preliminary questions that help to establish rapport with respondents and build the kind of trust that allows for frank and open discussion which results in reliable answers to sensitive questions. These questions include respondents' general professional history, educational background, age and challenges about their work. Moving on to how they perform enforcement work of detecting violations, respondents are asked questions on the following; extent of area supervised, frequency of inspections, resources for violation detection, experiences with illegal loggers, who they consider as worse violators and what they think about worse violations. They are also asked how they prioritize enforcement resources, and to estimate the probabilities of detection.

To obtain adequate information on how they react to violation through sanctions, respondents are asked the following questions: how they sanction offenders, what they think about the current levels of sanctions for illegal logging, and challenges they face in sanctioning offenders. The interviews conclude with suggestions for improving enforcement. All the interviews were conducted face-to-face with each lasting averagely 75 min. Respondents are numbered serially from 01 to 50 with prefix "EO", (meaning Enforcement Officer).

This study primarily analyses enforcement performance at the level of frontline officials. The responses from the interviews have been subjected to thematic analysis, which helps to identify, analyse and report patterns or themes within data (Braun and Clarke, 2006). This approach is useful due to its flexibility in describing data in a rich and complex manner. For this study, the themes were based on the research questions and the theoretical framework with which the researcher initially had entered the research field, and those empirical findings that fall outside this framework. This research therefore combines deductive and inductive approaches in the analysis.

5.3.3 Dealing with interview bias

In regulatory research, every data source used (i.e., surveys, interviews, participatory observations or official data) has its own challenges. For qualitative interviews used as the main data collection instrument here, the major challenge is the likelihood of untruthful reporting (Parker and Nielson, 2009). In this particular study where the researcher doubles as regulatory official, the prospect of respondents and/or the researcher bias was high. While it is impossible to completely eliminate interview bias in a study of this nature, the following measures were used to decrease it in many respects. First, respondents were promised anonymity and assured that the purpose of the study was purely academic and not a fault-finding

mission. Second, the researcher obtained prior and informed consent from each respondent. In other words, all respondents participated voluntarily and were guaranteed the freedom to decline response to questions they deemed uncomfortable. Third, the questions asked were very factual and bordered directly on the daily challenges they encounter in their operations. Finally, the face-to-face conversational interviewing approach adopted allowed for further invaluable analyses of the demeanour of respondents aside from their responses.

Actually, some scholars including McKenney et al. (2006) have argued that, being an outsider to a research context helps to promote a greater degree of objectivity which may not be possible for researchers who are insiders. Therefore, to improve objectivity, the researcher adopted the following measures. First, the findings of the study have been widely shared with colleague researchers, practitioners and some of the respondents for critique and feedback to deal with all biases and ethical issues and second, the researcher sought and obtained prior consent and approval from employers to undertake the study. It is also important to mention that, the researcher's insider position came with access to lots of information and contacts with different staff that would have proven difficult for an outsider researcher to secure. These contacts and information proved useful and beneficial throughout the data collection processes. In particular, it helped the researcher to validate or triangulate information obtained from respondents.

5.4 EMPIRICAL RESULTS

This section presents the empirical findings of the study. First, findings about detection work are presented and second, how officials react to violations through sanctions.

5.4.1 Detecting violations

Although all the frontline officials at the district level work as a team, there are some differences in their detection duties and accordingly the challenges they encounter. Consequently, the findings are presented separately starting from the forest guards to district managers

5.4.1.1 *Forest Guards*

Forest guards are instrumental in detecting illegal logging through routine ground patrols of forest reserve boundaries and reliance on informants reports or complaints. Traditionally, individual forest guards are supposed to protect 10 km of forest reserve boundary (referred to as a beat), a responsibility that includes cleaning the external boundary with machete to a width of 2m and patrolling to detect, arrest and report violations. However,

in practice most of them protect up to 20 km due to understaffing. Also, they undertake other non-enforcement duties including establishment and/or supervision of forest plantations in both forest reserves and areas outside reserves. Consequently, respondents indicate that in reality they spend about two weeks monthly on beat duties and the rest on other engagements.

Respondents indicate that their major challenges when it comes to detection duties are heavy workload and lack of transport. The study finds out that with the exception of about twenty forest guards who have managed to purchase their own motorbikes for official duties, the rest patrol on foot. This challenge plays out when on daily basis they have to walk long distances to and from work and also when they have to pursue chainsaw operators on foot to effect arrest. As a respondent puts it, *'the chainsaw operators in most instances outrun us and if we are lucky, we only get equipment they leave behind'*. Generally, those with motorbikes perform better in terms of offence detection and arrest when verified from their immediate superior officers. On the other hand, they complain about heavy workload, frequent breakdowns and high maintenance/running cost. The resultant effects of all these are that forest guards are thinly spread out on the ground and frequency of patrols is reduced and that invariably causes detection of violations to suffer. The study finds that the performance of forest guards is not properly monitored. In theory, range supervisors are supposed to follow up on them monthly to supervise the extent of work done but respondents point out it is done quarterly or longer for reasons that are later discussed.

The second strategy is the use of informants to track and detect violations. Respondents explain that there are two main types of informants, professional and voluntary. The professional or paid informants provide information about illegal logging or chainsaw operations for mutually agreed fees whereas the voluntary informants do so for reasons other than monetary. They include aggrieved farmers or persons who have been denied compensation or underpaid for crop or property damage during logging operations, member(s) of a particular chainsaw gang/group who are cheated in the sense of unpaid remuneration due them for assisting in the illegal practice or an employee of a logging firm who feels unfairly treated for any reason. Respondents indicate that because they do not have money, the first category rarely come to them.

Generally, the study finds that forest guards have other challenges that impede their detection work. One is that, violators employ various strategies that help them to avoid detection and arrest. This is particularly the case for most chainsaw operators who enter the forest to work deep in the night and are out by dawn break. They also resort to working on weekends and other statutory holidays when they know forest guards are off-duty and those who work at the day time plant their own informants at vantage points to alert them of any approaching enforcement official (through phone calls or blowing of whistles or firing gun into the air). When transporting the wood product, they use leading vehicles that warn them of routes to avoid to secure safe passage. A second is about how detections and arrests

are treated by their superior officers. Respondents indicate that after they have risked their lives to arrest chainsaw operators, seize their machines and hand them over to their range supervisors, in some cases nothing happens to the culprits and they return to resume operation. A respondent laments, *'it hurts so much when things happened that way particularly with chainsaw operators who brag about their connections with the top hierarchy'*.

A third is interferences especially from the local chiefs and opinion leaders. According to respondents, whenever local chainsaw operators are arrested, they get some of these high-ranking local people to plead for them. It is difficult to "disobey" them and maintain good relations with them at the same time. A respondent shared a case where he was ejected from his rented accommodation because he refused his landlord's request to pardon a chainsaw operator. Nobody offered him accommodation again and he eventually had to leave that village though it was the closet to his beat. Finally, a fourth is low remuneration and corruption. Forest guards are lowly remunerated. Table 1 shows that they receive about 200 USD per month. Respondents admit that they sometimes receive help (as they termed it) from friendly or good loggers. All these challenges help to explain why violation detection has been problematic.

5.4.1.2 Range Supervisors

Range supervisors also play an important role in the detection of illegal logging through logging area inspections, measuring and recording every tree legally harvested by logging firms on a tree information form (TIF). The TIF provides the basis for computing the actual volume of each tree harvested and the stumpage fees payable on it. They also engage in other non-enforcement duties such as supervision of forest plantation establishment. In practice, they visit logging areas and follow logging trails to inspect, measure and record all legally harvested trees. By so doing, they check to ensure that logging firms do not harvest outside their harvesting areas or remove more trees than legally allocated to them. An offence report containing all trees found to have been illegally logged during such inspections is made and submitted to the district manager for the violator to be sanctioned. Additionally, they depend on complaints and reports from informants to track and detect violations particularly in the outside reserved areas. Respondents indicate that monitoring and supervision of their performance is weak as district and regional managers visit not more than twice annually unless they receive reports about serious illegal logging involving for instance ten or more trees in a forest reserve.

The study finds that range supervisors also have difficulties detecting logging violations. As with forest guards, they are under-resourced in terms of personnel, transport and funding but their situation is relatively better than the forest guards particularly in the area of transportation. About a third of range supervisors in the region have been allocated with motor bikes, albeit being more than five years old, for inspections. Another, third

are housed in range quarters put up by the forestry commission. For most range supervisors, these challenges play out when three or more logging firms are working in different locations within their ranges and they have to follow them concurrently to prepare TIF for them. Under such situations, respondents (particularly those without motorbikes) admit they either depend on their forest guards or the bush managers of the logging firms to measure the harvested trees for them. The danger with the first option is that, it takes such forest guards away from their forest reserves boundary patrol duties and thereby allow other violators free access into the reserve. With the second option, there is the high probability of some trees being stolen or under-measured with resultant financial loss to the Commission. Those with motorbikes hint of having to depend on some of the logging firms to “assist” them with fuel before they follow up to capture TIF for them.

For most respondents, another challenge is when they come across infractions by friendly or good logging firms or chainsaw operators who *assist* them or have *assisted* them before both financially and in kind. As a respondent explains *‘our salaries are not good and some of these people (loggers) help us in different ways. We gloss over some of their minor infractions say five tree and advised them against any future repetition’*. Some also indicate that they report them for sanctions and that in most cases sever their relationship. The other challenges enumerated by the forest guards including interferences from chiefs, politicians and superior officers, low remuneration and corruption were all repeated by respondents as adversely affecting detection duties.

5.4.1.3 District Managers

District Managers employ three strategies to detect illegal logging. First is through periodic logging area audits in both forest reserves and areas outside forest reserves. Most of them indicate that they visit each logging area at least once annually. During such visits, they check the trees harvested by logging firms against what was allocated to them and any infraction observed is recorded and the violator sanctioned accordingly. Respondents indicate their inability to conduct frequent logging area inspections and that affect their chances of detecting more violations on their own. The main reason given was inadequate resources particularly vehicles and funds for operational work. Most of them have only one vehicle and due to work overload, it breaks down quite often and remains with the mechanics for a long time in the absence of funds. On funding, the study finds that they are allocated quarterly from the headquarters and that each district office receives about GhC 12,000 per quarter (i.e., GhC 4000 per month) to cover administration (including payment of electricity, water and stationery) and operational expenses. As respondent (EO 10) remarked, *‘apart from being woefully inadequate, funds are not released on time and for some quarters we receive nothing. Most often by the time we finish paying for utilities there will*

be nothing left for vehicle maintenance and fuel to undertake field inspections. To keep our offices running, we have to use part of the revenue derived from the sale of lumber seized from chainsaw operators albeit being unlawful. For now, this is the only way we can continue to carry on with our mandate'. Having said this, their situation is better than range supervisors and forest guards.

Second, they operate timber task forces to conduct road patrols and spot checks at vantage points to inspect trucks conveying timber products. The timber task force at the district level usually consist of the Assistant District Manager or a Range Supervisor (as leader) and personnel from the military and/or the police as members. The security personnel hold guns and help to effect arrest whenever violators are identified. The timber task forces also respond to reports from forest guards or range supervisors for help to arrest or evacuate chainsaw milled lumber. District Managers enumerate some of the challenges with the timber task forces as follows. First, they particularly focus on road patrols and checkpoints inspections instead of moving into the reserves to flush out the illegal operators. In this case, the harm is caused and only remedial action (i.e., salvaging the wood products) can be taken at that point. Second, the high cost of maintaining the security personnel on the team. Third, alleged corrupt practices; accusations of extortion of money from illegal operators and fronting for them are common. Overall, district managers consider the timber task force as a necessary evil. As one manager puts it *'in one breadth they help us to arrest the illegal operators and, in another breadth, they assist the illegal operators to outwit us'*

Again, the study finds that district managers make effective use of informants. Most managers indicate that they even trust some of the informants to provide accurate reports about illegal operations than their own range supervisors and forest guards. The use of informants also has its attendant problems. Respondents hint that some of them leak information about their intended inspections and movements, once they become aware, to the illegal operators and in so doing frustrate their efforts.

5.4.2 Sanctioning violators

On how violators are sanctioned, the study reveals that offenders either pay administrative fines or are sent to court for sanctioning. The decision as to which one to adopt largely depends on the applicable legal regime and the district managers' discretion. Separate sanction regimes exist for logging firms and chainsaw operators. For logging firms, who engage in illegal logging, the applicable sanction is given under the FC's Logging Manual (LM) (a code of practice for logging firms) as payment of ten times the current stumpage fee for every tree illegally logged and its implementation is done administratively. Based on the current fees/rates (last revised in July 2014), the average stumpage fee for all timber species is about GhC24.00 per cubic metre (Marfo et al., 2017). This translates the prescribed sanction to GhC240.00/m³ whilst the average domestic market price is about GhC500.00/m³. The study uncovers that, loggers in most cases are charged

a reduced rate of twice or three times the stumpage fees for reasons that include interferences from influential persons within and outside the industry. Also, since most offence detections are reactive, the trees would have been gone before the fines are imposed and, if not gone already the trees would be restored to the logger once the penalty is paid.

Chainsaw operators are supposed to be prosecuted in court and the applicable sanction regime is stipulated under the Timber Resources Management Regulation (TRMR), 1998 (LI 1649). This regulation prescribes a maximum fine of GhC500.00 or maximum imprisonment of 12 months. Here, it is only a court that can impose this sanction which rarely is the maximum. However, unlike logging firms, the lumber or wood product is not restored to the offender. Notwithstanding this legal position, the study finds that district managers use their discretions to determine whether or not a chainsaw operator arrested is prosecuted in court. One consideration is where the offence took place. Respondents explain that offences in forest reserves are taken more seriously and are usually sent to court. Second consideration is the general comportment of the offender at the time of the arrest. Those who resist arrest or even attempt to harm the enforcement officers (so-called recalcitrant or stubborn violators) are sure bet for court action. Third, first- and second-time offenders are normally given administrative fines whereas frequent or repeated offenders (i.e., three and above) are likely candidates for court. Finally, offenders who intend to use the lumber for non-commercial purposes are likely to be given administrative fine and caution to obtain permit/license in future. Again, violators who have links with the 'powers that be' either within the political, administrative or traditional set up are likely to receive an administrative fine or even go unpunished.

Once a district manager makes a determination to send an offender to court, the case is turned over to the police for investigation and prosecution. During the interviews, it became apparent that most respondents (particularly district managers and range supervisors) have serious challenges with the entire sanctioning regime. They indicated that sanctions given to violators (either by the courts or the regulatory agency) are low and offer little or no deterrence. First, it adversely affects the attitude and morale of enforcement officials. As one respondent states; *'why should I risk my life to arrest a chainsaw operator at night only for the court to fine him GhC300.00? It would have been foolish death if they had killed me'*. Second, it has the potential to corrupt officials. On this point, this is how respondent (EO 12) remarked, *'with these meagre sanctions given to illegal operators, it would be better for all of us to turn into chainsaw operators. After all, if you cannot beat them, you join them'*. Third, it sends wrong signals to informants who sacrifice to scout and provide information about illegal operations. This is how respondent (EO 15) explains it; *'two of my trusted informants have stopped providing me with information about illegal logging because they think that we treat the illegal operators with kid gloves in the sense that we encourage them, with our low sanctions, to continue with their operations'*.

Another challenge is low prioritization of forest crimes. Respondents hinted that the police investigators and prosecutors together with judges who handle forestry cases lowly prioritize them. There is a widely-held perception that the police investigators/prosecutors and judges underestimate the seriousness of forestry related cases including illegal logging. This sentiment is well articulated by respondent (EO12) as follows; *'we once arrested two illegal operators in a forest reserve and handed them over to the police for investigation and prosecution. We were given different excuses any time we inquired about the status of the case. After about two months, both the investigator and prosecutor handling the case became angry at us and retorted, 'why do you worry us with prosecution of persons who have only stolen a tree in the forest? Don't you know we have more serious cases such as armed robbery and narcotics to deal with and you come to worry us with timber? You can take your case away if you have no time to wait. It is almost two years now and we are still waiting to hear from them'*. In view of this, officials are reluctant to turn over cases to the police for prosecution.

The third challenge is about interferences from various political, socio-cultural and administrative actors. Regarding political interferences, respondents explained that in most cases the pressure come from the ruling political parties and their supporters at the various levels of governance particularly at the grassroots. The common experience most respondents shared was interferences from the District Chief Executives (DCEs) (who are the political heads at the district levels) and/or the executives of the ruling party at the districts. This is well-illustrated by respondent (EO 18) as follows; *'when we arrest offenders who are party members or related to them, the DCE or any party bigwigs come to plead for them and bail them from sanctions. The case may be with the police for investigation and prosecution but they will pressurize us to withdraw it or they will go and see the police to discontinue with the case'*. On why they have to give in to such requests, this is what the respondent had to say, *'if we refuse, they brand us as difficult persons or members of the opposition political party working against the interest of the ruling government. It is really frustrating because it renders all our efforts useless'*. In this context, the danger of a public official being branded a member of the opposition party could be interpreted to mean such officer is 'unqualified or unfit' for the position as long as the ruling party remains in office. In some instances, such officials are transferred or have had their promotions frozen. Aware of this, some illegal operators now openly declare their support or affiliation with these political parties with the hope of calling on them for support whenever arrested.

In a socio-cultural setting where it is considered disrespectful or a sign of insubordination to decline or challenge an elderly person's or a chief's (particularly paramount chiefs) request, albeit being questionable, enforcement officers are really constrained in dealing with violations involving such personalities or persons related to them. Respondents narrated instances where they have declined requests from chiefs to pardon violators and dearly paid for their actions. Respondent (EO 20) shares this

experience; *'we once arrested two chainsaw operators who were working for a chief without any permit/license. We seized their chainsaw machines and sent them to the district forest office. The next day, the chief sent his linguist (i.e., spokesperson) to request for the release of the two machines to him and discontinue with the case but we declined. The chief got infuriated and reported us to our boss as being disrespectful and does not need us in his jurisdiction. It was not long that the authorities reassigned us to different forest districts'*. For the sake of the officials' own position, and social peace, they must often agree to such requests from chiefs and politicians.

The administrative or internal pressures come from superior officers especially at the regional and national headquarters who for various reasons that include friendship and family affiliations with culprits would plead for them to be freed or treated leniently. Respondents explain that such requests from their superior officers tie their hands and any attempt to decline them is interpreted as a sign of insubordination with serious consequences. As a respondent puts it, *'Our bosses really make work tough for us'* Some respondents indicate that, acceding to such requests from their bosses help to keep or gain favour with them.

The last challenge is the low remuneration given to respondents and how that invariably exposes them to corrupt practices. Table 1 shows that the basic monthly salaries of a DM, RS and FG are approximately 400, 300 and 200 USD respectively. Respondent (EO15) sums up their sentiments as follows; *'we work so hard but receive little salaries at the end of the month, my salary is supposed to take me home (i.e., should be sufficient for the whole month) but the truth is that it cannot take me anywhere near my home (i.e., not more than ten days)'*. The low salaries paid to officials put them in difficult situation whenever illegal operators come flashing money at them to allow them carry on with illegal logging. It is intriguing how officials deal with the issue of poor remuneration. First, some engage in other private businesses (supposedly part-time but can sometimes turn full time and their enforcement work becomes part-time) to supplement their incomes. Second, others receive or accept inducements (gifts or bribes?) from the very actors they are supposed to regulate.

5.5 DISCUSSION AND CONCLUSION

This section first, discusses the empirical findings in relation to existing enforcement literature and second, the policy implications of the findings. Generally, the study finds that enforcement work of detecting illegal logging and reacting to such violations through sanctions to promote compliance with logging regulation is weak. The principal reasons are that, the FC has difficulties detecting violations and even when violators are caught, issues them with non-deterrent sanctions.

The study finds that frontline officials have difficulties detecting violations for reasons that include resource constraints (in terms of personnel,

equipment and funding) and corrupt practices. The issue with understaffing is that, the few enforcement officials are over-burdened with increased workload and that invariably affects detectability of violations (Kagan, 1994). Prior studies in Ghana, including Derkyi (2012), find that, monitoring of the forest reserves boundaries by forest guards as a mean of detecting forest illegalities is inefficient primarily due to chronic understaffing. As in Ghana, research in most other tropical forest-endowed countries reveal that detection work has proven to be difficult due basically to insufficient enforcement officials (FAO, 2005). Research indicates that, even when sufficient enforcement officials exist, fewer or lack of equipment (especially transport) and funds can affect frequency of inspection which is a good proxy for the likelihood of detecting violations (McCarthy, 2000; May and Winter, 1999). The present work confirms these studies and more so, in the particular case of Ghana and other tropical forest countries where forest reserves are scattered in remote areas, transportation is extremely crucial for effective detection.

The findings about inadequate funding and district managers using part of revenue realized from the sale of seized illegal timber products for both administrative and operational expenses are noteworthy as they have serious implications for enforcement work generally. This practice has the potential to breed corruption as funds taken from sale of confiscated lumber, because its unlawful, may not be properly accounted for. The other effect is what Lipsky (1980), describes as goal displacement—a situation where regulatory agencies no longer pursue their primary goals but shift to other peripheral goals that bring them immediate benefits. Here, forest districts (as per the operations of their timber task forces) appear to have shifted from their primary mandate of forest protection and management at the forest floor level to pursuing illegal operators on the highways to arrest them after the harm has been caused so as to get funds to run their offices. In this case, the violation of the logging regulations appears a necessity for the survival or functioning of the regulatory agency than just a menace to be completely eliminated. Some prior research that has investigated environmental pollution in Indonesia (McCarthy and Zen, 2010) and, Latin America and the Caribbean (Tietenberg et al., 1996) conclude that violations persist in situations where fines and penalties from violation form an important part of the regulatory agencies' budget.

Also, the findings about timber task forces and associated corrupt practices are consistent with prior studies in Ghana (Franck and Hansen, 2014; Marfo, 2010). Lessons from other countries where timber task forces have been used including Cameroun, the Philippines and Indonesia suggest that accusations of corrupt practices and ineffectiveness are common (Cerutti et al., 2013; Kishor and Damania, 2007). Again, the use of informants as third-party collaborators to mitigate the adverse impact of inadequate personnel for detection work and its associated challenges find support in other jurisdictions. For instance, studying enforcement of mining pollution regulations in Australia, Gunningham (1987) makes similar observation that

third-party collaborators in enforcement work can sometimes be problematic, especially when they seek to promote their own self-interest and/or that of the regulated actors at the expense of the regulatory agency. All this shows why violation detection has proven a difficult task.

Aside from the detection challenges, the study finds that, both the FC and the courts lack sufficient legal authority to issue strong sanctions. In other words, the fines and penalties under the current legal regimes are palpably low compared with the benefits derived from violation. For regulatory scholars who point to sanctions certainty and severity as the most important elements in the deterrence logic for enhancing compliance (Paternoster and Simpson, 1993; Sampson and Rorie, 2011), this development appears worrisome. Another important finding is that, even when the legal regime allows for higher or stronger sanctions, the regulatory agency is unable to impose them due mainly to interferences from the political through socio-cultural to administrative settings. Under such conditions, the effectiveness of sanctions as a policy intervention to enhance compliance diminishes and noncompliance persists. This finding is consistent with studies reporting that enforcement effectiveness suffers when violators are lightly sanctioned (Gray and Scholz, 1991; Thornton et al., 2005).

Associated with ineffective sanction regime, is the low prioritization of forestry-related cases including illegal logging by the judiciary (i.e., police and judges). This observation finds support in a study conducted by the World Bank in some developing countries including Cambodia, Indonesia and Papua New Guinea that came to similar conclusion. In Cambodia for instance, the study reports that, about 70 percent of forestry and fisheries related cases do not go through the criminal justice system for this very reason (World Bank, 2012).

The findings about various interferences in enforcement work are consistent with existing literature. Earlier studies in Ghana have documented the tacit support from the various political leadership to illegal logging through the acceptance and use of illegal chainsaw lumber for government-funded projects (Boakye, 2018; Marfo, 2010) and their reluctance to assist the FC to enforce the law at the various local timber market centres across the country where the illegal lumber is openly sold (Hansen, 2011). According to Ascher (2000), for reasons that include rent seeking, patronage and evasion of accountability governments in developing countries sometimes prefer there is a lack of capacity or weak enforcement. In this study also, the socio-cultural contexts were found to exhibit traits that potentially undermine enforcement effectiveness. This confirms research about environmental pollution control in the Philippines indicating that socio-cultural context can hinder enforcement work (Oposa, 1996). Again, the findings about administrative interferences agree with existing literature. For instance, Cooney (2007) reports that enforcement of labour regulations in China is weak due to administrative interferences. All this indicates that, interferences from both the external and internal regulatory contexts have strong impact on enforcement effectiveness

Moreover, the study finds that the low remuneration given to frontline officials adversely impact on their performance. Evidence from various studies including fisheries (Catedrilla et al, 2012) and forestry (Contreras-Hermosilla, 2001) support this finding. Finally, the findings about corrupt practices, as variously described by Blundo and Olivier de Sardan (2001, 2006) within the regulatory context, resonate with some earlier studies in Ghana including (Ameyaw et al, 2016; Marfo, 2010; Obiri and Damnyag, 2011). Lessons from the forestry sector in Cameroon, Indonesia and Papua New Guinea (Cerutti et al., 2013; Contreras-Hermosilla, 2001) and, the fisheries sector in the Philippines (Catedrilla et al (2012) and South Africa (Sundstrom, 2016) indicate that corruption can interfere with successful detection and sanctioning of illegal operators. Studying corruption and conservation rule violation in the fisheries sector in South Africa, Sundstrom (2016) demonstrates a strong correlation between corrupt inspectors and violations of conservation rules by fishers.

Implications of findings

The present study about law enforcement in the logging sector of Ghana provides some useful insights for the broader enforcement literature and practice. First, the study finds that the problem of enforcement of logging regulations in Ghana is much more about the low chances of offenders being caught for violating the regulation due to the weak state regulatory agency's proactive detection capacity. For scholars who believe that detection probability is the key driver of compliance in the deterrence logic, a weak detection probability could mean the risk associated with violation is low (Cohen, 2000; Grasmick and Bursik Jr., 1990). Such a perception has the tendency to stimulate widespread violation as actors are no longer deterred due to the reduced detection risk. A policy suggestion here is to adopt measures that enhance violation detection including aerial patrols and reconnaissance surveys using drones and other modern technologies to support existing ground patrols. Another approach to improve detection would be for the state to elicit the support of the forest fringed communities and forest land owners through education and increased benefits flow from the forests to them.

Second, is the revelation that the current sanctioning regimes are ineffectual and offer very little incentive for actors to comply with the law. Existing regulatory literature teaches that compliance is not just about sanctions severity by the state enforcement authorities as much of deterrence theory espouses. Compliance can also emanate from other sources including legitimacy of legal rules, social pressures and personal norms (Sutinen and Kuperan, 1999; Vandenberg, 2003). However, research shows that for rational actors' significant improvement in compliance is unlikely without strong regulatory pressures (Thornton et al., 2009). In other words, for rational economic actors, strong enforcement in the sense of certainty and severity of sanctions from the state is vital for improved compliance.

A policy recommendation here for regulators' desiring to enhance compliance among rational economic actors like loggers, is to implement sanction regimes that invoke significant fear that override the violation effect of low sanctions. Also, market instruments such as certification and other licensing schemes that help to trace the legality of timber products from the forest floor to the final consumer could be leveraged to promote compliance. In this regard, it is envisaged that the full implementation of the licensing scheme under the EU-Ghana voluntary partnership agreement would potentially promote compliance, at least, among the actors that export to the EU market.

Third insight is that, the deterrent effect of the state to improve compliance performance among the loggers is low. In theory, this could be mitigated through deterrence from other non-state sources (Grasmick and Bursik Jr., 1990; Rooij, 2016). In this regard, a strong network of both local and international actors (including the media and civil society groups) playing an oversight role would be desirable. Such a framework, according to Gunningham (2011) helps to achieve not only better outcomes at less cost but also frees up scarce [state] regulatory resources, which can be redeployed in circumstances where only direct government intervention is available.

Fourth, the finding that the judiciary (police and judges) lowly prioritise forestry-related crimes could mean a general lack of appreciation and understanding about the real value of forest resource conservation in the wider society. After all, when the value of a resource is unknown abuse or low prioritization is inevitable. In this regard, the regulatory agency would have to specifically target them for continuous education about the importance of the forest and impress upon them to impose heavy fines and custodial sentences to serve as signal cases. Scholarship demonstrates that signal cases have the potential to create a broader environment of fear among the regulated actors and thereby help to reduce noncompliance behaviour (Thornton et al., 2005).

Another issue is corrupt practices within the regulatory agency. The normative compliance theory suggests that people tend to obey laws made and/or implemented by authorities and institutions perceived to be legitimate. Generally, corrupt practices undermine the legitimacy of a regulatory agency and its work. Consequently, unless some drastic measures are taken to address this canker any increases in enforcement resources may not necessarily translate to performance effectiveness. A recommendation to tackle this canker and to improve legitimacy could be for the state to ensure that there is a real risk of sanction certainty for both loggers who give and officials who receive. The sanctions should include naming and shaming those who engage in corrupt practices and the confiscation of the proceeds of their crimes. Fifth, the low remuneration given to frontline officials has been shown to adversely impact on enforcement work. After all, there is no need to muzzle the ox that grinds the grains. A recommendation here is enhancement in their working conditions including insurance against injuries and death.

A final insight is the existence of various interferences that undermine enforcement effort. Put differently, in the particular case of Ghana and possibly in other developing countries, the socio-politico-cultural and administrative settings of regulatory officials matter for effective enforcement and hence the compliance behaviour of regulated actors. All this adds a new dimension to our understanding of what is driving weak enforcement of logging regulations, at least in Ghana, beyond poor state regulatory institutions' proactive detection capacity and low sanction severity. Here, more research work is required to understand how to improve regulatory enforcement within the peculiar socio-politico-cultural and administrative context of Ghana and other developing countries where similar challenges exist.

