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

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### Citation

Boakye, J. (2020, October 14). *Understanding illegal logging in Ghana: A socio-legal study on (non)compliance with logging regulations*. Meijers-reeks. Retrieved from <https://hdl.handle.net/1887/137750>

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**Note:** To cite this publication please use the final published version (if applicable).

Cover Page



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**Author:** Boakye, J.

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

**Issue date:** 2020-10-14

### 3 Motivations for (non) compliance with logging regulations: The case of licensed logging firms in Ghana

This chapter has been published as:

Boakye, J. 2018. Motivations for (non)compliance with logging regulations: The case of licensed logging firms in Ghana. *Environmental Development* 26: 100-111

#### 3.1 INTRODUCTION

Illegal logging and associated trade in illicit timber products are major problems for both the developed and developing timber producing countries. Worldwide, it is estimated that about 30% of all timber harvested annually comes from illegal sources (World Bank, 2012). The extent of the problem appears most pronounced in developing countries. Based on an extensive literature review, Smith (2004) reported that the volume of illegally harvested timber ranges from at least 20% in Russia through 70% in Indonesia to even 90% in Cambodia.

The adverse impacts of illegal logging are diverse: Economically, it is estimated that 10-15 billion USD of public revenue is lost annually due to illegal logging and associated illicit trade in timber products worldwide through funds that are unregulated, untaxed, and often remain in the hands of organised criminal gangs (World Bank, 2012). This amount is more than eight times the annual development assistance from the developed world to the developing countries (FAO, 2015). The social impacts are enormous. It undermines the rule of law, may stimulate corruption, and can contribute to conflicts as it mostly occurs without the consent of the forest-fringed communities. It has been linked to weapon purchases in some conflict zones such as Cambodia, Liberia and the Democratic Republic of the Congo (UNEP, 2011). Finally, the environmental effects include loss of habitats and/or biodiversity, climate change and destruction of areas of cultural significance/heritage as violators do not comply with environmental standards or best logging practices.

There has been growing awareness about the adverse consequence of illegal logging and associated illicit trade in recent times world-wide. For instance, in 1998, the G8 countries developed an 'Action Program on Forest' to address forest policy and management problems including illegal logging (Eberhardt, 2013). This has been followed by the East Asian Forest Law Enforcement and Governance (EA FLEG), the African Forest Law Enforcement and Governance (AFLEG) and the EU Forest Law Enforcement Governance and Trade (FLEGT) Action Plan. The main thrust of all these

initiatives is how to intensify national efforts and strengthen bilateral, regional and multilateral collaboration to address forest violations (Eberhardt, 2013)

In Ghana, illegal logging is recognised as a major challenge. Some studies estimate that about 70% volume of the annual timber production is illegal (Birikorang et al., 2001; Hansen and Treue, 2008). The Government estimates the annual loss of public revenue due to illegal logging at between USD 8 and 13 million, equivalent to 2% of Ghana's gross domestic product (GoG, 2012). As part of the measures to tackle this menace, Ghana has adopted various policy and legal instruments including the 2009 Voluntary Partnership Agreement (VPA) with the EU under the EU VPA/FLEGT aimed at ensuring that only legal timber is produced and traded on both the domestic and international markets. Nonetheless, the problem persists, raising questions about the effectiveness of the measures being rolled out to address the problem. It is imperative to stress that timber harvesting in Ghana is extensively regulated and that the problem of illegal logging is not lack of regulations but basically a low level of compliance. The critical issue then is how to improve compliance among the licensed logging firms in Ghana.

Some previous studies on compliance in Ghana examined farmers' compliance with forest rules that regulate timber harvesting on farmlands, farming in forest reserves and use of fire on farmlands (Ramcilovic-Suominen and Hansen, 2012). The findings indicate high levels of compliance with farming and fire rules but low compliance for timber harvesting rule. Again, Hansen (2011) studied law compliance in the case of on-farm timber extraction with rules that require timber operators; to obtain prior and informed consent from the farmers, to pay appropriate and timely compensation for crop damage during timber extraction and chainsaw milling. The study documents low level of compliance in all the three domains.

However, much less is known about how logging firms in Ghana make decisions about whether to obey or break timber harvesting regulations. This paper investigates compliance-violation behaviour of logging firms in relation to legal rule or regulation that prohibits illegal logging. Though illegal logging has no universally accepted definition, it takes place when timber is sourced, allocated, harvested, transported, processed and traded in violation of national laws (Tacconi, 2007). It is empirically studied as timber harvested outside a firm's legally allocated concession area, number, volume and species of trees without written authorisation from a competent forest authority (FPA, 2002). In other words, the study only considers illegal logging at the production or forest level.

This case study has two objectives. First, to determine the motivational factors that influence compliance-violation behaviour among logging firms in Ghana and second, what variations in compliance exist among the various categories of firms? It is believed that understanding how logging firms in Ghana think and make decisions about compliance could prove useful in the design of effective regulations to improve compliance in Ghana and beyond.

### 3.2 THEORISING COMPLIANCE

This section introduces the theoretical framework and the underlying hypotheses used for this study. What shapes compliance-violation behaviour among individuals and regulated entities can be explained from different perspectives including economic, social and normative motivations.

#### 3.2.1 Economic motivations

Standard economic theory holds that firms, as profit-seeking entities, will comply with regulations only when they believe that the compliance costs are exceeded by the cost of legal penalties for violation, discounted by the probability that violations will be promptly detected and punished (Becker, 1968; Thornton et al., 2009). The economic literature thus predominantly views compliance as a rational choice, motivated by financial considerations (Yapp and Fairmann, 2005). Various empirical studies, ranging from firms' compliance with industrial pollution (Kagan et al., 2011) to fishers' compliance with fisheries regulations (Raakjaer Nielsen and Matthiessen, 2003) have found evidence in support of deterrent effect of perceived detection risk and sanction severity from both state institutions and non-state actors on compliance behaviour.

Apart from deterrence (i.e., the perceived risks of detection and sanctions), the economic calculations also analyse the perceived operational costs and benefits of legal and illegal behaviour. According to Yan et al. (2015), whereas deterrence focuses on the eventual costs of violating the law, operational costs-benefits calculations look at the profitability or otherwise of legal and illegal operations as they occur within everyday business practices. Studying Chinese farmers' compliance with pesticide regulation, they found that regulated actors with perceived positive cost-benefit ratio for legal operations complied better than those with perceived negative cost-benefit ratio.

Flowing from this theory, two different but related hypotheses are put forward;

- i. A higher expected sanction severity will lower violation rate and that the small-scale firms who often have a weaker financial capacity are more likely to comply better than the large and medium-scale firms.
- ii. A higher perceived cost of compliance will increase violation rate and that the large and medium-scale firms who often have a stronger financial capacity are likely to better comply than the small-scale firms.

#### 3.2.2 Social motivation

The desire of individuals and regulated firms to earn the approval and respect of significant others as a motivation for compliance is well documented in sociological studies (Cialdini, 2007; Elster, 1989). According to

Elster (1989), social norms are shared values of appropriate conduct within a specific group of people and which are at least sustained by the approval or disapproval of others. For instance, Sutinen and Guavin (1998) reported in their Massachusetts lobster fishery research that peer-pressure and informal sanctions accounted for most of the compliance observed.

The importance of maintaining good reputation has also been found to shape compliance behaviour of firms (Fisse and Braithwaite, 1983). In an interview with executives of large corporations, Ayres and Braithwaite (1992) reported that both individual executives and the corporation collectively valued good reputation or status in the community they operate as priceless assets. Against this backdrop, it is hypothesized that higher social pressure will increase compliance and that the large and medium-scale firms who are more likely to have higher visibility and reputation are likely to comply better than small-scale firms with limited visibility and reputation.

### 3.2.3 Normative motivations

For some actors, what influence their compliance behaviour is the internalised obligation to do the right thing without any tangible or material rewards or an explicit cost-benefit calculation (Young, 1979). Normative motivation (i.e., obligation to comply) is a combination of the regulated actors' moral/civic duty to obey a given regulation, perceived reasonableness of the regulation and legitimacy of the regulatory institution (Winter and May, 2001). Elster (1989) defines moral norms as [personal] norms concerning ethical values relating primarily to what is right or wrong that are largely independent of extrinsic influence. According to Vandenberg (2003), regulatory rules that become or are internalised into actors' morals produce the deepest form of compliance because violating such rules means violating one's own morals.

Research has revealed that regulated actors generally comply with rules they deem reasonable even without direct material benefits (Young, 1979). In their studies of the Danish fisheries regulations, Raakjaer Nielsen and Mathiensen (2003) found that fishers were reluctant to comply with regulations they perceived as unreasonable. According to Tyler (1990), legitimacy is a feeling of obligation to obey law and defer to the decision made by legal authorities. Evidence suggests that most people obey regulations emanating from trusted institutions (Levi et al., 2008). Here, compliance depends on actors being satisfied with the law-making processes (including participation, openness and accountability), the content and the outcomes of the decisions made by the authorities, in terms of consistent interpretation and fair application of the law (Honneland, 1999).

For the normative theory, it is hypothesised that a higher sense of duty to comply will increase compliance rate and that the large and medium-scale firms who often have many professional staff in charge of their forest operations are more likely to comply better than the small-scale firms with no or limited professional staff.

### 3.3 METHODS

The study investigates compliance and its influencing variables from the perspectives of regulated actors. This is important because it is the way they perceive these factors that eventually shape their compliance decision making processes (Gray and Silby, 2012).

#### 3.3.1 Measuring compliance and its independent variables

Compliance or law-abidingness occurs when individuals act or refrain from acting in such a way that their behaviour is consistent with that required by law (Ostermann, 2016). In this study, compliance denotes the situation where individual logging firms harvest only the legal trees allocated to them or refrain from harvesting trees illegally. Compliance variables are what influence individual firms to comply with the stated legal rule.

Measuring compliance is complicated, and any approach used (either self-reporting, participatory observation or official data from regulatory agencies) has its own challenges. They include low levels of reliability due to the sensitivity of asking about illegal behaviour, low levels of representativeness and biases in recorded governmental data on violation behaviour respectively (Parker and Nielson, 2009; Yan et al., 2015).

In this study, compliance is measured in terms of violation outcomes (i.e., number of violations committed by each firm) as captured by the regulatory agency during field inspections at different times and self-reported data from the firms themselves. Prior to the interviews with the respondents, data were obtained on the number of violations recorded on each firm within the last two years by the respective district forest managers. This background information was used to verify the self-reported firm data. A benchmark of two years preceding the interviews was considered reasonable period within which respondents could recollect precisely the number of violations committed.

Interviews with the firms start from how they entered into the timber business, the challenges they currently face, and proceed through how and where they source raw materials to price levels. Normally, illegal logging pops up at this stage. This then leads to questions on whether they always harvest only the legal trees allocated to them and the number of times they have harvested more trees than allocated to them within the last two years. Any difference in the two figures was resolved in favour of the higher one. Only responses that help to measure the number of violations committed were coded. The codes were very good for firms' who recorded between zero and two violations, good for those who recorded 3 and 4 violations and poor for those who recorded 5 upwards.

### 3.3.2 Measuring compliance variables

The main variables considered are economic, social and normative motivations. Appendix A contains the questions used to measure compliance, its independent variables and a description of the relevant coding.

### 3.3.3 Sampling of logging firms and data collection

To investigate the firms' compliance performance with the rule under study, a total of 12 logging firms were selected. For this study logging firms are categorised into large, medium and small-scale using the Year 2010 timber production statistics published by the Timber Industry Development Division (TIDD) and the number of people directly employed. The large-scale firms produced at least 10,000 m<sup>3</sup> of sawn timber products and employ a minimum of 1000 people. The medium scale firms produced between 5000 m<sup>3</sup> and 10000 m<sup>3</sup> of sawmill derived timber products and employ between 100 and 1000 people per firm. The small-scale firms produced less than 5000 m<sup>3</sup> of round logs or sawn timber products and employ below 100 people (TIDD, 2010).

They consist of two large, six medium and four small-scale firms who operate both in productive forest reserve and outside forest reserves (i.e., farm and fallow lands). The selection of the firms was purely accidental as it depended on those firms that were willing and capable to discuss this somewhat sensitive subject matter with the researcher—a known regulatory official. For each selected firm, the Managing Director (who is the directing mind of the firm and is responsible for its day-to-day management), the Forest Manager(s) (who coordinate all timber harvesting operations and also serve as technical intermediary between management and field team) and the Bush Manager(s) (who directly supervise field harvesting operations) were interviewed. A total of thirty-eight persons made up of 12 Managing Directors, 12 Forest Managers and 14 Bush Managers were interviewed (Table 3.1).

Table 3.1 Overview of respondents

Firm category	Status of respondents			Total
	Managing Directors	Forest Managers	Bush Managers	
Large scale	2	5	3	10
Medium scale	6	7	7	20
Small scale	4	–	4	8
Total (N=38)	12	12	14	38

Although the relatively small sample size may weaken the external validity and generalization of certain findings, it allowed enough time to extract from the respondents comprehensive accounts of choices they have to make in response to challenges posed by the rule under study. These accounts



were generally more revealing of their (firm's) compliance-violation motivations, which is the primary object of this research.

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 framework used. The researcher's knowledge and understanding of the industry helped in couching very specific main, and follow-up questions that drew upon responses by other firms. All the interviews were conducted face-to-face and lasted for about 90 minutes. Prefixes F1 to F12 are used for responses from firm one to twelve respectively.

This study analyses compliance performance at the firm level and not at the individual employee level. Second, the analysis considers only the direct effect of each of the main compliance variables and not their interactions on the compliance performance of the firms. Compliance analysis at the individual employee level and at the interactions of the main variables will be the subject matter of separate studies in future. For each important aspect of the study, the most illustrative quotes are stated. However, such quotations are not necessarily the position of all the participating firms.

### 3.3.4 Minimising biases and untruthful responses

Undoubtedly, each of the main data sources used has its own biases and limitations. The main challenges with official enforcement data, as in most criminal activities, includes non-detection of some illegal logging operations (due possibly to resource constraints for regular inspections), non-reporting and under-reporting in terms of the frequency and actual volumes harvested. The reasons for these include the embarrassment that high reported illegal logging statistics cause to the enforcement officials and the potential adverse impact it could have on timber trade on the international market. Self-reported data may also suffer from low levels of reliability due to the fear of self-incrimination, shared secret information being leaked to competitors or regulators and, the desire of individuals/corporate entities to maintain good reputation or status in the sight of the public.

With these limitations and biases in view, the study employed the following measures to help minimise them. First, at the outset of each interview, the researcher assured the respondent that the purpose of the study was basically academic and that information shared would be treated with confidentiality and not be used against them in anyway. The interviews were therefore not electronically recorded. However, notes were taken either during the interviews or immediately afterwards depending on the sensitivity of the respondent.

Second, the questions asked were very factual and bordered directly on the daily challenges they encounter in their operations. Third, the use of face-to-face semi-structured interview approach allowed for further invaluable analyses of their demenour aside from their responses. Fourth, for many of the respondents it was also an opportunity to put their concerns across to the regulatory agency for some action to be taken. Last, the timber

sector is not entirely unfamiliar to the researcher who has over twenty-five years of working experience as a regulatory official. These measures might possibly explain how respondents freely and openly shared their personal experiences about illegal logging, what influences it and how they thought the problem could be resolved. For example, in two separate instances, respondents reported violation figures that were two more than those officially recorded.

### 3.4 RESULTS

This section presents the findings of the study. It shows the compliance performance of the firms, how the main compliance variables relate to firms' compliance performance and compliance variation among the different categories of firms (Table 3.2).

Table 3.2 Relationship between the compliance variables (economic, social and normative motivations) and logging firms' compliance performance

Nick Names of firms	Scale of operation	Compliance performance	Major market outlet <sup>1</sup>	Economic motivations			Social motivations			Normative motivations			
				Perceived cost of legal operations	Sanction severity perception	Impact of information of illegal logging on firms	State	Non-state actors	Social sanctions for illegal logging	Impact of societal demands on firms	Moral or civic duty to comply	Perceived reasonableness of the law	Perceived legitimacy of the regulators
Kwasi	Large	Good	EU	Positive	Low	High	Positive	Negative	Negative	Positive	Conditional	Negative	Negative
Kwadwo	Large	Poor	Asia	Negative	Low	Low	Positive	Negative	Negative	Positive	Negative	Negative	Positive
Kwabena	Medium	Very Good	EU	positive	Low	High	Negative	Negative	Negative	Negative	conditional	Negative	Positive
Kwaku	Medium	Good	EU	Negative	Low	High	Positive	Negative	Negative	Positive	Conditional	Negative	Negative
Yaw	Medium	Good	EU	Negative	Low	High	Positive	Negative	Negative	Positive	Conditional	Negative	Positive
Kofi	Medium	Poor	Asia	Negative	Low	low	Positive	Negative	Negative	Positive	Conditional	Negative	Negative
Kwame	Medium	Poor	ECOWAS	Negative	Low	Low	Positive	Negative	Negative	Positive	Conditional	Negative	Negative
Akosua	Medium	Poor	ECOWAS	Negative	Low	Low	Positive	Negative	Negative	Positive	Negative	Negative	Negative
Adwoa	Small	Very Good	EU	Negative	Low	High	Negative	Negative	Negative	Negative	Positive	positive	Negative
Abena	Small	Good	EU	Negative	Low	High	Positive	Negative	Negative	Negative	Conditional	Negative	Negative
Akua	Small	Good	Domestic	Negative	High	Low	Positive	Negative	Negative	Positive	Conditional	Negative	Positive
Yaa	Small	Good	Domestic	Negative	High	Low	Positive	Negative	Negative	positive	Conditional	Negative	Negative

1 ECOWAS stands for the Economic Community of West African States. Domestic means in-country.

### 3.4.1 Economic motivations and firms' compliance performance

The key findings for each of the two main components of the economic logic are presented under their respective sub-sections.

#### 3.4.1.1 *Deterrence and compliance performance*

The results (Table 3.2) show that most of the firms particularly the large and medium-scale report of a lower perception of deterrence from the state. However, all the firms across the three different categories who export into the EU market have a higher perception of deterrence than those who export into other markets. Another finding is that all firms who reported a high level of perceived deterrence from either the state or non-state actors also recorded a very good or good compliance performance. Similarly, all firms who reported a low level of deterrence from both the state and non-state actors equally scored a poor compliance performance. Consequently, the study finds a strong relationship between deterrence and firms' compliance performance.

Across the different categories of firms, the study finds variation in their perception about deterrence and compliance performance with the small-scale firms having a higher deterrence perception than the large and medium-scale firms. These findings confirm the initial hypothesis that higher expected sanction severity will lower violation rate and that the small-scale firms who are more likely to have a weaker financial capacity are likely to better comply than the large and medium-scale firms.

#### 3.4.1.2 *Operational cost-benefits ratio and firms' compliance performance*

The study finds that firms who reported a positive cost-benefit perception of legal operations also recorded either very good or good compliance performance. On the contrary, not all the firms who reported a negative cost-benefit perception of legal operations recorded a poor compliance performance (Table 3.2). This is unlike deterrence where all firms who reported low deterrence equally recorded a poor compliance performance and vice versa. The study thus finds that deterrence better explains firms' compliance performance than perceived cost-benefit ratio of legal operations.

Among the different categories of firms, Table 3.2 shows that, in descending order, the small, medium and large-scale firms reported the highest perceived negative cost-benefit ratio of legal operations. However, in terms of compliance performance, the small-scale firms scored higher than both the large and medium-scale firms. These findings sustain the first part of the initial hypothesis that a higher cost of compliance is likely to lead to more noncompliance but negate the second part that small-scale firms comply less than their counterparts.

Overall, the findings show a strong relation between firms' compliance performance and their economic variables with deterrence being a stronger driver than the operational cost-benefit ratio.

### 3.4.2 Social motivations

The study reports that for majority of firms' information about illegal logging (from either fellow loggers or chainsaw operators) adversely impact on their compliance performance. In other words, the behaviour of significant others matters for the compliance performance of participating firms. This finding suggests a fairly strong relationship between a firms' compliance performance and their perception about the behaviour of others. The results reveal no sharp variation among the different categories of firms in their compliance performance and the behaviour of others.

About social sanctions, firms report that there is no pressure on them from either the local community members or the timber trade association to comply. It is evident from Table 3.2 that no logging firm has ever been sanctioned by the local community and/or fellow loggers. The study makes two findings about local community's demands for infrastructural development and the firms' compliance performance. First, firms who reported such demands have no impact on them had a corresponding compliance performance of either very good or good. Second, firms who indicated a positive impact have mixed compliance performance record (table 3.2). The results suggest a fairly strong relationship between societal demands and firms' compliance performance. Across the firms, the findings indicate a decline in the impact of community demands on the firms' behaviour from the large through the medium to the small-scale.

In totality, the findings about social norms sustain the initial hypothesis to the extent that a higher social pressure will increase compliance and vice versa but defeat the second part that the large and medium-scale firms comply better than the small-scale firms.

### 3.4.3 Normative motivations and compliance performance

The results indicate that the only firm reporting a positive sense of duty to comply also recorded very good compliance performance whereas the firms indicating a negative sense of duty to comply equally recorded poor compliance performance. The compliance performance of the remaining firms who reported a conditional duty was mixed (Table 3.2). In sum, the results show a fairly strong relationship between the firms' felt sense of morality and their compliance performance. Across the firms, the small-scale demonstrated a better sense of duty to comply than the large and medium-scale firms.

Also, the findings reveal that the only firm supporting the regulation as reasonable also recorded very good compliance performance whereas the remaining firms with reservations about the regulation recorded a mixed compliance performance score. In sum, the findings show a fairly strong relationship between firms' perceived reasonableness of the law and their compliance performance. Generally, there is not much variation among the firms in their perception about the reasonableness of the regulation.

Again, the study finds that all the firms who reported a positive perception about the agency scored very good or good compliance performance whereas those firms with negative perception about the regulators have mixed compliance performance. These results suggest a fairly strong relationship between how the firms perceived the regulatory agency and their compliance performance. Across the firms, the findings indicate a decline in the regulatory agency's legitimacy from the large through the medium to the small-scale (Table 3.2).

Generally, the findings sustain the first part of the hypothesis about the direct relationship between sense of duty to comply and compliance rate but negate the second part that the large and medium-scale firms comply higher than the small-scale firms.

#### 3.4.4 Compliance variation among logging firms

The data shows that all the participating firms did not record the same compliance performance. Actually, a closer look at the results reveals significant levels of variations in terms of compliance performance among the different categories of firms (Table 3.2).

Overall, the findings indicate that small-scale firms better complied in all the three motivations studied than the large and the medium-scale firms.

### 3.5 DISCUSSION

This section discusses the impact of the various motivations on the compliance-violation decision making of the firms' studied and variations in compliance among the three categories of firms studied.

#### 3.5.1 Economic motivations and compliance performance

This sub-section examines how both deterrence (from state and non-state actors) and cost of compliance shape compliance performance.

##### 3.5.1.1 *Deterrence from the state*

As shown in Table 3.2, most of the firms have a lower perception of deterrence from the state. This is primarily because of the state's lower sanction regime. Presently, there are two different sanction regimes for illegal logging. First, the logging manual (which is a code of practice for loggers) prescribes a maximum penalty of ten times the stumpage fee for each tree illegally logged. Based on the 2014 revised rates by the regulatory agency, the average stumpage fee for all timber species is about GhC24.00 per cubic metre<sup>2</sup>. This translates to a maximum prescribed sanction of GhC240.00/m<sup>3</sup>.

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2 Ghanaian cedi (GhC) (3.80=1.00 USD) as at 2014

Second, the Forest Protection Act (FPA) prescribes a maximum sanction of twice the market/commercial value of the tree illegally logged. Using a conservative average domestic market price of GhC400.00/m<sup>3</sup> as at 2014 puts the maximum penalty at GhC800.00/m<sup>3</sup>.

For reasons that include interferences from influential persons within and outside the industry and possible inertia on the part of the regulatory agency, only the stumpage indexed penalty is applied. Nevertheless, once the penalty is paid, the illegal trees are restored to the logger. This makes it financially rewarding for firms to violate the rule because the commercial value of the trees is higher than the penalty for violation. Perhaps, the only exception is the two small scale firms (Table 3.2) who do not have their own logging and processing facilities and have to hire them from the medium and large-scale firms and sell the logs to them at half the commercial value. According to them, this, accounts for their higher perception of deterrence from the state.

During the interviews, the large and medium-scale firms reveal that, if the regulatory agency decides to impose the commercial value-indexed sanctions, they will be forced to close down with its adverse consequence on the economy including job losses, declined tax receipts and foreign exchange remittances. For most developing economies where such taxes and remittances are critical for socio-economic development and, job creation seen as crucial for maintaining public peace and stability, governments appear reluctant to impose severe sanctions on violating firms. Aware of this, they use their status within the economy to bargain for lower sanctions and thus perpetuate their violation behaviour. This finding supports studies that have shown once violators perceive the cost of violation is far lower than the illicit gain, it incentivises them to continue with the violation (Kagan et al., 2011; Winter and May, 2001)

Apart from the sanctions from the state, firms who export to the EU market and/or are engaged in forest certification processes express fear about consumer boycott/blacklisting and/or suspension of their licenses respectively when caught for illegal logging. Respondents explain that with the passage of the EU Timber Regulations<sup>3</sup>, their EU buyers as a proof of due diligence on the legality of timber products export to them demand a lot of documentary evidence and that makes illegal logging a difficult venture now. Similarly, three of them (one large, one medium and one small-scale) who are engaged in forest certification, spoke about their fears due to the annual field audits undertaken at their operational areas by auditors of these certification bodies. Based on these assertions, it could be stated that a proper implementation of the FLEGT license under the Ghana-EU/FLEGT VPA is likely to make illegal logging more difficult for these firms.

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3 The EU Timber Regulations came to effect on March 3, 2013 with the aim to reduce illegal logging by ensuring that no illegal timber product can be sold in the EU. It was created as part of the EU's FLEGT Action Plan and prohibits operators in the EU from placing illegally harvested timber and its derivatives on the EU market

The EU has been Ghana's longest timber trade partner and presently offers the most competitive price for Ghana's timber products (TIDD 2014). Consequently, many of the export-oriented firms do not want to lose out on the EU market. For these firms, particularly the large and medium-scale therefore, [its] the informal sanctions from these non-state actors that compel them to comply higher than the sanctions from the state regulator. This is an important finding as it demonstrates that there can be high level of compliance even when perceived deterrence from the state regulatory agency seems low. This is because such deterrence could come from other third-party sources. In a study about tax compliance among Chinese lawyers, Rooij (2016) found that even when the state enforcement is weak to non-existent, these lawyers still perceived a high risk of breaking the law, because such risk came from other sources including their own clients and their partners.

This finding is consistent with literature indicating that the deterrent effect on compliance behaviour does not only originate from certainty and severity of sanctions from state institutions, but also from non-state actors (Vandenbergh, 2003; Rooij, 2016).

#### 3.5.1.2 *Cost of legal operations*

For most of the firms, harvesting only the legal trees allocated to them leads to losses. The principal reasons appear to be the fewer number of trees allocated to them and the high cost of operations. These sentiments were echoed by almost all respondents as the single most important factor that presently confronts the industry, and also militates against their efforts at compliance. This is how respondent (F5) sums it; *'illegal logging among logging firms is purely intentional and the primary reasons are the lower number of trees allocate to firms per year and the associated high operational costs. Any logging firm that gives other excuses for illegal logging is possibly being economical with the truth'*.

For purposes of sustainable forest management, the annual allowable cut for all species for all legal firms is set at 2 million m<sup>3</sup> whilst the installed capacity of all firms is projected at 5 million m<sup>3</sup> (Marfo et al., 2017). It came to light during the interviews that all the firms are operating between 40 and 60% of their installed capacity with the medium scale firms being the worst affected. It therefore appears that for the vast majority of firms reporting negative costs-benefits ratio, compliance does not appear to be a preferred option. For these firms, therefore, it is either they violate the law to stay in business or comply and eventually collapse. Many of them have opted for the former. This finding confirms earlier studies showing that rules imposing high cost of compliance on actors are honoured more in violation than in compliance (Osterman, 2016; Thornton et al., 2009)



### 3.5.2 Social motivations and compliance-violation performance of logging firms

This subsection addresses the impact of information about illegal logging, societal demands and social sanctions on the compliance performance of firms investigated. The study reveals that colleague logging firms engage in illegal logging. About them, this is how respondent F4 puts it: *'I do not think there is any logging firm who does not engage in illegal logging. All logging firms are guilty when it comes to illegal logging. From the very first day I entered into the timber business, I was made to believe by my mentors then that every logger is a thief and my firm is not an exception'*. This assertion raises a serious presumption, though rebuttable, that appears to have shaped a perception or norm of non-compliance among the majority of the firms studied. Thus, most other firms do it, so why should my firm be different? In this case, it may be said that non-compliance behaviour of any particular firm influences non-compliance behaviour in other firms.

Another source of social pressure found to shape non-compliance behaviour is the activities of chainsaw operators<sup>4</sup>. This is how F5 puts it: *'as long as the regulatory agency cannot guarantee the safety of the trees in our concessions, it makes no sense to leave all of them for chainsaw operators to come and steal them when we also have uses for them. Most of us loggers engage in illegal logging because of the activities of illegal chainsaw operators. We know it is not good but they force us into it'*. For these respondents, therefore, it is the wilful violation behaviour of the chainsaw operators that has triggered the current high level of violation behaviour among the logging firms.

Nonetheless, for the two firms (one medium and one small-scale) who reported that illegal logging activities by others do not affect their compliance, it is all about protecting their reputational capital built over the years. This is how respondent F3 explains it: *'in today's corporate world, good image and reputation in the eyes of the public are extremely important and we would therefore not engage in any illegality to destroy or tarnish our reputation'*. This assertion is supported by respondent F9 who thinks that; *'good name and reputation are better than riches'*. This indicates that compliance could be improved if firms are educated about the importance of building and/or maintaining a good corporate image. This finding supports other studies reporting that there can be (voluntary) compliance even when there is limited deterrence from the state (Gunningham et al., 2011; Rooij, 2016).

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4 They consist of individuals and unorganised groups who have no license to engage in logging business yet do so underground and even harvest more than the licensed logging firms. They use fuel-powered chainsaw machines to harvest timber trees and convert them in-situ to lumber for commercial purposes (a banned practice under the Timber Resources Management Regulations (TRMR, 1998). Nonetheless, they continue to operate mostly as armed guards at nights in virtually every forest area and supply the bulk of lumber on the domestic timber market (Boakye, 2015).

Generally, it could be deduced from the study that all the actors are virtually willing to operate legally once other firms and chainsaw operators do same. In other words, each firm expects others to halt illegal logging before it does same and so confirming previous studies that have established that most regulated entities, view the compliance or violation behaviour of their peers and competitors as the normal thing to do in business (Cialdini, 2007; Grasmick and Bursik Jr., 1990).

The study documents that demands from the local community for infrastructural development and other forms of social support on logging firms adversely impact on their compliance performance. This is well illustrated by respondent F2 as follows: *'the pressure on us from the forest fringe communities through the District Assemblies to the traditional authorities is unbearable. They all come to us for various support/assistance including maintenance of roads, construction of school buildings and money for celebration of festivals. They brand us wicked, and frustrate our operations if we do not assist them. These informal demands are too much and a huge financial drain on us. Where do we get the money to meet all these demands? They come from the extra trees we illegally harvest. It would be extremely difficult for us to meet all these unofficial obligations without illegal harvesting'*

Respondents were reluctant to discuss in further detail the exact amounts involved in these informal payments to local communities but maintain they are substantial and a huge drain on their finances. These payments may directly increase the operational cost of legal operation for the firms' concerned and thereby lower their compliance performance. Also, it could promote corruption that has been shown by various studies in the forestry sector globally to undermine efforts at compliance (Contreras-Hermosilla and Peter, 2005; Kishor and Damania, 2007)

Regarding social sanctions, no evidence is found to suggest that violation behaviour attracts any sanctions from fellow loggers or the local community. The general impression gathered from the study is that members are reluctant to interfere with the 'internal or personal affairs' of other members. This attitude of non-interference seems to shield non-complying members from the pressure or sanctions of few that are compliant. This is in sharp contrast with findings from other studies including the Massachusetts lobster fishers' Sutinen and Guavin (1998) that report the influence of peer-pressure in enhancing compliance performance among group members

The apparent lack of sanctions from the local communities could be attributed to so many factors. First, the violations may not be so visible to most people in the sense that they take place in forests that are located in remote areas. Second, many community members lack or have little interest or knowledge about logging operations particularly at the forest level. Third, in some local districts where these firms operate, they are the major employers and thus provide livelihood support to most of them. All these may have contributed to the apparent inaction of the community members and thus allowing these firms to perpetuate their violation behaviour

unsanctioned. Overall, it may be concluded that in this case study social norms largely help to undermine compliance performance.

### 3.5.3 Normative motivations and compliance-violation performance of logging firms

This subsection discusses the actors' felt sense of duty to comply (morality), perceived reasonableness of the rule and the perceived legitimacy about the regulatory agency and their impact on compliance performance.

For the one small scale firm who indicated a positive felt sense of moral duty to comply, illegal logging is a serious moral issue for reasons that include religious beliefs (i.e., hope in eternal life) and the need to protect the forest for posterity. For this firm, compliance has nothing to do with legal or informal sanctions but solely on moral principles and any violation would lead to guilt feeling, moral stigma and shame. Persons with such strong moral commitment have been found to exhibit the deepest level of compliance with regulation (Grasmick and Bursik Jr., 1990). However, Raakjaer Nielsen and Mathiesen (2003) warned that compliance based solely on personal morality could be eroded when violation becomes widespread.

For most respondents, illegal logging is justifiable under certain circumstances. This view is well articulated by respondent (F1) as follows: *'do you think the thief does not know that when he steals, he has violated the law that prohibits stealing? He knows but sometimes steals out of necessity. For instance, if the regulatory agency gives me twenty red woods and I need four extra to complete my contract, what should I do? I would try my luck where possible. If you want to violate any law, be careful how you go about it. Don't do it too much. If you steal too many trees, you destroy the forest and the future of your own firm. Steal when it is extremely necessary but even then, one has to be moderate'*.

It may be said that for these respondents, illegal logging is justified under conditions of necessity. Curiously, these are conditions that invariably foster their' economic interests. In sum, for the majority of respondents, illegal logging appears wrong but an economic necessity. For these 'conditional moralists', therefore, Sutinen and Kuperan (1999) suggest, it is possible to strengthen their morality through education and persuasion.

However, for two firms (one large and one medium-scale), decision to comply or violate is purely an economic one and not about morality. For them, they either violate or comply depending on whether it makes economic sense or not. Such apparent lack of morality or its reduction to financial considerations could have serious implications for compliance. First, it suggests that the regulation in question has not been internalised into the morals of respondents, and therefore, eliciting voluntary compliance from them may prove difficult (Vanderburgh, 2003). Second, it becomes difficult for the regulatory agency to reverse this development through education or persuasion as suggested by Sutinen and Kuperan (1999). Another possible explanation for the low morality among the loggers could be the crisis situation that most of them find themselves in at the moment. Adam and Nsen-

kyire (2014) reported that about 60 logging firms, mostly in the medium and small-scale category, have collapsed within the last decade due basically to lack of raw materials and high operational cost.

On reasonableness of the rule, the only firm who reported a positive perception about the regulation thinks the current generation has a duty to ensure that future generations also benefit from the country's forest resource. However, the vast majority of the firms have serious reservations about the rule and the basis for allocating the legal yield (i.e., trees for logging) including the fewer number of trees allocated to them which make logging operations uneconomical and thereby resulting in the near collapse of their businesses.

The fact that majority of the actors have qualifications about the rule may signal a possible imposition on them. Put differently, the actors may not have been involved in the law-making and/or decision-making process. Evidence from fishery studies in Denmark (Raakjaer Nielsen and Mathiesen, 2003) indicates that perceived alienation of regulated actors from law and/or decision-making processes have negative impacts on compliance behaviour. Also, for these respondents, violation could emanate from principled disagreement with regulation they perceive as unreasonable (Tyler, 1990). The resultant effect is that actors perceive the rule and its implementation as unreasonable and unworthy of compliance. A possible evidence of their resistance to the law is the observed violations.

Regarding the perceived legitimacy of the regulatory agency, some of the actors think the regulators are doing a great work in the sense that they fairly discharge their duties. The perception of the majority is not that pleasant. *This is how respondent (F6) puts it: 'I have no doubt that the FC field inspectors take bribe and help logging firms to steal trees. In my estimation, about 60 percent of illegal harvesting cases happen with the knowledge and/or consent of some FC officials. I may be wrong but this is my opinion'*. This perception of the regulated actors about the regulators is serious because it is this perception that eventually shapes their compliance behaviour. It is even possible that, these firms, aware of the corrupt practices within the regulatory agency may exploit it to perpetuate their violation behaviour. Corruption, either real or perceived and in its different forms (i.e., petty or grand), has been shown by studies in various sectors including forestry to undermine efforts at compliance worldwide (Cerutti et al., 2013; Kishor and Damania, 2007). Again, the inability of the regulatory agency to vigorously enforce the ban on chainsaw operation presents a huge challenge for it to enforce the rule on illegal logging against logging firms. The respondents consider it unfair for the regulators to tighten the belt on them while the chainsaw operators continue to operate with impunity. The end result is the declining legitimacy of the regulatory agency with its possible manifestation in low compliance performance.

#### 3.5.4 Compliance variation among the logging firms

Table 3.2 clearly suggest that overall, the small-scale firms recorded a higher compliance performance under all the three main motivations than the medium and large-scale firms. On deterrence, they are the only category who reported higher deterrence perception of both state and non-state actors. This could be due to the fact that two of them sell their products on the domestic market and do not make as much profit as their counterparts, thus generally making violation behaviour unprofitable. For the medium and large-scale firms, those who export to the EU market recorded a higher compliance performance than their colleagues who trade on the ECOWAS and the Asian markets due to the higher deterrence perception in the former market.

The small-scale firms also recorded a higher compliance performance with social norms than the medium and large-scale firms. The main reason here appears to be the low community demands on them. This variable appears to weigh heavily on the other two categories with the large-scale firms being the worse affected

Again, the small-scale firms performed better on normative motivations than their counterparts. Their felt sense of duty to comply with the regulation and perceived reasonableness of the rule were much better than the medium and large-scale firms. Overall, this finding appears to support the strand of literature that indicates that larger scale firms perform poorly at compliance in the sense that they can use their influence and power to postpone or evade compliance or to protect them against enforcement, particularly if they happen to be dominant employers- in the sense of being responsible for a significant amount of income in a given area (Huisman, 2001; Vaughan, 1983).

### 3.6 CONCLUSIONS

This empirical case study examines the compliance behaviour of Ghanaian logging firms with respect to the legal rule that prohibits them to engage in illegal logging. The study finds that all the three variables investigated (i.e., economic, social and normative motivations) have both positive and negative effects on compliance performance of all the categories of firms. Specifically, the findings clearly indicate that deterrence from third party non-state actors produces better compliance than the state. Also, firms with positive cost-benefit ratio for legal operations comply better than those with negative cost-benefit ratio. Normative motivations and social pressures largely help to undermine compliance performance. Overall, the small-scale firms recorded a higher compliance performance in all the three main compliance variables than the medium and large-scale firms.

This study about loggers in Ghana has some important implications for both compliance literature and practice. First, the study finds that, at their present levels, sanctions from the state for illegal logging particularly the stumpage fee-indexed penalty provided under the logging manual are low and create a huge incentive for loggers to violate the logging regulation. It should be understood that for rational or profit-oriented regulated actors, rules that provide higher financial rewards/benefits than sanctions [when violated] are more likely to be honoured in violation than in compliance. A policy insight for Ghana and countries that desire to enhance compliance under such situation must be to implement measures that counter the violation effect of low sanctions. Actually, this suggestion is the basic assumption underlying deterrent-based compliance. Thus, a higher sanction severity increases compliance and vice versa.

Second, the findings revealed that for firms who export into the EU market and those engage in forest certification processes, particularly the large and medium-scale firms, [its] the informal sanctions from these non-state actors that compel them to better comply than the sanctions from the state regulator. A theoretical insight from here is that deterrence can originate from other sources than just the state and its sanctions (Grasmick and Bursik Jr., 1990; Rooij, 2016). In this study about logging firms in Ghana, such deterrence has been shown to emanate from the EU market and private international forest certification bodies. The policy implication here is for the state regulatory agency to re-examine the current regulatory design that has state policy and law as the sole instrument category in favour of one that uses different instruments implemented by a number of non-state parties (commercial and NGOs). Such a framework, according to Gunningham (2011) helps to achieve not only better policy 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. In this respect, a network of both local and international actors would be desirable.

Third, the study finds some firms, though small, who would not engage in illegal logging for reasons aside from deterrence such as maintaining good reputation or status in their community, religious beliefs (i.e., hope in eternal life) and the need to protect the forest for posterity. This is an important finding and demonstrates that compliance is possible with limited to no deterrence. This suggests that regulators can enhance compliance through non-deterrent and inexpensive means including the use of simple messages or adverts that encourages actors that compliance is good and the right thing to do.

All this demonstrates that enhancing compliance is complex phenomenon and not just a straight forward calculation of increasing sanctions to achieve a higher level of compliance as deterrence theory would like us to assume. More than that, compliance has other dimensions as well including social, normative and even political. What is important then for policymakers and practitioners to enhance compliance among various regulated actors

is to understanding how different actors respond to different compliance motivations under various socio-politico-economic and cultural settings. Here, much research is still required to ascertain how these factors either functioning independently or in their combination shape compliance behaviour in regulated actors.

APPENDIX A. MEASURING COMPLIANCE AND INDEPENDENT VARIABLES

Items		Brief statement of interview questions	Description of the relevant coding		
			Very good	Good	Poor
Compliance-Violation behaviour					
Timber harvesting		Do you always harvest only the legal trees allocate to you? If not, how many times have you harvested more than were allocated to you within the last two years?	Firms' who reported between zero and two violations	Firms' who recorded three and four violations	Firms' who recorded more than five violations
Independent Variables			High	Low	
Economic (Deterrence <sup>5</sup> )	Sanction severity from the state	How do you compare the official penalty/ cost for illegal logging to the revenue obtained from the sale of the trees?	Individuals who indicated the official penalty/cost was higher than the revenue obtained	Individuals who reported otherwise	
	Perceived risk of Sanctions from non-state actors	Do you perceive any risk of sanctions from source other than the state for breaking the rule? To what extent does such risk influence your compliance behaviour?	Individuals who indicated such risks exist and impact on their compliance behaviour	Individuals who reported otherwise	
Operational cost-benefit calculations of compliance		How do you evaluate the profitability of legal and illegal operations?	Individuals who indicated legal operations were profitable than illegal operations	Individuals who reported otherwise	

5 The study concentrated on the element that deterrence literature considers most crucial to achieve compliance-sanction severity (Paternoster and Simpson 1993; Thornton et al., 2005)



			Positive	Negative	
Social motivations	Impact of information about illegal logging on firms	Extent to which information about illegal logging from colleagues and chainsaw operators impacts on your compliance behaviour	Individuals who indicated information about illegal logging adversely impact on their compliance behaviour	Individuals who reported otherwise	
	Social sanctions for illegal logging	Have you ever been sanctioned or targeted for sanctions by either the local community or your trade association?	Individuals who reported they have never been sanctioned by any of the two actors	Individuals who indicated otherwise	
	Impact of community demands on firms	Extent to which demands/pressures from the local community for support impact on their compliance behaviour	Individuals who indicated community demands adversely impact on their compliance behaviour	Individuals who suggested otherwise	
Normative motivations	Duty to comply	Do you have a felt sense of duty to comply with the rule on illegal logging?	Individuals who indicated they have a duty to comply	Individuals who reported they have no duty to comply	Responses that reported it depends on the situation at hand
	Perceived reasonableness of the law	How do you perceive the reasonableness of the rule on illegal logging?	Individuals who reported the rule was reasonable	Individuals who suggested otherwise	
	Perceived legitimacy of the regulatory agency	How do you perceive the fairness of the regulatory agency in the application of the rule?	Individuals who indicated it applies the rule fairly	Individuals who reported otherwise	