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Criminal liability for illegal logging and transboundary timber trade in China and Indonesia (2010-2025)

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Abstract. This study aimed to define the peculiarities of criminal and legal countermeasures against illegal logging and timber trafficking in China and Indonesia. The methods of comparative law, normative-dogmatic and institutional legal were used in conjunction with analysis of the national legislations of China and Indonesia, international treaties and analytical reports, as well as satellite and statistical data of Global Forest Watch and materials of specialised institutions for 2010-2025. The article revealed that in 2010-2025, Indonesia had the maximum rates of forest losses in 2010-2016, which was 1.3-2.4 million ha per year, while the annual rate of forest loss in China was relatively stable (350-450 thousand ha per year in 2020-2024), which testifies to different scopes of pressure on forest resources. The legislation analysis revealed that China has developed a model of criminalisation of illegal logging (punishment of up to seven years of imprisonment and significant fines) and supporting centralised mechanisms of administrative regulation, while Indonesia has created a complex system to counteract organised logging networks (fines of up to ten billion Indonesian rupiahs) and quasi-criminal control through the Sistem Verifikasi Legalitas Kayu. The findings further indicate that international environmental and trade treaties served as normative regulators of the development of criminal and legal countermeasures against illegal logging and timber trafficking in China and Indonesia in 2010-2025. In China, the formally stipulated maximum penalties for illegal logging and timber trafficking are in fact not regularly applied to all forest crimes but are selectively reserved for particularly large and organised offences. A tendency has been identified towards reclassifying environmental crimes as customs or trade offences, which further reduces the potential deterrence of criminal law in China. Indonesia shows a greater congruence between the formal stipulations and judicial reality: When it comes to organised timber-extraction networks, sentence stacking is commonly applied, that is, prison sentences, the confiscation of assets and fines of up to 5-10 billion Indonesian rupiahs are imposed. The practical relevance of these results stems from their usefulness to criminal-justice and legislative stakeholders in improving forest crime countermeasures

Keywords: environmental security; economic stability; international obligations; environmental protection sector; sanctions

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Introduction

Illegal forest practices and transboundary timber trade in China and Indonesia have assumed proportions posing an immediate threat to ecological security, economic security and international environmental law-making. While both countries have long been engaged with the international community in the fight against forest crimes, the utility of criminal law tools remains ambiguous. The difference between the provisions of international legal instruments and the realities of criminal law practice provides an opportunity for the continued proliferation of illegal forestry operations. The involvement of various parties along the chain of transboundary timber supply, the risks of corruption, and the non-standardised approach to sanctions for forest crimes across different jurisdictions contribute to this. The lack of criminal responsibility instruments complicates the criminal prosecution of organised criminal groups that implement illegal logging and the international timber trade.

In contemporary academic discourse, increasing attention is paid to the relationship between state forest policy and the environmental consequences of its implementation. For example, a study by X. Huang *et al.* (2024) established that the introduction of a ban on natural forest logging in north-eastern China led to a statistically significant increase in the value of ecosystem services. At the same time, the authors recorded that the positive environmental effects were not accompanied by an automatic reduction in illegal logging, indicating the limited effectiveness of purely administrative prohibitions. The findings indirectly point to the need to complement environmental policy with criminal law deterrence mechanisms; however, this aspect remains outside the scope of in-depth legal analysis in that study. Issues of transboundary timber trade in interaction with China were addressed in the research by G.P. Kombat & X. Chen (2022), which demonstrated that trade flows between China and exporting countries are shaped not only by market factors but also by regulatory asymmetries between legal systems. In particular, it was proved that lower regulation in countries of origin increases the risk of illegal timber export to China, which, in most cases, is the final destination for imported timber. However, the study did not investigate the influence of criminal and legal norms of the involved countries on this issue, which has not been discussed in terms of legal mechanisms for countering illegal trade.

Another study aimed at the development of a risk-based approach to detecting areas with a high risk of illegal logging was conducted by J.C. Lin *et al.* (2021), who revealed a strong positive association between the spatial patterns of hotspots of illegal timber harvesting and the directions of international trade. The authors inferred that the risk of illegal logging in the area is significantly higher when it is connected to global timber-supply chains. However, their results relate to risk factors and do not provide insights into how international legal instruments or criminal-law sanctions influence the actions of the subjects involved in the chain. The evaluation of the effectiveness of China's forest policy through the normative-act analysis was performed by G. Meng *et al.* (2025). The authors concluded that the rigidity of Chinese forest policy has increased and the number of detailed provisions has improved since the late 1990s. However, the implementation effect of the policy highly depends on the law enforcement capacity. At the same time, the authors did not explore the effect of China's international commitments on the development of criminal law approaches, and, therefore, the potential impact of global environmental regimes on domestic legislative changes is still to be explored.

The situation in Indonesia regarding the criminal liability for forest offences is discussed by A.M. Rohmy *et al.* (2021), who point out that the number of subjects of criminal liability increased after the promulgation of the Law of Indonesia No. 11 (2020). The authors emphasised that corporate sanctions in the sphere of forest destruction have become an important instrument of legal influence; however, their effectiveness is constrained by inconsistencies in enforcement practice. At the same time, the international context of the formation of these norms, in particular the influence of the Convention on International Trade… (1973) (CITES – Convention on International Trade in Endangered Species) or the Forest law enforcement… (2003) (FLEGT – Forest Law Enforcement, Governance and Trade) initiative, is largely unexplored in the study.

The impact of China's domestic environmental restrictions on global timber markets was examined in the research by Q. Zhang *et al.* (2023), which found that the ban on domestic logging contributed to increased stability of the timber import network. The authors demonstrated that internal prohibitions have external consequences, notably the displacement of environmental pressure to other countries. However, the study does not analyse how criminal law instruments might offset these negative transnational effects. In a similar vein, J. Zeitlin & C. Overdevest (2021) proposed a transnational regime of timber legality, focusing on the interplay between states, markets and supranational institutions. They found that such regimes produce a new modality of regulatory power beyond traditional international law, but the criminal-law implications of state involvement in such regimes remain underexposed, certainly in a comparative perspective between different legal systems.

This being the case, the analysis of the academic literature reveals the availability of a significant amount of research on various aspects of environmental policy, timber trade, and control mechanisms. At the same time, a shortage of comprehensive comparative studies has been identified that would systematically analyse the impact of international environmental and trade agreements on the formation of criminal law approaches in states occupying different roles within the global forest supply chain. This study aimed to examine issues of criminal liability for illegal logging and transboundary timber trade in China and Indonesia in the context of international agreements In order to accomplish this aim, the study intended to accomplish the following objectives: to critically examine the

development of the criminal legislation of the two states relating to liability for forest crimes, to ascertain the impact of international agreements on the formation of approaches of state penal laws, and to compare the effectiveness of measures of penal law, as well as practices of courts, law enforcement, and environmental protection institutions.

Materials and Methods

The subject of this research consists of an analysis of criminal law methods in combating illegal logging and transboundary timber trade in China and Indonesia during the years 2010-2025. The selection of this period is connected with the increasing intensity of international regulation in the sphere of environmental and trade regulation, as well as with dramatic changes in the national criminal regulations of both states, aimed at increasing criminal liability in this sphere. The spatial boundaries of this research are conditioned by the participation of both states in international chains of illegal timber harvesting and trade.

The material basis of the research consisted of national criminal statutes and specialised forestry legislation of China and Indonesia. For the analysis of the Chinese model, provisions of the Criminal Law of the People's Republic of China No. 83 (1997), in particular Articles 151, 225, 338, and 345-347, Forest Law of the People's Republic of China No. 3 (2019), as well as the Law of the People's Republic of China No. 67 (2012), were examined. In the Indonesian context, the analysis covered the Law of the Republic of Indonesia No. 41 (1999) and the Law of the Republic of Indonesia No. 1 (2023), as well as regulatory acts concerning forest protection and the functioning of the Sistem Verifikasi Legalitas Kayu (n.d.), including Government Regulation of Indonesia No. 45 (2004) and Government Regulation of Indonesia No. 6 (2007). These instruments were used to identify the constituent elements of forest-related crimes, the structure of criminal sanctions, and specific features of the differentiation of liability depending on the scale and organised nature of offences.

A further set of materials was international treaties on environmental and criminal laws that framed the external regulation for the criminalisation process of forest-related crimes. Within the study, provisions of the Convention on International Trade… (1973), European Union (2003) were examined. These acts were considered not as sources of direct criminal law norms, but as institutional frameworks that determine the transformation of national legislation and law enforcement practice.

To establish the quantitative context for the criminal law analysis, satellite and statistical data from Global Forest Watch (2024b) for the period 2010-2024 were used, along with analytical reports from the Environmental Investigation Agency (2021). The abovementioned statistics are presented as a basis for determining the dynamics of deforestation and as proof of the interconnection between the scope of illegal logging and the intensification of criminal law sanctions. These indexes have not been applied as a method for the calculation or prediction of any tendencies; they play the role of an empirical ground for legal analysis and for comparison of the results of the application of different normative mechanisms.

In addition to measuring the de jure punitiveness of criminal law sanctions, an assessment of the de facto punitiveness of criminal law in practice was also necessary, for which a comparative analytical approach of law enforcement was used, combining normative legal analysis with an examination of secondary quantitative empirical data. The empirical basis for analysing the practical implementation of criminal law sanctions consisted of analytical reports by international organisations for the period 2020-2025, in particular materials from the United Nations Office on Drugs and Crime (2025), including the United Nations (2020; 2024). A separate group of sources comprised reports by the Environmental Investigation Agency (2024), which analyse enforcement practices in the areas of illegal logging, transboundary timber trade, and the reclassification of environmental crimes as customs or economic offences. In addition, the study drew on sectoral risk reviews of illegal deforestation and associated timber trade in individual countries, including the analytical report Illegal Deforestation and Associated… (2024), which contains aggregated data on the application of criminal sanctions and the institutional capacity to counter forest-related crimes.

Results and Discussion

Characteristics of the criminal legislation of China and Indonesia in the field of combating forestrelated crimes

In the period of 2010-2025, China and Indonesia continued to be countries participating in the global illegal logging and illicit transboundary timber trade, which played significant roles in the evolution of national criminal law regimes of forest resources protection. As Global Forest Watch (2024b) revealed, forest cover loss trends in the two countries show steady characteristics of both legally and illegally felled timber, on which criminal law control and responsibility mechanisms in forest use have been developed. The highest rate of forest cover loss in Indonesia occurred between 2010 and 2016, with an annual loss of 1.3 to 2.4 million hectares. During this time, illegal palm oil production was at its height, and transnational logging groups were at their most prolific. While the rate of deforestation has been declining since 2017, Indonesia still ranks as one of the largest exporters of illegal timber according to Global Forest Watch (2024a).

In China, forest cover loss dynamics remained relatively stable; however, the country was an important factor in the global illicit timber trade as the largest consumer of tropical timber. Although China officially declares a policy of "ecological civilisation", studies indicate that a significant proportion of illegal timber entered the market through transit schemes, in particular via Myanmar and Laos (Environmental Investigation Agency, 2021). Meanwhile, satellite data show that between 2020 and 2024, annual forest cover loss hovered between 350 to 450 thousand hectares, showing that forest resource use remained under pressure

(Global Forest Watch, 2024b). These numbers are represented graphically in Figure 1, which depicts the general patterns of forest cover loss in China and Indonesia from 2010 to 2024. A side-by-side comparison of these two numbers makes it clear that there is an imbalance between the two countries; in most years, the amount of forest loss in Indonesia is between two and four times larger than that of China. This imbalance makes sense given Indonesia's status as the main source of illegal timber and China's status as one of the main importers and exporters of illicit timber.

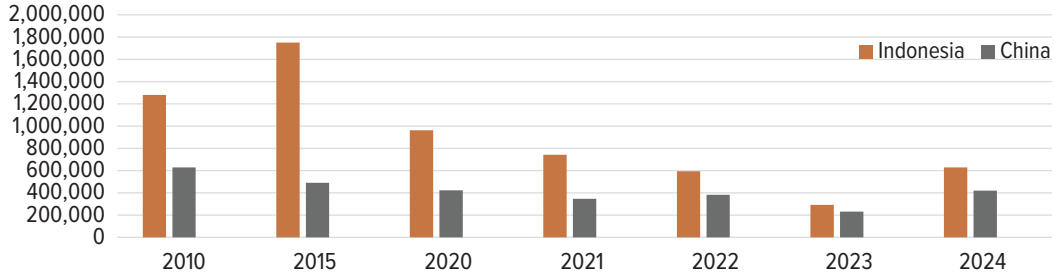

Figure 1. Tree cover loss in China and Indonesia 2010-2024 (thousand ha)
Source: compiled by the author based on Global Forest Watch (2024b)

Figure 1 demonstrates the dynamics of forest loss in Indonesia and China between 2010 and 2024. The highest levels of forest loss in Indonesia were noted in 2010 (over 1.2 million ha) and 2015 (1.7 million ha), which indicates active forest use in that period. Minimum values are noted in 2023 (approximately 0.3 million ha), followed by a partial increase in 2024 to about 0.6 million ha. The values of forest cover loss in China are significantly lower and more stable; the maximum forest loss was noted in 2010 (over 0.6 million ha), and the minimum was in 2023 (around 0.25 million ha). A general trend toward a decrease in the rate of logging after 2015-2017 is observed in both countries, which can be associated with the toughening of mechanisms of both legal and criminal law in the field of forest management.

The legal regulation of forest-related crimes in China and Indonesia is based on a combination of criminal, administrative, and sectoral laws, which contain provisions defining the regulations governing the use of forest resources, the criminal nature of their illegal extraction, as well as state regulations governing forest timber control. In China, the legal basis for the regulation of forest-related crimes is the Criminal Law of the People's Republic of China No. 83 (CL-PRC) (1997), which, in its articles 345-347, criminalises the illegal logging, damage, and destruction of forests and stipulates differentiated liability depending on the nature and scope of the infringement. According to the law, serious cases refer to large volumes of illegally harvested timber, significant environmental harm, repeated offences, organised conduct, or illegal harvesting using machinery or teams that cause substantial losses of forest resources. Under Article 345 CL-PRC, these circumstances are liable to up to 7 years imprisonment and significant fines, unlike "ordinary" cases of illegal logging, when the liability is limited to 3 years of imprisonment or fine. Particularly severe cases, in which illegal activities cause "especially significant harm to state forest resources", may be punished with a term exceeding seven years under Article 346 CL-PRC, covering major environmental crimes and large-scale illegal timber trade. In a separate provision, Article 151 CL-PRC foresees liability for the smuggling of timber, an aspect of special relevance in the framework of transboundary flows of timber between China and Southeast Asian countries. In addition, Articles 225 and 338 CL-PRC foresee liability for illicit activities related to the purchase and sale of timber without the required license, as well as for environmental crimes resulting in significant harm to natural resources.

The main legislative act governing the relations in the sphere of forests in China is Forest Law of the People's Republic of China No. 3 (2019), which not only increased the necessary requirements for the protection of forest resources, but also established new regulations for forest use. The law directly prohibits illegal timber harvesting without a license, and administrative and criminal liability is provided for unlicensed activities, exceeding quotas, as well as the circulation of timber obtained in an illegal way. In addition, the law introduces the tracing of the origin of timber and state monitoring systems in accordance with international environmental standards. Another component of full regulation is the Law of the People's Republic of China No. 67 (2012), which provides the possibility of applying administrative penalties for minor offences in the legislation on forestry, in particular, the illegal transportation and storage of timber. Thus, the Chinese model is a combination of criminal and administrative mechanisms that make it possible to respond to different types of offences in the sphere of forests.

The legislation of Indonesia on forest protection is based on the Law of the Republic of Indonesia No. 41 (1999), which establishes the rules for the use of forest resources, as well as criminal liability for the illegal harvesting, transportation, and storage of timber. Amendments to the law in 2002 and 2007 increased criminal liability for illegal logging and activities related to organised crime groups. The law establishes that the participation of organised networks of loggers, including financing, organising, or using illegally harvested wood, is punished with imprisonment for a period of five to fifteen years and a fine of up to five billion

Indonesian rupiah (IDR) (approximately 350,000 USD). For the main types of illegal timber harvesting, such as unauthorised logging, forgery of forest documents, transportation of illegal timber, or assisting in the illegal export of timber, the penalties are from one to ten years imprisonment, and a fine of from 500 million IDR to 5 billion IDR, depending on the scope of the offense, the involvement of an organised group, or the degree of environmental harm caused. Furthermore, the law also clearly states the higher legal responsibility of public servants in terms of corruption for the issuance of illegal permits or for the operation of illegal logging, as in such cases it can be punishable with up to 20 years in prison and a fine of up to 10 billion IDR, thus illustrating the inclusion of anticorruption legal content in the forest crime legal policy.

The uniqueness of the Indonesian approach is the existence of the Sistem Verifikasi Legalitas Kayu (SVLK) (n.d.), a national system that verifies the legality of timber, established as required by the EU to implement the European Union (2003). Even though the SVLK is not a criminal law instrument, due to its legal foundation and practice, it has a quasi-criminal nature, because non-compliance with the system incurs administrative as well as criminal liability. According to Government Regulation of Indonesia No. 6 (2007) and No. 45 (2004), people or enterprises that carry out harvesting, processing, transporting or exporting of wood without an SVLK certificate or with forged certificates shall be subject to multi-level sanctions. Administrative sanctions include revoking the harvest or export license, suspending the enterprise temporarily or permanently and seizing the timber and equipment.

In case of serious breach to SVLK, like certificate counterfeiting, being involved in an organised criminal group of illegal logging, or intentional transfer of illegal timber, the SVLK law resorts to criminal liability, which is taken from the Law of the Republic of Indonesia No. 41 (1999) and Law of the Republic of Indonesia No. 1 (2023). Criminal penalty ranges from one to ten years of prison for illegal harvesting, moving and trading of timber without SVLK certification, up to fifteen years of prison for crimes committed in an organised criminal group or in a massive way (for instance, illegal export of a large amount of timber), a fine of up to 5 billion IDR, or in case of recidivism, up to 10 billion IDR, and criminal liability for public servants who forge the SVLK documents, issue permits illegally, or hide evidence of illegal logging. Hence, SVLK acts as a tool of administrative and criminal law levers that impact the agents of illegal felling and timber trafficking. This multi-level system of responsibility serves as a threat, which is directed against the illegal timber market. As the conclusion suggests, the dynamics of forest area in China and Indonesia in 2010-2025 are not only an environmental indicator, but they are also an indicator of the effectiveness of criminal law levers in the fight against illegal logging. The dynamics are consistent with the results of studies on the causes and structure of illegal timber trade. This dynamic corresponds to maximum losses in Indonesia in 2010-2016 (1.3-2.4 million ha per year) and small-scale, but persistent losses in China (350-450 thousand ha per year in 2020-2024).

The results of the research partially agree with those of J. Sheng *et al.* (2023), who, against the backdrop of the declarative policy of "ecological civilisation" in China, note the preservation of the status of a key link in the international illegal timber market. The authors confirm that a significant proportion of illegal timber flows to China through transit channels – via Myanmar and Laos, which agrees with the plateau of forest cover losses in 2020-2024. Simultaneously, the authors note that even the toughening of criminal responsibility in the PRC cannot compensate for the external influences of illegal flows, which agrees with the detected imbalance between the scale of forest loss and the existing control mechanisms. A partial difference with the current results is that J. Sheng *et al.* place greater emphasis on the economic demand factors, while the data in this study also show the significant influence of the institutional capacity and law enforcement practices.

The data obtained for Indonesia agree with the results of S.M. Piabuo *et al.* (2021), who studied the relationship between illegal logging, weak governance and increasing environmental risks in Asian countries. The authors identified corruption and low effectiveness of law enforcement institutions as the main causes of the accelerating depletion of forest resources, which agrees with the maximum losses in Indonesia in 2010-2016. Their results also confirmed that the toughening of criminal responsibility without the reform of the governance system does not lead to a long-term effect, which is illustrated by the preservation of Indonesia's status as one of the largest suppliers of illegal timber after the tightening of the regulations. The difference lies in the fact that S.M. Piabuo *et al.* paid greater attention to global environmental consequences, while this study highlights the criminal law aspect of the problem.

The results also agree with the conclusions of H. Supratman & M. Alif (2022) about the efficiency of the SVLK system in Indonesia as a quasi-criminal means of controlling the origin of timber. The authors showed that after the introduction of free certification for small businesses, the formalisation level in the timber industry increased; however, the risks of abuse and falsification of documents remained. This agrees with the results of this study, which note the need for criminalisation of gross violations of the SVLK regime, including forgery of certificates, illegal transportation and participation in an organised scheme. At the same time, the study by H. Supratman & M. Alif notes that the SVLK system is efficient only given the proper state control, which agrees with the dynamics of the decrease in forest losses after 2017. In general, the legal and regulatory approaches in China and Indonesia have different priorities: the PRC is focused on centralised control and criminalisation of environmental crimes, while Indonesia combines anti-corruption, environmental and anti-organised crime components due to the spread of illegal logging networks. Both countries have broad legislation; however,

the efficiency of its application for a long time depended on the institutional capacity and the presence of relevant international obligations.

The role of international environmental agreements in shaping criminal law responses in China and Indonesia

International environmental agreements contribute to the formation of contemporary criminal law responses to illegal logging and transboundary timber trade despite not being directly binding on individuals and legal entities. Their regulatory effect is indirect – through the binding effect on contracting states to criminalise certain types of environmentally damaging conduct, to establish minimum standards for control over the use of natural resources, and to bring national legislation in line with global environmental and trade regimes (Bösch, 2021). In this sense, international agreements play the role of normative stimuli that set in motion a process of change in the domestic legal order, primarily in the criminal law and law enforcement dimension.

The scientific literature stresses that the participation of states in multilateral environmental and trade agreements has made it possible to evolve gradually from the predominantly administrative regulation of forest exploitation to a wider application of criminal law sanctions, particularly in the case of transboundary offences and organised crime structures (Bellelli *et al.*, 2023). International agreements such as the Convention on International Trade… (1973), the Convention against The United Nations Convention against Transnational Organized Crime (2000) (UNTOC) and European Union (2003) not only establish general standards for forest resource protection but also encourage states to introduce criminal liability for illegal logging, timber trafficking, falsification of permits and corruption in the forestry sector.

For China and Indonesia, the international pressure to comply with these agreements was a factor that strengthened criminal sanctions between 2010 and 2025 and expanded the range of criminal law regulation. Although the Convention on International Trade… (1973) does not have direct criminal law provisions, its legal impact is based on the imperative obligation of contracting states to provide effective sanctions against the unlawful export, import, and transit of species specimens included in the Appendices to the Convention. This requirement has facilitated the gradual transition of illegal natural resource trade from the sphere of administrative regulation to the realm of criminal prosecution, particularly in the context of transboundary offences. In recent scientific studies, CITES is increasingly considered not as a narrowly environmental agreement but as one of the first international regimes that has contributed to the criminalisation of global illegal resource markets, including timber, through the mechanism of states' international obligations (Qian *et al.*, 2016; Grigoras, 2024).

In China, the implementation of CITES did not result in the establishment of special criminal offences, but influenced the application of criminal law in the sphere of smuggling. In this sense, Article 151 of the Criminal Law of the People's Republic of China No. 83 (1997) is of particular importance as it provides for liability for the smuggling of goods across the state border. As empirical studies by M. Shi *et al.* (2025) have shown, against the backdrop of the strengthening of international control within the framework of CITES, the Chinese law enforcement practice has increasingly qualified the illicit transportation of tropical timber not as a customs or administrative offence, but as a criminal offence that affects ecological security and international obligations of the state. Thus, in the Chinese context, CITES acts as a normative model that defines rigorous criminal sanctions, in particular for transboundary operations with illegal timber, without directly regulating domestic logging.

In Indonesia, the effect of CITES is of a different nature and is expressed mainly in the criminalisation of illegal exports of tropical timber species included in the Appendices to the Convention. As S.Y. Ardiyanto *et al.* (2022) point out, Indonesia's participation in CITES became one of the factors in the gradual movement away from administrative sanctions in external timber trade and towards criminal prosecution in cases of systematic and organised violations. As a result, although CITES itself does not regulate domestic logging activities, it works as a normative driver for the criminalisation of transboundary forest crimes, which is an important variable for explaining the design of Indonesia's criminal law model in the forestry sector.

In contrast with traditional international environmental treaties, the European Union (2003) has a clear trade law nature and aims to control the access of illegal timber to the EU market. The implementation of EU requirements directly resulted in the creation of Indonesia's SVLK system, which made the verification of the legality of timber mandatory at all supply chain levels, from harvesting to export. As D. Susilawati (2022) points out, the SVLK was not a mere product of environmental policy, but a direct result of Indonesia's international commitments under the EU Voluntary Partnership Agreement. The primary driver of its adoption was not environmental protection per se, but the threat of losing access to a foreign market, which conferred a high regulatory effect on FLEGT.

The United Nations Convention against Transnational Organised Crime (2000) does not explicitly mention illegal logging; however, its general provisions on organised crime, financing, corruption, and international cooperation provided a conceptual framework for the recognition of forest crimes as a type of transnational organised crime. In Indonesia, the impact of UNTOC is reflected in the clear orientation of criminal policy toward the prosecution of organised logging networks, which involve financing, coordination, corrupt enablement, and money laundering. Indonesian legislation consciously differentiates between petty forestry offences and systemic crimes related to transnational networks, and fully adheres to UNTOC's logic of prioritising the prosecution of organised types of criminal activity (Absori *et al.*, 2024).

In China, the implementation of UNTOC provisions is more indirect and occurs through general criminal provisions on organised crime, smuggling, illicit business activities, and corruption. The Chinese model does not recognise illegal logging as a specific type of transnational organised crime; however, it provides an opportunity for the prosecution of participants in such schemes through the accumulation of several criminal offences. This reflects the different levels and modes of UNTOC implementation, depending on the peculiarities of national legislation and the role of each country in the global network of illegal timber trade (Liu *et al.*, 2024).

A comparative analysis shows that international treaties have played different functional roles in the construction of the criminal approaches of China and Indonesia toward forest crimes. CITES served as a primary driver for the criminalisation of the transnational illegal timber trade and prepared the ground for the transition from administrative to criminal responsibility in cases of international offences in both countries. European Union (2003) produced an asymmetric effect: in China, it plays a secondary role as an external standard of control, while in Indonesia, it resulted in the establishment of the Sistem Verifikasi Legalitas Kayu (n.d.), combining trade, administrative, and criminal law mechanisms. United Nations Convention against Transnational Organized Crime (2000) is most fully implemented in the Indonesian legislation, where illegal logging is recognised as a form of transnational organised crime, while in China, its implementation is indirect and occurs through general criminal provisions. In general, international treaties have not worked as direct sources of criminal provisions, but rather as structural drivers for the strengthening of criminalisation, the differentiation of responsibility, and the institutional modernisation of national legislations.

The findings are in line with those of A.E. Apeti & B.D. N'doua (2023), who found that international regimes regulating the timber trade produce a significant indirect effect on national legislations, even in the absence of explicit criminal provisions. These authors showed that the tightening of trade restrictions and requirements for the legal origin of timber drives changes in domestic regulatory structures, including a shift from administrative measures to criminal sanctions in cases of systemic violations. The results of this research endorse this hypothesis for the cases of China and Indonesia, in which compliance with international obligations under CITES and FLEGT is reflected in the growth of criminal law reactions to transnational forest crimes between 2010 and 2025.

The conclusions about FLEGT and the SVLK system in Indonesia are generally in line with those of A. Ma'ruf (2021), who investigated SVLK as a type of environmental labelling combining trade, legal and enforcement elements. The author concluded that SVLK serves not only as an administrative tool but also as a legal enforcement instrument, since non-compliance with its provisions entails severe legal consequences. The results of this study extend this point of view by demonstrating that since the introduction of FLEGT, violations of the SVLK regime in Indonesia are increasingly criminalised, especially in situations involving certificate counterfeiting, concerted practices and corrupt services. Thus, SVLK manifests itself as a quasi-criminal instrument that exceeds the limits of environmental or trade policy – a fact only partially stressed by A. Ma'ruf (2021).

The results partially resonate with the conclusions of T. Besisa Nguba *et al.* (2025), who considered forest degradation and the failure of exclusive focus on illegal logging. The authors claim that overreliance on the legal arsenal on illegal logging fails to account for other factors of forest degradation, such as small-scale farming. In turn, the results of this study demonstrate that within the international agreements, criminalisation of transnational forest crimes follows its own path, which has a linkage not only to the environmental damage but also to countering organised crime and illegal markets. Hence, the approach criticised by T. Besisa Nguba *et al.* (2025) has a right to existence in the context of international legal obligations, where priority is given to the control of the global flows of illegal timber rather than to the control of all forms of forest degradation.

Overall, the results of the study endorse the scholarly position that international environmental treaties are not direct sources of criminal law norms, but structural matrices, within which national lawmakers intensify criminal responsibility. Unlike some of the previous research, this study demonstrates that the impact of Sistem Verifikasi Legalitas Kayu (n.d.), the United Nations Convention against Transnational Organized Crime (2000) and European Union (2003) is not the same but differential: CITES serves as a driver for the criminalisation of transnational timber trade, FLEGT acts as a quasi-criminal mechanism of control for the exporting countries, and UNTOC provides a conceptual architecture for the prosecution of organised forest crimes. This makes it possible to specify the role of international treaties not as "external pressure" but as drivers of the functional transformation of criminal law policies in China and Indonesia.

Effectiveness of criminal sanctions and enforcement mechanisms in countering illegal logging and timber trade

A comparative analysis of the criminal law regimes of China and Indonesia highlights a substantial discrepancy between the formally prescribed toughness of the sanctions (the maximum level of sanctions and the scope of sanctions in the dispositions) and their practical implementation, which immediately affects the effectiveness of the criminal law deterrent in relation to forest crimes. The mere presence of lengthy terms of imprisonment and high pecuniary sanctions does not ensure effective application if these sanctions are applied selectively or replaced by other measures of responsibility (United Nations, 2020). Legislatively, Articles 345-346 of the Criminal Law of the People's Republic of China No. 83 (1997) stipulate differentiated

punishments for illegal logging and timber trade: up to seven years' imprisonment, and more than seven years' imprisonment for serious and especially serious infringements. Analytical reviews carried out by international bodies and monitoring agencies point to the selective use of maximum legal sanctions in judgments, with a focus strictly on schemes involving large-scale organised schemes, considerable quantities of illegal timber sourced, or considerable damage to the environment. The United Nations (2024) states that, in most importing countries, including China, the severest criminal penalties are rarely imposed, while most of the sentences are relatively light.

Further analysis of the pattern of enforcement, as outlined within the thematic reports by the United Nations Office on Drugs and Crime (2025), on the topic of environmental offences, indicates that in the context of illegal logging/timber trafficking, it appears that the courts are reluctant to mete out the most severe custodial sentence, and that preference is shown towards the imposition of alternative sentencing, such as suspensions or fines, reflecting the fact that the penalty is not "particularly serious". This restricts the practical deterrent potential of criminal law despite its formal strictness. Moreover, in the thematic reports of independent monitors, such as those issued by the Environmental Investigation Agency (2024), one may find traces of a down-classification of environmental crimes into breaches of customs, tax or commercial legislation, which allows the application of less stringent sanctions and the circumvention of the upper range of the criminal sanctions foreseen by legislation. Taken together, these tendencies generate a situation where the formal strictness of criminal legislation on forest protection is not fully matched by an equivalent level of real criminal-law enforcement, particularly in the case of transnational flows of illicit timber.

Unlike the Chinese model, in Indonesia the formal strictness of criminal sanctions for forest-related crimes is accompanied by their practical implementation, particularly in the case of organised criminal groups, corrupt complicity and the export of illicit timber. Analytical data presented in Illegal Deforestation and Associated… (2024) suggest that criminal sanctions, including prison sentences and pecuniary fines, are used not only formally but also in practice, as an effective means to counter systemic infringement in the forestry sector. According to the United Nations (2024), in Indonesia, the courts often impose a combination of penalties in cases involving organised logging, such as imprisonment, fines and confiscation. The level of the fines imposed (up to 5-10 billion IDR) is equivalent to or exceeds the profits obtained from the sale of the illicit timber. This increases the actual deterrent effect of criminal law.

In sum, the analytical data demonstrate that the deterrent effect of criminal sanctions does not depend on their formal strictness but rather on their systematic and inevitable application. In the Chinese model, there is a high level of formal strictness and a low level of practical implementation, whereas in the Indonesian model, there is a relative proximity between the legislation in force and judicial practice. This leads to the conclusion that the effectiveness of criminal-law reactions to forest crimes does not depend solely on the contents of the sanctions but also on the institutional capability to guarantee their practical implementation. In this sense, the structure of the law enforcement system, the level of institutional specialisation, the inter-institutional cooperation and the capability of the state to accompany cases from the phase of identifying illicit activity to the judicial sentence are of key relevance.

The Chinese model is characterised by a centralised system of detection and investigation of forest crimes. The main actors responsible for revealing violations of the law are forestry administrations, customs, and public security agencies. The majority of criminal cases on illegal logging and trade are brought only when these crimes involve a transboundary component or significant volumes of illegally harvested and transported forest resources. According to analytical reports of international organisations, customs primarily identify violations related to the export of timber, including through the land border of China with Southeast Asian countries (Environmental Investigation Agency, 2021; United Nations Office on Drugs and Crime, 2025).

In Indonesia, the structure of the agencies responsible for detecting and investigating crimes related to illegal logging is more diverse and decentralised. In addition to forestry agencies and police, crimes in this area are also revealed by anti-corruption agencies, in particular the Corruption Eradication Commission (KPK) (n.d.), as well as financial intelligence agencies and tax authorities. The availability of such a structure of agencies responsible for the suppression of illegal logging allows controlling not only the direct performers of crimes in this sphere but also financial and organisational structures of logging criminal networks (Illegal Deforestation and Associated…, 2024). An important feature of the Indonesian model is a higher level of transparency of law enforcement practice. Court decisions on crimes in the sphere of forest crimes are much more often made public, which increases not only the transparency of the system but also its preventive effectiveness. In conjunction with the functioning of the Sistem Verifikasi Legalitas Kayu (n.d.) and international monitoring within the European Union (2003) agreement, this creates an additional incentive for law enforcement agencies to apply norms of criminal law not formally but in essence (Environmental Investigation Agency, 2024). To summarise the identified differences in the statutory model and law enforcement practice in China and Indonesia, Table 1 presents a comparative overview of the effectiveness of criminal law mechanisms in the fight against forest crimes. The conducted comparative analysis allows concluding that the effectiveness of criminal law mechanisms in the fight against forest crimes is less determined by the formal severity of criminal sanctions and more by the combination of certainty of punishment, economic sanctions, and the state's institutional capacity to ensure the real application of criminal sanctions. The Chinese model is characterised by a high formal level of severity of

criminal sanctions combined with selective law enforcement and low transparency of the law enforcement system, which significantly reduces the preventive effectiveness of criminal law. The Indonesian model is closer to the legislative model of criminal law and law enforcement practice, which significantly increases the preventive effectiveness of criminal law sanctions in the fight against illegal logging and transboundary timber trade.

Table 1. Comparative overview of the effectiveness of criminal law mechanisms against forest crimes in China and Indonesia

Criterion	China	Indonesia
Nominal severity of sanctions	High (differentiated prison terms, broad statutory provisions)	Very high (imprisonment up to 15 years; fines up to IDR 100 billion)
Frequency of application of maximum penalties	Limited, selective	Selective (applied in cases involving organised illegal logging syndicates)
Judicial practice	Tendency towards mitigation and alternative sanctions	Active application of imprisonment (up to 15 years for organisers of illegal logging; 5-10 years for members of organised groups; 1-5 years for individual offenders) and fines (up to IDR 100 billion for corporations; up to IDR 50 billion for individuals)
Reclassification of offences	Limited; criminal classification generally maintains (customs, commercial violations)	Reclassification of offences
Institutional model	Multi-layered, inter-agency	Multi-layered, inter-agency
Role of anti-corruption bodies	Secondary	Key (KPK, financial authorities)

Source: compiled by the author based on Criminal Law of the People's Republic of China No. 83 (1997), Law of the Republic of Indonesia No. 41 (1999), United Nations (2024), Environmental Investigation Agency (2024)

The results of this research generally coincide with the conclusions of the systematic review prepared by F.D.P. Villanueva *et al.* (2023), in which the authors analysed the impact of EU policies on combating illegal timber felling in supplier countries. The authors concluded that a formal increase in the rigidity of the regulatory framework and sanctions does not necessarily lead to a decrease in the scale of illegal felling in the absence of its implementation and institutional capacity at the national level. The authors emphasise that there is a discrepancy between the statutory framework and the actual practice of law enforcement in a number of countries, which significantly reduces the preventive effectiveness of the sanctions imposed. A similar discrepancy was found in the Chinese model, in which the formally high severity of criminal law sanctions does not ensure their real application, primarily in relation to transboundary flows of timber.

The results of this article are in line with those of J.F.M.F. Tonouéwa *et al.* (2024), who investigated the impact of timber traceability instruments as a mechanism to fight against illegal logging. They showed that the deterrent impact of criminal law is actual only when supported by the legal sanction, institutional control, information and inter-agency collaboration. The research shows that weak enforcement and the possibility to circumvent criminal liability by requalifying crimes as delicts significantly reduces the deterrence of criminal law. This is corroborated by the results of this study, which show that in China, the extensive requalification of environmental crimes into customs or commercial offences lowers the deterrence of the criminal law.

Meanwhile, the results of this article are in line with the findings of D.A. Rahmawati *et al.* (2025). The authors analysed, within the framework of a normative-legal study, the effectiveness of sanctions under the Indonesian law on illegal logging. According to the authors, the Indonesian model demonstrates a closer relation of legislative acts to law enforcement practice, which manifests itself in the application of cumulative sanctions, the confiscation of property and imposing large fines. In their opinion, the anti-corruption and financial services authorities play an important role in bringing the organisers of criminal groups to justice, not just the direct participants in crimes. The current article confirms the results of this study. It is the consistent application of the law and the economic non-profitability of the illegal activity that guarantees the stronger preventive effect of criminal sanctions in the Indonesian model compared to the Chinese model.

Conclusions

This article confirms the results of this study. It is the consistent application of the law and the economic non-profitability of the illegal activity that guarantees the stronger preventive effect of criminal sanctions in the Indonesian model compared to the Chinese model. The results show that China and Indonesia had different institutional paths with respect to illegal logging and transboundary timber trade between 2010 and 2025, in terms of criminalisation, governance and enforcement. Global Forest Watch quantitative data show that the forest cover loss in Indonesia reached the peak from 2010 to 2016 (more than 1.3-2.4 million hectares per year), and China had relatively stable but high forest cover loss from 2020 to 2024, as the foundation for criminal law intervention. The levels of formal legal development are comparably high in both jurisdictions. The Chinese model presents a mix of criminal and administrative measures and retains an almost universal criminalisation of environmental crimes. China also employs a range of penalties, including imprisonment for 7 years or

more and criminal liability for timber trafficking and for organised forestry crime. This illustrates a greater concern for state sovereignty and the preservation of natural resources as a component of national environmental security.

It is the consistent application of the law and the economic non-profitability of the illegal activity that guarantees the stronger preventive effect of criminal sanctions in the Indonesian model compared to the Chinese model. Indonesian legislation is directed at combating organised crime and corruption, which has traditionally either underpinned or accompanied illegal logging. Inclusion of the SVLK scheme has created a hybrid legal structure consisting of criminal and administrative liability and a pseudo criminal feature as a criminal law tool in verifying the legality of timber sources, which, in turn, is more of a preventive and supply chain control.

To conclude, the efficiency of criminal law mechanisms in the fight against forest crimes depends not so much on the symbolic rigour of the sanctions, but rather on the ability of the state to enforce the law, the articulation between institutions and the transparency of the enforcement activity. The findings corroborate the arguments in favour of the criminal policy for the protection of the forest to be directed towards the certainty of punishment, the restriction of the institutions of reclassification of the offence and the application of cumulative sanctions as a practical instrument of dissuasion to illegal logging and trade in timber. Future research should focus on an in-depth analysis of the effectiveness of criminal and quasi-criminal mechanisms for combating illegal logging in other countries involved in global timber supply chains.

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Talgat Makulov conducted a comparative analysis of the criminal legislation of China and Indonesia, combining legal provisions with satellite monitoring data. He personally designed the structure of the study and prepared the manuscript, including the interpretation of statistical reports and the formulation of final conclusions.

Conflict of Interest

None.

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