

UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Administrative unit: University of Padova

Department: Land, Environment, Agriculture and Forestry (TESAF)

PhD Program: Land, Environment, Resources and Health (LERH)

Batch: XXXVI

**INTEGRATION OF THE EU TIMBER REGULATION REQUIREMENTS INTO
THE FOREST POLICY FRAMEWORK OF SELECTED WESTERN BALKAN**

**COUNTRIES:
A MULTIPLE CASE STUDY ANALYSIS FOR SLOVENIA, CROATIA, SERBIA,
MONTENEGRO AND BOSNIA AND HERZEGOVINA**

Thesis financially supported by *CARIPARO Foundation*

PhD Program Coordinator: Prof. Marco Borga

Supervisor: Dr. Mauro Masiero

Co-Supervisors: Prof. Dr. Branko Glavonjic,

Faculty of Forestry, University of Belgrade, Serbia

Dr. Todora Rogelja

PhD candidate: Maja Radosavljevic



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Administrative unit: University of Padova

Dipartimento Territorio e Sistemi Agro-Forestali (TESAF)

**CORSO DI DOTTORATO DI RICERCA: Land, Environment, Resources and Health
(LERH)**

Ciclo: XXXVI

**INTEGRAZIONE DEI REQUISITI DELLA NORMATIVA UE SUL LEGNO NEL
QUADRO POLITICO FORESTALE DEI PAESI SELEZIONATI DEI BALCANI
OCCIDENTALI: UN'ANALISI DI STUDIO DI CASI MULTIPLI PER SLOVENIA,
CROAZIA, SERBIA, MONTENEGRO E BOSNIA ED ERZEGOVINA**

Tesi redatta con il contributo finanziario di/del la Fondazione CARIPARO

Coordinatore: Prof. Marco Borga

Supervisore: Dr. Mauro Masiero

Co-Supervisors: Prof. Branko Glavonjic,

Dr. Todora Rogelja

PhD candidate: Maja Radosavljevic

CONTENTS

ABBREVIATIONS	II
ACKNOWLEDGEMENTS	IX
SUMMARY	XI
SOMMARIO	XIII
1. INTRODUCTION	1
1.1 Deforestation, degradation, and illegal logging	1
1.2 European Union policy actions for reducing illegal logging and deforestation	3
1.2.1. EU Timber Regulation (EU Directive 995/2010) obligations and their enforcement	5
1.2.2. Regulation on deforestation-free products (EUDR) 2023/1115	7
1.2.3. Western Balkan countries as priority region for improving timber legality	9
2. RESEARCH AIMS, OBJECTIVES AND QUESTIONS	12
2.1 Research Objectives and Questions	12
2.2 Organisation and structure of the study	13
3. CONCEPTUAL FRAMEWORK	16
3.1 Policy coherence and integration	16
3.2 Actor-centred institutionalism	19
3.3 Network governance, policy networks and information exchange	20
4. METHODOLOGY	22
4.1 Research design	22
4.2 Data collection and analysis	23
4.3 Case study area: Selected Western Balkan countries	24
5. RESULTS	27
5.1 Article 1	28
1. Introduction	30
2. EUTR Obligations and Their Enforcement	33
3. Materials and Methods	34
4. Forestry in Selected Countries	37
5. Results	42
6. Discussion and Conclusions	54

Appendix A.	66
Appendix B.	75
Appendix C.	97
5.2 Article 2 Alignment of National Forest Policy Frameworks with the EU Timber Regulation Requirements: Insights from Montenegro and the Republic of Srpska (Bosnia and Herzegovina)	106
1. Introduction	108
2. Materials and Methods	111
3. Forestry Sector in Montenegro and the Republic of Srpska	113
4. Policy Framework Conditions for Implementation of the EUTR Requirements	114
5. Discussion	127
6. Conclusions	133
5.3 Article 3: Institutional and actor-oriented factors influencing timber legality in selected Western Balkan countries: Multiple case study of Croatia, Montenegro, Serbia, Slovenia, and the Republic of Srpska (Bosnia and Herzegovina)	134
1. Introduction	134
2. European requirements on the legality of timber and timber products	136
3. Actor-centred institutionalism	137
4. Methodology and methods	141
5. Results	147
6. Discussion	154
7. Conclusions	163
5.4 Article 4 (In draft): Perceptions of information exchange networks on timber legality among key actors in Serbia: An illustrative case study	164
1. Introduction	166
2. Conceptual frameworks	167
3. Methodology	173
4. Background of the study	176
5. Results: Perceived Information Exchange Network in Serbia	177
6. Discussion	187
7. Conclusions	190

6. COMMON DISCUSSION	191
7. CONCLUSIONS	197
References	200

LIST OF TABLES

Table 1. Research objectives, questions and assumptions

Table 2. Overview of the organisation and structure of the study

Table 3. Overview of conceptual frameworks (ACI and PNA) in relevant articles

Table 4. Key elements of the ACI framework and their operationalisation in this research

Table 5. Overview of research methods and goals in different research stages

Table 6. Network metrics with definitions and scope of application

Table 7. Stakeholders interview table: type and number of interviewed actors per targeted country

Table 8. Attributes of information exchange relations and their characterisation and interpretation

Table 9. List of organisations that exchange information on timber legality as perceived by respondents

Table 10. Network metrics with duplicate relations

Table 11. Cleaned network metrics

Table 12. An overview of research questions and answers

LIST OF FIGURES

Figure 1: The Western Balkans region

Figure 2. Six ego networks and b. Network of ego networks (with duplicated relations)

Figure 3. Network of actors (organisations) that exchange information on timber legality in Serbia based on the perceptions of key actors;

Figure 4. Network of actors with mutual connections

Figure 5. Perceived quantity (left) and quality (right) of information exchange among actors

Figure 6. Network with only sufficient exchange of information

ABBREVIATIONS

ACI - Actor-Centred Institutionalism

BiH - Bosnia and Herzegovina

CITES - Convention on International Trade in Endangered Species of Wild Fauna and Flora

CRO - Croatia

DDS - Due Diligence System

EGNOS - European Geostationary Navigation Overlay Service

EEAS - European External Action Service

EU - European Union

EUDR - European Union Deforestation Regulation

EUTR - European Union Timber Regulation

FAO - Food and Agriculture Organization

FBiH - Federation of Bosnia and Herzegovina

FLEGT - Forest Law Enforcement, Governance, and Trade

FRC - Forest Risk Commodities

FSC - Forest Stewardship Council

LERH - Land, Environment, Resource and Health

MAFWM - Ministry of Agriculture, Forestry and Water Management

NA - Network Analysis

NGO - Non-Governmental Organisation

PEFC - Programme for the Endorsement of Forest Certification

PNA - Policy Network Approach

RS - Republic of Srpska

SAP - Stabilisation and Association Process

SFMO - State Forest Management Organization

SME - Small and Medium-sized Enterprises

SRB - Serbia

SLO - Slovenia

SME - Small and Medium-sized Enterprises

SNA - Social Network Analysis

SO - Specific Objective(s)

UNEP - United Nations Environment Programme

UNEP WCMC - United Nations Environment Programme World Conservation Monitoring Centre

UNIPD - University of Padua

UN - United Nations

USD - United States Dollar

VPA - Voluntary Partnership Agreement

WB - Western Balkan Countries

WWF - World Wide Fund for Nature

ACKNOWLEDGEMENTS

In life, it is often said that each encounters a unique and profound moment of immense joy—a symbol of deep happiness that is not merely incidental but a deliberate choice. The culmination of the three and a half years on the challenging yet rewarding journey of pursuing a PhD marks one such extraordinary occasion. Moments like these are the essence of a life meant to be treasured and celebrated.

I would like to express my deepest appreciation and gratitude to the following individuals who have played a crucial role in the completion of this Ph.D. thesis.

My sincere thanks to my supervisor, Professor Dr. Mauro Masiero, for his unwavering guidance, invaluable insights, and constant encouragement throughout the research process. Special appreciation goes to the co-supervisor, Dr. Todora Rogelja for her friendship, support, shared knowledge, and all the discussions that have enriched the intellectual content of this research. I am infinitely grateful for the time she dedicated and all the advice, as well as for her full support and organisation of research in Slovenia. I extend my heartfelt thanks to the co-supervisor, Professor Branko Glavonjić for his constructive feedback and insightful suggestions that significantly contributed to the refinement of this thesis.

I am grateful to the University of Padua, TESAF Department, Land, Environment, Resource, and Health Ph.D. Program for providing the necessary resources, facilities, and a conducive academic environment that fostered my research endeavours. I would like to acknowledge the financial support received from the CARIPARO Foundation.

Achieving this goal would not have been possible without Professor Margaret Shannon, Professor Mersudin Avdibegović and Professor Davide Pettenella. I am immensely grateful for all the advice received over the past 14 years; there was no shortage of it. A special thanks to Professor Marco Borga, the coordinator of the PhD program and Laura Secco, deputy coordinator.

Heartfelt thanks to my family for their unwavering support, understanding, and encouragement throughout my academic journey. Their love has been my anchor, providing the strength to overcome challenges and persevere. Special thanks to my husband, Aleksandar, who was the strongest support on the journey to this goal. To my daughters, Una and Tara, for their understanding of all absences and missed days of their childhood. A special thanks to my mother, Radenka Srndović, who is also the greatest initiator of a love for lifelong learning, the importance of education, and knowledge.

I extend my special thanks to Professor Dragan Čomić from the Faculty of Forestry, University of Banja Luka, for his invaluable support and organisation of the research in the Republic of Srpska. Additionally, my gratitude goes to Ranko Kankaras from the Ministry of Agriculture, Forestry, and Water Management in Montenegro for his support during the research in Montenegro. Without their selfless help and support, it would not have been possible to conduct the research.

I am immensely grateful to all the institutions, organisations, and individuals who participated in this research across five countries: Slovenia, Croatia, Serbia, the Republic of Srpska (BiH), and Montenegro. The research received support from 36 individuals representing competent ministries, state administrative bodies, state enterprises, inspections, faculties, private companies, and non-governmental organisations. Their invaluable contributions greatly aided in comprehending the subject matter and the significance of the research. I extend my heartfelt thanks to each of them individually for the time they devoted and the knowledge they shared with me.

I extend my sincere gratitude to Prof. Dr. Stjepan Posavec and Dr. Metodi Sotirov for their invaluable contributions, dedication, and review of this dissertation.

Finally, I would like to extend my heartfelt gratitude to all my friends and colleagues whose inspiration and motivation have added significant value to this academic journey, making it a more rewarding experience.

This thesis is a culmination of the collective support and contributions of these individuals. I am sincerely thankful for the impact they have had on both my academic and personal growth.

SUMMARY

In the past three decades, significant efforts have been made to combat deforestation and illegal logging globally. The European Union (EU) has played a pivotal role in this by introducing key initiatives, such as the EU Forest Law Enforcement, Governance, and Trade (FLEGT) Action Plan in 2003 and the EU Timber Regulation (EUTR) in 2013. Ten years later, the EU Deforestation Regulation (EUDR) came into effect, requiring specified commodities to be "deforestation-free" for sale in the EU market or export.

Despite a decrease in the EU's imports of illegally harvested timber, concerns persist about the potential trade of illegally sourced timber within producing countries or a shift of exports to regions with less stringent regulations. Western Balkan countries, including non-EU member states like Serbia and Bosnia and Herzegovina (BiH), are identified as priority nations by the European Commission for EUTR implementation. Forestry is a traditional economic sector in these countries, and despite export-oriented economic directions, state actors remain crucial in shaping forestry policies. Decision-makers at the state forestry administration level play a pivotal role in the application of specific legislation to adapt to EU policies as well as market requirements. However, progress in EUTR preparation in these non-EU Western Balkan countries is slow and delayed, with incomplete normative and policy frameworks for the implementation and assessment of effective due diligence standards and systems.

Building on this premise, this research aims to investigate how five Western Balkan countries - i.e., Slovenia, Croatia, Serbia, Montenegro, and Bosnia and Herzegovina - have transposed EUTR requirements into their national policies and how they are addressing the coming soon implementation of EUDR. To do so, we used multiple case study methods by combining both policy analysis to assess the extent to which EU regulations have been adopted into the national context, and key stakeholder interviews across all targeted countries. The research focused on identifying key actors in the implementation of the EUTR regulation and relevant for the future implementation of the EUDR. Then two-stage interviews were conducted. The first stage was aimed at capturing the perspectives of 36 representatives from competent institutions, including state forestry administrations, public forest management enterprises, forestry inspection bodies, research institutions, private companies, and non-governmental organizations across the five surveyed countries. The second stage was specifically designed and conducted to understand the relationships among identified stakeholders, and to this aim 25 interviews were conducted in the five surveyed countries and a pilot Structural Network Analysis was conducted for Serbia.

Results show differences among the five countries, in particular between countries that are already EU members states, i.e. Slovenia and Croatia, and the remaining three surveyed countries that are EU membership candidates. As for Slovenia and Croatia, it is evident that even with harmonized regulations in the form of enacted regulations and laws, efforts are needed to strengthen the implementation of the incoming EUDR. It is particularly significant to enhance institutional

capacities and align existing data on illegal activities related to the legality of timber and timber products. Collaboration among relevant institutions is essential, necessitating improved cooperation between forestry, environmental protection, economy, and regulatory authorities. As for the remaining three surveyed countries, they show different profiles with regard both to their policy and normative settings and to the timber and timber product markets they mainly point at. Serbia and the Republic of Srpska (BiH) are oriented towards the EU market, while Montenegro is undergoing a phase of transforming its state forestry sector, with a market directed towards less demanding and geographically proximate markets. In addition to this, substantial variations exist in the quality and price of timber and timber products from these countries.

To better comply with existing regulations, the surveyed countries have undertaken specific initiatives. The EUDR poses a new challenge for both EU member and candidate countries. Understanding and implementing this forthcoming regulation require serious consideration and strong support from state forestry administrations to successfully enforce the envisaged provisions.

SOMMARIO

Negli ultimi tre decenni, sono stati compiuti significativi sforzi a livello globale per contrastare la deforestazione e il taglio illegale delle foreste. L'Unione Europea (UE) ha svolto un ruolo chiave, introducendo iniziative fondamentali come il Piano d'Azione dell'UE per l'Applicazione delle Norme in Materia Forestali, la Governance e il Commercio (*Forest Law Enforcement, Governance, and Trade, FLEGT*) nel 2003 e il Regolamento Legno dell'UE (*EU Timber Regulation, EUTR*) nel 2013. Dieci anni dopo è entrato in vigore il Regolamento UE sulla Deforestazione (EUDR), che richiede che determinate merci siano verificate come "non provenienti da deforestazione" per poter essere vendute nel mercato dell'UE o esportate.

Nonostante una diminuzione delle importazioni, da parte dell'UE, di legname di origine illegale, persistono preoccupazioni riguardo al possibile commercio di legname illegalmente ottenuto all'interno dei paesi produttori o a uno spostamento delle esportazioni verso regioni con norme meno rigide. I paesi dei Balcani occidentali, ivi compresi quelli che, come Serbia e Bosnia ed Erzegovina, non sono ancora stati membri dell'UE, sono identificati dalla Commissione Europea come nazioni prioritarie per l'implementazione dell'EUTR. La selvicoltura e il settore forestale costituiscono segmenti economici tradizionali in questi paesi, e, nonostante una prevalente propensione orientata al mercato e all'esportazione, gli attori statali rimangono cruciali nella definizione delle politiche forestali. I decisori a livello delle singole amministrazioni forestali statali svolgono un ruolo chiave nello sviluppo e l'applicazione della normativa specifica finalizzata all'adattamento alle politiche dell'UE e ai requisiti del mercato. Tuttavia, l'avanzamento nella preparazione all'EUTR nei paesi dei Balcani occidentali non appartenenti all'UE è lento e in ritardo, con quadri normativi e politiche incompleti per l'implementazione e la valutazione di efficaci standard e sistemi di dovuta diligenza.

Partendo da questa premessa, questa ricerca mira a indagare come cinque paesi dei Balcani occidentali - Slovenia, Croazia, Serbia, Montenegro e Bosnia ed Erzegovina - hanno trasposto i requisiti dell'EUTR nelle loro politiche nazionali e come stanno affrontando l'imminente implementazione dell'EUDR. Per farlo, abbiamo utilizzato metodi di studio basati su molteplici casi-studio, combinando un'analisi delle politiche finalizzata a valutare il grado di adozione delle normative dell'UE nel contesto nazionale e interviste con informatori-chiave in tutti i paesi presi in esame. La ricerca si è concentrata sull'individuazione dei principali attori nell'implementazione del regolamento EUTR e rilevanti per la futura implementazione dell'EUDR. Successivamente sono state condotte interviste in due fasi. La prima fase mirava a catturare le prospettive di 36 rappresentanti di istituzioni competenti, tra cui amministrazioni forestali statali, aziende di gestione forestale pubblica, organismi d'ispezione forestale, istituti di ricerca, aziende private e organizzazioni non governative nei cinque paesi oggetto dell'indagine. La seconda fase è stata progettata e condotta specificamente per comprendere le relazioni tra gli attori identificati, e a tal fine sono state condotte 25 interviste nei cinque paesi oggetto dell'indagine e, successivamente, un'analisi pilota delle reti sociali (*Structural Network Analysis*) per la Serbia.

I risultati mostrano differenze tra i cinque paesi, in particolare tra quelli che sono già membri dell'UE, vale a dire Slovenia e Croazia, e i restanti tre paesi oggetto di indagine, che sono invece attualmente candidati a diventare membri dell'UE. Per quanto riguarda Slovenia e Croazia, è evidente che, anche con regolamenti armonizzati sotto forma di leggi promulgate, sono necessari sforzi per rafforzare l'implementazione dell'imminente EUDR. È particolarmente urgente potenziare le capacità istituzionali e allineare i dati esistenti sulle attività illegali relative al legname e ai prodotti derivati dal legno. La collaborazione tra le istituzioni interessate è essenziale, e richiede un migliorato coordinamento tra le diverse autorità aventi responsabilità in materia forestale, ambientale, economica e legislativa.

I restanti tre paesi oggetto di indagine mostrano profili diversi sia per quanto riguarda il quadro politico-normativo sia per quanto riguarda i mercati del legname e dei prodotti in legno ai quali si rivolgono principalmente. La Serbia e la Repubblica Srpska (Bosnia ed Erzegovina) sono maggiormente orientate verso il mercato dell'UE, mentre il Montenegro sta attraversando una fase di trasformazione del suo settore forestale statale, con un mercato rivolto a regioni meno esigenti e geograficamente vicine. Esistono inoltre notevoli differenze con riferimento alla qualità e al prezzo del legname e dei prodotti in legno.

Per soddisfare al meglio le normative esistenti, i paesi oggetto di indagine hanno intrapreso specifiche iniziative. L'EUDR rappresenta una nuova sfida sia per i paesi membri dell'UE che per quelli candidati all'adesione. Comprendere e attuare al meglio questo nuovo regolamento richiede debita considerazione e forte sostegno da parte delle amministrazioni forestali statali che avranno la responsabilità di farlo rispettare.

1. INTRODUCTION

Within this chapter the research topic is introduced, providing background information and justification for the research. The chapter includes three main sub-chapters, i.e. a first one introducing deforestation, degradation, and illegal logging concepts and information (1.1), a second one deepening the European Union (EU) policy actions for reducing illegal logging and deforestation (1.2) and a third one highlighting the role of Western Balkan countries as a priority region for improving timber legality (1.3).

1.1 Deforestation, degradation, and illegal logging

Deforestation and forest degradation continue to be significant challenges to the integrity of the world's forests (FAO GFRA, 2020). Deforestation is defined as the conversion of forest to other land uses regardless of whether it is human-induced or occurs naturally (FAO GFRA, 2020). Instead, forest degradation is reported to consist of significant alterations or permanent loss of structure, function, species composition, or productivity (Donaso and Gerding, 2018). Forest degradation therefore results in the reduction of the capacity of a forest to provide goods as well as socio-cultural and environmental services as a consequence of natural (e.g. fire, storms, drought, pests and diseases), or human-induced (e.g. logging operations, wood fuel extraction, shifting agriculture, grazing, hunting, fires, invasive non-native - “alien” - species, road construction, mining, etc.) factors, or a combination of both (FAO, 2023). Although the global annual rate of gross deforestation decreased from 16 million hectares per year in the 1990s to 10 million hectares between 2015 and 2020, deforestation and forest degradation remain major threats. Between 1990 and 2020, the global forest area experienced a total gross decline of 1,780 million km² (equivalent to a 420,000 km² net loss) of which 800,000 km² (45% of the total gross deforested area) consisted of primary and pristine forests (FAO and UNEP, 2020). Loss of forests, particularly natural forests, continues to be especially high in the tropics, however, to a lower extent, temperate and boreal forest areas are affected too (FAO 2020). Forest degradation is way more difficult to measure, nonetheless, studies suggest that it accounts for about one third of the overall impacts associated with changes in forest ecosystems, measured in terms of carbon emissions (Federici, 2015).

Deforestation and forest degradation are often associated with illegal activities feeding informal markets for forest products, thus remaining major environmental and socioeconomic issues, though still widely unacknowledged (Begemann *et al.*, 2021). Forest illegal activities are normally referred to through the umbrella term “illegal logging” that comprises all practices as well as timber and derived products that are harvested, processed and traded in violation of national or subnational laws (Kleinschmit *et al.*, 2016; Hoare, 2015). Illegal logging disrupts the natural balance of forests, leading to the loss of biodiversity and the degradation of ecosystems (UNEP, 2017; Tacconi *et al.*, 2007). Illegal loggers often harvest timber from sensitive areas, such as primary forests and protected areas, which are home to a wide variety of species (Kissinger *et al.*, 2012). The removal of trees can destroy habitats, displace wildlife, and disrupt pollination and seed dispersal processes

(UNEP, 2017; Tacconi *et al.*, 2007). Moreover, illegal logging contributes to climate change by releasing stored carbon dioxide into the atmosphere. Illegal logging also harms local communities, which rely on forests for food, medicine, and traditional livelihoods (World Bank Group, 2019). Additionally, illegal logging can lead to conflicts between local communities and loggers, as communities often attempt to protect their forests from illegal exploitation (EC, 2021).

Research on illegal logging and timber trade has shown that illegal activities can take place along the whole supply chain, from timber extraction to transport and from processing to consumption (Tacconi *et al.*, 2016). Nonetheless, two major types of illegal activities are found to be dominant in the discourses. The first one is the violation of ownership rights, i.e. harvesting activities occurring on areas on which harvesters have no ownership or tenure rights (e.g., outside concession boundaries or on third party's areas without previous and informed consent), and the second one is the violation of resource management rules and regulations, namely the extraction of wood without required authorisation or the extraction of wood from areas where harvesting is banned/limited, such as protected areas, including corruption practices involving public officials in charge of monitoring and police activities. Different discourses focus their attention on different drivers of illegal logging, such as market demand, infrastructural drivers, socio-economic drivers, and drivers related to governance issues (Tacconi *et al.*, 2016).

Regardless of the drivers, illegal logging and related timber trade are happening at high magnitudes, with recent estimates of market value ranging from approximately 30 to 157 billion United States Dollars (USD) (WBG, 2019, p.18). In 2013, more than 80 million m³ of timber in roundwood equivalent were illegally produced in the nine main producer countries (Hoare, 2015). According to Interpol (2012) estimations, illegal logging, including processing, is estimated to cover about 10-30% of global wood trade, accounting for 50-90% of the volume of all forestry in key producer tropical countries and 15-30% globally. As domestic wood consumption rises in developing countries and countries in transition, there is a risk that demand-side pressure from importing countries with import controls may have a diminishing effect on preventing illegal timber logging and trade, particularly if a larger share of domestic trade continues to source illegal wood (Kissinger *et al.*, 2012). According to Gan *et al.* (2016, p. 47), *“the trade value of roundwood and sawnwood at high risk of illegality is estimated to have totalled about USD 6.3 billion in 2014 (42 per cent of total roundwood and sawnwood exports from producer countries). China is by far the leader among the top importers of illegal roundwood and sawn wood, importing more than 50% of the total illegal export value from the five producer regions. China together with Vietnam, India, the EU, Thailand and the US cover 84 percent of the total value of imports”*.

Several policy initiatives have been launched in the last 30-50 years to address illegal logging, deforestation and forest degradation and scientific interest has grown accordingly, however research on these initiatives remains patchy, with a narrow scope and mainly focused on tropical areas (Kleinschmit *et al.*, 2016). Studies until now mostly focused on the possible impacts of policies and regulations aiming to support legality in the forestry sector and related trade.

While a systematic review of such literature is beyond the scope of this study, we would like to report here just a few significant examples. Among others, Borsky *et al.* (2018), as well as Houghton and Naughton (2017) studied the impact of sustainability in production on international trade, focusing on the effects of the International Tropical Timber Agreement on countries' trade patterns of tropical timber. Giurca *et al.* (2013), Pepke *et al.* (2015) and Masiero *et al.* (2015) studied the influence of policy measures on international trade flows of tropical timber. They caution about possible policy spillover effects in terms of, for instance, the creation of dual markets for certain products and other influences on trade patterns, including e.g. product or species substitution effects. Jonsson *et al.* (2015) studied how EUTR and other regulatory measures influenced timber flows involving tropical and EU countries. Buongiorno (2016) analysed the world trade in forest products, as well as the effects of the Trans-Pacific Partnership agreement on the trade of forest products between the 12 European Union (EU) member states. Morland *et al.* (2020) applied a gravity model to study global trade flows for 13 types of forest sector products under the influence of multiple policy instruments and regulations. More recently, research has focused on embodied deforestation, by assessing the impacts of agriculture and forestry as direct deforestation drivers (e.g., Lawson, 2015; Pendril *et al.*, 2019a and 2019b). By digging on existing literature, Bausano *et al.* (2023) confirmed that the international trade of agriculture is acting globally as an indirect driver of natural ecosystem degradation and provided empirical evidence on embedded deforestation caused by palm oil as one of the forest-risk commodities. Berning and Sotirov (2023a and 2023b) provided evidence of strategic policy-oriented learning from experiences with implementing and enforcing existing policy and governance mechanisms - particularly the European Union (EU) Timber Regulation (EUTR), the EU Forest Law enforcement, Governance and Trade (FLEGT) Program and Voluntary Partnership Agreement (VPAs) defined within it, as well as forest risk commodities (FRC) certification - shaped the recent development and design of the EU Deforestation Regulation. They noted that EUDR is a state-based hard regulation of the commodity supply chain, which reduces the role of market incentives and private regulation (Berning and Sotirov, 2023b).

1.2 European Union policy actions for reducing illegal logging and deforestation

Conditions for effective forest governance have significantly improved in recent years thanks to the global connection of people and initiatives through rapidly improving technologies, in combination with national governments that are more and more integrated into binding political and economic international processes (Huwart and Verdier, 2013). Many initiatives were taken by the public, private sector and civil society organisations to tackle illegal logging and deforestation. Since the EU is one of the main hubs in the global trade of illegally sourced wood (Gan *et al.*, 2016), it has been a frontrunner in the development of policies and initiatives aiming to address this issue (Sotirov *et al.*, 2020; Begemann *et al.*, 2021; Barning and Sotirov, 2023a). These include both policy initiatives specifically targeted at tackling illegal logging and deforestation, and broader policies, such as (among others) the EU Biodiversity Strategy for 2030, the European Green Deal, the EU Forest Strategy for 2030 and the 2019 communication Stepping up EU Action to Protect

and Restore the World's Forests, that though not specifically designed to address illegal logging issues pinpoint deforestation and degradation caused by illegal logging.

Among specific policy initiatives against illegal logging, a prominent position is held by policies and regulations aiming to ban illegally logged timber and related products from the market. Since these initiatives ultimately aim to safeguard the sector from illegal trade, they make up part of the regulatory framework promoting sustainable forest management (Aggestam and Pülzl, 2018). Timber legality trade restrictions and verification have been developed on the legacy of forest certification and in response to continued global concerns regarding forest degradation and deforestation (Acheampong and Maryudi, 2020; Kleinsmith *et al.*, 2023). The emerging timber legality regime builds on cooperation between state actors, non-governmental organisations (NGOs) and (multinational) corporations (Kleinschmit *et al.*, 2023).

To prevent imports of illegally sourced timber and timber products, the EU adopted the EU FLEGT Action Plan in 2003. This aims to strengthen forest governance in producing countries by enhancing the capacity of timber-producing nations to enforce their forestry laws and regulate the timber trade. Through VPAs with producing countries, the EU supports the development of national action plans, capacity building for forestry officials, and the implementation of traceability systems. VPAs have prompted reforms in forest policies but may harm economies by intensifying legality efforts without offering premiums for verified timber carrying a FLEGT licence. Additionally, knowledge gaps make it uncertain if VPAs effectively address illegal logging and timber trade (Polo Villanueva *et al.*, 2023). Finally, despite huge VPA development efforts and associated investments¹ put in place by the EU over more than 18 years, only one VPA (i.e. the one with Indonesia) was positively finalised up to the issuing of FLEGT licenced products to the EU market (EU FLEGT Facility, 2023).

This led the EU Court of Auditors to conclude that the FLEGT support was not sufficiently well designed and targeted thus making the EU support to timber-producing countries not sufficiently effective (ECA, 2015).

While VPAs mainly operate on the supply side, the FLEGT also includes the mandate to develop specific initiatives to address the demand (i.e., the consumer) side. Therefore, the EU adopted the EUTR (EU Directive 995/2010) that became effective in 2013. The EUTR introduced several obligations for operators - i.e. physical or legal entities placing timber and wood-based products to the EU market and introduced Competent Authorities and Monitoring Organisations (see section 1.21). After a decade of implementation, the effects of the EUTR (as well as FLEGT) remain country-dependent and often inconclusive (European Commission, 2020). Although EU imports of legally harvested timber increased after the implementation of FLEGT and EUTR, it is possible that illegally harvested timber and timber products are traded domestically or that the

1. An estimated 300 million Euro have been allocated to 35 countries for FLEGT-related support over the period 2003-2013 (ECA, 2015).

producer countries shifted exports to the countries and regions with less stringent regulations (Polo Villanueva *et al.*, 2023). Besides, recent studies showed that the EU plays a significant role as a leading global importer of deforestation-linked agricultural and forest commodities, referred to as FRCs (EC, 2021a; Pendrill *et al.*, 2019b; Bausano *et al.*, 2023).

To act on such matters, the EU adopted a new Regulation on deforestation-free products - EUDR (Regulation (EU) 2023/1115) in 2023. It directly addresses deforestation and forest degradation and regulates deforestation caused by FRCs' production, trade, and consumption. It repeals the EUTR, reduces the role of FLEGT VPAs, and restricts the use of FLEGT licences and voluntary private regulation (e.g. certification) as due diligence compliance tools. It has a broader scope (focusing on six more commodities besides timber) than the EUTR. More details on the contents and the key requirements of the two main policies of interest for this research (i.e., the EUTR and EUDR) are provided below within sub-sections 1.2.1 and 1.2.2.

1.2.1. EU Timber Regulation (EU Directive 995/2010) obligations and their enforcement

EUTR lays down three main obligations on operators who place timber and timber products on the EU market (European Commission, 2020b): (i) it prohibits the placing of illegally harvested timber and products derived from such timber on the EU market for the first time, (ii) it requires operators (i.e., those who place timber products on the EU market for the first time) to develop, implement, and update a due diligence system (DDS), by obtaining information on the source and legality of timber and timber products, as well as conducting a risk assessment and risk mitigation and (iii) it requires traders (i.e., those who buy or sell timber and timber products already placed on the EU market) to keep records of their suppliers and customers.

Operators can use their DDS or DDS provided by Monitoring Organisations recognised by the European Commission. The task of the Monitoring Organisations is to assist operators in complying with the EUTR requirements by developing a DDS, granting operators the right to use it and checking if it is used correctly (European Parliament and the Council of the European Union, 2010). Though granting a green lane just to products carrying a FLEGT or CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) licence, the EUTR recognises good practices in the forestry sector, so certification or other third party verified schemes that include verification of compliance with applicable legislation may be used in the risk assessment procedure. After the entry into force of the EUTR (as well as of similar regulations adopted by other countries, such as the Lacey Act in the United States of America and the Australian Illegal Logging Prohibition Act in Australia), the two main forest certification schemes operating at the international scale (i.e., the Program for Endorsement of Forest Certification, PEFC, and the Forest Stewardship Council, FSC) aligned their standards with EUTR (and other normative) requirements. Thus, holding an FSC or PEFC certificate considerably lowers the risks of importing illegal timber and ultimately contains the costs of implementing a DDS (Brusselaers and Buysse, 2021).

EUTR is legally binding to the EU member states that are required to designate one or more Competent Authorities responsible for carrying out checks on operators' compliance with the EUTR at regular intervals. Competent Authorities are responsible for laying down penalties and for enforcing the EUTR. *“The institutional structures, legal powers, and status of the designated authorities vary between countries due to their different legal and institutional frameworks”* (European Commission, 2020a). The penalties differ considerably between countries, as well as *“the approach taken to ensure effectiveness, proportionality, and dissuasiveness of the penalties applied”* (UNEP-WCMC, 2020, p. 1). The majority of countries issue administrative fines or seize timber and timber products. In some countries, criminal fines, suspension of trade authority, or even imprisonment are issued for breaching the EUTR provisions (UNEP-WCMC, 2020).

In its recent Biennial report, the European Commission (2020) recognised certain shortcomings in the implementation of EUTR across the EU. The implementation of EUTR within EU member states stayed uneven, which had impacts on the effectiveness of EUTR, as well as on market operators. *“While progress has been made in some countries, the current level of technical capacity and resources (both human and financial) allocated to the Competent Authorities often does not correspond to the needs and must be strengthened in most of the Member States to increase the number and quality of compliance checks”* (European Commission, 2020, p. 11). The report also states that in several countries the number of checks remained relatively low compared to the number of operators, and it is doubtful whether such a low number of checks can have a truly dissuasive effect across the industry. In addition, it reports that *“further effort should be made to ensure that the scope and quality of the checks carried out reflect a more consistent approach across the EU. While progress has been made in some countries, the current level of technical capacity and resources (both human and financial) allocated to the Competent Authorities often does not correspond to the needs and must be strengthened in most of the Member States to increase the number and quality of compliance checks”* (European Commission, 2020, p. 12).

Concerns and criticisms about EUTR implementation have emerged also from other studies and reports. For example, in its Position Paper regarding EU rules on Illegal Logging (November 2020), ClientEarth lists several problematic issues with the EUTR implementation, including: lack of staff and financial capacity in the member states; uneven implementation leading to market disruption; satisfactory assistance provided for small and medium-sized enterprises (SMEs); the low number of checks conducted by Competent Authorities in the member states; low penalties; non-transparent reporting and disclosing relevant information of the member states; weak cooperation between enforcing authorities within the member states (Clientearth, 2020). Similarly, a study by the World Wide Fund for Nature (WWF) found gaps in the implementation of EUTR concerning penalties and sanctions, number and quality of checks, follow-up of control results and prosecution, resources and staff training, substantiated concerns by third parties, cooperation within countries and between countries, and transparency of competent authorities (WWF, 2019).

1.2.2 Regulation on deforestation-free products (EUDR) 2023/1115

The EUDR, as adopted by the Parliament and Council and published in the Official Journal of the EU on 9 June 2023, entered into force on June 29, 2023 and will partially apply from December 30, 2024 and be fully applicable as of June 30 2025 (Article 38). It will repeal the EUTR with effect from December 30, 2024. However, the EUTR continues to apply until December 31, 2027 to timber and timber products produced before June 29, 2023 and placed on the Union market from December 30, 2024 (Berning and Sotirov, 2023b).

The new regulation on deforestation and forest degradation expands the EUTR's state-based approach, diminishes the role of FLEGT VPAs, and limits the use of market-based instruments like FLEGT licences and private certification for due diligence. It broadens the regulatory scope to include agricultural FRCs, introduces environmental sustainability standards with a 'deforestation-free' definition, and imposes stricter zero-deforestation and zero-forest degradation requirements after December 31, 2020. The regulation also prohibits importing, exporting, and trading seven FRCs and related products unless specific conditions are met.

EUDR aims to minimise the EU's contribution to deforestation and forest degradation worldwide and to reduce the EU's contribution to greenhouse gas emissions and global biodiversity loss. EUDR prohibits placing or exporting certain products in the EU market unless they meet specific criteria (EC, 2023): (i) they must be deforestation-free, meaning they aren't made from commodities produced on deforested land after December 31, 2020, (ii) they should adhere to the laws of their production country, including land use rights, environmental rules, forest management, and more, and (iii) they require a due diligence statement confirming compliance with the above conditions. These statements must be submitted through an information system and demonstrate minimal risk of non-compliance. For wood and wood-based products listed under Annex I to the Regulation, it is additionally required that they come from forests without degradation after December 31, 2020.

While the EUTR imposes due diligence implementation only to operators, the EUDR requires operators and traders (excluding SME ones as per the definition provided in Article 3 of Directive 2013/34/EU of the European Parliament and of the Council) to conduct an extensive due diligence process regarding all relevant products supplied by each particular supplier and establish, implement, and regularly update a DDS. The due diligence process has three main elements: information gathering, risk assessment and risk mitigation.

The EUDR introduces simplified due diligence for products from low-risk countries, exempting operators from certain elements, while SME traders are directed to collect identity information and due diligence references, streamlining the process.

The Regulation aims to contribute to the establishment of a robust enforcement framework. Competent Authorities in member states are tasked with conducting compliance checks based on risk levels set and updated by the European Commission to ensure effective implementation. Additionally, the Regulation empowers these Authorities with investigative capabilities, necessitating cooperation and the utilisation of technical means to conduct thorough checks. It further establishes minimum check thresholds for various risk categories of products, enhancing the regulation's precision and efficacy.

The regulatory framework includes defined corrective actions and penalties for instances of non-compliance, encompassing fines and temporary exclusion from public procurement as punitive measures. Transparency in enforcement is reinforced through reporting mechanisms. Additionally, the Commission is assigned the responsibility of assessing the potential expansion of the Regulation's scope and publishing lists of countries at risk, contributing to a comprehensive and transparent regulatory landscape.

Entities subject to the Regulation must assess their due diligence mechanisms by December 30, 2024, and consider complexities in supply chains, compliance risks, and relevant laws. Producers should ensure compliance and provide necessary information to customers.

EUDR prohibition clauses and due diligence requirements are similar to the EUTR, yet the EUDR expands legal obligations through more detailed due diligence, monitoring and enforcement requirements. As mentioned above, it expands the EUTR's regulatory approach beyond timber legality to include other FRCs (i.e. cattle, cocoa, coffee, oil palm, rubber, soya) and institutionalised new environmental sustainability standards (i.e. zero-deforestation and zero forest degradation) (Berning and Sotirov, 2023a). Furthermore, the EUDR expands the EUTR scope by extending the operator status and obligations to exporters from the EU market as well as embodying some social issues into risk assessment criteria. Finally, and similarly to EUTR requirements, the EUDR also applies to targeted products produced within the EU, therefore e.g. timber harvested from EU forests as well as wood products derived from it are subject to EUDR requirements. This is quite a relevant issue for some Western Balkan countries, as they have strict commercial connections with the EU market and wood industry and are regarded as priority countries for EUTR (and, by extension, EUDR) implementation.

1.3 Western Balkan countries as priority region for improving timber legality

Introduced by the EU in the early 2000s, the term Western Balkans refers to south-eastern European countries originally not yet EU members or candidates but with aspirations to join the EU. The region includes seven countries, i.e. Albania, Bosnia and Herzegovina, Croatia, Montenegro, Northern Macedonia, Serbia and Kosovo² (Figure 1).

The Western Balkan region possesses a noteworthy forest stock (FAO, 2020; Forest Europe, 2020), particularly with a high proportion of virgin and old-growth forests within the European context (European Commission, 2021). This abundance is attributed to the mountainous topography, relatively low population density, and below-average intensity of economic exploitation. Consequently, woodlands are regarded as a vital natural resource, and the region has a longstanding tradition of forest management. Under communism, Balkan states treated forest areas as important national heritage and an economic asset, with the state acting as the sole and ultimate owner and manager of the entire forest resources (Petrova, 2014). This was supported by the widespread nationalisation of forest land after World War II.

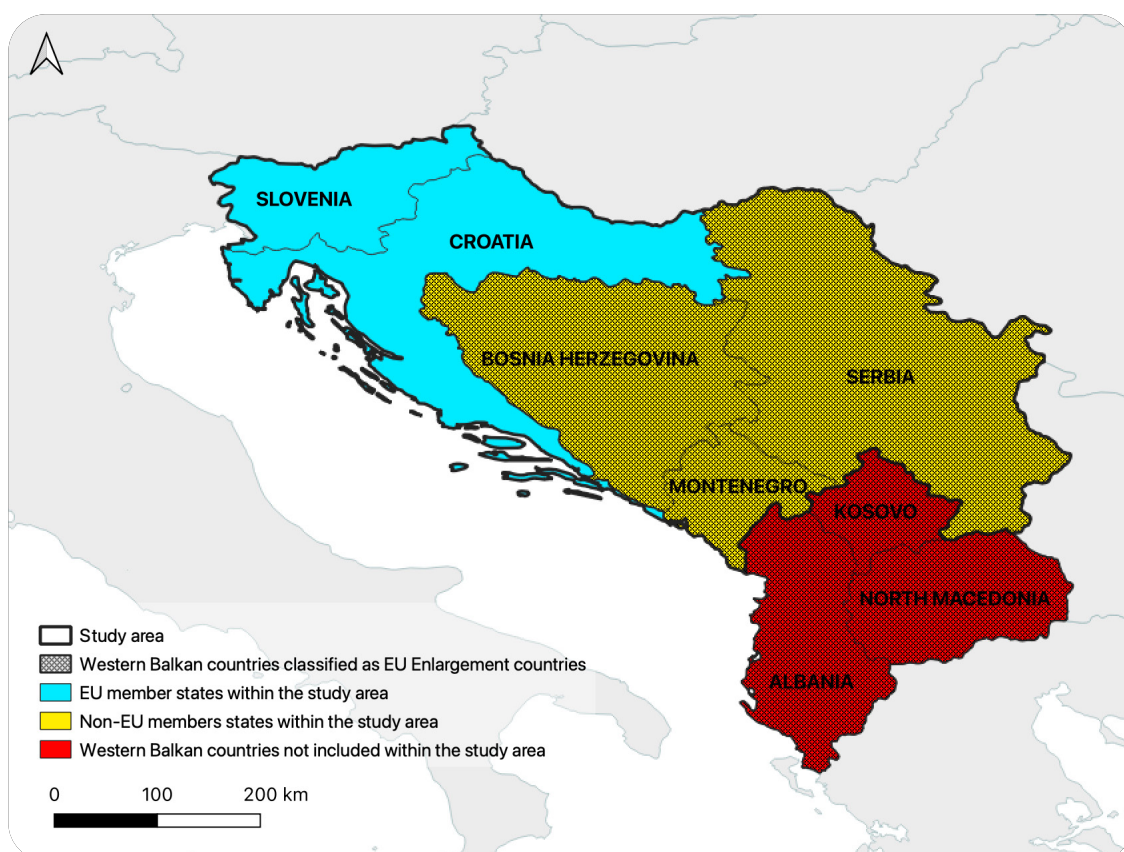


Figure 1: The Western Balkans region (Source: Own elaboration)

2. UN Security Council, Security Council resolution 1244 (1999).

Due to its strategic location, the region holds significance for the EU in terms of security, stability, trade, and transit routes. As such, the economic and political future of Western Balkan countries within a European context remains a top priority for the EU (Dabrowski and Myachenkova, 2018). Besides hosting valuable forest resources and significant growing stock, the Balkan region occupies a strategic geographic location for the trans-shipment of timber and timber products into the EU, the Middle East, as well as other countries/regions, which is facilitated by the infrastructure of roads and railways as well as seaports on the Black and Mediterranean seas (Glavonjić *et al.*, 2009).

Democratic changes took place in the late 1990s and early 2000s, leading to (among others) new forest regulatory frameworks, private forest companies, new public procurement procedures, new regulation of private forest companies and stricter financial regulations. Although some progress in reducing illegal logging was made, “*further action is necessary to reduce the pressure on forests*” (Markus-Johansson *et al.*, 2010, p. 13). In particular, Avdibegović - (2010) argued that newly established forestry legislation in most of the former-Yugoslavia countries is not adequate for the management of private forests, as it is predominantly oriented towards the administration needs of state-owned forests.

Markus-Johansson (2010) highlight common characteristics among Western Balkan countries in terms of their forest sector governance, structure, management, and trade of forest-based products. These include a substantial share of state-owned forests, a mix of young and old forests, a tendency toward decreasing high-quality forests, recent losses of significant forest areas due to clear-cutting and fires, susceptibility to illegal timber harvesting, and a lack of reliable, aggregated data on forests and management.

In general, most Western Balkan countries still suffer from an overall lack of coordination and discrepancies between various institutional and administrative frameworks. Institutional capacities in the Western Balkan countries are underdeveloped and the participation of civil society in the forestry sector is poor (Markus-Johansson *et al.*, 2010). Administrative and judicial sanctions can be weak, and illegal forestry activities rarely lead to court sentences. Law enforcement is challenging in private forests, as national forest agencies are limited in an enforcement capacity and financial audits of forestry operators are based on often incomplete documentation. The correctness of the data is often not verified against actual forest activities. Moreover, data collection and monitoring systems are inadequate in most Western Balkan countries (Markus-Johansson *et al.*, 2010).

The European Commission recognises some Western Balkan countries (including Serbia and Bosnia and Herzegovina) as priority countries for the implementation and enforcement of the EUTR (European Commission, 2020, p. 12). Worries about Balkan countries as a source of illegal timber due to possible gaps in the regulatory, policy and governance systems were recently confirmed by Segato (2017, p. 13) who found that “*research into corruption in the forest sector in the Balkans shows that south-eastern Europe is a corridor for criminal activity and illegal timber trafficking. A complex supply chain makes it difficult to identify falsified documents, and the lack of robust enforcement - due to insufficient resources - and the cost of compliance to companies means that there is little incentive to adhere to the EUTR. A better understanding of the EUTR, as well as more stringent due diligence systems and risk assessment, is needed to tackle corruption in the region*”.

Although Western Balkan countries are regarded as priority areas for improving legality monitoring systems in line with EUTR requirements and aims, no comprehensive study on policy adaptation of Western Balkan countries on European timber legality requirements (i.e., at the time of the research, of the EUTR) has been done recently.

Existing studies mostly focused on timber flows involving the Western Balkan countries, or forest certification. The trade of forest timber products between and from the Western Balkan countries was studied mostly on a country level. Glavonjić (2015), Paluš - (2018) and Vasiljević and Glavonjić (2011) focused on wood legality and the influence of different verification methods on the timber market in Serbia by conducting a study on the chain of custody certification in six countries (Slovakia, Czech Republic, Poland, Slovenia, Croatia and Serbia). Paluš - (2018, p. 699) found that companies connect *“certification mainly to the issues of legality, tracing the origin source of supply and prevention from illegal logging. The main expected benefits are linked to the improvement of the external company image followed by business performance factors such as penetrating new markets, increase in sales volume, expanded market share and increase of profit margin. The key problems connected to certified supply chains relate to the overpricing of certified material inputs, while respondents reported none or minimum price premiums for their certified products over non-certified alternatives”*. Glavonjić (2021) analysed the impact of the Covid-19 pandemic on the wood and furniture industry in Serbia. Posavec and Pezdevsek-Malovrh (2020) analysed wood quantities and wood sale models in state-owned forest companies in Croatia and Slovenia, focusing on the competitiveness of the wood processing industry. Different trade patterns of the Western Balkan countries with the New and the Old (i.e. EU-8, including the main EU economies) Member states have been established. Western Balkans trade with the New EU on a much smaller scale, smaller level of product complexity, and with much simpler trading arrangements. Clearly New Europe does not equal Old Europe, looking from the Western Balkans' perspective.

Rogelja and Shannon (2017) analysed the incorporation of anti-corruption measures into Serbian forest policy, identifying the network of actors that can influence their implementation. Although some authors (e.g., Glavonjic, 2015, and Rogelja - 2017) focus on the legality aspects of wood, there are no recent studies illustrating how different Western Balkan countries adapted their policies to the EUTR requirements. In particular, as reported more into details in Chapter 2, the general objective of this research is to contribute to advancing knowledge on the transposition of EU timber legality requirements in selected Western Balkan countries thus providing useful novel information and perspectives to inform future research as well as policy making in the region.

2. RESEARCH AIMS, OBJECTIVES AND QUESTIONS

Within this chapter overall research aims and objectives, organised as general and specific objectives, and research questions are reported and presented in detail.

2.1 Research Objectives and Questions

Driven by the relevance of illegal logging and associated implications in the Western Balkan countries as well as developments in the EU timber legality framework, this research aims to fill the existing gaps in forest policy research by conducting a multiple case study analysis on the transposition of EU timber legality requirements into the policies of selected Western Balkan countries: Slovenia, Croatia, Serbia, Montenegro, and Bosnia and Herzegovina (Republic of Srpska).

Following the institutionalist approach (Scharf, 1997; more details in Chapter 3), this research was divided into two specific objectives. Each objective was associated with two to three research questions, followed by specific research assumptions that were investigated using a combination of methods, a summary of which is presented in Chapter 4. Table 1 below presents general and specific research objectives and the corresponding questions and assumptions.

Table 1. Research objectives, questions, and assumptions

General objective:	To contribute to advancing knowledge on the transposition of EU timber legality requirements in selected Balkan countries thus providing useful novel information and perspectives to inform future research as well as policy making in the region.	
Specific objectives:	Research questions	Assumptions
1. To analyse the adaptation of policies of the Western Balkan countries to the EUTR	1.1 How did the Western Balkan countries adapt their policies to the EUTR?	A1.1.1: The EU Western Balkan countries complied with the EUTR and implemented EUTR requirements. A1.1.2: The non-EU Western Balkan countries did not adapt their policies to the EUTR
	1.2 To what extent and how did they implement the EUTR requirements?	A1.2.1: The EU Western Balkan countries complied with the EUTR and fully incorporated the EUTR requirements into policies. A1.2.2: The non-EU Western Balkan countries partially implemented EUTR requirements focusing on the supply side.

General objective:	To contribute to advancing knowledge on the transposition of EU timber legality requirements in selected Balkan countries thus providing useful novel information and perspectives to inform future research as well as policy making in the region.	
Specific objectives:	Research questions	Assumptions
2. To identify the main actors involved in the adaptation of policies in Western Balkan countries, their roles, and relations	2.1 Who are the main stakeholders involved in implementing policies in Western Balkan countries?	A2.1.1: The main actors involved in the adaptation of policies in Western Balkan countries are governmental bodies and public forest enterprises.
	2.2 What are the attitudes of key stakeholders on EUTR/EUDR transposition/ implementation?	A2.2.1: Actors from the EU countries have a positive attitude towards EUTR. A2.2.2: Actors from the non-EU countries have sceptical attitude towards EUTR.
	2.3 What are their roles and relations?	A2.3.1: Information exchange relations are strong among state actors. A2.3.2: Information exchange relations are weak among state and non-state actors.

Source: Own elaboration (2023)

2.2. Organisation and structure of the study

The thesis is organised into seven main chapters (Table 2), each complemented by a list of relevant literature and annexes.

The first chapter of this thesis presented the problem of illegal logging in relation to global deforestation and forest degradation (1.1) as well as policy responses (1.2) and illustrated the situation regarding the Western Balkan countries (1.3). The second chapter, i.e. this chapter, outlines the aim and research question (2.1) and presents the details of how the thesis was structured. The third chapter provides the conceptual framework for the research by presenting the concept of policy integration and coordination (3.1) (Sotirov *et al.*, 2022) and introducing actor-centred institutionalism (3.2) (Scharpf, 1997) as well as policy network approach (Peters and Pierre, 2010). The fourth chapter briefly outlines the methodology and main methods used in the research, presenting the network analysis method in more detail (as Article 4 is in finalisation). Methodological details for the other parts are provided within relevant subchapters of the fifth chapter that presents the results of policy analysis as a compilation of two published research papers (5.1 - Article 1 and 5.2 - Article 2). The sixth chapter offers and discusses a summary of the findings in the form of Article 3 (6.1) and presents the network analysis (6.2). The seventh chapter concludes the thesis by summarising findings according to research questions and assumptions and offers take-away messages.

Some parts of the thesis are organised as chapters (Chapters 1 to 4, and 7-8), while others as a collection of papers developed (or being finalised) within the framework of the doctoral research program. These papers are reported within two dedicated chapters - number five and six - representing the core of the thesis. Chapter 1-5 frame these papers into the general research background, thus providing the rationale, aims, objectives, and methodological approaches of the study. Thus, certain redundancies in the text were imminent. Chapters 5 - 8 summarise and discuss the findings of all articles presented, ultimately drawing final conclusions.

Table 2. Overview of the organisation and structure of the study

Chapter	Sub-chapter	Corresponding part of the research	Related to
1. Introduction	1.1	Deforestation, forest degradation and illegal logging	Transversal
	1.2	The EU policy responses	
	1.3	Illegal logging in Western Balkan countries	
2. Aim and research questions	2.1	Analysis of the adaptation of policies of the Western Balkan countries to the EUTR	Article 1
	2.2	Identification of the main actors involved in the adaptation of policies in Western Balkan countries, their perceptions, roles, and relations	Article 2
		Article 3	
3. Conceptual framework	3.1	Policy coordination and integration	Article 4
	3.2	Actor-centred institutionalism	Article 1
	3.3	Policy network approach	Article 2
4. Methodology and methods	4.1	Research design	Article 3
	4.2	Data collection and analysis	Article 4
		Article 1	

Chapter	Sub- chapter	Corresponding part of the research	Related to
5. Results	5.1	Policy analysis for Croatia, Slovenia and Serbia	Article 1
		Policy analysis for Montenegro and Bosnia and Herzegovina (Republic of Srpska)	Article 2
6. Discussion	6	Synthesis of actor-institutional factors	Article 3
		Networks of information exchange	Article 4
7. Conclusions	7	Common conclusions	Transversal

Source: Own elaboration (2023)

3. CONCEPTUAL FRAMEWORK

Within this chapter the general conceptual framework behind the research is presented. This includes key conceptual aspects on which the research builds, i.e. policy coherence and integration (3.1), actor-centred institutionalism (3.2) and policy networks and information exchange (3.3).

3.1 Policy coherence and integration

Policy coherence refers to the extent to which policies and programs align with each other and broader development goals (Sotirov, 2022; Lovrić *et al.*, 2023). In environmental policy and politics studies, policy coherence can be achieved by policy integration or coordination (Persson, 2004; Trein *et al.*, 2020). A conceptual distinction is that integration refers to incorporating some elements into a larger entity (as with policy goals and instruments), whereas coordination refers to the joint work of “*various actors, administrative units, interest groups, or organisational entities that work together across different levels and/or sectors for the achievement of certain goals or for reaching common outcomes*” (Baycheva-Merger and Sotirov, 2020, p.2). It is about reorganising previously separate processes or units to make them work together properly (often referred to as administrative units). While integration captures the actual integration of policies, notably policy goals and instruments, policy coordination focuses on the relationship between public sector organisations, which is closely related to multi-level policy implementation and network governance (Trein *et al.*, 2019).

Policies are written and negotiated plans of action that contain policy goals, targets, and measures that are to be implemented on the ground (Crabbe and Leroy, 2008; Fischer *et al.*, 2007; Knoepfel *et al.*, 2007; Krott, 2005; Ludvig *et al.*, 2018;). Policy goals refer to core beliefs guiding policy and practice (e.g., timber production vs. nature conservation) and operationalised objectives that a policy formally aims at (e.g. 50% mixed forests by 2020 or 10% set aside forests by 2020).

Sectoral policies are made up of specific sets of goals and instruments that reflect the beliefs of different actors about problems, causes, and solutions, which guide their actions. According to Vedung (1998, p. 21), “*public policy instruments are the set of techniques by which governmental authorities wield their power in an attempt to ensure support and effect social change*”. Policy instruments are means and procedures used to achieve policy goals (Cashore and Howlett, 2007). They can be classified into *regulatory* (e.g., obligations, prohibitions, sanctions), *financial* (e.g., subsidies, taxes, tariffs, fines, market incentives), *persuasive* (information, advice, training) and *organisational* (e.g., structural reforms) instruments (Vedung, 1998; Sotirov *et al.*, 2022). This variety of instruments can be placed on a continuum between mandatory ‘hard’ law (e.g., command-and-control regulations, structural reforms) and voluntary ‘soft’ law (e.g., subsidies, markets, information) (Sotirov *et al.*, 2022): they are further investigated in Articles 1 and 2 (see 5.1), as well as synthesised in Article 3 (see 5.2).

Policy integration and coherence is a complex and politically charged process that often leads to conflicts between policy sectors and associated actors (Degeling, 1995; Sotirov *et al.*, 2022). Sectoral policy paradigms are influenced by the power dynamics of the actors involved (Hall, 1993; Sotirov, 2022). Power is defined as an actor's position of formal decision-making authority (such as legislative, executive, or juridical powers) and their ability to influence decision-making through other political resources, like funding, information, public opinion, or boycotts (Sabatier

and Weible, 2007). In this sense, having control over the flow of information or being able to verify or monitor it could represent an advantage for organisations operating in a certain sector, including the forestry sector. Further on, being in a position to quickly spread and act on received information across sectors and institutions is advantageous when dealing with cases of illegal logging, as confirmed, for example, by the increased access to open data and information in Brazil (Morgrado, 2020).

To successfully achieve policy goals, significant changes must be made that challenge the existing policies and their boundaries. This process involves a power struggle between policy sectors and their respective actors, who compete to influence the changes (Winkel and Sotirov, 2015). As a result, these transformative shifts can impact the goals, instruments, beliefs, actions, and power dynamics of all involved policy actors (Derksen *et al.*, 2009; Feindt, 2010; Winkel and Sotirov, 2015). The overall set of policy goals and instruments, institutional rules, and the underlying ideas, interests, power, and practices of actors refer to a policy regime (Sotirov, 2022; Dal Molin and Masella, 2015).

For zooming-in on policy integration and regimes, the actor-centred institutionalism (ACI) (Scharpf, 1997) and policy networks approach (Peters and Pierre, 2010) are as useful as complementary tools. The policy coordination concept and ACI framework were used in the first part of our research under the assumption that there are differences between EU and non-EU member countries with respect to the implementation of EUTR requirements into national policies. Namely, the EU member countries considered for this study (i.e., Croatia and Slovenia) must comply with the EU directives and regulations and transpose the requirements while keeping the sovereignty in how to do that. Non-EU countries considered for this study (i.e., Serbia, Montenegro and Bosnia and Herzegovina (Republic of Srpska)) are not obliged to do so, yet they might have a strong impetus due to the Stabilisation and Association Process (SAP), as well as access to EU markets and EU funds.

Since the above-mentioned conceptual frameworks, such as ACI and policy network approach (PNA), are presented in detail within the relevant articles (as presented in Table 3), the following section offers just a brief overview of underlying concepts. Please refer to the corresponding articles for more details.

Table 3. Overview of conceptual frameworks within relevant articles developed by our research

Specific objectives	Research questions	Assumptions	Related to concept or 1 framework	Related to article
1.To analyse the adaptation of policies of the Western Balkan countries to the EUTR	1.1 How did the Western Balkan countries adapt their policies to the EUTR?	<p>A1.1.1: The EU Western Balkan countries complied with the EUTR and implemented EUTR requirements.</p> <p>A1.1.2: The non-EU Western Balkan countries did not adapt their policies to the EUTR.</p>	<p>Policy coordination from European to national/subnational levels</p> <p>Policy integration - timber legality requirements</p> <p>Actor-centred institutionalism (ACI) - Policy instruments</p>	<p>Article 1</p> <p>Article 2</p>
	1.2 To what extent and how did they implement the EUTR requirements?	<p>A1.2.1: The EU Western Balkan countries complied with the EUTR and fully incorporated the EUTR requirements into policies.</p> <p>A1.2.2: The non-EU Western Balkan countries partially implemented EUTR requirements focusing on the supply side.</p>	<p>Policy integration</p> <p>ACI - Institutional factors</p> <p>ACI - Actors-oriented factors</p>	<p>Article 3</p>
2.To identify the main actors involved in the adaptation of policies in Western Balkan countries, their roles, and relations	2.1 Who are the main stakeholders involved in implementing policies in Western Balkan countries?	<p>A2.1.1: The main actors involved in the adaptation of policies in Western Balkan countries are governmental bodies and public forest enterprises.</p> <p>A2.1.2: Private sector actors and research and education institutions were marginally involved in the adaptation of policies in Western Balkan.</p>	<p>Policy coordination</p> <p>ACI - Actors-oriented factors</p> <p>ACI - Institutional factors</p> <p>Policy network approach</p>	<p>Article 3</p> <p>Article 4</p>

Specific objectives	Research questions	Assumptions	Related to concept or framework	Related to article
	2.2 What are the attitudes of key stakeholders on EUTR/EUDR transposition/ implementation?	<p>A2.2.1: Actors from the EU countries have a positive attitude towards EUTR.</p> <p>A2.2.2: Actors from the non-EU countries have sceptical attitude towards EUTR.</p>	<p>Actor-oriented factors (ACI)</p> <p>Policy network approach (PNA)</p>	Article 3
	2.3 What are their roles and relations?	<p>A2.3.1: Information exchange relations are strong among state actors.</p> <p>A2.3.2: Information exchange relations are weak among state and non-state actors</p>	<p>Policy network approach (PNA)</p> <p>Policy networks (Structural Network Analysis, SNA)</p> <p>Institutional and actors-oriented factors (ACI)</p>	Article 4

Source: Own elaboration (2023)

3.2 Actor-centred institutionalism

Given the perverse nature of the illegal logging and trade of timber and timber products, it is important to understand the institutional setting around timber legality. In this research, we build on core concepts of the actor-centred institutionalism (ACI) framework (Scharpf, 1997), i.e. (1) institutions and (2) actors. According to the ACI framework, institutions can be defined as formal and informal rules and/or a system of procedures that structure social interactions and shape the courses of action that actors may choose (Scharpf, 1997). The interaction among actors and their institutional environment is a multi-faceted process, and actors both respond to, and modify the institutional environment in which they are embedded over time to maintain competitive advantages (Hollingsworth, 2000).

When looking at actors-oriented factors, we focused on the roles of the main responsible actors as described by the ACI framework (Mayntz and Scharpf, 1995; Scharpf, 1997; Baycheva-Merger *et al.*, 2018). Within actors two relevant categories are roles and attitudes, looked through responsibilities and perceptions as subcategories.

These categories and sub-categories provided the framework for structuring, organising, and interpreting the empirical data from interviews and qualitative policy analysis on formal institutional factors in the five selected countries. An overview of the key elements of the ACI framework is provided in Table 4. below.

The ACI framework was, in particular, used as a guiding framework of the research, enabling the distinction between institutional and actor-oriented factors. It is presented in more detail in Article 3 (Chapter 6).

Table 4. Key elements of the ACI framework and their operationalisation in this research

Key elements	Definition	Category	Sub-category
Institutions	The official ‘rules of the game’ that, via policy instruments, affect actors' behaviour by specifying required, prohibited or permitted actions (Scott, 2005).	Formal rules	Regulations, policy
			Monitoring, fines
	Implicit, slowly changing, culturally transmitted and socially constructed rules (Scott, 2005).	Informal	Organisational culture
Actors	Individuals, groups, organisations, and institutions that have a stake in or influence the policymaking process.	Roles	Responsibilities
			Resources
		Attitudes	Perceptions
			Awareness

Source: Own elaboration from Scharpf (1997)

3.3 Network governance, policy networks and information exchange

In the policy definition process, policy networks involving various stakeholders have become essential (Börzel, 1998; Klijn 1996; Marsh and Rhodes 1992). Policy networks refer to “*the patterns of interactions that take place between different individual and organisational stakeholders involved in a policy decision-making process (that is articulated in games and arenas) to deal with*

a common policy problem in order to favour joint and shared solutions” (Dal Molin and Masella, 2015, p. 830). In policy networks (as well as network governance), the State maintains the task of defining the goals, actors to be involved, interaction modalities, dedicated resources and services to be provided (Dal Molin and Masella, 2015; Borzel 1998). Yet, the traditional centralised model of service provision and decision-making has changed towards more collaborative arrangements and service delivery networks (Dal Molin and Masella, 2015).

The policy network approach (Peters and Pierre, 2010) assumes coordination with other organisations. The number of allies who trust an organisation is a good indicator of its information quality. A strongly related social opportunity structure is linked to social trust. Actors, both individuals and organisations, need common "friends" to reduce uncertainty about the contact and information received. Relying on one's contacts to establish new ties lowers the costs of searching for new contacts and deciding whether they are worth the effort.

Trusting others is more efficient, and so common neighbourhoods' matter, as actors are more likely to trust information from another organisation if it is in the same coalition. At the meso level, this results in self-reinforcing coalitions (Sabatier and Weible 2007). The number of shared partners is also related to the concept of "bonding" structures as transitive triads increase the ego's trust in alter (Leifeld and Schneider, 2012; Berardo and Scholz, 2010). It is, therefore, useful to include a transitivity-related analysis that checks whether two directed paths between two actors correspond positively (Leifeld and Schneider, 2012).

On the other side, network governance refers to a set of individual or organisational actors that collaboratively control, define and govern the activities carried out by a set of (other) actors involved in public services delivery and public goods production (Dal Molin and Masella, 2015). These governing activities cover both the strategic and the operational decision-making process. The literature on network governance tends to focus on the steering activities conducted by public authorities that are responsible for governing the network and its participants (Sørensen and Torfing, 2009). Such activities include strategic and operational decision-making processes that cover both long and short-term network activities. These processes occur within institutionalised and legitimised structures (Klijn - 2010; Sørensen and Torfing, 2009; Torfing, 2005). Network governance is thus mostly related to the government, which is responsible for setting the network's goals and functioning rules as well as defining the scope and composition of networks (Sørensen and Torfing 2009; Keast and Brown, 2002). Moreover, an essential characteristic of network governance literature is the recognition of the crucial role that public authorities play in implementing, controlling, and steering networks (Ansell and Gash, 2008).

In network governance, the State covers two main roles related to the level of acting. At a macro-level, it defines goals and objectives and establishes adequate communication and accountability mechanisms (Keast and Brown, 2002). At a micro-level it acts within the network through public agencies, participating as a member in negotiations and decision-making; throughout, it should pursue the necessary balance between its steering role and controlling activities (Keast and Brown, 2002).

Power is frequently interpreted as the ability to regulate or have jurisdiction over forest resources in the context of forest policy (Edwards and Kleinschmit, 2013). In such a context, information can be strategically employed to gain power and increase authority; it can also be selectively employed or framed to legitimise political agendas and provide justification for political decisions (Baycheva-Merger and Sotirov, 2020; Pregernig and Böcher, 2008; Shannon *et al.*, 1996).

4. METHODOLOGY

This chapter introduces methodological approaches and methods adopted throughout the research. It provides an overview of the research character and design (4.1) as well as details about data collection and analysis (4.2). Finally, it introduces the case study area (4.3). It is important to stress that more details about methodological aspects as well as the study area are reported - where relevant - within single chapters.

4.1 Research design

This research has an exploratory qualitative character, driven by *How* and *Who* questions. Exploratory qualitative research is an iterative process that involves collecting, analysing, and interpreting data to gain a deeper understanding of a phenomenon or research question that has not been extensively studied (Miles et. al, 2014), in this case, timber legality in the Western Balkans. It is often used to identify patterns, themes, and insights that could inform future research or generate new hypotheses (Corbin and Strauss, 2008). The data collected for exploratory qualitative research can be in various forms, including primary data, from e.g. interviews, and secondary ones from e.g. documents and literature review (Patton, 2002). The analysis of data in exploratory qualitative research is typically inductive, as the researcher generates themes and categories from the data rather than imposing them a priori (Glaser and Strauss, 2017). More in detail, this research started from already established and known European timber legality requirements (i.e., those defined by the EUTR since the research started before the EUDR was approved and became effective) and deductively driven assumptions on policy adaptation institutions and actors, as explained in the previous chapter.

This research deploys a comparative case study of five Western Balkan countries: Slovenia, Croatia, Serbia, Montenegro, and Bosnia and Herzegovina (Republic of Srpska) (see also 4.3 below). A case study is “*an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident*” (Yin, 2009, p. 18). We endorse multiple embedded case study design as our research analyses policies and laws related to the prevention and tackling of illegal logging as well as trade of illegal timber and timber products within and from five Western Balkan countries. Multiple case study design covers multiple cases and draws a single set of cross-case conclusions. It is thus more complete and tends to be more reliable and robust than a single case study approach. The embedded design refers to embedded units of analysis within each context (Yin, 2009).

Case study countries were selected for the analysis as they present a wide range of economic, social, and policy conditions (Pezdevšek Malovrh *et al.*, 2015) that, as already explained in section 1.3 (as well as in 4.3 below), make them suitable and relevant for the aims of this study. Within each case, units of analysis include policies and laws related to the prevention and tackling of illegal logging and trade of illegally sourced timber and timber products, as well as actors and their relations, notably to be understood in terms of exchange of information between actors.

4.2. Data collection and analysis

This research spans three consecutive years (2020 - 2023) and adopts a combination of several methods for both data collection and analysis. In the first year, research activities were mainly dedicated to literature review, desktop research and conceptualisation of the research. In the second year, the research methodology was developed, and policy document analysis was conducted. Moreover, interviews with key stakeholders were developed and the first round of interviews was conducted. In the third year, data from the first round of interviews was elaborated and analysed. Moreover, network data collection took place as the second round via survey. Network data for all countries were collected, while in the frame of PhD research data for Serbia, as an illustrative and test case study were analysed, the analysis of data for the other four countries (Croatia, Montenegro, Bosnia and Herzegovina (Republic of Srpska) and Slovenia) is in the pipeline with the finalisation and submission of Article 4 planned in 2024.

Different data collection and analysis methods adopted for the research include:

1. **Literature review and desktop research** involve gathering and analysing information that already exists (i.e. from secondary sources) rather than collecting new data through primary research methods. It was used to identify relevant national policies, obtain data for the forest sector in selected countries, and obtain background information on identified actors. It is explained in detail in Articles 1 and 2 (Chapter 5).
2. **Qualitative content analysis** was used for analysing identified policy documents and deriving policy instruments related to timber legality. It is explained in detail in Articles 1 and 2 (Chapter 5).
3. **Semi-structured interviews** were performed involving selected key national actors to obtain information about decision-making functions, policies aimed to prevent and tackle illegal logging, and their implementation within selected countries. Two rounds of interviews were performed with the same panels of national experts: a first one focusing on actors' perceptions on targeted policies and a second one to obtain data on the networks behind the exchange of information among actors. The first round of interviews took place from January to September 2022 across all five countries and is explained in detail in Article 3 (Chapter 5). The second round was performed via a structured survey in the Spring 2023: details are reported in Article 4 (Chapter 6).
4. **Network analysis** was used to visualise the networks of key actors involved in information exchange with reference to forest policies (and in particular those related to illegal logging) in selected countries, to obtain key network metrics to describe and comment some of the network main features and dynamics, as explained in detail in Article 4 (Chapter 6).

Table 5 provides an overview of research methods adopted for the different stages of the research, their main goals and related articles.

Table 5. Overview of research methods and goals in different research stages

Research question	Method	Used for	Related article	
(RQ1.1) How did the Western Balkan countries adjust their policies to align with the EUTR?	Desktop research and literature review	Identification of policies and actors.	Article1	
		State of the art of forestry sectors	Article2	
			Article 3	
			Article 4	
(RQ1.2) To what degree and in what manner did they implement the requirements stipulated by the EUTR?	Qualitative content analysis	Analysis of national policies.	Article1	
		Analysis of actor's perceptions	Article2	
			Article 3	
(RQ1.2) To what degree and in what manner did they implement the requirements stipulated by the EUTR?	Semi-structured interviews	Collection of data on actors' perceptions	Article 3	
		Structured survey	Collection of data on information exchange	Article 4
		Structural network analysis	Analysis of network data	Article 4

Source: Own elaboration (2023)

4.3. Case study area: Selected countries

This section presents brief information about selected Western Balkan countries, that have been shortly introduced before (see 1.3). More detailed information about the forestry sector (e.g. forest area, forest ownership, forest stock, forest certification, etc.) of each country is presented in Chapter 5 (Articles 1 and 2).

As mentioned in Chapter 1 the term Western Balkans refers to south-eastern European countries, and includes seven countries, i.e., Albania, Bosnia and Herzegovina, Croatia, Montenegro, Northern Macedonia, Serbia and Kosovo. Though acknowledging the relevance of all countries within the area, this research focused on five selected countries - Croatia, Slovenia, Serbia, Bosnia and Herzegovina (focus on the Republic of Srpska) and Montenegro (see below as well as Chapters 2 and 4 for details).

Country selection criteria derived from a combination of needs in terms of consistency (i.e. former Republic of Yugoslavia member countries sharing a common historical perspective and a similar ecological as well as socioeconomic background), relevance (both EU member states and countries in the accession process) and access to both primary and secondary data and information. Each of the selected countries is characterised by peculiar national circumstances, while looked together they share commonalities and differences, as further outlined below.

All countries addressed by this research reflect the changes that occurred after the breakup of the former Republic of Yugoslavia and with accession to the EU. Slovenia became an EU member in 2003, followed by Croatia in 2013. As of the end of 2023, Serbia, Bosnia and Herzegovina, and Montenegro maintain EU candidate status.

Slovenia boasts one of the highest forest coverages in Europe, equivalent to 58% of its national territory (Slovenian Forest Service, 2021). Slovenia has been implementing the EUTR since 2013, with forestry inspection and the Financial Administration overseeing domestic and imported timber compliance, respectively (Ministry of Agriculture, 2016). The Forest Act implicitly tackles illegal logging, lacking a specific definition but prohibiting any action in forests that diminishes stand growth, site fertility, forest stability, sustainability, or poses a threat to its functions, existence, or purpose (Forest Act, Article 18, 2016).

Croatia assumed its EUTR implementation responsibilities upon joining the EU in 2013. However, the Law on EUTR implementation became effective a few months prior to EU accession by Croatia. The Ministry of Agriculture serves as the Competent Authority, overseeing checks on operators, traders, and monitoring organisations (Ministry of Agriculture, 2021). Recent information and official data concerning illegal logging in Croatia are limited. In 2020, the European Parliament received a report on deforestation in the country from the Croatian NGO VIDRA. The report alleges that Hrvatske šume Ltd. engaged in extensive and unlawful logging in Natura 2000 areas throughout Croatia (Grgic, 2020). In cases of illegally placing timber or timber products on the market, a collateral sanction, involving the confiscation of forest timber assortments, may be imposed alongside the stipulated fine. The Customs office carries out the seizure, while Hrvatske šume Ltd. manages the transport, storage, and disposal of the confiscated forest timber assortments on behalf of the Republic of Croatia (Law on Forests, Article 94, 2020).

Despite the many similarities, targeted countries also present differences and peculiarities. Bosnia and Herzegovina consists of two autonomous entities - The Federation of Bosnia and Herzegovina and the Republic of Srpska - along with the Brčko District. The Federation is divided into 10 cantons, and despite the absence of a national forest policy, forest management is decentralised to the canton level. Due to organisational complexities and the lack of a common forest framework at the federal level, the analysis focuses solely on the Republic of Srpska as a legal entity within Bosnia and Herzegovina.

In Serbia, as well as in other non-EU Western Balkan countries, the adaptation to EUTR is proceeding slowly. Due diligence standards and systems still need to be fully developed. It has been recently reported that *“unregistered/illegal logging does occur in the country in some instances because of government corruption. Other challenges include the fact that procedures for granting private forest owners the right to harvest their trees are complicated, and the timber and wood products industry does not have sufficient collaboration or communication with the government. At present, there are no meetings among forest producers/companies in Serbia to discuss illegality risks”* (Forest Trends and Ministry of Agriculture of the Czech Republic, 2015).

The proper functioning of Montenegrin institutions has been affected by political volatility, government instability, and tensions within the ruling majorities, stalling decision-making processes, and reform implementation (Čomić *et al.*, 2013). Overall, limited progress has been made, including adopting the new 2022-2026 strategy for public administration reform. The green agenda and the sustainable connectivity cluster are at the heart of the Green Agenda for the Western Balkans and are closely linked to Montenegro's economic reform program and the Commission's Economic and Investment Plan (European Commission, 2022). In Montenegro, illegal activities are mainly related to the existing system of granting and control of concessions, with the most common being logging in excess of quota or logging outside a concession area. The most common type of illegal activity in Montenegrin forests, after illegal logging, is the usurpation of state forests or forest land, usually for construction (Directorate for Forests, 2021).

In fact, the five countries share similarities but also present differences in terms of wood production and trade patterns. In general terms for all the Western Balkan countries the EU is the leading trade partner, accounting for two-thirds (65.8%) of the region's total trade (European Commission, 2023; Kaloyanchev *et al.*, 2018; Botric, 2012). This also reflects on forest product trade as most of the Western Balkan countries have strong trade connections and relationships with the EU market (though with different partners among EU member states, due to historical, cultural, economic and geographical reasons). Nonetheless, intra-regional wood trade remains relevant, in particular in the case of Montenegro and Bosnia and Herzegovina.

From 2013 to 2017, Serbia and Bosnia and Herzegovina were among the 20 top exporters of timber and timber products in the EU. In 2018, Bosnia and Herzegovina's exports of timber and timber products totalled USD 826 million, of which 75% was exported to EU member state, mostly to Germany, Croatia, Slovenia and Italy (UN-WCMC, 2020). "*A large proportion of these imports were firewood (36% of illegal exports) with most illegal timber exported to Italy (42%) and Slovenia (25%)*" (UN-WCMC, 2020, p. 3).

5. RESULTS

This Chapter presents results in articles and focuses on the results from five selected countries. In more detail, Section 5.1 is composed of two published articles:

1. Article 1: Adaptation to EUTR Requirements: Insights from Slovenia, Croatia and Serbia. It presents results of policy document analysis of Croatia, Slovenia and Serbia and contributes to the understanding of EUTR implementation by qualitatively analysing 22 policy documents, revealing that none of the analysed countries have a direct policy addressing illegal logging or preventing illegal activities.
2. Article 2: Alignment of National Forest Policy Frameworks with the EU Timber Regulation Requirements: Insights from Montenegro and the Republic of Srpska (Bosnia and Herzegovina). It applies the same method used in Article 1 to two more countries, Montenegro and the Republic of Srpska (Bosnia and Herzegovina). It assesses the alignment of national forest policy frameworks with EUTR requirements, revealing through qualitative content analysis that both countries have well-developed policies addressing illegal logging and preventing illegal activities in forestry, notably through dedicated action plans.

After presenting policy analysis of five selected countries in 5.1, Chapter 5.2 is composed of two other articles:

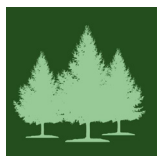
3. Article 3: Institutional and actor-oriented factors influencing timber legality in selected Western Balkan countries: Multiple case study of Croatia, Montenegro, Serbia, Slovenia, and the Republic of Srpska (Bosnia and Herzegovina). It presents results on key actors' perceptions and synthesises the findings from all five countries using the Actor Centered Institutionalism (ACI) framework.
4. Article 4 Perceptions of information exchange networks on timber legality among key actors in Serbia: An illustrative case study (in draft). It zooms in on the situation in one selected country (Serbia) and presents network analysis results of information exchange among key actors in Serbia. It discusses the implications of potential network structure on transposition of EUTR and EUDR requirements and policy network approach and provides avenues for future investigations.

As such, each article presents in its own the problem and research aims relevant for the case and unit of the analysis (being institutions or actors); related concepts and methods used for data collection and analysis; research results, discussion and conclusion.

5.1 Article 1

This article has been published as the following Open access paper:

Radosavljević, M.; Masiero, M.; Rogelja, T.; Glavonjić, B. Adaptation to EUTR Requirements: Insights from Slovenia, Croatia and Serbia. *Forests* **2021**, *12*, 1665. <https://doi.org/10.3390/f12121665>



forests

IMPACT
FACTOR

2.9

CITESCORE

4.5

Article

Adaptation to EUTR Requirements: Insights from Slovenia, Croatia and Serbia

Maja Radosavljević, Mauro Masiero, Todora Rogelja and Branko Glavonjić



<https://doi.org/10.3390/f12121665>



Article

Adaptation to EUTR Requirements: Insights from Slovenia, Croatia and Serbia

Maja Radosavljević, Mauro Masiero, Todora Rogelja and Branko Glavonjić

1. Department of Land, Environment, Agriculture and Forestry (TESAF), University of Padova, Via dell' Università 16, 35020 Legnaro, Italy; mauro.masiero@unipd.it (M.M.); todora.grasic@gmail.com (T.R.)
2. Faculty of Forestry, University of Belgrade, Kneza Viseslava 1, 11000 Belgrade, Serbia; branko.glavonjic@sfb.bg.ac.rs

*Correspondence: maja.radosavljevic@phd.unipd.it; Tel.: [+381-65-8055807](tel:+381-65-8055807)

Abstract: Eight years after the European Union Timber Regulation (EUTR) came into force, its effectiveness is still unsatisfactory due to deficient and uneven implementation among member states. In addition, some Western Balkan countries have poor legality monitoring systems, increasing the risk of trade in illegally harvested timber. Regardless of this, no recent work has analyzed the adaptation of national forest policies to the EUTR obligations. Our study aims to contribute to the understanding of EUTR implementation by analyzing the adaptation of policies of the Western Balkan countries (Slovenia, Croatia, and Serbia) to the EUTR. Qualitative content analysis was conducted on 22 policy documents from Slovenia, Croatia, and Serbia. Documents were coded using coding categories derived from EUTR. Our results point out that none of the analyzed countries have a policy to directly address illegal logging or prevention of illegal activities. As EU members, Slovenia and Croatia has implemented EUTR through laws. The Slovenian Forest Act addresses all EUTR obligations, while Croatian Law on EUTR Implementation does not directly address the obligation of legality. This obligation is addressed by the Law on Forests. As Serbia is not an EU member, it did not implement EUTR. Nevertheless, Serbian Law on Forests addresses all EUTR obligations, but has some discrepancies regarding Traceability obligation. With ongoing discourses on Green Deal policies and the increasing focus on “deforestation-free” commodities, stricter implementation might be expected of EUTR at EU level. Most countries would probably have to build capacities for EUTR implementation and become more transparent and responsible concerning information availability. To successfully implement EUTR, an increased number of checks as well as stricter fines will be needed.

Keywords: EUTR implementation; forest policy; the legality of timber and wood products; Western Balkan

1. Introduction

Over the last three decades, many efforts have been made to address deforestation and illegal logging. The European Union (EU), United States of America (USA) and Australia, among others, have adopted specific measures to avoid the placing of illegal timber on their markets. To prevent imports of illegally sourced timber and timber products, the EU adopted the Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan in 2003 and the EU Timber Regulation (EUTR) in 2013. While FLEGT addresses the supply side (producing countries), EUTR addresses the demand side (importing EU countries). The EUTR obliges importers to implement a due diligence system (DDS) to minimize the risk of importing illegally sourced timber and timber products to the EU.

EU regulations increased awareness of illegal logging in producing and importing countries [1], but the effects of these regulations on the trade of illegally sourced timber and timber products are still debated. Eight years after the EUTR came into force, its effectiveness is still unsatisfactory due to deficient implementation [2]. The implementation of EUTR within EU member states is uneven, which impacts its effectiveness also on market operators and traders. In its 2020 fitness check, the European Commission reported that “while progress has been made in some countries, the current level of technical capacity and resources (both human and financial) allocated to the Competent Authorities often does not correspond to the needs and must be strengthened in most of the member states to increase the number and quality of compliance checks” ([3], p. 11). Furthermore, many reports and studies reveal other gaps in implementation (i.e., information disclosure, weak sanctions, etc.), which need improvements to succeed in a full and effective implementation of the EUTR [2,4]. They call for the EU to strengthen the EUTR implementation and facilitate the removal of deficiencies, stating that uneven implementation by the member states might indicate that “the fight against illegal logging is not considered a high priority by national governments” ([2], p. 19).

EU regulations increased awareness of illegal logging in producing and importing countries [1], but the effects of these regulations on the trade of illegally sourced timber and timber products are still debated. Eight years after the EUTR came into force, its effectiveness is still unsatisfactory due to deficient implementation [2]. The implementation of EUTR within EU member states is uneven, which impacts its effectiveness also on market operators and traders. In its 2020 fitness check, the European Commission reported that “while progress has been made in some countries, the current level of technical capacity and resources (both human and financial) allocated to the Competent Authorities often does not correspond to the needs and must be strengthened in most of the member dtates to increase the number and quality of compliance checks” ([3], p. 11). Furthermore, many reports and studies reveal other gaps in implementation (i.e., information disclosure, weak sanctions, etc.), which need improvements to succeed in a full and effective implementation of the EUTR [2,4]. They call for the EU to strengthen the EUTR implementation

and facilitate the removal of deficiencies, stating that uneven implementation by the member states might indicate that “the fight against illegal logging is not considered a high priority by national governments” ([2], p. 19).

Available studies have mainly considered EUTR impacts on markets and trade flows, both within and outside the EU (e.g., [5-7]). Borsky *et al.* (2018), as well as Houghton and Naughton (2017) studied the impact of production sustainability on international trade, focusing on the effect of the International Tropical Timber Agreement on countries’ trade patterns of tropical timber [8,9]. Giurca *et al.* (2013), Pepke *et al.* (2015) and Masiero, Pettenella and Cerutti (2015) studied the influence of policy measures on the international trade flows of tropical timber [6,10,11]. They all call for caution about possible policy spillover effects in terms, for instance, of creation of dual markets for certain products and other influences on trade patterns, including, e.g., product or species substitution effects. Jonsson *et al.* (2015) studied how EUTR and other regulatory measures influenced timber flows involving tropical and EU countries [1]. Buongiorno (2016) analyzed the world trade in forest products, as well as the effects of the Trans-Pacific Partnership agreement on the trade of forest products between 12 EU member states [12]. Akyüz *et al.* (2010) studied the trade in forest products between the EU and Turkey [13]. Morland, Schier and Weimar (2020) applied the gravity model to study global trade flows for 13 types of forest sector products [14]. Becher (2019) found that “the imports, after the enforcement of EUTR, experienced a linear increase, or in case of tropical wood products, stagnation after a previous falling trend” ([5], p. 33). In the southern and eastern Europe, researchers mostly looked into forest certification as a mean for sustainable forest management [15,16], chain of custody certification [17] and trade of timber and timber products [18]

Although EU imports of legally harvested timber increased to some extent as a consequence of implementing specific policies and regulations, it is possible that illegally harvested timber and timber products are sourced and traded domestically, or that the producer countries shifted exports to the countries/regions with less stringent regulations [19]. Among countries at risk of producing and trading in illegal timber, as well as being subject to policy side-effects, are some Western Balkan countries (e.g., Slovenia, Croatia, Serbia). Worries about Balkan countries as a source of illegal timber have been reported, for instance, by Segato (2017), who found that “research into corruption in the forest sector in the Balkans shows that southeastern Europe is a corridor for criminal activity and illegal timber trafficking. A complex supply chain makes it difficult to identify falsified documents, and the lack of robust enforcement-due to insufficient resources-and the cost of compliance to companies means that there is little incentive to adhere to the EUTR. A better understanding of the EUTR, as well as more stringent due diligence systems and risk assessment, is needed to tackle corruption in the region” ([20], p. 13).

In Western Balkan countries, democratic changes took place in the late 1990s and early 2000s,

leading to new forest regulatory frameworks, new public procurement procedures, new regulation of private forest companies, stricter financial regulations, etc. In their accession to the EU, Croatia and Slovenia had to harmonize their laws with the EU legislation and its international principles. In this context, the EUTR is part of the body of community law and regulations that need to be incorporated to fulfill EU requirements ([21], p. 1). Slovenia and Croatia aligned their policies and regulatory frameworks with those of the EU and had to implement the EUTR requirements. Serbia is still in the pre-accession process and has yet to adopt EUTR obligations. It is recognized by the European Commission as a priority country for the implementation and enforcement of the EUTR [22]. In addition, all three countries have a significant share of their forest certified by third party verifiers, such as FSC and PEFC [15].

Although Western Balkan countries are regarded as priority areas for improving legality monitoring systems in line with EUTR requirements and aims, no recent work has analyzed the adaptation of national forest policies to the EUTR obligations

Furthermore, no comprehensive study on EUTR implementation in the Western Balkan countries has been performed. Our study aims to contribute to the understanding of EUTR implementation by analyzing the adaptation of policies of the Western Balkan countries (Slovenia, Croatia, and Serbia) to the EUTR. For this purpose, we look into two research questions:

RQ1: How did the Western Balkan countries-namely Slovenia, Croatia, and Serbia- adapt their policies to the EUTR?

RQ2: To what extent and how did they implement the EU requirements?

In Section 2, we outline the EUTR obligations and their implementation within the EU. In Section 3, we describe the research methodology. In Section 4, we provide some basic data on the forest sector for the selected countries (Slovenia, Croatia, and Serbia) focusing on EUTR enforcement. In Section 5, we present the results of our research, arranged according to our research questions. In Section 6, we discuss our findings and draw conclusions. Additional materials are provided in Appendices.

2. EUTR Obligations and Their Enforcement

The EUTR was passed by the EU Parliament in October 2010 and entered into force in March 2013. It covers the demand side for timber and timber products, by prohibiting the placing of illegally harvested timber and timber products on the EU market [23]. EUTR lays down three main obligations for operators who place timber and timber products on the EU market [24]:

- 1) It prohibits the placing of illegally harvested timber and products derived from such timber on the EU market for the first time.
- 2) It requires operators (i.e., those who place timber products on the EU market for the first time) to develop, implement and update a due diligence system (DDS), by obtaining information on the source and legality of timber and timber products, as well as conducting a risk assessment and risk mitigation.
- 3) It requires traders (i.e., those who buy or sell timber and timber products already on the market) to keep records of their suppliers and customers.

Operators can use their own DDS or one provided by monitoring organizations recognized by the European Commission. The task of the monitoring organizations is to assist operators in complying with EUTR requirements. The monitoring organizations develop a DDS, grant operators the right to use it, and check it is used correctly [23]. With this respect, forest certification schemes (i.e., FSC and PEFC) can be used by companies as a complementary tool for proving legality of timber and sustainable forest management. Furthermore, they can be used “also as an influencer in private and public purchasing policies and as a component of emerging wood harvesting and trade legality schemes” [17]. EUTR is legally binding for EU member states. Member states designate one or more Competent Authorities that are responsible for carrying out checks at regular intervals on operators’ compliance with the EUTR, as well as for laying down penalties and enforcing the EUTR. “The institutional structures, legal powers, and status of the designated authorities vary between countries due to their different legal and institutional frameworks” ([3], p. 2). Penalties differ considerably between countries, as well as “the approach taken to ensure effectiveness, proportionality, and dissuasiveness of the penalties applied” [25] (p. 1). The majority of countries impose administrative fines (23 countries) or seize timber and timber products (23 countries). In some countries, criminal fines (16 countries), suspension of trade authority (15 countries), or even imprisonment (17 countries) are applied for breaching the EUTR provisions [25]. In addition, criminal fines by 16 countries, imprisonment by 17 countries, and other penalties can be imposed by 11 countries [25].

In the recent Biennial report, the European Commission recognized certain shortcomings in the implementation of EUTR across the EU and concluded that an “uneven implementation can have potential implications in terms of both the effectiveness of legislation and a level playing field for market operators. In several countries, the number of checks remained relatively low compared to the number of operators, and it is doubtful, whether such a low number of checks can have a truly dissuasive effect across the industry. In addition, further effort should be made to ensure that the scope and quality of the checks carried out reflect a more consistent approach across the EU.” ([3], p. 12).

Several other organizations worry about discrepancies in the formal implementation of EUTR. In its Position Paper regarding EU rules on Illegal Logging published in November 2020, ClientEarth lists several issues about EUTR implementation [4]:

- Lack of staff and financial capacity in the member states;
- Uneven implementation leading to market disruption;
- Satisfactory assistance provided for small and medium enterprises (SMEs);
- The low number of checks conducted by Competent Authorities in the member states;
- Low penalties;
- Non-transparent reporting and disclosing relevant information of the member states;
- Weak cooperation between enforcing authorities within the member states.

Similarly, WWF found gaps in the implementation of EUTR concerning penalties and sanctions, number and quality of checks, follow up of control results and prosecution, resources and staff training, substantiated concerns by third parties, cooperation within and between countries, and transparency of Competent Authorities [2].

3. Materials and Methods

This research presents a comparative case study of three Western Balkan countries, i.e., Slovenia, Croatia and Serbia. A case study is “an empirical inquiry that investigated a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” ([26], p. 18). This research endorses multiple embedded case study design, as it analyzes policies and laws related to the prevention of illegal logging and trade of illegal timber and timber products of three Western Balkan countries. A multiple case study design covers multiple cases and draws a single set of cross-case conclusions.

It is thus more reliable and robust than a single case study approach. The embedded design refers to embedded units of analysis within each context [26].

The countries were selected as cases for the analysis as they present a wide range of economic, social and policy conditions [27]. All three export a large proportion of their timber and timber products to EU member states. They also reflect the changes that occurred after the breakup of the former Republic of Yugoslavia and with accession to the EU. Slovenia joined the EU in 2003, Croatia in 2013, while Serbia is still in the pre-accession process. There are therefore also several differences between these countries concerning economic development, social-political stability, and new forest policy and regulatory frameworks. Within each case, units of analysis include policies and laws related to the prevention of illegal logging and trade of illegally sourced timber and timber products, as well as policies and laws related to EUTR implementation.

As policy documents are written plans that prescribe means of actions [28-30], we focused on the content of policy documents that are of relevance to the legality of timber and timber products. National policies and regulations related to the prevention and tackling of illegal logging, as well as the trade in timber and timber products, were collected via a literature review and internet search in May 2021. The starting point for the identification of relevant policy documents were the websites of Ministries responsible for forestry in the three selected countries. Those websites contain lists of policy and normative documents that guide the national forestry sectors. After compiling an initial list of documents for targeted countries, other relevant websites were searched, including, among others, the websites of state forest enterprises, chambers of forestry engineers, associations of private forest owners, etc. Finally, a Google search was used to find other relevant policy documents in national languages using a combination of keywords, i.e., “Slovenia”, “Croatia”, “Serbia” and “illegal logging”, “wood processing”, “timber trade”, “European Union Timber Regulation” and “forestry documents”. For Slovenia and Serbia, this search did not yield additional results, whereas for Croatia it resulted in three additional documents not previously identified. The finalized lists of documents for all three countries were cross-checked with 3 national experts on forest policy from Slovenia, Croatia and Serbia. In total, we identified 8 Slovenian, 10 Croatian, and 4 Serbian policy documents. In the case that policies and regulations were not available for consultation through the above-mentioned sources, relevant institutions were contacted and were asked for the documents.

Policy documents were analyzed using qualitative content analysis. This is a technique for the systematic analysis of texts that addresses the content, themes and core ideas in texts [31,32]. “Qualitative content analysis includes contextual information, latent content, as well as formal aspects of the analyzed documents” ([30], p. 149). The software NVivo 12 was used to perform the analysis. All documents were coded in the relevant national language. Coding was performed by using a combination of deductive and inductive coding, distinguishing between coding categories and themes. Based on the content of Regulation (EU) No 995/2010 (EUTR), five main coding

categories, and their respective themes were deducted (Table 1). During the coding process, several other themes emerged as relevant for EUTR implementation; thus, they were added inductively. Whole paragraphs of the text were coded under relevant themes, and multiple coding of paragraphs was allowed.

Table 1. Deductive and inductive coding categories and themes.

No	Coding categories	Coding themes	Related to	Related to
1	EUTR	International commitments	Deductive	Explicit or implicit referral to the EUTR
		Forest protection	Inductive	Referral to forest protection against negative human influences
2	Prohibition	Planning	Inductive	Referral to planning documents about felling, wood transport, or record keeping
		Illegal activities	Deductive	An explicit mentioning of illegal activities of relevance to the EUTR
		Felling	Deductive	An explicit mentioning of felling requirements
		Felling of protected species	Deductive	An explicit mentioning of felling requirements for protected species
3	Due diligence	Certification	Deductive	An explicit mentioning of forest certification
		Wood products	Inductive	Referral to wood products certification or trade
		Wood transport, processing, and storage	Deductive	An explicit mentioning of the requirements for wood transport, processing and storage

No	Coding categories	Coding themes	Related to	Related to
4	Traceability	Record keeping	Deductive	An explicit mentioning of required records
		Information	Inductive	Referral to accessibility and transparency of information
5	Implementation	Competent authorities	Deductive	An explicit mentioning of competent authorities
		Monitoring	Deductive	An explicit mentioning of monitoring activities
		Sanctions	Deductive	An explicit mentioning of sanctions, fines, and other restrictive measures

Source: Own elaboration.

4. Forestry in Selected Countries

This section first presents a brief overview of the forestry sector in the selected countries focusing on forest resources, their ownership and tenure, as well as on wood production and the main trade flows, on illegal activities and, finally, on tools for promoting responsible forest management and tackling illegal logging, namely forest certification and EUTR implementation.

b. Slovenia

Slovenia is one of the most forested countries in Europe with 1,176,754 ha of forest cover (58% of the territory) [33]. Forests in Slovenia are mainly owned by private forest owners (77%), 20% are state-owned, and 3% are owned by local communities. In 2019, the total volume of forest wood assortments produced in Slovenia was 4,729,000 m³, of which 40% were exported [34]. The main export destinations are Austria and Italy, while the main import partners are Croatia, Italy and Austria [35,36].

All state forests are managed by the state company Slovenski drzavni gozdovi- SiDG [37]. They have been certified according to the Forest Stewardship Council (FSC) scheme since 2007, and according to the Program for the Endorsement of Forest Certification (PEFC) scheme since 2017. In addition to state forests, the SiDG joint forest management (FM) and chain of custody (CoC)

certification group includes seven major private forest estates with a total area of 24,346.76 ha, 12 timber traders, 16 sawmills and 32 wood processing companies [38]. Private forests are included in the PEFC regional certification (RCG PEFC). It includes 1196 owners managing 292,722 ha of forests, which represents almost one-fourth of Slovenian forests [39].

In 2019, 2851 illegal activities were recorded for the forest sector on a total area of 577 ha: these figures are similar to those reported for 2018. In 2019, 111 illegal activities (3.9% of the total) were reported as occurring in the forest and forest area, which is slightly less than in 2018 (120). Illegal activities in 2019 were caused by agriculture (13.7 ha), mining (5.5 ha), and urbanization (3.4 ha), while illegal logging due to the building of infrastructure and other causes affected 0.6 ha each [33].

Slovenia has been implementing EUTR since 2013. Forestry inspection (i.e., the Inspectorate for Agriculture, Forestry, Hunting and Fishing [40]) is the responsible organization for carrying out checks on operators placing domestic timber on the market, while the Financial administration of the Republic of Slovenia is in charge for operators importing timber. Summary data on EUTR implementation in Slovenia (and Croatia) are presented in Table 2.

Table 2. EUTR implementation in Slovenia and Croatia.

	Slovenia	Croatia
Estimated no of operators trading in domestic timber	460 000	600 000
Estimated no of operators trading in foreign timber	1 426	3 589
Competent authority (CA)	Ministry of Agriculture, Forestry, and Food	Ministry of Agriculture and Ministry of Finance, Custom office
Annual plan of checks	1	0
Total number of checks on operators planned (domestic timber)	380	0

	Slovenia	Croatia
Total number of checks on operators planned (imported timber):	29	120
Total number of checks on operators undertaken (domestic timber)	611	0
Total number of checks on operators undertaken (imported timber):	29	104
Total number of checks on traders undertaken	177	1
Total number of penalties for domestic timber	n.a.	n.a.
Total number of penalties	n.a.	n.a.
Checks on MO	“Burea Veritas” on 29 March 2017	0
Particularly relevant trade partners	Bosnia and Herzegovina, Russia, Ukraine, Serbia	Bosnia and Herzegovina, Serbia, Ukraine
Substantiated concerns	16	0
Human resources (imported timber)	2 full time	3 (this work is performed in addition to other regular inspection work)
Human resources (domestic timber)	14 (this work is performed in addition to other regular inspection work)	1
Budget	n.a.	0
Number of operators who received assistance/training	60	1 000

n.a. - not available.

Source: own elaborations from Slovenian and Croatia national reports on EUTR implementation [41,42].

c. Croatia

The total area of forests and forest land in Croatia amounts to 275,903,905 ha, equivalent to about 47% of the total national land area ([43], p. 452). State-owned forests represent 76% of all forests, while private forests the remaining 24% ([43], p. 449). According to estimates, there are about 600,000 private forest owners in Croatia. Management is carried out according to 10-year management plans, which are in place for about 70% of private forests [44] and all (100%) state-owned forests. In 2019, the total volume of forest wood assortments produced in Croatia was 13,995,000 m³ [45]. The wood sector is traditionally export-oriented [46] and accounts for about 8% of the total national foreign trade totaling about 1.1 billion EUR in 2019. The leading export market for Croatian products is Italy (21%), followed by Germany (13%), Slovenia (10%) and China (7%) ([47], pp. 17-22). As regards wood imports, the main partner countries for Croatia are Serbia and Bosnia and Herzegovina, followed by Albania, Kosovo and Montenegro [21].

All state forests in Croatia are managed by Public Enterprise Hrvatske šume Ltd. (Zagreb, Croatia) [48] and FSC certified since 2002 ([43], pp. 52-55). In addition to this, there are currently over 250 FSC CoC-certified wood processing companies [49].

Recent documents and official data on illegal logging in Croatia are scarce. In 2020, the Report on Deforestation in the Republic of Croatia was submitted to the European Parliament by the Croatian non-government organization (NGO) VIDRA. The report accuses Hrvatske šume Ltd. Of performing excessive and illegal logging in Natura 2000 areas all over Croatia [50]. The European Parliament responded that “the responsibility for forests lies with the member states, and all forest-related decisions and policies in the EU must respect the principle of subsidiarity and member states’ competence in this field” [51].

Croatia has taken over its obligations for the implementation of EUTR from the date of joining the EU in 2013. However, the Law on implementation of the EUTR entered into force a couple of months before joining. The Ministry of Agriculture is the Competent Authority responsible for carrying out checks of operators, traders, and monitoring organizations [52]. The Ministry of Finance is also included in the process by providing data for checks. Between March 2015 and February 2017, Croatia did not plan or carry out checks on domestic timber, stating that 70% of the domestic forests are state-owned [42] ([53], p. 33).

d. Serbia

Serbia has 2,237,511 ha covered by forests which correspond to about 29% of the national land [54]. 57% of forests in Serbia are owned by private forest owners and 43% are state-owned. Private forests are small and fragmented, being owned by approximately 900,000 forest owners [27]; this would correspond to an average size for private forests of about 1.42 ha. State forests are managed by Public Enterprise Srbijashume, and Public Enterprise Vojvodina šume [55,56].

As of April 2021, there are three joint FSC FM-CoC certificates. PE Srbijašume holds two certificates [55] and PE Vojvodinašume holds 1 [57]. The total certified forest area corresponds to 94,809,721 ha. Moreover, a total number of 245 CoC certificates have been issued to companies engaged in wood processing, trade and paper production [38].

In 2020, 3,180,227 m³ of wood assortments were produced in Serbia ([58], p. 39). Wood imports grew by 7.2% since 2019 and total some 373 million United States dollars (USD). Total exports of the Serbian wood and wood furniture industry in 2020 equaled 548 million USD. Imports of softwood sawn timber amounted to 298,999 m³ worth 48.7 million USD ([59], pp. 6-8). Serbia exports wooden furniture to over 30 countries, the main importers being Romania, France, Germany, the Netherlands and Italy, followed by other Western Balkan countries such as Macedonia, Bosnia and Herzegovina and Montenegro ([60], p. 21). In 2019, 26,678 m³ were illegally logged, while an additional 700 m³ were damaged by human activities ([58], p. 51) including theft of forest assortments, and other damage. Serbia has not yet started implementation of EUTR. In Serbia, as well as in other non-EU Western Balkan countries, EUTR preparations are proceeding slowly. Due diligence standards and systems are not well developed. Unregistered/illegal logging occurs in the country in some instances because of government corruption, administrative procedures needed for felling in private forests, and weak connections between forestry and the wood processing industry. It seems that legality is not considered a priority in the wood processing industry and forestry, as “at present, there are no meetings among forest producers/companies in Serbia to discuss illegality risks” ([61], p. 7).

The PLAC project “Legal harmonization with FLEGT and EUTR-Demands, Needs and Consequences” produced recommendations for improvement of the Law on Forests to be in line with the EUTR Directive. In addition, this project recommended the preparation and adoption of specific legislation related to the timber trade, which should be in line with EUTR. This project also found that FLEGT Regulation is not transposed to national legislation. Currently, the Directorate for forests is engaged in the project Improvement of forest management in Serbia as a contribution to climate change adaptation and mitigation [62]. The specific objective of this project is “to strengthen capacities of the forestry sector in Serbia to be able to implement obligations stemming from EU standards and regulations in the field of forestry and forestry-related fields, including timber market, Forest Information System, subsidies, NATURA 2000 and bioeconomy” ([63], p. 3). The project should be finished by December 2022.

5. Results

a. How Did the Western Balkan Countries Adapt Their Policies to the EUTR?

This section provides the results of the content analysis answering our first research question. Results are presented according to coding categories, country by country.

i. Slovenia

As we were interested in adaptation of policies to EUTR requirements, we identified eight potentially relevant policy documents at the Slovenian national level (Table 3). A description of Slovenian policy documents is provided in Appendix A.1, while detailed coding themes are given in Appendix A.2.

Table 3. Identified policy documents on the national level (Slovenia).

Category	Document Name	Type of document	Year
Strategic documents	Resolution on the National Forest Program	Resolution	2007
	Forest Development Program in Slovenia.	Program	1996
	Operational program for the Implementation of the National Forest Program	Program	2017
	Action Plan to Increase the Competitiveness of the Forest-Wood Chain in Slovenia by 2020	Action Plan	2012
Regulatory documents	Forest Act	Law	2016
	Management of State Forests Act	Law	2016
Guidelines	Explanations on the Record Sheet on The Use and Trade of Forest Wood Assortments	Communication	2016
	Explanations on the Accounting Document	Communication	2016

Source: Own elaboration.

Table 4 provides an overview of coding categories identified in Slovenian policy documents and number of coded references found among them. As Slovenia is an EU member state, it had to translate EUTR obligations into policy and regulatory documents. However, on the national level, there is no policy explicitly related to prevention of illegal logging or other illegal activities (Theme EUTR commitments). Furthermore, none of the strategic documents explicitly mention illegal logging or EUTR. Strategic documents implicitly refer to the obligation of implementing EUTR requirements through fulfilling international commitments, such as ratified conventions and EU regulations [64,65], or forest protection [66].

Table 4. Coding categories identified in Slovenian policy documents and number of coded references.

	EUTR commitments	Prohibition	Due diligence	Implementation	Traceability
Resolution on the National Forest Program	5	5	2	2	0
Forest Development Program in Slovenia	2	4	2	1	0
Operational program for the implementation of the National Forest Program	1	4	1	0	0
Forest Act	1	11	6	17	7
Management of State Forests Act	0	2	0	2	0
Explanations on the Record Sheet on The Use and Trade of Forest Wood Assortments	1	0	1	0	2
Explanations on the Accounting Document	0	0	0	0	3
Action Plan to Increase the Competitiveness of The Forest-Wood Chain in Slovenia by 2020	0	4	3	0	0

Source: Own elaboration based on NVivo 12 Matrix query.

In Slovenia, EUTR is implemented through the Forest Act, which is the only legal document explicitly referring to EUTR implementation ([67], Article 1a). This document addresses all three EUTR obligations. Document Explanations on the record sheet on the use and trade of forest wood assortments also contains a paragraph dedicated to the explanation of EUTR, and related obligations for forest owners as well as other natural and legal persons that place timber on the EU market for the first time [68]. Illegal logging is implicitly addressed solely by the Forest Act. It does not define illegal logging, but it stipulates that “in forests, any action that reduces the growth of the stand or the fertility of the site, the stability or sustainability of the forest or endangers its functions, its existence or purpose is prohibited” ([67], Article 18).

ii. Croatia

For Croatia we identified 10 potentially relevant policy documents for the implementation of EUTR (Table 5). A description of policy documents is provided in Appendix B.1, while detailed coding themes are given in Appendix B.2.

Similar to Slovenia, Croatia did not adopt new strategic documents that explicitly address prevention of illegal logging or other illegal activities (Theme EUTR commitments). Strategic documents implicitly refer to the obligation of implementing EUTR requirements through fulfilling international commitments, such as ratified conventions and EU regulations. Although the National Forest Policy and Strategy was adopted before Croatia entered the EU, it states that implementation of resolutions and conventions, as well as harmonization of regulations and institutions with EU regulations are a priority task ([69], p. 1676). The Strategy for the Development of Timber Processing and Furniture Production states that it respects guiding principles of sustainable and multifunctional forest management, efficient use of natural resources, and responsibility for global forests, promoting sustainable production and consumption of forest products, but it does not explicitly mention EUTR [70].

Table 5. Identified policy documents on the national level (Croatia).

Category	Document Name	Type of document	Year
Strategic documents	National Forest Policy and Strategy	Strategy	2003
	Strategy for the Development of Timber Processing and Furniture Production	Strategy	2017
Regulatory documents	Law on Forests	Law	2018
	Law on the Implementation of European Union Regulations on the Trade of Timber and Timber Products	Law	2018

Category	Document Name	Type of document	Year
Regulatory documents	Law on Trade	Law	2008
	Ordinance on Remittance of Trees, Marking of Timber Assortments, Consignment Note, and Forest Order	Bylaw	2015
	Regulation on the Auction of Certain Timber Assortments	Bylaw	
Guidelines	Instructions for Operators and Traders	Communication	2018
	List of Timber and Timber Products to Which the EUTR Applies	Communication	2018
	List of Protected Species Whose Trade is Restricted or Under Special Supervision.	Communication	2018

Source: Own elaboration.

Croatia transposed EUTR requirements through the Law on the Implementation of the European Union Regulations on the Trade of Timber and Timber Products, which was adopted in 2018 and amended in 2020 [71]. Although this law refers to the Competent Authorities, professional and inspection supervision, and misdemeanor, it does not fully address obligations of prohibition, due diligence and traceability. Those are addressed in the Law on Forests and other documents (Table 6).

Table 6. Coding categories identified in Croatian policy documents with number of coded references.

	EUTR commitments	Prohibition	Due diligence	Implementation	Traceability
National Forest Policy and Strategy	5	7	4	9	0
Strategy for the Development of Timber Processing and Furniture Production	4	4	0	4	0
Law on Forests	5	2	19	13	6
Law on the Implementation of European Union Regulations on the Trade of Timber and Timber Products	0	0	3	1	1
Law on Trade	7	0	0	0	1
Ordinance on Remittance of Trees, Marking of Timber Assortments, Consignment Note, and Forest Order	6	0	1	7	10
Regulation on the Auction of Certain Timber Assortments	3	0	0	0	6
Instructions for Operators and Traders	1	0	2	0	1
List of Timber and Timber Products to Which the EUTR Applies	0	0	0	1	0
List of Protected Species Whose Trade is Restricted or Under Special Supervision	1	0	0	0	0

Source: Own elaboration based on NVivo 12 Matrix query.

5.1.3 Serbia

For Serbia, we identified four relevant policy documents for the implementation of EUTR (Table 7). A description of policy documents is provided in Appendix C.1, while detailed coding themes are given in Appendix C.2.

Table 5. Identified policy documents on the national level (Croatia).

Category	Document Name	Type of document	Year
Strategic documents	Forestry Development Strategy	Strategy	2006
	Law on Forests	Law	2015
Regulatory documents	Law on Foreign Trade	Law	2018
	Rulebook on consignment, and delivery note	Bylaw	2015

Source: Own elaboration

As Serbia is not an EU member state, it did not translate EUTR obligations into policy and regulatory documents. Regardless of this, identified categories in the four policy documents can be implicitly or explicitly relevant for EUTR (Table 8).

Table 8. Coding categories identified in Serbian policy documents with number of coded references.

	EUTR commitments	Prohibition	Due diligence	Implementation	Traceability
Forestry Development Strategy	14	3	3	0	6
Law on Forests	7	11	2	6	6
Law on Foreign Trade	1	0	0	0	0
Rulebook on Consignment, and Delivery Note	0	1	1	4	0

Source: Own elaboration based on NVivo 12 Matrix query.

EUTR is implicitly tackled by the Forestry Development Strategy which states that the Government shall “harmonize the future legislative and institutional framework with the requirements of the European Union” ([72], p. 32). It also stresses that “the valid legislative and regulatory instruments do not ensure the adequate protection and enhancement of current forest resources” ([72], p. 10). According to the Law on Forests, protection of forests against illegal appropriation, use, destruction and other illegal activities is the responsibility of the user or forest owner, who is obliged to organize a forest protection service (i.e., the appointment/employment of forest guardians) ([73], Article 39).

b. How Did Selected Countries Implement the EUTR Requirements?

i. Slovenia

In Slovenia, EUTR obligations are implemented through the Forest Act and the Forest Development Program. With respect to the legality of timber logging, the Forest Development Program prescribes that all measures undertaken in forests must be planned ([65], p. 13). According to the Forest Act, forest management plans define the quantitative, temporal and spatial scope of felling, as well as methods and conditions for obtaining wood (Theme Planning). Felling in both state and private forests is performed according to valid forest management plans ([67], Article 13). Before felling, the trees must be selected, marked and stamped by the district forester who issues the Decision on felling ([67], Article 17). Furthermore, according to the Forest Act, it is illegal to transport wood or wood assortments without a valid Accounting document (see Theme Record keeping). The Accounting document issued by the consignor must contain all data required by the EUTR (see Appendix A.2).

The carrier of forest wood assortments must have a copy of the Accounting document after loading and during their transport and has to hand it over to the authorized official for supervision on request ([67], Article 17b). In several cases, including for example sales between two natural persons, an Accounting document is not required (see Appendix A.2 for more details). For forest wood assortments imported from third countries, including other EU member states, the Accounting document is not needed, but the carrier must prove the origin of assortments to the authorized official ([67], Article 17b).

As an optional tool for transparent management of data required by due diligence obligations set by the EUTR, the Ministry of Agriculture, Forestry, and Food recommended the use of a Record sheet on the use and trade of forest wood assortments and its five-year retention together with the accompanying documents (i.e., felling decision) [68]. The Record Sheet on the Use and Trade of Forest Wood Assortments contains information as required by EUTR (see Appendix A.2 for details).

Forest owners and other natural and legal persons may provide the information necessary to ensure the traceability of timber and timber products and the DDS in other ways, but they must comply with the provisions of EUTR regulation [74]. According to the Forest Act, all forest management plans are documentary material and must be kept permanently. The Decision on felling, Accounting document and Record sheet must be kept for five years, in line with the EUTR obligation of traceability.

The Competent Authorities for the enforcement of EUTR and related secondary legislation (in particular, Regulation 607/2012/EU) are the Ministry of Agriculture, Forestry and Food, the Inspectorate for Forestry, and the Financial Administration of the Republic of Slovenia, each of them according to their specific competencies. The Ministry of Agriculture, Forestry and Food is responsible for keeping records, exchanging information, conducting inspections of control organizations, and reporting to the European Commission. The Inspectorate for Forestry and the Financial Administration provide the Ministry of Agriculture, Forestry and Food with all necessary information [67].

The Resolution on the National Forest Program states that monitoring of forests is carried out by the Forestry Inspection (see Appendix A.1 for more details), and in protected areas also by the Inspection body responsible for nature conservation [66]. The Inspectorate for Forestry (Ministry of Agriculture, Forestry and Food) performs inspection of forest works. The Forest Development Program reports that the number of forest inspectors is relatively low and that private forest owners are the focus of forest inspection [65]. For that reason, in 2006, the Slovenian Forest Service started implementing direct control in nature, i.e., control of forest management including on site/field controls to check compliance with regulations in the field of nature protection ([67], Article 75). Financial administration and the police can also act as inspection bodies in the case of transport of wood or forest wood assortments without an accounting document ([67], Article 75).

For infringements of the Law on Forests, monetary sanctions are prescribed. The amount of fines depends on the type of legal entity that commits a certain illegal activity, as well as on the severity of the activity itself (see Appendix A.2 for more details) ([67], Article 81 and 81a). For the offense of placing illegally harvested timber or timber products on the market, in addition to the prescribed fine, a collateral sanction consisting of the confiscation of forest wood assortments may be imposed. In that case, the supervisory authority seizes forest wood assortments. Transport, storage and disposal of seized forest wood assortments are performed by the company Slovenski Državni Gozdovi, on behalf of the Republic of Slovenia ([67], Article 81c).

ii. Croatia

In Croatia, EUTR obligations are implemented through the Law on the Implementation of European Union Regulations on the Trade of Timber and Timber Products [71]. Although this law refers to

Competent Authorities, and their responsibilities it does not fully address EUTR obligations on prohibition. With respect to the legality of timber logging, illegal activities are explicitly addressed by the Law on Forests and the National Forest Policy and Strategy [69,75]. The latter defines the measure of “strengthening the forestry guard service by giving greater powers to prevent illegal activities in forests” ([69], p. 1672). The Law on Forests defines illegal logging as “any felling of trees that is not prescribed by forest management plans”([75], Article 8). Forest management plans are the basic documents for the management and use of forests ([75], Article 27). They make a legal and technical basis for the remittance of trees and felling.

With respect to due diligence, the Law on Forests prescribes that timber forest assortments may be transported only if they are marked and if the prescribed consignment note has been issued for them ([75], Article 37). For manufactured and properly marked timber assortments for which a consignment note has already been issued, a new one may be issued at a later date as specified below. A new (EUTR) consignment note is issued by a licensed forester confirming traceability, in accordance with the EUTR. The sale of timber assortments belonging to the tariff codes 4401 and 4403 and originating from forests managed by the company Hrvatske šume L.t.d.. (i.e., the Croatian National Forestry Enterprise) is performed by auctioning. At the request of other users, i.e., forest owners, timber assortments originating from forests that are not managed by the company Hrvatske šume Ltd. Can also be sold by auctions ([76], Article 1).

The Regulation on the Auction of Certain Timber Assortments prescribes that before offering timber or timber assortments via an auction, a Request for bidding must be submitted to the Committee for the auction. If the request contains all the data, the Committee issues consent for bidding. After the bidding, the Committee draws up a record of the public auction, as a proposal based on which the Ministry of Finance decides on the selection of the bidders who offered the highest price for certain timber assortments and issues a Notice of public auction with a maximum validity of 90 days. The Notice is a document with information on the origin and legality of timber assortments, the right of purchase based on tenders and resale on the EU market and the European Economic Area market, as well as to export timber assortments to third countries. Attached to the Notice is the Specification of timber assortments as listed in the request for bidding and the bid-offer. According to the issued Notice and Specification, and at the request of a legal or natural person who wishes to sell or export timber assortments referred to by the Specification, the licensed forester performs measurement, marking and stamping in accordance with forestry regulations and issues a new (EUTR) consignment note, which is a condition for further transport of timber assortments [76].

Traceability of timber and timber products is regulated by the Law on Forests, according to which forests should be managed transparently, making forest management plans publicly available, and keeping the information on forests available in the national Register ([75], Article 2). The national Register is an electronic record of the whole forest management area of the Republic of Croatia. It represents a unified system of registers of data whose purpose is to ensure effective access

to information and support decision-making and management ([75], Article 3). The Register also contains a section for reporting to fulfill international and national obligations set by the EU legislation, international conventions, agreements, protocols and other acts binding on the Republic of Croatia ([75], Article 13). According to the Law on Forests, all forest management plans must be kept permanently and the evidence on the remittance of trees is to be kept in the Register ([75], Article 30). Besides that, the licensed forester keeps the Remittance book of all trees marked for felling. The Remittance book for state forests is kept by Hrvatske šume Ltd., while for private forests by the Advisory service (see Appendix B.1 for more details) ([77], Article 10). Licensed foresters are obliged to submit a summary table of marked and felled trees to the Ministry of Agriculture once a month. The summary table contains data on the forest owner (name and surname), county, administrative municipality, cadastral municipality, cadastral parcel, and economic unit, as well as data on tree species, assortments and volume ([77], Article 23). Licensed foresters also keep the consignment book which includes all issued consignment notes ([77], Article 20).

Instructions for Operators and Traders state that the economic operator is obliged to keep timely and systematic records of each consignment of imported timber and timber products. Records on all suppliers from whom logs and timber products are purchased, and on all customers to whom logs and timber products are sold shall be kept by economic operators for at least five years [78].

The Competent Authorities for the enforcement of the EUTR are the Ministry of Agriculture, Ministry of Finance and the Customs Administration [71,75]. The Customs Administration is responsible for receiving FLEGT licenses and keeps records about them, further verifying the consignment covered by the FLEGT licenses, and takes provisional measures where needed ([71], Article 6). The Ministry of Agriculture verifies and accepts the FLEGT licenses, checks the implementation of the DDS by operators, as well as compliance with the traceability obligation of traders within the supply chain. Moreover it reports to the European Commission and determines corrective measures where appropriate ([71], Article 6).

According to the Law on Forests the protection of state forests is performed by the forest rangers. If a forest ranger finds a person who illegally appropriates timber, or other forest products, or performs other illegal activities, (s)he is obliged to establish the identity of that person and temporarily confiscate the illegally appropriated forest products and assets ([75], Article 44). Legal supervision over the implementation of the Law on Forests is performed by the Ministry of Agriculture. Inspection supervision is performed by forestry inspectors from the State Inspectorate. Professional supervision of the quality of work is performed by the Chamber of Forest Engineers at the request of the Ministry of Agriculture or other persons with a legal interest. Inspection supervision in the field of trade is carried out according to special regulations, namely the Law on Trade and the EUTR.

For infringements of the Law on Forests as well as EUTR obligations monetary sanctions are prescribed. The amount of fines depends on the type of legal entity that commits a crime, as well as on the severity of illegal activities (see Appendix B.2) ([73], Article 9-10). For the offense of placing illegally harvested timber or timber products on the market,

in addition to the prescribed fine, a collateral sanction consisting of the confiscation of forest timber assortments may be imposed. In that case, the Customs office seizes them. Transport, storage and disposal of seized forest timber assortments are performed by Hrvatske šume Ltd., on behalf of the Republic of Croatia ([75], Article 94).

iii. Serbia

In Serbia, the EUTR is not implemented through existing regulatory and strategic documents. Illegal logging is marginally addressed by the Forestry Development Strategy which states that the Serbian Government will establish an efficient system of forest protection against illegal felling, illegal occupation, illegal building, and other unlawful actions and efficiently sanction illegal actions related to forests ([72], pp. 38-40). The Law on Forests defines illegal logging as the felling of trees that is not performed according to the forest management plans and prohibits transport and processing of the timber without the stamp. It also prohibits the felling of protected species. Forest management plans provide both technical and legal requirements and guidelines for conducting all operations in forests, including felling (see Appendix C.1).

With respect to the legality of logging, the Law on Forests stipulates that felling of trees in forests can be performed only after selection, marking with remittance stamp, and registration of trees for felling ([73], Article 57). The remittance shall be made by a licensed forester allowed to perform professional activities in forest management. The right to the remittance stamp is issued to an expert employed by a forest owner who manages the forest following a valid forest management plan or is employed by the legal entity that manages the forest. The remittance stamp is assigned by the competent ministry (or other competent institution of the Autonomous Province of Vojvodina) to each expert ([73], Article 58). Felling of protected species is prohibited unless they are a source of infection from diseases and pests, or if they endanger people and objects. In this case, the competent Ministry (or other competent institution of the Autonomous Province of Vojvodina) must approve felling. Stumps of illegally logged timber must be marked by a licensed forester employed by a legal person (e.g., PE Srbijasume, private company, etc.) with a stamp indicating forest misdemeanor.

With respect to due diligence obligations, the Law on Forests stipulates that felled timber must be stamped and followed by a consignment or delivery note to be placed on the market (bought, sold, donated, stored and transported). Stamping of felled timber and issuance of a consignment or delivery note is performed by the forest owner or the user who manages the forest according to the

management plan. It is prohibited to process and store timber if it is not stamped and if it is without a consignment or delivery note ([73], Article 60).

With the aim of creating and retrieving the highest possible value from forest products, the Forestry Development Strategy prescribes to “develop the national criteria, indicators, and guidelines for sustainable forest management pursuant to the Pan-European criteria and indicators of sustainable management and stimulate the voluntary forest certification” ([72], p. 54). Similarly, the strategy prescribes a measure for “creating the conditions for the beginning of the forest certification process for wood products” ([72], p. 62), to create an efficient wood industry sector competitive on the world market. Under the same objective, the strategy prescribes a measure aimed at “introducing the system of production quality control and the harmonization of technical norms in the field of wood industry with the European and international standards” ([72], p. 60).

The Forestry Development Strategy reports that information on the status of resources, measures and activities implemented in forests should be made available to all stakeholders and the public ([72], p. 68).

The Law on Forests prescribes that completed forest management operations are recorded and presented as an integral part of the forest management plans ([73], Article 34). A person who places timber on the market must keep evidence of the stock of sold, processed and bought timber, number of the consignment or delivery note, the name and address of the supplier and buyer of the timber, mark and number of the stamp by which the wood is stamped, types and quantities of timber by assortment, as well as place and date of receipt/delivery of timber ([79], Article 14). The book of consignment or delivery notes must be kept for at least two years, which is not in line with the EUTR requirement of traceability (five years). Data on illegally logged timber are kept in a book of forest misdemeanors.

As Serbia did not implement EUTR, there are no competent authorities for enforcement of the EUTR. The Forestry Development Strategy states that the regulatory, supervisory and supportive functions will be executed by the ministry’s division responsible for forestry. The supervision is implemented through the inspection affairs with the aim of promoting sustainable forest management ([72], pp. 80-82).

The Law on Forests prescribes that monitoring activities in state-owned and private forests are carried out by forest inspectors ([73], Article 107-108). In addition to the forest inspector, the forest guardian is (amongst others) authorized to stop/check a person caught while performing illegal activities, inspect all types of vehicles by which timber is transported as well as documentation that accompanies timber in traffic and report on the illegal activities ([73], Articles 39-41) (see Appendix C.2 for more details).

For infringements of the Law on Forests, monetary sanctions are prescribed. The amount of fines depends on the type of legal entity that commits a crime, as well as on the severity of illegal activities (see Appendix C.2) ([73], Article 111-113).

6. Discussion and Conclusions

Our study points out that none of the analyzed countries have strategic policy documents (i.e., a strategy or action plan) specifically dedicated to the prevention of illegal activities in forestry. Existing policies address illegal logging marginally, without specifying measures for preventing and combating it. This might imply that, in analyzed countries, illegal logging and trade are not currently regarded as “hot” political issues requiring targeted strategies or action plans, which is in line with the WWF findings from 2019 [2]. Illegal logging is referred to in analyzed forest laws, mostly within the description of tasks and responsibilities for forestry inspectors and guards.

Table 9 presents a summary of EUTR obligations and related key documents needed to prove DDS implementation and timber legality in the three targeted countries. Both similarities and differences concerning the EUTR implementation were noticed between analyzed countries. Both Slovenia and Croatia fully implemented EUTR requirements through regulatory documents. Slovenia amended the Forest Act in 2016 and integrated all EUTR requirements. In 2018 Croatia adopted the Law on the Implementation of the European Union Regulations on the Trade of Timber and Timber Products in addition to the already existing Law of Forests. Although Croatia reported the Law on the Implementation of European Union Regulations on the Trade of Timber and Timber Products to be the only reference for the enforcement of the EUTR, we found that the Law on Forests is also explicitly relevant for the EUTR, as it refers to the legality of logging and timber products, as well as to the documents needed for fulfilling the obligations of due diligence and traceability. Serbia has not yet implemented EUTR requirements, but it will have to do in the near future. Although EUTR is not yet implemented, the Law on Forests as well as other regulatory documents show links and connections to EUTR obligations.

Table 9. Summary of policy documents addressing EUTR obligations and.

EUTR obligation	Slovenia	Croatia	Serbia
EUTR implementation	<ul style="list-style-type: none"> • Forest Act 	<ul style="list-style-type: none"> • Law on the Implementation of European Union Regulations on the Trade of Timber and Timber Products • Law on Forests 	<ul style="list-style-type: none"> • Law on forest
Prohibition	<ul style="list-style-type: none"> • Forest Management Plan • Decision on felling • Accounting document 	<ul style="list-style-type: none"> • Forest Management Plan • Consignment Note 	<ul style="list-style-type: none"> • Forest Management Plan • Consignment or Delivery Note
Due diligence	<ul style="list-style-type: none"> • Record sheet • Certification 	<ul style="list-style-type: none"> • Notice of Public Tender • Specification of Timber Assortments • EUTR Consignment Note • Certification 	<ul style="list-style-type: none"> • Book of consignment or delivery notes • Certification
Traceability	<ul style="list-style-type: none"> • Record sheet 	<ul style="list-style-type: none"> • Instructions for Operators and Traders • National Register • Remittance Book • Consignment Book 	<ul style="list-style-type: none"> • Book of consignment or delivery notes
Enforcement	<ul style="list-style-type: none"> • Ministry of Agriculture, forestry and Food - Forestry Inspectorate (CA) • Financial Administration of the Republic of Slovenia 	<ul style="list-style-type: none"> • Ministry of Agriculture • Customs administration 	n.a.

Source: Own elaboration.

In all countries, forest management plans define the legal and technical basis for felling. Legally harvested timber must be accompanied by certain documents which vary from country to country. Ministries responsible for forestry in Slovenia and Croatia also provided guidelines on EUTR implementation explaining the more difficult-to-understand parts of the EUTR requirements.

In order to conduct a full risk assessment, due diligence obligations require operators to collect detailed information on timber and their suppliers [22]. In Slovenia and Croatia, due diligence is proven by several documents and permits that must accompany timber from the logging site to the final destination. All these documents contain specific information about the timber and its origin (see Appendices A.2 and B.2), but not all of them include general information needed for the risk assessment, in particular with regard to the complexity of the supply chain and the prevalence of illegal logging. As a result, to prove the legality of timber and timber products, operators need to obtain a number of additional documents, e.g., documentation on logging rights, payments for logging, legal rights of third parties regarding the use and possession of land affected by logging, trade and customs-that prove that the timber is legally obtained and traded.

In each analyzed country more than 50% of forests are certified and all countries are aiming to promote forest certification and increase certified forest areas and organizations [16-18]. In these countries FSC certification “is, to a certain extent, perceived as a guarantee for the legality of wood operations and origin.” ([15], p. 17). Since certification is desirable as a management and marketing tool but does not represent a sufficient condition for ensuring legality according to EUTR requirements, further cautions are necessary.

The Western Balkans are known as an area exposed to a high risk of corruption, which together with illegal activities is recognized as one of the key problems in the forestry sector at the regional scale [80]. Both Croatia (47) and Serbia (38) show a Corruption Perception Index that is lower than 50 [81], a threshold that is often associated to a higher risk. In this sense, Croatia makes an interesting example. The state forest enterprise, Hrvatske šume, develops forest management plans and manages state forests. At the same time, it is the largest timber operator on the Croatian market, acting as an organizer of timber auctions. This multiplicity of roles might lead to some conflict of interest [82], undermining the credibility of documentation as well as actual legality of timber [83]. Indeed, a recent report on massive deforestation in Croatia accuses Hrvatske šume, as well as administrative bodies for forestry and nature protection, of committing deforestation on large areas all over Croatia, including within Natura 2000 sites.

At the same time, in Serbia and Croatia, numerous protests have been organized by civil society in the last year regarding the issue of timber logging associated with land use changes. An example is given by the Facebook group “Odbranimo reke Stare planine”, i.e., “Let’s protect Stara planina rivers”, aiming to protect rivers in the mountain area of Stara planina against human activities, including logging for the development of skiing facilities and hydropower stations.

These events call for increased precaution when dealing with timber from these areas, posing challenges to forest owners and operators in general that, with the strengthening of the implementation of EUTR, will need to prove the legality of timber by several means (i.e., due diligence systems, multiple certification, permits, receipts). While attention paid by civil society organizations and citizens on these issues may ensure some watch-dogging of forestry activities it may also result in additional efforts and costs for operators called to prove the legality of the timber they place on the market.

Transparency, availability and accessibility of information are of critical importance for obtaining the necessary information on timber legality [83]. Yet, transparency of information is still low in some countries. For example, in all three countries forest management plans, felling permits, consignment and delivery notes should be kept permanently as archive material. Some of those documents are publicly available, as this is also a requirement for many documents, such as a summary of the forest management plan, according to FSC standards, while for others a special request and/or administrative fee must be paid. In addition, there is not easily and freely available information about illegal logging in Croatia. There are no national reports or any other documents accessible online that quantify illegally logged timber. At the time of manuscript preparation, Croatia, as well as Slovenia still had not submitted an EUTR Annual report for 2020 to the European Commission. Furthermore, although websites of Ministries responsible for forestry do list documents relevant for forestry (i.e., strategies, laws, etc.) it often happens that those lists are not regularly updated, thus showing old documents, or being incomplete. Finally, not all listed documents are available online. Our findings are in line with recent reports on EUTR implementation which found that Competent Authorities do not regularly publish information on checks and/or breaches detected during control [2,4].

To prove legality of timber, operators in Slovenia and Croatia have to ensure record keeping for at least five years, while in Serbia this period is only two years. As the latter is a discrepancy with EUTR, Serbia will have to change the required duration of record keeping. We see a few possibilities about how this could happen. To comply with EUTR obligations, Serbia will have to opt either for amending the existing Law on Forests, as Slovenia did, or more probably, opt for the adoption of a new, separate law on EUTR implementation (as was the case in Croatia). In any case, it will have to establish a Competent Authority, which will probably be The Ministry responsible for forestry [18]. Most likely, the Inspectorate for Forestry will take over most of the Competent Authority obligations. This will be an addition burden on the already limited capacities of the public forest administration for coercion and monitoring of forest legislation.

Limited capacities of public authorities were also recognized as limiting factors for EUTR implementation [2,4,22]. Our results confirm these findings. Both Croatia and Slovenia have no separate budget for EUTR implementation and invest minimal human resources. They report no cooperation with other EU member states on EUTR implementation.

A limited number of checks on operators, traders and monitoring organizations is performed in both countries. In the 2019 report Croatia reported that no monitoring organization is operating in Croatia; thus, checks were not needed [42]. Penalties for breaching EUTR are average in Slovenia and lower in Croatia compared to other EU Member states [3], and mostly stay on the level of notice for remedial actions.

Our findings indicate that the reporting quality of Competent Authorities should also be improved, which is in line with the findings of the European Commission (2020), ClientEarth (2020) and WWF (2019) [2,4,22]. Our research found some inconsistencies between what Competent Authorities reported in their biennial reports for the period 2017-2019, and what is prescribed in laws. While both the Slovenian Forest Act and the Croatian Law on the Implementation of European Union Regulations on the Trade of Timber and Timber Products prescribe seizure of illegal timber and timber products, both countries reported that they cannot apply this measure.

Currently, in all targeted countries, several activities are taking place within the framework of EUTR policies and their implementation, which may be regarded as an indicator of future changes and improvements. In Slovenia, a specific online tool and platform have been developed to improve the connectivity of the forest-wood chain and market conditions (www.mojgozdar.si, accessed 25 August 2021). As a part of the national register, Croatia is currently compiling a register of private forest owners, and a register of companies operating with timber and timber products. In Serbia, a new information system for forestry is being developed, which will also include electronic consignment and delivery notes. In parallel, a new national forest inventory is being conducted to ensure more precise data. Capacities for implementation of the EUTR are being built through the dedicated twinning project “Improvement of forest management in Serbia as a contribution to climate” with the objective of introducing comprehensive sectoral policies to ensure the reduction of illegal activities and the increased resilience of forests to climate change [63]. With ongoing discourses on Green Deal policies and the ambitious EU target to cut CO₂ emissions by 55% by 2030, as well as the increasing focus on “deforestation-free” commodities, stricter implementation of EUTR might be expected at EU level. Most countries would probably have to build capacities for EUTR implementation and become more transparent and responsible concerning information availability. Western Balkan countries will be no exception, and decision makers and forestry professionals, as well as operators and traders, will face new challenges. To overcome them, they will need to learn from existing best practices and improve cooperation. To successfully implement EUTR, a number of checks, as well as stricter fines, will be needed. Those policies [83] will likely not be enough to ensure an appropriate promotion of legality. It seems that for ensuring a better governance of the forest sector effective mix of policy tools (including voluntary ones, for instance, forest certification) is needed. This will need to imply a stricter cooperation among all relevant forest sector actors, both public and private, to identify technically and economically viable solutions for ensuring legality and the respect of existing regulations, while at the same time

ensuring competitiveness on domestic and, above all, global markets. More empirical research on the Western Balkans must be performed to understand how operators could respond to EUTR requirements. This may also provide guidance and best practices for other Balkan countries not covered in this study.

Author Contributions: Conceptualization, M.R., M.M., T.R. and B.G.; methodology, M.R., M.M. and T.R.; software, M.R.; validation, M.M., T.R. and B.G.; formal analysis, M.R. and T.R.; investigation, M.R.; resources, M.R., M.M. and B.G.; data curation, M.R.; writing-original draft preparation, M.R. and T.R.; writing-review and editing, M.M. and B.G.; visualization, M.R.; supervision, M.M. and B.G.; project administration, M.R.; funding acquisition, M.R. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the CARIPARO Foundation Ph.D. scholarship (University of Padova) for the project tentatively titled “Global Trade Flows and Forest Sector: Focus on Western Balkan countries”.

Data Availability Statement: The data presented in this study are available in Appendices.

Acknowledgments: We owe our gratitude to all experts from Slovenia, Croatia and Serbia who validated the selection of documents for the analysis. We are also grateful to two autonomous reviewers for their constructive comments.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

Appendix A.

Appendix A.1. Policy Framework and Organization of Forest Sector in Slovenia

Appendix A.1.1. Forest Policy

Forest policy in Slovenia is shaped through several documents, of which we focus on those relevant for implementation of the EUTR.

The Forest Development Program in Slovenia was adopted in 1996. It established a national policy for the sustainable development of forest management, guidelines for the conservation and development of forests, and conditions for their exploitation or multipurpose use. It laid down the foundations for the preservation and development of all forests and their functions.

The program contains the development strategy in individual areas of forest management, and also indicates professional guidelines for cooperation with related sectors (i.e., nature conservation, wood industry, etc.). Organizational, personnel and material resources are also determined for the implementation of sustainable, close-to-nature, and multifunctional forest management [65].

The Resolution on the National Forest Program was adopted in 2007. It is a key strategic document of Slovenian forest policy. The main principles are aimed at preserving the forest and ensuring a multifunctional role that includes environmental, social and economic aspects. It contains a long-term management vision, goals, guidelines and indicators for development of the forest sector, links with environmental protection and nature conservation, as well as economic sectors related to wood processing and forestry [66].

The Operational Program for the implementation of the National Forest Program 2017-2021 was adopted in 2017. It represents the link between the basic strategic documents and documents that form the basis for planning, implementation and monitoring of forest policy measures at lower levels. It connects the contents of valid operational documents and programs and upgrades them according to need through the scheme of priorities, measures and tasks. The operational program should enable forest policymakers to direct sustainable forest management following the needs of the forests, owners and society as a whole, while ensuring the rational and efficient use of available organizational, personnel and financial resources [64].

The Forest Act was adopted in 1993 and mandated numerous times. The last mandate was in 2016. It regulates the protection, cultivation, exploitation and use of forests, and the disposal of forests as natural resources to ensure sustainable, close-to-nature and multifunctional management following the principles of environmental protection and natural values, sustainable and optimal functioning of forests as an ecosystem, and the realization of their functions. The Forest Act also regulates the implementation of EUTR in Slovenia. According to the Forest Act, all operations and measures implemented in forests must follow forest management plans. The Forest Act prescribes three types of plans:

- Forest management and hunting management plans of the areas-define forest functions and their evaluation, objectives, guidelines, and measures for forest management, objectives, guidelines, and measures for game management following the regulations on game and hunting, and guidelines for the preservation or establishment of the natural autochthonous composition of forest life communities based on biological indicators;
- Forest management plans of forest management units-define forest functions and their evaluation, intensity and objectives of forest management, guidelines for achieving the objectives, measures and methods of their implementation, guidelines for the management of individual forest trees and groups of forest trees outside settlements, and site coefficients.

- Silvicultural plans-an implementation plan for a management plan of a forest management unit which defines silvicultural objectives, guidelines and management measures, scope, intensity and necessity of cultivation and protection operations, areas where the individual selection of trees for possible felling is not the mandatory, quantitative, temporal and spatial scope of fellings, methods and conditions for obtaining wood, guidelines and works for the simultaneous preservation and promotion of the ecological and social functions of the forest.

Forest management and hunting management plans of the areas and management plans of forest management units are prepared as joint plans for all forests, regardless of ownership, taking into account the specifics of individual areas ([67], Articles 8-16).

Management of State Forests Act was adopted in 2016. This Act determines the management of forest owned by the Republic of Slovenia (state forest) aiming to achieve economic and development goals and objectives of public interest in the state forest and to create conditions for the development of forest-timber chains as carriers of sustainable development and green jobs. It also regulates the principles and objectives of state forest management. The company Slovenski Državni Gozdovi manages state forests, procedures, manner and restrictions in the disposal of state forests, method of obtaining forests, method of state forest management and annual compensation, transparency of operations, the budgetary fund for state forests, collection and use of data, the right of municipalities to be part of the annual compensation and other issues related to state forest management [37]. Explanations on the Record Sheet on the Use and Trade of Forest Wood Assortments were prepared by the Ministry of Agriculture, Forestry and Food in 2016. It is an optional tool for the simple and transparent management of data required by EUTR [68].

Explanations on the Accounting Document were prepared by the Ministry of Agriculture, Forestry and Food in 2016. It contains similar information to the Forest Act on requirements for the transport of wood and forest wood assortments [74].

Action Plan for Increasing the Competitiveness of the Forest-wood Chain in Slovenia by 2020 “Wood is Beautiful” was adopted in 2012. It is an operational document of the Government of the Republic of Slovenia for increasing the competitiveness of the entire forest-wood chain, which also takes into account the goals and orientations of the National Forest Program. The document defines wood as a strategic raw material for Slovenia. It places the wood processing industry among promising industries, with a large amount of domestic raw materials. It lays down measures to intensify forest management and measures to revive and develop the processing of wood and its residues. The expected result of the implementation should be the creation of new and different jobs and the achievement of high added value in the wood processing industry of Slovenia. Forest management is included in a special chapter, which, following the structure of the document, determines the goal, measures, activities, indicators, deadlines, resources, and holders

and contractors at the beginning of the forest-timber chain. It deals with forest management mainly from an economic and partly also a social point of view. Forest management is also included in general measures, namely with the measure “Establishment of a model of state forest management”, which will ensure as much wood processing as possible in Slovenia [36].

Appendix A.1.2. Organization of Forest Sector

The main responsible organization for forestry is The Ministry of Agriculture, Forestry and Food-the Directorate for Forestry, Hunting and Fisheries. Responsibilities of the Directorate are:

- monitoring and preparation of systematic legal solutions in the field of forestry;
- monitoring the economic impacts and costs of forestry activities;
- preparation of economic instruments for financing or co-financing measures in the forests;
- supervision of the implementation of the Forest Act [40].

The central professional forestry institution is the Slovenian Forest Service (SFS), which was established by the Government of the Republic of Slovenia in 1994. It is financed from the budget of the Republic of Slovenia. The main tasks of the service are:

- forest management planning, which is carried out regularly for all forests regardless of ownership;
- silviculture and forest protection, where the main activities are an elaboration of silvicultural plans, marking trees for felling, and various forest protection activities, including bark beetle control;
- forestry techniques with the main tasks of directing and supervising the construction of forest roads and providing an extension to forest owners for safe and effective work in forests;
- wildlife management and hunting, including the elaboration of hunting management plans;
- advisory to private forest owners, education, and popularization of forestry. (Ministry of Agriculture, Forestry and Food, 2016b);

Other forestry-related institutions and organizations are:

- Department of Forestry and Renewable Forest Resources of the Biotechnical Faculty, University of Ljubljana;

- Slovenian Forestry Institute (the central forestry research organization);
- Chamber of Agriculture and Forestry of Slovenia (officially represents forest owners and provides extension services);
- the state-owned company Slovenski drzavni gozdovi (SiDG) (responsible for managing state-owned forests);
- Associations of Forest Owners;
- Professional Association of Foresters [40].

Appendix A.2. Detailed Coding Themes for Slovenia

Eight documents that are relevant for the legality of timber and timber products as well as their trade were analyzed: Action Plan for Increasing the Competitiveness of the Forest-wood Chain in Slovenia by 2020 “Wood is Beautiful”, Forest Act, Management of State Forests Act, Explanations on the Record Sheet on the Use and Trade of Forest Wood Assortments, Explanatory Notes on the Accounting Document, Forest Development Program, Resolution on the National Forest Program, and Operational Program for the Implementation of the National Forest Program 2017-2021.

Fourteen themes that could be directly or indirectly related to three main EUTR obligations (Placing on the market of illegally harvested timber or timber products derived from such timber, Prohibition, Due diligence when placing timber or timber products on the market, and Traceability) were recognized and the text was coded throughout all four documents (Table A1). They are further presented through their relation to EUTR obligations.

Table 9. Summary of policy documents addressing EUTR obligations and.

	Action Plan for Increasing the Competitiveness of the Forest-Wood Chain in Slovenia	Forest Act	Management of State Forests Act	Explanations on the Record Sheet on the Use and Trade of Forest Wood Assortments
Competent authorities	0	1	0	0
Felling	2	1	0	0
Felling of protected species	0	0	0	0
Forest certification	2	0	0	0
Forest protection	0	0	0	0
Illegal activities	0	3	0	0
Information	1	2	0	1
International commitments	0	1	0	1
Monitoring	0	7	1	0
Planning	0	6	2	0
Record keeping	0	7	0	2
Sanctions	0	9	1	0
Wood products	2	1	0	0
Wood traffic	0	4	0	0

	Explanatory Notes on the Accounting Document	Forest Development Program	Resolution on National Forest Program	Operational Program for Implementation of the National Forest Program 2017 - 2021
Competent authorities	0	0	0	0
Felling	0	0	2	3
Felling of protected species	0	1	0	0
Forest certification	0	0	2	0
Forest protection	0	0	1	0
Illegal activities	0	0	0	0
Information	0	2	0	0
International commitments	0	2	4	1
Monitoring	0	1	2	0
Planning	0	2	0	0
Record keeping	3	0	0	0
Sanctions	0	0	0	0
Wood products	0	0	3	1
Wood traffic	0	0	0	1

Table 9. Summary of policy documents addressing EUTR obligations and.

Appendix A.

As Slovenia is an EU member state, it had to transpose EUTR obligations into policy and regulatory documents.

Theme International Commitments

The main purpose of the National Forest Program is the coordination of other national policies and international commitments, due to Slovenia joining the EU, among other reasons. Similarly, the Forest Development Program was based on the international obligations of Slovenia and stressed the importance of cooperation in fulfilling ratified conventions and EU regulations. The Operational Program for the Implementation of the National Forest Program 2017-2021 includes a measure with priorities for international cooperation in the field of forests and forestry, especially with China ([64], p. 37). The Forest Act explicitly refers to the EUTR, as it is used for its regulation. Document Explanations on the record sheet on the use and trade of forest wood assortments contains a paragraph dedicated to the explanation of EUTR, and related obligations of forest owners, as well as other natural and legal persons that place timber on the EU market for the first time.

Theme Forest Protection

The Resolution on the National Forest Program refers to forest protection in the sense of reducing negative influences on forests, but illegal activities were not recognized as one of the influencing factors.

Appendix A.2.2. EUTR Obligation 1. Placing on the Market of Illegally Harvested Timber or Timber Products Derived from Such Timber (Prohibition)

Theme Planning

The Forest Development Program prescribes that all measures undertaken in forests must be planned (Official Gazette of RS No.14/96, p. 13). According to the Forest Act, silvicultural plans define the quantitative, temporal, and spatial scope of feelings, as well as methods and conditions for obtaining wood. Trees for possible felling must be selected based on the silvicultural plan ([67], Article 13).

Theme Illegal Activities

Illegal logging is only addressed to some extent by the Forest Act. The Law on Forests does not define illegal logging, but it stipulates that “in forests, any action that reduces the growth of the stand or the fertility of the site, the stability or sustainability of the forest or endangers its functions,

its existence or purpose is prohibited” ([67], Article 18). According to the Forest Act, it is illegal to transport wood or wood assortments without proper documentation (see Theme keeping).

Theme Felling and Felling of Protected Species

According to the Resolution on the National Forest Program, felling in state forests is realized in the amount of allowable cut, as determined by forest management plans. Felling in private forests is realized in the amount of about 60% of allowable cut ([66], p. 30). The operational program for the implementation of the National Forest Program states that the realization of possible felling is increasing, but in private forests it still does not achieve the plan. For that reason, the Operational program prescribes a measure for increasing utilization of the production potential of forest sites by encouraging felling in private forests in accordance with forest management plans ([64], p. 30). The Action Plan for Increasing the Competitiveness of the Forest-Wood Chain in Slovenia by 2020 prescribes a measure to increase the share of realized possible felling and the implementation of operations, especially in private forests ([36], p. 12).

According to the Forest Act felling in both state and private forests is performed according to the management plans for forest management units and silvicultural plans. Before felling, the trees must be selected, marked with paint (red or orange dot), and stamped by the district forester. The district forester issues the decision on felling which contains: necessary cultivation operations for reforestation and care, necessary protective operations, guidelines, and deadlines for the implementation and repetition of individual cultivation and protection operations, quantity and structure of trees for the maximum possible felling, guidelines, and conditions for felling and harvesting wood, guidelines and conditions for obtaining resin and ornamental trees, and the period for which the decision is issued. The felling of Christmas trees is performed in the same way ([67], Article 17).

Appendix A.2.3. EUTR Obligation 2. Due Diligence When Placing Timber or Timber Products on the Market

Every forest owner that exports timber or timber products from Slovenia to the EU could be regarded as an operator. Concerning the measures and procedures to provide access to the information concerning the operator’s supply of timber or timber products, the following themes were identified as relevant:

Themes Certification and Standardization of Wood Products

The Action Plan for Increasing the Competitiveness of the Forest-wood Chain in Slovenia by 2020 recognized certification of private forests as an opportunity for the development of Slovenian forestry ([36], p. 10). Furthermore, the Action Plan lists the provision of more certified building

materials as being one of the key challenges in the field of primary wood processing ([36], p. 33). Similarly, the Resolution on the National Forest Program prescribes an aim of the developed market of forest wood assortments in the Republic of Slovenia, and within it a guideline to obtain international certificates for sustainable forest management for all forests and to maintain them ([66], p. 39).

Theme Wood Products

Within an aim of the developed market of forest wood assortments in the Republic of Slovenia, the Resolution on the National Forest Program prescribes a guideline of introducing modern market forms for the sale of forest wood assortments with an indicator of an increased number of wood tracking certificates (CoC) ([66], p. 39). The Resolution also prescribes an aim of increasing exports of wood products with increased added value in the domestic wood industry ([66], p. 42). The Operational Program for the Implementation of the National Forest Program 2017-2021 recognized that the timber market is not transparent, forest owners do not act in an organized manner, and that permanent contracts are the exception rather than the rule ([64], p. 16). The Action Plan for Increasing the Competitiveness of the Forest-Wood Chain in Slovenia by 2020 stressed that Slovenian wood processing companies need incentives for faster penetration into foreign markets because the developed western markets (in particular the EU) are suitable for products with high added value ([36], p. 16). The Forest Act defines wood and wood products as defined in EUTR ([67], Article 3).

Theme Wood Transport, Processing and Storage

The Operational Program for the Implementation of the National Forest Program 2017-2021 states that wood exports are increasing, especially the round wood of conifers ([64], p. 16). According to the Forest Act, forest wood assortments loaded on a vehicle or transported by road shall be accompanied by the accounting document. The carrier of forest wood assortments must have the accounting document with him after loading and during their transport and has to hand it over to the authorized official for supervision on request ([67], Article 17b). In several cases, an accounting document is not required:

- for forest wood assortments obtained from forests owned by natural persons, loaded on a vehicle, or transported by road, if their total quantity does not exceed 10 m³, are intended for own use and are transported by the forest owner or in the form of neighborhood or kinship assistance. In this case, the decision on felling issued by the district forester is needed.

- for forest wood assortments, up to 10 cm in diameter at the thicker end (except for wood chips and split wood), if their total quantity does not exceed 10 m³ and other forest wood assortments are not loaded on the vehicle at the same time.
- for forest wood assortments that are loaded on a vehicle or transported by road and are the subject of a sale or gift between two natural persons. In this case, the transport of forest wood assortments is accompanied by a statement or other document stating the type and quantity of forest wood assortments, place and date, consignor, transporter, and recipient of forest wood assortments. The declaration or other document shall be kept by the consignor and the consignee for 5 years from the date of the transport of forest timber assortments and must be signed by the consignor and the consignee.

For forest wood assortments imported from third countries or imported from other EU states an accounting document is not needed, but the carrier must prove the origin of assortments to the authorized official ([67], Article 17b).

The transport and sale of ornamental trees (i.e., Christmas trees) is permitted if the ornamental tree is equipped with a seal showing the original forest management area and year of felling. Seals are issued by the Slovenia forest service.

Theme Competent Authorities

The competent authorities for the implementation of Regulation 995/2010/EU and Regulation 607/2012/EU are the Ministry responsible for forestry, the forestry inspection, and the Financial Administration of the Republic of Slovenia, each following its competencies. The Ministry responsible for forestry is responsible for keeping records, exchanging information, conducting inspections of control organizations, and reporting to the European Commission following Regulation 995/2010/EU and Regulation 607/2012/EU. The Forestry Inspectorate and Financial Administration shall provide the Ministry responsible for forestry with all necessary information [67].

Theme Monitoring

The resolution on the National Forest Program states that supervision in forests is carried out by the forestry inspection, and in protected areas also by the inspection responsible for nature conservation. In 2006, the Slovenian Forest Service started implementing direct control in nature, which means control in the forest area also from the point of view of compliance with regulations in the field of nature protection. Nature conservation control is already carried out by inspectors in protected areas. The resolution establishes two goals related to the monitoring of forests: one related to effective forest inspection, and the other to effective direct control in forests ([66], pp.

49-50). The Forest Development Program states that the number of forest inspectors is relatively low and that private forest owners are the focus of forest inspection.

According to the Forest Act, monitoring in forests is performed by forestry inspectors and the Slovenian forest service. The Forest Act implementation and regulations issued on its basis is performed by forestry inspectors ([67], Article 75). The forestry inspector (among other duties and rights) has the duty and right to:

- inspect operations in forests and documentation for these operations and all places where forest wood assortments are cut or stored (from the forest to the consumer), stacked, and transported in the forests
- review and monitor the implementation of forest management plans and silvicultural plans
- stop all operations that are not in accordance with the Forest Act
- stop a vehicle transporting or having loaded forest timber assortments on forest roads
- request a personal identification document from the person transporting forest wood assortments
- inspect the documentation that must accompany the forest wood assortments during transport or loaded on a vehicle.

Employees of the Slovenian forest service, authorized by the Minister responsible for forestry can perform direct supervision in addition to forestry inspectors, but their jurisdiction is not related to the inspection of felling, and transport of wood assortments. Financial administration and the police can also act as inspectors in the case of transport of wood or forest wood assortments without an accounting document in line with their competencies ([67], Article 75).

The Management of State Forests Act states that management of state forests means the implementation or delivery and control over the implementation of felling and harvesting of timber, transport of forest wood assortments, the performance of protection and cultivation operations, and all other operations necessary to ensure social and ecological functions of state forests, acquisition and sale of forest goods, sale of wood and forest wood assortments and rental of state forests ([37], Article 2).

Theme Sanctions

For infringements of the Law on Forests, monetary sanctions are prescribed. The amount of fines depends on the type of legal entity that commits a crime, as well as on the severity of illegal activity (Table A2).

The Forest Act imposes a fine of 1000 to 30,000 EUR on a monitoring organization referred to in the EUTR if it fails to verify the correct application of its due diligence system by an economic operator or fails to take appropriate measures if the economic operator does not apply the due diligence system correctly. A fine of 1000 to 2000 EUR is also imposed on the responsible person of the monitoring organization ([67], Article 81a).

For the offense of placing illegally harvested timber or timber products on the market, in addition to the prescribed fine, a collateral sanction of the confiscation of forest wood assortments may be imposed. In that case, the supervisory authority seizes forest wood assortments. Transport, storage and disposal of seized forest wood assortments are performed by the company Slovenski Državni Gozdovi, in the name and on behalf of the Republic of Slovenia ([67], Article 81c).

Appendix A.2.4. EUTR Obligation 3. Traceability

Traceability of timber and timber products is ensured by the Accounting Document and Record Sheet on the Use and Trade of Forest Wood Assortments.

Theme Information

The Forest Development Program states that planning in forestry must be based on an integrated, nature-adapted and spatially presentable information system, to guide the development of forests based on the principles of sustainability, multipurpose and close-to-nature forest management ([65], p. 16). Furthermore, the program states that an information system must be created for the market of forest wood assortments and other forest products ([65], p. 20). To increase the felling and implementation of silvicultural works in Slovenian forests, an Action Plan for Increasing the Competitiveness of the Forest- wood Chain in Slovenia by 2020, prescribes a measure of “setting up a website and forum for more efficient networking of forest owners, forest contractors, purchasers and processors of forest timber products, and the timber and forestry exchange services” ([36], p. 14). The purpose of the activity is to combine all information on the supply of wood, demand for wood, supply and demand for forest operations on one website, to collect all current tenders published by state institutions and the EU. The Forest Act prescribes that all three types of plans must be publicly available ([67], Article 8). Within its mandate, the Slovenia Forest Service processes data and prepares information on the state and development of forests ([67], Article 56). The Slovenian Forest Service and Chamber of Agriculture and Forestry of Slovenia provide additional information on ensuring the system of due diligence and the related entry of data in the record sheet and their storage [68].

Table A2. Monetary fines for illegal activities in forests by type of perpetrator.

Illegal activity	a self-employed legal person or a sole proprietor	the responsible person of a legal person, a self-employed individual, or a sole proprietor of an individual.	individual	a responsible person in a self-governing local community and a responsible person in a state body
felling or allowing the felling of forest trees, or obtaining ornamental trees without felling decision	2 500 - 50 000 EUR	1 000 - 2 000 EUR	300 - 5 000 EUR	1 000 - 2 000 EUR
not issuing an accounting document to the carrier before loading or transporting forest timber assortments	2 500 - 50 000 EUR	1 000 - 2 000 EUR	300 - 5 000 EUR	1 000 - 2 000 EUR
no material records for the warehouse from which the forest wood assortments were shipped	2 500 - 50 000 EUR	1 000 - 2 000 EUR	300 - 5 000 EUR	1 000 - 2 000 EUR
loaded or transported forest wood assortments without an accounting document	2 500 - 50 000 EUR	1 000 - 2 000 EUR	300 - 5 000 EUR	1 000 - 2 000 EUR
cutting or allowing the felling of forest trees or ornamental trees in an amount that exceeds 10 years of possible felling, without felling decision	3 000 - 50 000 EUR	2 000 - 3 500 EUR	800 - 2 000 EUR	

Illegal activity	a self-employed legal person or a sole proprietor	the responsible person of a legal person, a self-employed individual, or a sole proprietor of an individual.	individual	a responsible person in a self-governing local community and a responsible person in a state body
not having a due diligence system in place				
not storing information in accordance with Article 5 of Regulation 995/2010 / EU or Article 5 of Regulation 607/2012 / EU	1 000 - 30 000 EUR	600 - 1500 EUR	200 - 600 EUR	600 - 1 500 EUR
not enclosing the accounting document within 2 hours				
not keeping the accounting document	800 - 20 000 EUR	400 - 1 000 EUR	200 - 400 EUR	400 - 1 000 EUR
transporting or selling ornamental trees without seals				
felling or allowing the felling of forest trees, or obtaining ornamental trees to a lesser extent without felling decision	800 - 15 000 EUR	300 - 800 EUR	150 - 400 EUR	300 - 800 EUR

Source: Own elaboration based on Forest Act

Theme Record Keeping

According to the Forest Act, all three types of forest management plans are documentary material and must be kept permanently. The Forest Act also prescribes the content of the accounting document ([67], Article 17c). The accounting document issued by the consignor must contain:

- information on the owner of the trees to whom the felling decision was issued in the administrative procedure (consignor). The information on the owner can be recorded on the accounting document with an identification number, in which case the consignee must keep a record of identification numbers and submit it for inspection at the request of the competent authority;
- data on the consignee of forest wood assortments;
- data on the recipient of forest wood assortments;
- information on the carrier;
- type and registration number of the vehicle, place, date and time of loading, place, and date of unloading;
- type and quantity of forest wood assortments and a serial number of the accounting document.

Data on the consignor, consignee and carrier, in the case of natural persons, include personal name, address and tax number, and in the case of legal persons, the company name and registered office of the company or tax number.

If the consignor sends forest wood assortments from the place of storage for which material accounting must be kept following regulations, data on the owner of trees to whom a decision on felling has been issued is not needed on the accounting document. In this case, the place of storage shall be indicated.

The accounting document should be drawn up in three copies, of which all three must be signed and one copy shall be kept by the consignor, the carrier and the consignee for five years from the date of the transport of forest wood assortments.

As an optional tool for transparent management of data required by the Ministry of Agriculture, Forestry and Food recommended the use of a Sheet on the use and trade of forest wood assortments and its 5-year retention together with the accompanying documents (i.e., felling decision). Forest owners and other natural and legal persons may provide the information necessary to ensure the

traceability of timber and timber products and the due diligence system in other ways, but they must comply with the provisions of the Commission Implementing Regulation (EU) no. 607/2012 [68]. The Record Sheet on the Use and Trade of Forest Wood Assortments contains information on:

- felling permit (i.e., felling decision);
- forest wood assortments for own use, their quantity, type, tree species, and date of their harvesting or transport;
- the personal name and address or company name and registered office of the natural or legal person to whom forest wood assortments were supplied, their quantity, type, tree species, and date of delivery;
- assessment of the risk of illegal logging;
- risk mitigation measures.

Appendix B.

Appendix B.1. Policy Framework and Organization of Forest Sector in Croatia

Appendix B.1.1. Forest Policy

The National Forest Policy and Strategy was adopted in 2003. The general objective of the policy is “to increase the contribution of the forest sector to the national economy through sustainable management, use and comprehensive protection of forest resources and biodiversity, applying research results, respecting international norms and resolutions, and respecting the rights of the local community” ([69], p. 1665). It defines policy objectives and strategic activities needed for their fulfillment.

The Law on Forests was adopted in 2018 and amended four times until 2020. It regulates “the system and manner of management, administration, use and disposal of forests and forest lands on the principles of sustainable management, economic and environmental acceptability and social responsibility” ([75], Article 1). Forest management plans are basic documents for the management and use of forests, which determine the conditions for sustainable forest management and interventions, the required scope of forest cultivation and protection, possible degree of utilization, and conditions for wildlife management. According to the Law on Forests (Article 27), there are several types of forest management programs:

- forest management basis of the territory of the Republic of Croatia;
- management basis of the management unit;
- forest management program for management unit with management plan of ecological network;
- forest management program for private forest;
- forest management program of special purpose forests for the needs of defense;
- forest management program of seed facilities;
- forest protection, care and restoration program;
- forest management program for special-purpose forests managed by the Legal Entity.

The Law on the Implementation of European Union Regulations on the Trade of Wood and Wood Products was adopted in 2018 and amended in 2020. This law determines the competent authorities, the actions of the competent authorities, professional and inspection supervision, and misdemeanor provisions for implementation of the European Union regulations (Council Regulation (EC) no. 2173/2005, Commission Regulation (EC) no. 1024/2008, Regulation (EU) no. 995/2010, Commission Implementing Regulation (EU) no. 607/2012, Regulation (EU) 2019/1010) [71].

The Ordinance on Remittance of Trees, Marking of Wood Assortments, Consignment Note, and Forest Order was adopted in 2005 and amended several times until 2014. This Ordinance prescribes the procedure and manner of remittance of trees for felling, marking of wood assortments, issuance of accompanying documents for forest products, and establishment of forest order [77].

The Regulation on the Auction of Certain Wood Assortments was adopted in 2003 and amended several times until 2013. It prescribes the conditions for organizing the auction of certain wood assortments, the manner of doing business, and procedure of selling goods through the auction of wood products with tariff codes 4401 and 4403 of the Combined Nomenclature of the European Union. The auction is held after a public announcement through a public tender which is issued at a certain place and time [76].

The Instructions for Operators and Traders were published by the Ministry for Agriculture in 2018. They explain the requirements of EUTR, listing necessary documents for the trade of timber and timber products, and provide two practical examples [78]. It contains two annexes: List of Wood and Wood Products to Which the Act on the Implementation of European Union Regulations on Trade in Timber and Timber Products Applies, and List of Protected Species Whose Trade is

Restricted or Under Special Supervision.

The Strategy for the Development of Wood Processing and Furniture Production of the Republic of Croatia 2017-2020 was adopted in 2017. It is the first national planning act on the strategic development of wood processing and furniture production drafted after the Republic of Croatia joined the EU. The strategy defines development models of wood processing and furniture production, development guidelines, vertical and strategic measures for improving the situation in the sector [70].

The Law on Trade was adopted in 2008 and amended several times until 2020. It regulates the conditions for performing trade activities, working hours in trade activities, measures prohibiting unfair trading, and supervision and administrative measures [46].

Appendix B.1.2. Organization of Forest Sector

The main organization responsible for forestry is The Ministry for Agriculture and within it The Directorate of Forestry, Hunting and Wood Industry. The Directorate performs administrative and other tasks related to forestry, forest protection, regulation of legal relations in forests and forest land owned by the state, except for property law affairs; wood industry and hunting; inspection activities related to forestry and hunting; implements international agreements in the part related to forestry; regulation of relations and conditions of production, trade, and use of forest seeds and forest seedlings, forest ecology, protection of forests from natural disasters and human influences, fires, preservation of forest genetic resources and forest reproductive material [52].

Hrvatske šume Ltd. is the company that manages 98% of state-owned forests in Croatia (2,024,461 ha). It also manages masters with 37 state hunting grounds with a total area of 331,000 ha. Besides forest management and planning activities, Hrvatske šume is engaged in tourism and recreational activities in state forests and is the biggest roundwood supplier for the Croatian wood industry [48].

Other forestry-related institutions and organizations are:

- Faculty of Forestry, University of Zagreb (www.sumfak.unizg.hr, accessed 28 August 2021);
- Croatian Forest Research Institute (www.sumins.hr, accessed 28 August 2021);
- Croatian Union of Private Forest Owners' Associations (www.hsups.hr, accessed 28 August 2021);
- Croatian Chamber of Forestry and Wood Technology Engineers (www.hkisdt.hr, accessed

28 August 2021);

- Croatian Forestry Society (www.sumari.hr, accessed 28 August 2021);
- Advisory Service (www.savjetodavna.hr, accessed 28 August 2021).

Appendix B.2. Detailed Coding Themes for Croatia

Ten documents that are relevant for the legality of timber and timber products, as well as their trade, were analyzed: National Forest Policy and Strategy, Law on Forests, Law on the Implementation of European Union Regulations on the Trade of Timber and Timber Products, Law on Trade, Ordinance on Remittance of Trees, Marking of Timber Assortments, Consignment Note, and Forest Order, Regulation on the Auction of Certain Timber Assortments, Instruction for Operators and Traders, List of Timber and Timber Products to Which the Act on the Implementation of European Union Regulations on Trade in Timber and Timber Products (EUTR) Applies, List of Protected Species Whose Trade is Restricted or Under Special Supervision, and Strategy for the Development of Timber Processing and Furniture Production.

Fourteen themes that could be directly or indirectly related to three main EUTR obligations (prohibition, due diligence when placing timber or timber products on the market, and traceability) were recognized and the text was coded throughout all 10 documents (Table A3). They are further presented through their relation to EUTR obligations.

Table B2-1. Themes that could be directly or indirectly related to 3 main EUTR obligations.

	Instructions for Operators and Traders	Law on Forests	Law on Implementation of the European Union Regulations on the Trade of Timber and Timber Products	Law on Trade	List of Protected Species Whose Trade is Restricted or Under Special Supervision.
Competent authorities	1	0	1	0	0
Felling	0	4	0	0	0
Felling of protected species	0	1	0	0	0
Forest certification	0	0	0	0	0
Forest protection	0	2	0	0	0
Illegal activities	0	4	1	0	0
Information	1	4	0	0	0
International commitments	0	0	0	0	0
Monitoring	2	8	1	0	0
Planning	0	4	0	0	0
Record keeping	1	6	1	1	0
Sanctions	0	12	1	0	0
Timber products	0	0	0	0	0
Timber transport...	0	1	0	7	1

	List of Timber and Timber Products to Which the EUTR Applies	National Forest Policy and Strategy	Ordinance on Remittance of Trees, Marking of Timber Assortments, Consignment Note, and Forest Order	Regulation on the Auction of Certain Timber Assortments	Strategy for the Development of Timber Processing and Furniture Production
Competent authorities	0	0	0	0	0
Felling	0	0	6	0	0
Felling of protected species	0	0	0	0	0
Forest certification	0	4	0	0	0
Forest protection	0	1	0	0	0
Illegal activities	0	1	0	0	0
Information	0	1	0	1	2
International commitments	0	7	0	0	4
Monitoring	0	4	1	0	0
Planning	0	0	0	0	0
Record keeping	0	0	10	6	0
Sanctions	0	0	0	0	0
Timber products	1	8	1	0	4
Timber transport...	0	1	6	2	2

Source: Own elaboration

Appendix B.2.1. EUTR in Croatia

As Croatia is an EU member state, it had to translate EUTR obligations into policy and regulatory documents.

Theme International Commitments

The National Forest Policy and Strategy stresses that Croatia participates in international forest policy and lists the main ratified conventions and EU regulations. It proclaims that implementation of the resolutions and conventions, as well as harmonization of regulations and institutions with regulations in the EU and developed countries, are a priority task. Within the measure of the harmonization of laws, the Policy prescribes a measure of “Comparing and aligning forestry provisions with EU regulations and adopting EU guidelines” ([69], p. 1676). It also prescribes the “Adaptation and harmonization of Croatian standards with relevant European and international standards for timber and timber products” ([69], p. 1681). The Strategy for the Development of Timber Processing and Furniture Production highlights that it respects the strategic guidelines of the New EU Forest Strategy and acknowledges its guiding principles of sustainable and multifunctional forest management, efficient use of natural resources, and responsibility for global forests, promoting sustainable production and consumption of forest products.

Theme Forest Protection

The general goal of the National Forest Policy and Strategy is to increase the contribution of forests to the national economy through sustainable management, use, and comprehensive protection of forest resources and biodiversity ([69], p. 1665). The Law on Forests stipulates that forest protection is the measure by which Croatia fulfills its interest in forest management. Furthermore, the Law defines forest protection as “a set of measures that are required to be taken by persons who manage forests to protect forests from fire, other natural disasters, harmful organisms, and harmful anthropogenic influences” ([75], Article 8).

Appendix B.2.2. EUTR Obligation 1. Placing on the Market of Illegally Harvested Timber or Timber Products Derived from Such Timber (Prohibition)

Theme Planning

The Forest Act states that “forest management plans are the basic documents for the management and use of forests and forest lands on the territory of the Republic of Croatia, which determine the conditions for sustainable management of forests and forest land and interventions in that area, the required scope of cultivation and protection of forests, the possible degree of utilization and conditions for the management of wildlife” ([61], Article 27).

Theme Illegal Activities

Within the priority of increasing the efficiency and rationalization of forest administration, the National Forest Policy and Strategy defines the measure of “strengthening the forestry guard service by giving greater powers to prevent illegal activities in forests” ([69], p. 1672). The Law on Forests defines illegal logging as “any felling of trees that is not prescribed by forest management plans or allowed in accordance with provisions of this Law” ([75], Article 8). In 2018, Croatia introduced the Law on the Implementation of European Union Regulations on the Trade of Timber and Timber Products to ensure that economic operators apply a system of due diligence to minimize the placing on the market of illegally harvested timber or derived products, and to ensure the import of timber and products produced from legally harvested timber or timber imported into a partner country in accordance with the national legislation of the country where the timber was harvested ([71], Article 3).

Theme Felling and Felling of Protected Species

The remittance of trees and felling is performed according to the management of forests prescribed by forest management plans ([77], Article 3). Before felling, the trees must be selected, marked with paint (red or orange dot), and stamped by the licensed forester. The license is issued by the Croatian Chamber of Forestry and Timber Technology Engineers. The small and medium private forest owner must submit a request for the remittance of trees to the Ministry for Agriculture. If the forest management program for private forest owners has not been prepared the Ministry for Agriculture issues a decision on remittance which is an administrative act ([75], Article 36). In state forests, the remittance of the trees is performed by the public enterprise Hrvatske šume. After the remittance of trees in private forests, the Ministry for Agriculture issues a remittance booklet and a management guideline to the forest owner. For intensive and permanent supervision over the remittance of trees, the public forest owner and large forest owners are obliged to enter data on the remittance of trees in the remittance register within the National Register. For small and medium forest owners the entry of data is performed by the Ministry for Agriculture ([75], Article 36).

Appendix B.2.3. EUTR Obligation 2. Due Diligence When Placing Timber or Timber Products on the Market

Every forest owner that exports timber or timber products from Croatia to the EU could be regarded as an operator. Concerning the measures and procedures to provide access to the information concerning the operator’s supply of timber or timber products, the following themes were identified as relevant:

Themes Certification and Standardization of Timber Products

The National Forest Policy and Strategy calls upon FSC certification as an acknowledgment of sustainable forest management of Croatian forests. Furthermore, the Policy prescribes a measure of support in obtaining certificates for forest and timber products management and development of a national standard within the priority of preserving and promoting habitat stability, forest health and productive capacity of forest stands ([69], p. 1668).

Theme Timber Products

The National Forest Policy and Strategy recognized that timber and timber products are mainly exported to the EU market, especially in Italy, where they are further processed into high value-added products. It also identified the development of the timber industry as one of its main priorities. To develop and maintain “a flexible timber industry competitive on the international market and capable of optimal use of assortments” it prescribes several measures among which is the promotion of initiatives to implement the highest quality standards, intensification of quality control of delivered raw materials, and imported final products, and adjustment of legislation regulating the quality control, adaptation and harmonization of Croatian standards with relevant European and international standards for timber and timber products, as well as definition of measures to encourage the export of final products ([69], p. 1682). The Strategy for the Development of Timber Processing and Furniture Production recognized manufacturing of articles of timber, cork, straw and plaiting materials and manufacturing of furniture as activities oriented to international trade in goods. As a priority area for development, this Strategy recognized insufficient focus on creating its own brand of timber processing and furniture. The Strategy states that “when creating a Croatian brand of products and services, one should take into account the fact that timber as an environmentally friendly material comes from certified Croatian forests and respect the socially responsible attitude towards the consumer, the environment and society. The emphasis should be on eco-labeling of timber and furniture products, which will support the market recognition of products in the common European market, which increasingly recognizes green products as proof of quality, including through green and sustainable public procurement” ([70], p. 13). As a specific objective, the Strategy defines a goal of increasing the delivery of goods to the single market of the EU and exports to third countries by 15% until 2020 ([70], p. 17). As Annex to the Instructions for Operators and Traders, the Ministry for Agriculture published the List of Timber and Timber Products to Which the EUTR Applies categorized according to combined nomenclature.

Theme Information

The National Forest Policy and Strategy recognized that the flow of information between public enterprise Hrvatske šume and the timber processing industry impedes planning of timber assortments' production. The Law on Forests states that forests should be managed transparently,

making forest management plans publicly available, and keeping the information on forests in the national Register ensuring access to basic information and information from the Register under proportionate, non-discriminatory and transparent conditions ([75], Article 2). The Register is an electronic record of the whole forest management area of the Republic of Croatia. It represents a unified system of registers of data and computer programs whose purpose is to ensure effective access to information and to support timely decision-making and effective management ([75], Article 3). The register also contains a section for reporting to fulfill international and national obligations from EU legislation, international conventions, agreements, protocols, and other acts binding on the Republic of Croatia ([75], Article 13). The Law on Forests also prescribes that all forest management plans in the approval process and after approval are available to the public ([75], Article 28). Instructions for operators and traders provide information on EUTR requirements in simplified form in the Croatian language. The Regulation on the Auction of Certain Timber Assortments prescribes that the company Hrvatske šume announces the tender of timber assortments in state and private ownership, in the daily press, and on the company website. The announcement on timber assortments contains the following information: name of the owner, tree species, quality and description of the timber assortment, quantity, exclusive price per unit, place of sale, deadline for submission of bids, place where the bidding will take place, date and time of bid opening, determination of the possibility of participation in the bid opening, address for submission of bids ([76], Article 3). The Strategy for the Development of Timber Processing and Furniture Production recognized that the lack of a single database of timber processing and furniture production impedes the development of the timber processing industry, and defined creation of the data platform for timber processing and furniture production as a priority area ([70], pp. 5-7).

Theme Timber Transport, Processing, Storage, and Trade

One of the expected impacts of the Strategy for the Development of Timber Processing and Furniture Production was growth in the supply of goods to the single market of the EU and exports to third countries to EUR 1 billion in 2020 ([70], p. 20). The Law on Forests prescribes that timber forest assortments may be transported only if they are marked and if the prescribed consignment note has been issued for them ([75], Article 37). Marking of timber assortments is performed obligatorily before their placing on transport, with an overhead hammer, such that a stamp is imprinted on the heads of timber assortments ([75], Article 14). For forest timber assortments from state forest, stamping and issuing of the consignment note is performed by public enterprise Hrvatske šume ([75], Article 37), whereas for timber assortments from private forests, stamping and issuing of the consignment note is performed by a licensed forester ([75], Article 23). For manufactured and properly marked timber assortments for which a consignment note has already been issued, a new one may be issued at a later date. A new consignment note is issued by a certified engineer confirming traceability, in accordance with the EUTR directive. The validity of the consignment

note for forest timber assortments is 24 h ([75], Article 24). The sale of timber assortments from the tariff codes 4401 and 4403, originating from forests managed by the company Hrvatske šume d.o.o. is performed by auction. At the request of other users, i.e., forest owners, timber assortments originating from forests that are not managed by the company Hrvatske šume d.o.o. can be also sold by auction ([76], Article 1). The Law on Trade stipulates that in addition to the trader, the trade activity may also be performed by a legal or natural person entered in the Register of Forest Owners, when he sells forest products at retail outside stores, as well as at auctions, on wholesale markets, other forms of wholesale trade organized by professional institutions and/or Ministry for Agriculture of the ministry responsible for forestry (Article 5). The Law on Trade prescribes that the goods imported or temporarily imported must meet the health, veterinary or phytosanitary safety conditions. Imported goods may be placed on the market if they comply with the prescribed requirements, are marked in accordance with the relevant regulations, and if the prescribed documents of conformity are provided for the goods ([46], Article 19). The rules on the origin of goods and the manner of issuing certificates of origin of goods are determined by customs regulations and international agreements. Certificates of Croatian origin of goods are issued by the Croatian Chamber of Commerce, and certificates of preferential origin of goods are issued by the Ministry of Finance-Customs Administration. When the regulations of a foreign state, international agreement or regulation of the Republic of Croatia stipulate that goods must be accompanied by certificates that are issued or certified by the Ministry of Finance, except for certain goods for which certificates are issued in administrative proceedings ([46], Article 22). The State Office for Trade Policy prescribes by a special act the manner of application of directly applicable EU regulations governing the special import regime, such as the measures to control imports of products from third countries into the EU ([46], Article 49). As an Annex to the document Instruction for Operators and Traders, the Ministry of Agriculture provided the List of Protected Species Whose Trade is Restricted or Under Special Supervision.

Theme Record Keeping

According to the Law on Forests, all forest management plans must be kept permanently ([75], Article 28). The Law on Forests also prescribes that the manager of state forests (i.e., Hrvatske šume) must keep the evidence of all operations conducted in forest management plans ([75], Article 30). The evidence of operations conducted in small and medium private forest is kept by the Ministry for Agriculture ([75], Article 25). The evidence on the remittance of trees is kept in the Register ([75], Article 30). Besides that, the licensed forester keeps the remittance book of all trees marked for felling. The remittance book for state forests is kept by Hrvatske šume, and for private forests by the Advisors service ([75], Article 10). Licensed foresters are obliged to submit a summary table of marked and felled trees to the Ministry of Agriculture once a month. The summary table contains the name of the property owner (name and surname), county, administrative municipality, cadastral municipality, cadastral parcel, and economic unit, as well as

data on tree species, assortment structure, and volume ([75], Article 23). Licensed foresters also keep the consignment book which includes all issued consignment notes ([75], Article 20). The Regulation on the Auction of Certain Timber Assortments prescribes that before putting the timber or timber assortments up for auction, the request for auction must be submitted to the Committee for the auction. The request must include:

- name of the applicant;
- address of the applicant;
- contact of the applicant;
- quality of timber assortments;
- quantity per unit of measure (m; t);
- price per unit of measure (EUR/m; t);
- place of sale-parity;
- personal identification number;
- origin of goods;
- a statement certified by a notary public, which confirms the truthfulness of the data from the submitted request under criminal and material liability;
- proof of ownership for the timber assortments for which the application is submitted,
- proof of paid forest contribution in accordance with the provisions of special regulation;
- documentation for the sale of timber assortments by tender, i.e., specification of timber assortments, classified by types, dimensions (diameter, length, cubature), quality, and calculation of the value for the initial price;
- proof of payment of the administrative fee ([76], Article 4).

If the request contains all the data, the Committee issues a consent for bidding. Bidding offer must include:

- name and address of the bidder;
- personal identification number;

- indication of whether it is timber assortments from state or private ownership,
- indication of the quantity of timber assortments to which the offer refers and the price per unit of measure (m³ or ton);
- mark on the competent forest administration, branch, and forestry for timber assortments originating from state-owned forests;
- mark of forest owner for privately owned timber assortments;
- offered individual price and price for the total quantity of timber assortments to which the offer refers;
- indication of payment terms;
- indication of the final destination of the goods, i.e., the country of export and the currency in which the payment will be made, and an indication of the exporter if it is an export;
- date and valid signature and stamp of the bidder;
- copy of the identification document for the bidder who is a natural person registered to perform trade activities;
- excerpt from the court or trade register for the bidder;
- power of attorney for representation, if the bid is submitted by an authorized proxy,
- statement on securing the appropriate payment instrument or his proxy;
- a statement certified by a notary public, stating under criminal and material liability that the legal or natural person, i.e., the responsible person in the legal entity has not been punished for violating forestry regulations, customs regulations, or regulations governing trade in timber products;
- a statement certified by a notary public, which declares under criminal and material liability that the legal or natural person has no outstanding due public benefits;
- proof of the deposited guarantee to the owner of timber assortments in the amount of 10% of the exclusive value of timber assortments for which the bid is submitted ([76], Article 7).

After the tender, the Committee draws up a record of the public tender, as a proposal based on which the ministry responsible for the economy decides on the selection of the most favorable bidders who offered the highest price for certain timber assortments, and issues notices of public tender with a maximum validity of 90 days. The notice is a document with information on the origin and legality of timber assortments, the right of purchase based on tenders and resale on the single market of the EU, and the European Economic Area market and exports of timber assortments to the third countries. Attached to the Notice is the specification of timber assortments as listed in the request for bidding and the bid-offer. According to the issued notice and specification, and at the request of a legal or natural person who sells or exports the same timber assortments, the authorized person in accordance with regulations in the field of forestry performs measurement, marking and stamping, and issues the new consignment note, which is a condition for further transport of timber assortments. Possession of the Notice on the conducted public tender with the specification of timber and timber products, and a new consignment note is a condition for further transport, sale, or export of the timber assortment purchased based on the conducted tender. Persons who are in possession, export or buy, sell, hand over to another, receive for safekeeping or transport or possess the timber assortment on any other basis shall without delay at the request of the competent inspection authorities, in accordance with special regulations, submit the Notices on the conducted public tender, as proof of the origin and legality of the timber assortment. The Notice on the conducted public tender as a document on the origin and legality of timber assortments, the right of purchase based on the conducted tender, transport, resale and export of timber assortments may not be transferred to another legal or natural person ([76], Article 8). Instructions for Operators and Traders state that the economic operator is obliged to keep timely and systematic records of each consignment of timber and timber products that he imports, which includes the following information:

- name of the shipment supplier, supplier identification number and supplier address;
- country of dispatch/export of the consignment;
- the type of goods contained in the consignment;
- quantity of goods expressed in volume, mass, or number of units;
- the type of timber from which the goods contained in the consignment are made;
- the country of felling of the timber from which the goods contained in the consignment are made;
- the name of the customer, identification number of the customer, and address of the customer to whom the timber and timber products are delivered.

The economic operator is obliged to keep records for at least five years on all suppliers from whom logs and timber products are purchased and on all customers to whom logs and timber products are sold [78].

Theme Competent Authorities

The competent authorities for the implementation of Regulation 995/2010/EU and Regulation 607/2012/EU are the Ministry for Agriculture, and Ministry of Finance, Customs Administration [71].

Theme Monitoring

The Inspectorate for Forestry and Hunting was transferred from the Ministry of Agriculture in 1998 to the State Inspectorate, in accordance with the general policy of the Government. The Forest Policy and Strategy states that it is necessary to organize an expert forestry and hunting inspection in the Ministry of Agriculture and Forestry as a part of a public administration reform. One of the measures prescribed by the Policy is strengthening the forestry guard service by giving greater powers to prevent illegal activities in forests ([69], pp. 1672-1676). According to the Law on Forests, the protection of state forests is performed by the forest ranger. If a forest ranger finds a person who illegally appropriates timber or other forest products or performs other illegal activities, (s)he is obliged to request an identity card or other document based on which he can establish the identity of a person and temporarily confiscate illegally appropriated forest products and assets ([75], Article 44). Legal supervision over the implementation of the Law on Forests is performed by the Ministry. Inspection supervision is performed by forestry inspectors from the State Inspectorate. Professional supervision of the quality of work performed by certified operators is performed by the Chamber of Forest Engineers at the request of the Ministry or other persons with a legal interest. Inspection supervision in the field of trade is carried out according to special regulations (i.e., Law on Trade, EUTR). The Forestry Inspector in the Regional Office of the State Inspectorate is, amongst other things, authorized to:

- inspect the forest management plans and supervise their implementation;
- supervise all forest management operations, forest infrastructure, devices, as well as all places where timber is cut, stored, or exported from the forest to the place of processing and the means with which the timber is transported to the customer;
- collect data and information on performed forest management operations, on funds and procedures applied to forest management, professional services, as well as other data;

- order the suspension of felling of trees, and their parts, devastation of forests, deforestation, remittances of trees, transport of timber outside forest roads and collection of forest products;
- prohibit the felling of trees, cancel the remittance of trees contrary to forest management plans and forestry profession for areas where no forest management plans have been prepared;
- order the temporary seizure of illegally cut timber and other parts of the tree, as well as other illegally appropriated or produced forest products;
- order the temporary seizure of coniferous forest products that have not been harvested according to the law;
- inform the competent authorities about the observed irregularities and request their action, if he is not authorized directly;
- collect the necessary data and information from supervised persons, witnesses, experts and other persons;
- file indictments for a misdemeanor in the forests ([75], Article 77).

The forestry inspector in the central office of the State Inspectorate is authorized to: supervise the implementation of the forest management plan of the area, supervise the management of protected forests in which the economic use of natural resources is prohibited for scientific research and forests for the needs of defense, to carry out control- instructional supervision ([75], Article 78).

The Ministry for Agriculture performs the following tasks:

- verifies and accepts the FLEGT license;
- draws up a plan of expert supervision and keeps their records;
- verifies the implementation of the due diligence system;
- verifies compliance with the traceability obligation of traders in the supply chain;
- prepares the annual report;
- checks the supervisory organizations and prepares reports;
- informs the European Commission;

- prepares the annual report;
- determines corrective measures ([57], Article 6).

The expert supervision plans shall be based on a risk assessment that can be determined according to the following criteria:

- the size of the economic operator;
- specific information relating to the timber or timber product: description, country of felling (where applicable, region within the country where the timber was harvested and felling concession), supplier and trader, and documentation demonstrating compliance with applicable legislation;
- the general information that provides the context for assessing product-specific information: the prevalence of illegal logging of certain tree species, the prevalence of illegal logging practices at the place of felling, and the complexity of the supply chain;
- supply chain complexities;
- the level of corruption in the country or region within the country;
- the use of the services of the supervisory organization in the implementation of the due diligence system ([71], Article 8).

The Customs Administration performs the following tasks:

- receives a FLEGT license and keeps records of FLEGT licenses;
- further verify the consignment covered by the FLEGT license;
- take provisional measures ([71], Article 6).

Theme Sanctions

For infringements of the Law on Forests, monetary sanctions are prescribed. The amount of fines depends on the type of legal entity that commits a crime, as well as on the severity of illegal activity (Table A4).

A fine of 13,300 EUR to 66,600 EUR is imposed on a legal person who:

- imports into the EU a consignment not covered by a FLEGT;
- as an importer, submits to the competent authority a paper form of a FLEGT license which does not correspond to a model copy of the license;
- as an importer, submits to the competent authority a FLEGT license whose validity period has been extended without certification by the licensing authority;
- submit a duplicate FLEGT license or a replacement FLEGT license to the competent authority, which has not been issued and certified by the licensing authority;
- places on the market illegally felled timber and timber products derived from such timber;
- does not list the economic operators or traders who supplied him with timber and timber products and the traders to whom he supplied timber and timber products in all parts of the supply chain;
- does not allow the competent authority to verify the establishment and implementation of the due diligence system ([71], Article 9).

A fine in the amount of EUR 1330 to 6600 is imposed on the responsible person in the legal entity as well as a natural person for that misdemeanor. A fine of EUR 6600 to 26,600 is imposed on a natural person, a craftsman, and a self-employed person who has committed an offense in connection with performing a trade or other independent activity [71].

A fine of EUR 6600 to 26,600 is imposed on a legal person who:

- as an importer with a FLEGT license for each consignment, does not present a customs declaration for that consignment for release for free circulation;
- does not translate the license into Croatian as an importer, at the request of the competent authority;
- does not provide all the necessary assistance to the competent authority to facilitate the verification of the establishment and implementation of the due diligence system;
- has not established and does not keep records of deliveries and application of risk mitigation procedures;
- has not decided on risk mitigation measures;

- does not keep and does not provide the competent authority with information on traceability in the supply chain ([71], Article 10).

A fine of EUR 660 to 4000 is imposed on the responsible person in the legal entity for that misdemeanor. A fine of EUR 1300 to 9300 is imposed on a natural person who is a craftsman and one who performs an independent activity who has committed an offense in connection with performing a trade or other independent activity [71].

For the offense of placing illegally harvested timber or timber products on the market, in addition to the prescribed fine, a collateral sanction of the confiscation of forest timber assortments may be imposed. In that case, the public institution seizes forest timber assortments. Transport, storage and disposal of seized forest timber assortments are performed by the company Hrvatske šume, on behalf of the Republic of Croatia ([75], Article 94).

TableB2. Monetary fines for illegal activities in forests by type of perpetrator

Illegal activity	Public forest owner, institution, or legal entity	The responsible person of public forest owner, institution, or legal entity	Medium and big private forest owners	A responsible person of medium or big private forest owner if a legal entity	Small private forest owner
allow the devastation of forests, the illegal felling of trees or their damage					
does not ensure the protection of forests from illegal appropriation, use, and other illegal actions					
forestry works are not performed by registered and licensed contractors, and professional work is not performed by certified engineers	6 600 - 13 300 EUR	1 300 - 2 000 EUR	2 600 - 6 600 EUR	930 - 1 600 EUR	1 300 - 2 600 EUR
does not enable the forestry inspector to carry out supervision or does not provide him with the necessary information or notification					
execute or allow the felling of unmarked trees					
transports forest products and timber outside the forest unmarked or without consignment note	4 000 - 7 300 EUR	730 - 1 300 EUR	1 300 - 4 000 EUR	660 - 1 000 EUR	930 - 2 000 EUR
does not keep the prescribed records of operations performed	1 300 - 4 000 EUR	660 - 730 EUR	2 600 - 6 600 EUR	930 - 1 600 EUR	1 300 - 2 600 EUR

Illegal activity	A responsible person of small private forest owner if a legal entity	Public institutions and Legal entities that are not forest owners	The responsible person of a public institution or legal entities that are not private forest owners	Natural persons that are not private forest owners
allow the devastation of forests, the illegal felling of trees or their damage				
does not ensure the protection of forests from illegal appropriation, use, and other illegal actions				
forestry works are not performed by registered and licensed contractors, and professional work is not performed by certified engineers	450 - 930 EUR			
does not enable the forestry inspector to carry out supervision or does not provide him with the necessary information or notification		4 000 - 9 300 EUR	730 - 1 300 EUR	1.300 - 2 600 EUR
execute or allow the felling of unmarked trees				
transports forest products and timber outside the forest unmarked or without consignment note	400 - 660 EUR			
does not keep the prescribed records of operations performed	450 - 930 EUR			

Source: Own elaboration based on Law on Forests

Appendix B.2.4. EUTR Obligation 3. Traceability

Traceability of timber and timber products is ensured by the auction notice, and consignment note issued for the purposes of respecting EUTR obligations (see Theme Record keeping).

Appendix C.

Appendix C.1. Policy Framework and Organization of Forest Sector in Serbia

Appendix C.1.1. Policy Framework

After the system change in the 1990s, Serbia became a new democracy and moved from a centrally planned economy towards a system based on the market economy. Along with this transformation process, the existing sectoral policies were either changed or newly formulated. In the Serbian forest sector most substantial changes, such as formulation of new strategic and legislative documents, as well as consideration of changes of existing organizations (e.g., public forest enterprises), can be traced back to the period 2000-2010 and internationally-assisted projects.

The Forestry Development Strategy of the Republic of Serbia was adopted in 2006. The strategy is based on two main principles-forest sustainability and forest multifunctionality. The main strategic goal is “maintaining and improving forest condition and pursuing the development of forestry as an integral part of the overall economy” ([72], p. 36). For the realization of this goal, the government committed itself, among others, to provide an enabling regulatory, institutional and economic framework and to launch activities on the formulation of the National Forest Program (NFP) as the action framework for the development of the forest sector. NFP, as well as the action framework, are still not in place. The new Law on Forests was adopted in 2010 and amended in 2012 and 2015. The

Law on Forests regulates the preservation, protection, planning, cultivation and use of forests, disposal of forests and forest land, supervision over the implementation of this law, as well as other issues important for forests and forest land both in state and private property [73]. The Law on Forests prescribed the adoption of three types of documents for forest management:

- (1) forest area development plan-planning document which determines the directions of forest development with a plan for its implementation for the forest area;
- (2) forest management basis-forest management planning document for the forest management unit, except for private forests;
- (3) forest management program-planning document of forest management adopted for forests of a larger number of private forest owners.

The Rulebook on the Form and Content of the Forest Stamp, Form of the Consignment Note, Conditions and Manner of Stamping of the Tree for Cutting, Manner of Keeping Records was adopted in 2016. It prescribes the form and content of the forest stamp, the form of the consignment note, i.e., the delivery note accompanying the tree in circulation, conditions, and manner of stamping the tree for felling, and the manner of keeping records [79]. It also regulates the manner of stamping of Christmas trees, as well as the appearance and content of the consignment and delivery note.

The Law on External Trade was adopted in 2006. It regulates foreign trade operations, in accordance with the rules of the World Trade Organization and regulations of the EU. It also regulates foreign trade in certain types of goods or services in accordance with the rules of the World Trade Organization and regulations of the EU.

Appendix C.1.2. Organization of Forest Sector

The directorate for forests is an administrative body within the Ministry of Agriculture, Forestry and Water Management. It performs state administration tasks and professional tasks related to forestry policy; forest conservation, improvement and use of forests and wildlife, implementation of forest and wildlife protection measures, control of seeds and planting material in forestry, and inspection in the field of forestry and hunting [62].

The public enterprise Srbijasume manages state forests and forest lands on a surface area of 893,204 ha and provides professional advisory services in private forests (forests owned by natural/legal persons) on an area of 1,224,751 ha. It also manages 53 protected areas on an area of 338,620 ha, as well as 44 hunting grounds on a total of 488,020 ha [55]. The public enterprise Vojvodinasume manages 129,877.84 ha of forest and forest land in the Autonomous Province of Vojvodina. Its main activities include breeding, protection, management of protected natural goods, maintenance and regeneration of forests, production of forest seeds and planting material and growing of new forests and forest plantation, forest utilization, production of forest products, and other products of forestland areas, utilization of forests for recreational purposes, sawn-wood production and other ways of forest utilization, hunting and game breeding, meat production and processing, and others [57].

Other forestry-related institutions and organizations are:

- The University of Belgrade, Faculty of Forestry;
- Institute of Forestry;
- Institute of Lowland Forestry and Environment;
- • Chamber of Forestry Engineers.

Appendix C.2. Detailed Coding Themes for Serbia

Four documents that are relevant for the legality of timber and timber products, as well as their trade, were analyzed: the Law on Forests, Rulebook on Consignment, and Delivery Note, Law on Foreign Trade, and Forestry Strategy.

Thirteen themes that could be directly or indirectly related to three main EUTR obligations (prohibition of placing on the market of illegally harvested timber or timber products derived from such timber, due diligence when placing timber or timber products on the market, and traceability) were recognized, and the text was coded throughout all four documents (Table A5). They are further presented through their relation to EUTR obligations.

Table C2. Themes that could be directly or indirectly related to 3 main EUTR obligations.

No	Theme (code)	No of references			
		Forestry development strategy	Law on forests	Rulebook on consignment, and delivery note	Law on foreign trade business
1.	Felling	0	2	1	0
2.	Felling of protected species	0	1	0	0
3.	Forest certification	2	0	0	0
4.	Forest protection	3	7	0	0
5.	Illegal activities	2	6	0	0
6.	Information	1	1	0	0
7.	International commitments	11	0	0	1
8.	Monitoring	6	4	0	0
9.	Planning	0	2	0	0
10.	Record keeping	0	6	4	0
11.	Sanctions	0	2	0	0
12.	Standardization of wood products	1	0	0	0
13.	Wood traffic	0	1	1	0

Source: Own elaboration

Appendix C.2.1. EUTR in Serbia

As Serbia is not an EU member state, it did not translate EUTR obligations into policy and regulatory documents. Regardless, identified themes in the four policy documents can be implicitly or explicitly relevant for EUTR.

Theme International Commitments

The Forestry development strategy states that “The Strategy and legislation in forestry are based on national interests and shall be harmonized with the confirmed international commitments” ([72], p. 30). For the fulfillment of the main objective of the strategy (the conservation and enhancement of forests’ condition and the development of forestry as an economy branch), the Government shall “harmonize the future legislative and institutional framework with the requirements of the European Union” ([72], p. 32).

The Law on foreign trade regulates foreign trade in goods or services according to the World Trade Organization and regulations of the EU (Article 1). Provisions relevant to timber and timber products are referred to in general under the term plants and plant materials.

Theme Forest Protection

The Forestry development strategy emphasizes that “the valid legislative and regulatory instruments do not ensure the adequate protection and enhancement of current forest resources” ([72], p. 10).

According to the Law on Forests, protection of forests against illegal appropriation, use, destruction and other illegal activities must be provided by the user or the forest owner, who is obliged to organize a forest protection service (i.e., the appointment/employment of forest guardians) ([73], Article 39).

Appendix C.2.2. EUTR Obligation 1. Placing on the Market of Illegally Harvested Timber or Timber Products Derived from Such Timber (Prohibition)

Theme Planning

Forest management bases (for state-owned forest) and forest management programs (for private-owned forests) are both technical and legal bases for conducting all operations in forests, including felling [73].

Theme Illegal Activities

Illegal logging is marginally addressed by the Forestry development strategy. It states that the Serbian Government will establish an efficient system of forest protection against illegal felling, illegal occupation, illegal building and other unlawful actions, and efficiently sanction illegal actions related to forests ([72], pp. 38-40). The Law on Forests defines illegal logging as the felling of trees that is not performed according to the forest management basis and programs and prohibits transport and processing of the timber without the stamp [73]. It also prohibits the felling of protected species and Christmas trees.

Theme Felling and Felling of Protected Species

According to the Law on Forests, felling of trees in forests can be performed only after selection, marking with remittance stamp, and registration of trees for felling [73] (Article 57). The remittance shall be made by an expert who has a license to perform professional activities in forest management. The right to the remittance stamp is issued to an expert employed by a forest owner who manages the forest following a valid forest management basis or program or is employed by the legal entity that manages forests. The remittance stamp is assigned by the competent Ministry (or other competent institution of the Autonomous Province of Vojvodina) to the name of the expert ([73], Article 58). Felling of protected species is prohibited unless they are a source of infection from diseases and pests, or if they endanger people and objects. In this case, the competent ministry (or other competent institution of the Autonomous Province of Vojvodina) must approve felling. Stumps of illegally logged timber must be marked with a stamp for forest misdemeanor by an expert employed by a legal person [73].

Appendix C.2.3. EUTR Obligation 2. Due Diligence When Placing Timber or Timber Products on the Market

Every forest owner or user (that manages a forest according to a valid forest management basis or program) that exports timber or timber products from Serbia to the EU could be regarded as an operator. Concerning the measures and procedures to provide access to the information concerning the operator's supply of timber or timber products, the following themes were identified as relevant:

Themes Certification and Standardization of Wood Products

Under the objective of creating the highest possible value of forest products, the Forestry development strategy prescribes a measure to “develop the national criteria, indicators, and guidelines for sustainable forest management pursuant to the Pan-European criteria and indicators of sustainable management and stimulate the voluntary forest certification” ([72], p. 54). Similarly, the Strategy prescribes a measure for “creating the conditions for the beginning of the Forest

Certification process for wood products”([72], p. 62), under the objective related to creating an efficient wood industry sector competitive on the world market. Under the same objective, the Strategy prescribes a measure of “introducing the system of production quality control and the harmonization of technical norms in the field of wood industry with the European and international standards” ([72], p. 60).

Theme Information

The forestry development strategy reports that information on the status of resources, measures and activities implemented in forests should be available to all stakeholders and the public ([72], p. 68). According to the Law on Forests data from the development program, national forest inventories and development plans shall be available to the public, while data from the forest management basis and programs may be accessed by paying a fee (i.e., the republic administrative tax) ([73], Article 36).

Theme Wood Transport, Processing, and Storage

According to the Law on Forests, felled timber must be stamped and accompanied by a consignment or delivery note to be placed on the market (bought, sold, donated, stored and transported). Stamping of felled timber and issuing of a consignment or delivery note is performed by the forest owner or the user who manages the forest following the management plan. It is prohibited to process and store timber if it is not stamped and if it is without a consignment or delivery note ([73], Article 60).

Theme Record Keeping

The Law on Forests prescribes that completed forest management operations are recorded and presented as an integral part of the forest management basis, and programs ([73], Article 34). A person who places timber on the market must keep evidence of: stock of sold, processed, and bought timber, number of consignment or delivery note, name and address of the supplier and buyer of the timber, mark, and number of the stamp by which the wood is stamped, types and quantities of timber by assortment, as well as place and date of receipt/delivery of timber ([79], Article 14). A book of consignment or delivery notes must be kept for at least 2 years. Data on illegally logged timber are kept in a book of forest misdemeanors.

Theme Monitoring

Under the objective of a sustainable and economically efficient wood industry and forest sector a measure was planned for “strengthening the system of monitoring the flows of raw materials and final products, as the conditions for defining the mid-term measures for the sector development” ([72], p. 61). The strategy states that the regulatory, supervisory and supportive functions will

be executed by the Ministry's division responsible for forestry. The supervision is implemented through the inspection affairs with the aim of sustainable forest management ([72], pp. 80-82).

The Law on Forests prescribes that monitoring activities in state-owned and private forests are performed by forestry inspectors who have the right and duty to determine and check the following ([73], Article 107-108):

- development and implementation of forest management basis and programs;
- whether the forest management basis and programs contain records of performed works in the forest in the form of a forest chronicle;
- the selection, marking, recording of trees for felling;
- the stamping of the felled timber, issuance of the consignment or delivery note, and timber trade;
- the processing, storage and registration of timber;
- the trade of Christmas trees;
- calculation and payment of fees for the use of forests and forest land;
- relevant business books and other documentation.
- According to the Law on Forests, the forest guardian is (amongst others) authorized and obliged to ([73], Articles 39-41):
- legitimize a person caught in the illegal activities;
- inspect all types of vehicles and cargo by which timber is transported, as well as documentation that accompanies timber in transit (accompanying and delivery note);
- temporarily confiscate illegally harvested timber and timber placed on the market;
- make a report on the illegal activities and the established factual situation and submit it to the user or the forest owner.

Theme Sanctions

For infringements of the Law on Forests, monetary sanctions are prescribed. The amount of fines depends on the type of legal entity that commits a crime, as well as on the severity of illegal activity ([73], Article 111-113):

- legal persons (except entrepreneurs) will be sanctioned with a fine of approximately 850-2,500,000 EUR, depending on the type of crime;
- entrepreneurs will be sanctioned with a fine of EUR 850-4250;
- natural persons will be sanctioned with a fine of EUR 85-850.

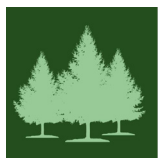
Appendix C.2.4. EUTR Obligation 3. Traceability

Traceability of timber and timber products is ensured by consignment or delivery notes. This data is stored in the book of consignment and delivery notes, which should be kept for at least 2 years (see Theme Record keeping).

5.2. Article 2 Alignment of National Forest Policy Frameworks with the EU Timber Regulation Requirements: Insights from Montenegro and the Republic of Srpska (Bosnia and Herzegovina)

Article 2 has been published as the following paper:

Radosavljevic, M.; Masiero, M.; Rogelja, T.; Comic, D. Alignment of National Forest Policy Frameworks with the EU Timber Regulation Requirements: Insights from Montenegro and the Republic of Srpska (Bosnia and Herzegovina). *Forests* **2023**, *14*, 1157.



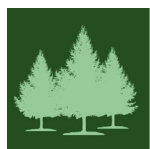
forests

IMPACT
FACTOR

2.9

CITESCORE

4.5



forests



Article

Alignment of National Forest Policy Frameworks with the EU Timber Regulation Requirements: Insights from Montenegro and the Republic of Srpska (Bosnia and Herzegovina)

Maja Radosavljević, Mauro Masiero, Todora Rogelja and Branko Glavonjić

¹Department of Land, Environment, Agriculture and Forestry (TESAF), University of Padua,

Viale dell'Università 16, 35020 Legnaro, Italy; mauro.masiero@unipd.it (M.M.);
todora.rogelja@unipd.it (T.R.)

²Faculty of Forestry, University of Banja Luka, Vojvode Stepe Stepanovica 75a,

78000 Banja Luka, Republic of Srpska, Bosnia and Herzegovina; dragan.comic@sf.unibl.org

*Correspondence: maja.radosavljevic@phd.unipd.it

Citation: Radosavljevic, M.; Masiero, M.; Rogelja, T.; Comic, D. Alignment of National Forest Policy Frameworks with the EU Timber Regulation Requirements: Insights from Montenegro and the Republic of Srpska (Bosnia and Herzegovina).

Forests **2023**, *14*, 1157. <https://doi.org/10.3390/f14061157>

Received: 6 April 2023

Revised: 25 May 2023

Accepted: 2 June 2023

Published: 4 June 2023

Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Abstract: The Western Balkans represent a priority area for improving forest legality monitoring systems in line with the European Union Timber Regulation (EUTR). However, research on EUTR implementation in Western Balkan countries is still sporadic with a limited geographical scope; therefore, the preparedness of forestry sector actors for the EUTR in the region is largely unknown. The main objective of this study is to determine to what extent the forest policy frameworks of Montenegro and the Republic of Srpska (Bosnia and Herzegovina) are aligned with the EUTR requirements. To achieve this aim, we applied a qualitative content analysis of policy documents identified via an expert-based approach. Our results show that both countries have well-developed policy frameworks addressing illegal logging and preventing illegal activities in forestry, especially through dedicated action plans. Key actors in both countries are public, including the ministries responsible for forestry, public forest enterprises, and forestry inspectorates. The forestry sector in Montenegro is facing significant changes due to the termination of forest concessions and the reorganization of the management of state forests, including forest certification. The Republic of Srpska has relatively well-established institutional bodies for EUTR implementation but, in some cases, insufficient exchange of information and cooperation among them. Our findings indicate that the forestry sectors in Montenegro and the Republic of Srpska (as well as in Serbia, Croatia, and Slovenia, as per previous research) are dynamic, undergoing various changes, so there is room for improvement in terms of capacities (e.g., human, technological, infrastructural), legal responsibilities, and information access and availability. With an increasing focus on “deforestation-free” commodities within the EU and global policy arena, a new, more demanding, and broader regulation is expected at the EU level, replacing the EUTR. The incoming regulation will expand existing EUTR requirements, likely posing severe challenges to many EU member countries. This could be even more challenging for countries with less developed or advanced systems to enforce legality requirements, including Western Balkan countries.

Keywords: forest policy analysis; timber legality; forestry sector; Western Balkan; EUTR

1. Introduction

Despite all the efforts to address deforestation and forest degradation [1], unsustainable forest management practices and illegal logging remain a widespread problem [2], representing a major threat to the world’s forests [3-5]. Fuelwood and industrial wood harvesting and trade have been identified as direct deforestation and forest degradation drivers [6,7], and their impacts are emphasized by illegal practices often associated with them [8]. To prevent imports of illegally sourced timber and timber products, the European Union (EU) adopted the EU Timber Regulation (EUTR) in 2013, which addresses the demand side of timber supply chains (importing EU countries). The EUTR prohibits the export of illegally harvested timber and timber products on the EU market by laying down three main obligations for operators, i.e., prohibition, due diligence, and traceability [9].

Legislation banning illegally logged timber and related products entering the EU should safeguard the sector from illegal trade and make up part of the regulatory framework that promotes sustainable forest management [10]. However, despite the EU’s efforts to stop the flow of illegally sourced timber and timber products, it is difficult to derive definite conclusions on the effects of the EUTR [11]. Although changes in timber trade patterns have been observed, e.g., under the form of reduced EU imports of tropical timber, this does not allow the conclusion that EU member states have reduced illegal timber imports nor that illegal logging activities have diminished in producing countries, as the illegal timber could have been diverted to other less regulated markets [10,12-15].

Illegal logging remains prevalent in developing countries where corruption coupled with inadequate forest governance leads to significant illegal practices and associated trade flows [2,15]. While much of the world's attention remains focused on the large-scale destruction of tropical rainforests in South America and Southeast Asia, illegal logging and deforestation/forest degradation processes occur in economically unstable Southern and Eastern Europe [16]. Segato [17], for example, reports that the Balkan countries comprise a corridor for illegal timber trafficking. "A complex supply chain makes it difficult to identify falsified documents, and the lack of robust enforcement-due to insufficient resources-and the cost of compliance to companies means that there is little incentive to adhere to the EUTR. A better understanding of the EUTR, as well as more stringent due diligence systems and risk assessment, is needed to tackle corruption in the region" ([17], p. 13).

In light of these risks, some Western Balkan countries (i.e., Serbia, Bosnia and Herzegovina, and Montenegro) are recognized by the European Commission as priority countries for the implementation and enforcement of the EUTR. Although Western Balkan countries are regarded as priority areas for improving legality monitoring systems in line with the EUTR requirements and aims, up-to-date research on the transposition of EUTR requirements into forest policy framework conditions in these countries is still patchy and has several gaps. Regarding Southeastern Europe, researchers mostly looked into forest certification as a means for sustainable forest management [18,19], including chain of custody certification [20] and trade of timber and timber products [21]. A limited number of studies (e.g., [22-24]) analyzed the adaptation of national forest policies to the EUTR obligations or forest governance.

Our study aims to contribute to the knowledge base on timber legality in the Western Balkan region by analyzing the adaptation of policies of two Western Balkan countries- Montenegro and the Republic of Srpska (the Republic of Srpska is one of the two entities of Bosnia and Herzegovina, the other one being the Federation of Bosnia and Herzegovina.)-to the EUTR. For this purpose, we investigated to what extent the national forest policies of these two countries aligned with the requirements of the EUTR.

In Section 2, we briefly present the Western Balkan region in relation to illegal activities in forestry, while in Section 3, we describe the research methodology. In Section 4, we provide some basic data on the forestry sector for the two selected countries. In Section 5, we present the results of our research, whereas Section 6 discusses the findings, broadening the scope to other Western Balkan countries (namely Serbia, Croatia, and Slovenia) and the relevant literature. Finally, in Section 6, we draw conclusions and recommendations for policy and practice.

Illegal Forestry Activities in the Western Balkan Region

Geographically, the Western Balkan region comprises Bosnia and Herzegovina, Croatia, North Macedonia, Serbia, and Montenegro, all being former republics of the Socialist Federal Republic of Yugoslavia (in short, Yugoslavia) and Albania. Geopolitically, including Slovenia, these countries represent a region with a complicated recent history. After the fall of Yugoslavia and the socialist regime, all these countries have been experiencing drastic changes in their society, resulting from the strong transition towards a market economy and modernization [25].

The Western Balkans are known as an area exposed to a high risk of corruption [16,26,27], with illegal activities being recognized as one of the key problems for the forestry sector in the region [24,28]. In the Western Balkan countries, activities such as illegal logging by local communities,

corruption, nepotism, and preference for certain contractors are still regarded as highly relevant and damaging issues for the forestry sector [28]. Several countries, including Montenegro (45), Bosnia and Herzegovina (34), and Serbia (36), show a Corruption Perception Index lower than 50 and might be associated with a higher corruption risk [29].

The Balkan region has a substantial forest stock in the European context and a high share of virgin and old-growth forests [30]. This is due to the Balkan's mountainous topography, relatively low population density, as well as the below-average intensity of economic exploitation [31]. In this region, forest vegetation has been greatly modified and often degraded through agricultural practices such as grazing [32,33]. This forested region is the largest contiguous forest area in Central Europe, providing an important habitat for many endemic [34] and endangered species, including large predators such as the brown bear (*Ursus arctos* L.), wolf (*Canis lupus* L.), and lynx (*Lynx lynx* L.). The area is characterized by high altitudes, steep slopes, rocky conditions, and a lack of surface water that made the area generally unsuitable for colonization, except for the karst valleys. Because of the difficult terrain in the Dinaric Mountains, large forest areas have been managed with low intensity. In contrast, the Mediterranean part of the Dinaric region was colonized very early and has traditionally been more densely populated. As a result, woodlands are considered a key natural resource, and forestry and forest management practices have a long and relatively well-documented history, at least since the second half of the nineteenth century [34]. Under communism, the Balkan states treated forest areas as an important national heritage and economic asset, with the state acting as the sole owner and manager of forest resources [35]. This was supported by the widespread nationalization of forest land after World War II. Although the state is still the dominant forest owner in most of the region, public forest administrations in the Western Balkans were challenged when facing novel forest policies following the breakup of Yugoslavia in the 1990s. Research on private forest owners and stake actors [35,36] argued that newly established forestry legislation in most of the ex-Yugoslavia countries is not adequate for the management of private forests, as it is predominantly oriented towards the administration needs of state-owned forests.

Additionally, with high growth stock, the Balkan region has a strategic geographic location for the trans-shipment of timber and timber products into the EU, the Middle East, as well as other countries/regions, which is facilitated by the infrastructure of roads and railways as well as seaports on the Black Sea and Mediterranean [21].

Except for Slovenia and Croatia, which are EU members, all other countries within the region are part of the EU special process for the Western Balkan countries, known as the Stabilization and Association Process (SAP) [37]. This is based on several instruments such as stabilization and association agreements, trade concessions or economic, financial, and other types of assistance from the EU, which should contribute to the stabilization of the region and eventually lead to membership of the EU. In addition, the Western Balkan countries already became potential candidates, meaning they should be offered official candidate status once they have officially complied with SAP requirements [38].

Both Montenegro and the Republic of Srpska are still in the pre-accession process to the EU. Accession negotiations with Montenegro were opened in June 2012. To date, 33 negotiating chapters have been opened, of which three have been provisionally closed. Montenegro accepted the revised enlargement methodology. It continued to implement the Stabilization and Association Agreement (SAA), and meetings of the joint bodies under the agreement took place at regular intervals [39]. The proper functioning of Montenegrin institutions has been affected by political

volatility, government instability, and tensions within the ruling majorities, stalling decision-making processes, and reform implementation

Overall, limited progress has been made, including adopting the new 2022-2026 strategy for public administration reform. The green agenda and the sustainable connectivity cluster are at the heart of the Green Agenda for the Western Balkans and are closely linked to Montenegro's economic reform program and the Commission's Economic and Investment Plan [40]. The SAP process will create new opportunities and challenges to provide products to the EU market, including quality timber at competitive market value with the required standards for sustainability.

2. Materials and Methods

This explorative, descriptive study is an extension of previous research on the policy framework for EUTR implementation within Western Balkan countries, targeting Slovenia, Croatia, and Serbia [22]. By adopting a multiple, embedded comparative case study approach [41], we extended the case study area to Montenegro and the Republic of Srpska, thus covering a wider range of economic, social, and policy conditions [42] compared to the original study [22]. The two countries targeted by this research present differences concerning the forestry sector and the management of domestic forests. While the Republic of Srpska exports a large proportion of its timber and timber products to neighboring and some EU member states, Montenegro is not a large exporter of timber to the EU market. However, Montenegro represents an interesting case study due to the high forest coverage and because it is currently in the process of reformulating its forest policies and restructuring the national forestry sector.

Data Collection and Analysis

We focused on the content of policy documents relevant to the legality of timber and timber products. National policies and regulations related to the prevention and tackling of illegal logging, as well as those dealing with the trade in timber and timber products in the Republic of Srpska and Montenegro, were collected via a literature review and an internet search in May 2022.

Following [22], the starting point for identifying relevant policy documents was the websites of Ministries responsible for forests and forestry in the two selected countries. These websites contain lists of policy and normative documents guiding the national forestry sectors. After compiling an initial list of documents for the two targeted countries, other relevant websites were searched, including, among others, the websites of the state forest enterprises, chambers of forestry engineers, associations of private forest owners, etc. Finally, a Google search was used to find other relevant policy documents in national languages, using a combination of keywords, i.e., "Republic of Srpska", "Bosnia and Herzegovina", "Montenegro" and "illegal logging", "wood processing", "timber trade", "European Union Timber Regulation" and "forestry documents". Existing studies and reviews about the policy and normative framework on illegal logging in the two countries, such as [43], were also considered. In total, we identified seven policy documents in Montenegro and five in the Republic of Srpska. If policies and regulations were not available for consultation through the above-mentioned sources, the relevant institutions were contacted and asked for the documents. The final list of documents was validated by key informants in each country.

Using the same qualitative content analysis method adopted by [44], policy documents were analyzed using the software NVivo 12. All documents were coded in the relevant national language.

Coding was performed by using a combination of deductive and inductive coding, distinguishing between coding categories and themes. Based on the content of Regulation (EU) No. 995/2010 (EUTR), five main coding categories and their respective themes were deducted (Table 1). During the coding process, several themes that emerged as relevant for EUTR implementation were added inductively. Whole paragraphs of the text were coded under relevant themes, and multiple coding of paragraphs was allowed.

Table 1. Deductive and inductive coding categories and themes.

No	Coding Categories	Coding Themes	Code Type	Coding Rules/Explanation
1.	EUTR	International commitments	Deductive	Explicit or implicit referral to the EUTR
		Forest protection	Inductive	Referral to forest protection against negative human influences
2.	Prohibition	Planning	Inductive	Referral to planning documents about felling, wood transport, or record keeping
		Illegal activities	Deductive	Explicit mentioning of illegal activities of relevance to the EUTR
		Felling	Deductive	Explicit mentioning of felling requirements
		Felling of protected species	Deductive	Explicit mentioning of felling requirements for protected species
3.	Due diligence	Certification	Deductive	Explicit mentioning of forest certification
		Wood products	Inductive	Referral to wood products certification or trade
		Wood transport, processing, and storage	Deductive	Explicit mentioning of the requirements for wood transport, processing, and storage

No	Coding Categories	Coding Themes	Code Type	Coding Rules/Explanation
4	Traceability	Record keeping	Deductive	Explicit mentioning of required records
		Information	Inductive	Referral to accessibility and transparency of information
5	Enforcement	Competent authorities	Deductive	Explicit mentioning of competent authorities
		Monitoring	Deductive	Explicit mentioning of monitoring activities
		Sanctions	Deductive	Explicit mentioning of sanctions, fines, and other restrictive measures

Source: Updated from [22].

3. Forestry Sector in Montenegro and the Republic of Srpska

Within this section, detailed information about forestry and the forestry sector in Montenegro (Section 3.1) and the Republic of Srpska (Section 3.2) is provided.

b. Montenegro

Although Montenegro covers a relatively small area, it is considered a forest-rich country. Montenegro's land area has a 59.9% forest coverage (826,782 ha) and 9.9% of forestland (137,480 ha): forest and forestland together cover 69.8% (964,262 ha) of the country's land area. The estimated total wood volume in Montenegro's forests is 122 Mio m³ with an annual increment of 2.9 Mio m³ [45]. According to FAO [45], about 52.3% of forests are state-owned, while the remaining 47.6% are privately owned. About 41% consist of conifer forests and 59% of broad-leaf forests [46]. The average standing volume per hectare was estimated to be 159.8 m³/ha, while the total annual volume increment was 2.9 Mio m³ [45].

In Montenegro, illegal activities are mainly related to the existing system of granting and control of concessions, with the most common being logging in excess of quota or logging outside a concession area [47-49]. The most common type of illegal activity in Montenegrin forests, after illegal logging, is the usurpation of state forests or forest land (usually for construction) [50,51]. In 2019, there was 6037.50 m³ of illegally logged wood in the state forests and 436.08 m³ in private forests [43].

c. Republic of Srpska

The forestry sector is very important for the national economy of the Republic of Srpska. Forests and forest lands cover approximately 50% of the national territory and are pivotal among the country's natural resources and green infrastructures. Approximately 80% of forests and forest lands are owned by the state, while the remaining 20% are privately owned [52,53]. In general terms, the jurisdiction for the forestry sector in the Republic of Srpska is in the hands of the Ministry of Agriculture, Forestry, and Water Management. Within the ministry, the Forestry Department has responsibility for various administrative and management activities, including the production and sale of seeds and genetic materials; growing, protection, management, and improvement of forests; increase in forest productivity, exploitation of forests; afforestation of degraded forest land and coppices; communication in forestry; hunting; and inspection supervision in the forestry and hunting sectors.

Illegal logging is recognized as a serious problem in the forestry sector in Bosnia and Herzegovina. According to [54,55], the amount of illegally harvested wood from Bosnia and Herzegovina has been estimated to be 1.2 million m³, while the official statistics reported on average 92,977 m³/annually of timber illegally harvested in the 2014-2018 period [43]. Available data on illegal logging usually refer to violations that involve material removal of trees, i.e., theft and unauthorized harvesting. Another aspect of illegal activities involves corruption and nepotism in the forestry sector [28]. Tracking the specific case of illegal logging is difficult due to the lack of consolidated data, suggesting a lack of strong enforcement. "In general, Bosnia and Herzegovina lacks implementation measures aimed at combating corruption in the forest sector. So far, corruption is being tackled through internal programmes at the cantonal level in the Federation Bosnia and Herzegovina. The measures are primarily focused on formal company commitments and the development of internal structures within companies to prevent and combat corruption and continued efforts to educate and disseminate information on the importance of tackling corruption" ([43], p. 26).

4. Policy Framework Conditions for Implementation of the EUTR Requirements

This section presents the results of the analysis of relevant policies linked to the EUTR implementation in Montenegro (Section 4.1) and the Republic of Srpska (Section 4.2).

a. Montenegro

For Montenegro, we identified seven policy documents relevant to the implementation of the EUTR (Table 2).

Table 2. Relevant policy documents for the implementation of the EUTR in Montenegro.

Document	Year	Responsible Body	Document Type
Action plan for prevention of illegal activities in forestry for the period 2019-2021	2019	Government of Montenegro	Action plan
Strategy with forestry development plan 2014-2023-National Forestry Strategy.	2014	Ministry of Agriculture and Rural Development	Strategy
Revised Forest Strategy 2018-2023	2018	Ministry of Agriculture and Rural Development	Strategy
Program for restructuring concession use of forests	2020	Ministry of Agriculture and Rural Development	Program
Forest Law, “Official Gazette of Montenegro”, No. 74/2010, and 47/2015	2015	Government of Montenegro	Law
Action plan to meet final benchmarks for Chapter 27	2021	Ministry of Ecology, Spatial Planning, and Urbanism	Action plan
Industry policy 2019-2023	2019	Ministry of Economy	Strategy and action plan

Source: Own elaboration.

As Montenegro is not an EU member state, it did not translate EUTR obligations into policy and regulatory documents. In this regard, identified categories in the six policy documents were identified as being implicitly or explicitly relevant to the EUTR (Table 3).

Table 3. Identified EUTR categories in Montenegro policy documents and the number of coded parts (references) for each of them.

Document Short Title	EUTR Commitments	Prohibition	Due Diligence	Traceability	Enforcement
Action Plan for preventing illegal activities	2	11	11	0	18
Chapter 27 Action Plan	4	2	1	1	3
Industry Policy 2019-2023	4	7	7	0	1
Forest Law	1	17	10	2	15
National Forest Strategy	4	30	21	1	7
Draft Revised Forest Strategy 2018	6	12	8	1	4
Program for Concession Restructuring	0	7	8	1	3

Source: Own elaboration-NVivo matrix Query.

i. EUTR Commitments

Illegal logging in Montenegro seems to attract great political attention. It is officially recognized as an important forestry and economy problem in the Action Plan for combating illegal activities, which should contribute to finalizing the overarching National Strategy for Sustainable Development (NSOR 2030). The EUTR is implicitly addressed by all targeted documents through statements related to international obligations and timber legality. In addition, the EU Common Position for Chapter 27-Environment and Climate Change defines the benchmarks Montenegro needs to achieve to ensure the transposition and implementation of the EU acquis within the environment and climate change domains. It explicitly states that “The EU reminds of the need to order nuisance authorities in accordance with EU regulations on timber and the implementation of the Forest Management and Trade Act (FLEGT)” ([56,57], p. 99). Aligned with this purpose, planned activities include the reorganization of the forestry sector of Montenegro, as well as the adoption of the amendments to the Forest Law.

ii. Prohibition Requirement

The Action Plan is related to the EUTR prohibition requirement as its goal is “to oppose all forms of illegal activities in forestry, including forest theft and illegal occupation of forest land, the deliberate setting of forest fires, destruction of border lines between state and private forests, corruption in forestry, with a special emphasis on illegal activities in the forest use authority and traffic in illegally cut wood” ([39], p. 2). The Action Plan defines three broad types of measures:

- a. preventive measures aiming to prevent the occurrence of illegal activities;
- b. monitoring and detection aiming to promote active monitoring and detection of illegal activities;
- c. repressive measures aiming to ensure that perpetrators of illegal activities are prosecuted and punished in an adequate manner.

It further describes in detail operational objectives, the current and desired state of forests in 2022 and 2023, together with activities needed to be undertaken under each objective. For each activity, the Action Plan [39] stipulates indicators with responsible bodies, timelines, and resources. The Action Plan also defines spatial zones with a high risk of illegal activities. One of the major activities related to the prohibition requirement is awareness raising on shared responsibility for forest protection and illegal activities targeting the general public and improving capacities (e.g., human, technical, financial) of public institutions.

Article 33 of the Forest Law [47] defines illegal forestry activities, including destruction and clearing of forests; clear-cutting of forests and high-intensity cutting that is not planned as a regular form of

forest restoration; and felling that is not in accordance with forest management planning. Article 53 of the same Law states that “Trees may be cut only after they have been selected, marked and recorded (receipt) in accordance with the forest management program, the forest management plan in private property and the contractor’s project” [47].

iii. Due Diligence Requirement

With respect to due diligence requirements, Article 56 of the Forest Law [33] stipulates that moving wood assortments from the felling site can only be done after “the reception” which includes measurement, recording, and marking of wood assortments (with a stamp, bar code, etc.). It is carried out by the competent authority of the administration (currently forest administration within the ministry responsible for forestry) through the reception book, the extract of which is presented as a certificate of origin for timber assortments. Timber assortments in transport and trade must be accompanied by the above-mentioned certificate of their origin. The transport, processing, and storage of forest products that are not marked as prescribed are prohibited.

The program for the reorganization of forest concessions directly addresses the procedures for timber felling, transport, and trade in relation to the planned structural changes. It stresses that the new organizational model will have an extremely reduced administrative capacity to perform operational tasks, such as receiving requests and issuing decisions for felling and issuing certificates of origin for private forests [56].

Strategic policy documents (e.g., Forest Strategies, Industry Policy, etc.) recognize the importance of forest management certification for value-added timber products, the reduction of illegal logging, and supporting exports towards the EU [57,58], “despite the fact that relatively small quantities of wood are exported from Montenegro to the EU market” [59]. In addition, the Action Plan for Chapter 27 lists activities needed to fulfill the requirement for strengthening capacities and improving the legislation related to forests by defining the institution responsible for monitoring and issuing certificates of timber origin ([41], p. 5), which should be done by adopting and implementing the program of reorganization of the forestry sector, and amendment of the Forest Law that were planned in 2022. The program for the reorganization of forest concessions stipulates that Montenegro šume should be responsible for the reception of timber assortments and issuing the certificate of origin in state forests. At the same time, registered legal entities will be responsible for the same activity for private forests. Although the program for reorganizing forest concessions was adopted in 2020, Montenegro šume is not yet established.

iv. Traceability Requirement

The Forest Law prescribes that forest management plans are subject to public consultation and must be valid for 10 years. Article 25 of the Forest Law also prescribes the establishment of a

forestry information system which should contain information about forests, forest lands, and clearings. In particular, the information system should contain data on the condition and changes of forest ecosystems, data collected through forest inventories, information on the forest infrastructure network, works performed in forests, and data on forest owners and users [47].

The Forestry Administration and Ministry of Agriculture and Rural Development do not yet have a functional system to exchange information, although its establishment was started a few years ago. The Revised Forest Strategy recognized the need for establishing a centralized information system that will connect the Forestry Administration (central and regional units) and the Ministry of Agriculture and Rural Development. The Revised Forest Strategy also states that “it is necessary to establish a Central Electronic Bidding System and control of the circulation of wood assortments, where the sale of wood in a deep state or cut logs at warehouses will be carried out transparently through an established business entity” ([41], p. 12). The program for reorganizing forest concessions assigns the responsibility for creating and managing a central information system to a Forestry Directorate after the system is reorganized ([40], p. 5).

The Revised Forest Strategy also states that “it is necessary to develop mechanisms for the sale of wood based on market principles in such a way that the Wood Exchange will be established, which will be supported by the state with strong regulatory functions, which will be implemented by the competent authority of the state administration. Also, all timber approved for felling (except for the own needs of private forest owners and state support for rural development) in an unprocessed state should be sold through the Exchange, which will be electronically linked with the Tax Administration and Customs” ([41], p. 21).

v. Enforcement

As Montenegro is not required to formally implement the EUTR, there are no competent authorities formally in charge of its enforcement. Nonetheless, in the wake of the Accession process, the new program for reorganizing forest concessions should define responsible bodies for EUTR implementation [38] (pp. 101-102). The program presupposes passing part of the responsibilities of the Forestry Directorate in terms of forest management and commercial activities in the state forests currently under concessions to the state forest enterprise Montenegro šume. Within this integrated model (Mne. integralni model), the administrative and management functions would stay with separate organizations [40].

Concerning monitoring, the Action Plan for Combating Illegal Activities in Forestry reports a series of activities that are mostly aimed at education and capacity building of personnel (i.e., traffic police, customs officers, inspectors), improvement of technical capacity (e.g., the introduction of bar codes for tracing the origin of wood), enhanced coordination between authorities and border control, defining of zones with high illegal logging risk, etc. The Forest Law stipulates that forest

guards have the right and obligation to: legitimize persons caught committing illegal acts in forests; inspect the vehicles used to transport wood; inspect places, except apartments, where there may be timber that is the subject of a criminal offense or misdemeanor; perform temporary confiscation of illegally harvested timber and hand them over to the competent authority without delay; report on the illegal action and the established factual situation and submit it to the competent administrative body, and, if necessary, to the police and the competent inspection body. Forest guards must have at least a secondary vocational education in forestry, have passed a professional exam, and meet the conditions for carrying weapons in accordance with the law regulating the use of weapons [33] (Article 34).

In addition to forest guards, the Forest Law states that forestry inspection is carried out by the state body for inspections [33] (Article 86). The forestry inspectors employed by the state body for inspections are authorized to control: felling and all works in forests with reference to legality issues, including compliance with plans and professional technical standards; origin of wood assortments and their traffic on forest roads; storage of forest assortments; fulfilling the conditions for carrying out works in forests (The professional- technical, technological and other conditions for natural and legal persons who perform activities in the forests are prescribed by the Forest Law (“Official Gazette of the Republic of Montenegro”, No. 074/10, 040/11, 2015, Article 87) as “Professional work in forestry can be performed by a legal entity who has at least one employed person with higher education in forestry with a license to perform professional work in forestry (license), who is registered in the Central Register of the Commercial Court and who meets the requirements in terms of equipment for performing that activity. The is acquired by a person with a higher education in forestry and at least one year of work experience in the profession, who has passed the professional exam for performing professional work in forestry. The license is issued by the ministry responsible for forestry.” (Article 67).); implementation of the procedure for land use change, i.e., clearing of forests; use of forests.

In the case that law violations or infringements are found, the forestry inspectors are authorized to (among other things): order the execution of planned and other necessary works, order the suspension of clear-cutting, high-intensity cutting (clear-cutting and high- intensity cutting are prohibited by the Forest Law (Article 33), except in the case of direct conversion of coppice forests and rehabilitation of forests from the harmful effects of natural disasters, plant diseases, and pests, if this is provided for in planning documents in forestry (Article 37). Clear-cutting is also allowed for the purposes of land use change if this is provided for in special planning documents (Article 38), and illegal tree cutting, clearing forests; temporarily confiscating illegally cut timber, timber and other forest products illegally appropriated or placed on the market, as well as means and objects used to carry out these actions; prohibit the performance of forest works by legal and natural persons who do not meet the conditions for carrying out works in forests provided for by the Forest Law [33] (Article 87). For infringements of the Forest Law, monetary sanctions are

prescribed. The fines depend on the type of entity that commits a crime (physical person or legal entity). For physical persons, fines are from EUR 300 to EUR 1200, while for legal entities, these vary between EUR 2500 and EUR 15,000 [33] (articles 88-90).

b. The Republic of Srpska

For the Republic of Srpska, we identified five relevant policy documents for the implementation of the EUTR (Table 4).

Table 4. Relevant policy documents for the implementation of EUTR in the Republic of Srpska.

Document	Year	Responsible Body	Document Type
Forestry development strategy of the Republic of Srpska 2011-2021-draft	2011	Ministry of Agriculture, Forestry and Water Management	Strategy
Action plan for illegal logging	2019	Government of the Republic of Srpska	Action plan
Forest Law (75/08, 60/13, 70/20)	2020	Government of the Republic of Srpska	Law
Rulebook on the shipping form	2015	Ministry of Agriculture, Forestry and Water Management	By-law
Rulebook on tree marking	2021	Ministry of Agriculture, Forestry and Water Management	By-law

Source: Own elaboration.

Similarly to Montenegro, the Republic of Srpska did not translate EUTR obligations into policy and regulatory documents. Regardless, identified categories in the five policy documents can be implicitly or explicitly relevant to the EUTR (Table 5).

Table 5. Identified EUTR categories in the Republic of Srpska policy documents and the number of coded parts (references) for each of them.

Document	EUTR Commitments	Prohibition	Due Diligence	Traceability	Enforcement
Action plan for illegal logging	2	9	6	6	4
Forestry Strategy	8	3	18	0	1
Forest Law	9	50	14	3	25
Rulebook on the shipping statement	0	5	3	2	1
Rulebook on tree marking	0	8	0	3	0

Source: Own elaboration-NVivo matrix Query.

i. EUTR Commitments

The EUTR is implicitly addressed by all strategic and regulatory documents except by-laws, mostly through statements related to international obligations and timber legality. As reported within the Forest Strategy [60] that represents the basis for the national Forestry Development Programme [61], the Republic of Srpska is a signatory to many international conventions relevant to the field of protection and sustainable development of forestry and biodiversity conservation (e.g., Convention on Biological Diversity, General Guidelines for Sustainable Forest Management, the Pan-European Strategy for Biological and Landscape Diversity, Sofija, 1995, the Ministerial Conferences on Forest Protection and Protected Forests, etc.). The EUTR, however, is not explicitly mentioned in the strategy or any other analyzed document.

Illegal logging is officially recognized by the Forest Strategy as one of the priority issues to be addressed. The Forest Strategy prescribes basic guidelines to tackle illegal activities, referring

mostly to regulatory instruments (e.g., it provides supervision of wood transportation and supply of raw wood materials for wood processing capacity) and networking instruments. As for the latter, they include, e.g., strengthening of intra-sectoral, i.e., between forestry companies and forest owners, as well as inter-sectoral cooperation, i.e., between the forestry sector and police forces, customs services, and the judicial system to combat illegal activities in the forest and forestry sector and for the detection of illegal exports and imports. To a lesser extent, the Forest Strategy refers to information policy instruments, i.e., it establishes a system for creating and disseminating relevant information on forest management and the sales of forest products.

The Action Plan for preventing illegal activities also highlights that these cause serious problems related to the theft of timber and timber assortments sale and resale from the buyer to the end user, which imposes a general conclusion that special attention should be paid to this problem by intensifying cooperation with the institutions of the system (police, inspectorate, prosecution, and court). Regardless of formal prohibition by law, the Action Plan for preventing illegal activities recognized that notwithstanding measures taken in the past, illegal logging and other illicit activities prevailed in two forestry districts (Jahorina and Romanija) [62].

ii. Prohibition Requirement

The Action Plan for preventing illegal activities prescribes two main directions for fighting illegal activities:

- (1) Improvement of institutional cooperation and external support by strengthening inspection supervision through institutions that supervise legality in forests and forestry, as well as institutional support of the ministry responsible for forestry and the Ministry of Internal Affairs;
- (2) Improvement of the organization of the public forest enterprise Sume Republike Srpske, a.d. Sokolac.

The Action Plan further defines four main activities with 21 sub-activities corresponding to the two above-reported main directions [62] and mostly related to monitoring and enforcing forest legislation. The prohibition requirement is met by the Forest Law [41]. In detail, Article 8 precisely defines illegal activities in forests in relation to property and use rights, quantity limitations, permits, illegal transport, and trade. Moreover, the Forest Law [41] (Article 41) prohibits:

- Felling that is not in accordance with forest planning documents;
- Felling in protected natural areas that are not in accordance with planning documents of protected natural areas;

- Felling and destruction of rare and protected species of trees, biotopes, habitats, and ecosystems, as well as the destruction of bush species and their natural habitats.

iii. Due Diligence Requirement

According to the Forest Law [41] (Article 16), forest management (including felling) shall be done in accordance with forest management documents, including:

- (a) Forest management plan (“šumska osnova”) for the forest area;
- (b) Long-term karst area management program;
- (c) Industrial and other forest management investment programs for plantations (investment program of forest plantation management);
- (d) Forest management executive project (executive project);
- (e) Program for the use of other forest products.

Executive projects prescribe detailed measures for forest management and felling amount and are made by Šume Republike Srpske [41] (Article 23).

Forest felling must be done upon selection, marking, and evidencing of trees for felling-the remittance-and in accordance with the forest management plan and executive project. Remittance should be done in all forests by certified experts. In privately owned forests, remittances are made only to the owner who provides appropriate proof of ownership of the forest. The remittance is also needed for forest areas that are planned to be clear-cut or cleared and in cases where the felling is caused by natural disasters [41] (Article 69).

Before being placed on the market, timber must be stamped, numbered, and supplied with a shipping statement reporting the volume and type of assortment by wood species, quality classes, recording method, place and date of shipment, and expiration dates, as well as the method of transportation and place of shipment. Timber must be stamped in the forest where timber assortments are made [41] (Article 72).

The Action Plan for preventing illegal activities prescribes the introduction of mobile devices in the timber production process (receipt at the stump, on the truck road, in the shipment, etc.), as well as measures to tackle illicit financial activities, mostly at the organizational level in the forestry sector [42].

iv. Traceability Requirement

The Action Plan for preventing illegal activities prescribes several measures for improving access to information, among which it mentions the establishment of “a system for collecting and disseminating relevant information on forest management and timber sales (e.g., list of areas planned for felling, list of buyers and quantities delivered to them, detailed annual report, etc.) in a form accessible to the public (e.g., on the Internet)” ([42], p. 5), as well as improvement of information sharing and coordination among the public forest enterprise Šume Republike Srpske, forestry inspection, traffic police, and the judicial system

In alignment with the above, the Forest Law [41] prescribes the establishment of an information system in forestry, which is aimed to provide all necessary information about the current condition and changes of the forests of the Republic of Srpska for the purposes of planning, monitoring, and reporting. Forest management documents [41] (Article 76), as well as the Cadastre of forest and forest land [41] (Article 75), shall be kept permanently.

The origin of a tree is proven by the shipping statement and the existence of a stamp and number on the timber [63]. Timber found in transport without proof of origin is considered illegally cut [41] (Article 72).

According to the Forest Law [41] (Article 83), mechanical wood processing plants are prohibited from storing and processing timber if it has not been stamped in the manner prescribed by law and if no dispatch report or dispatch note has been issued. The owner of a plant for mechanical processing is obliged to keep records of timber bought and processed in the record book upon receipt and to certify the record book (book of receipt of roundwood) by the Republican administrative body responsible for tax affairs [41] (Article 72). Detailed regulations on the form and content of the forest marking, recording, method of registration and storage, shipping statement form, shipping note form, conditions, method, and the deadline for stamping and numbering by quality classes of felled wood are prescribed in the Rulebook on shipping statement.

v. Enforcement

Since the Republic of Srpska is not an EU member state and is therefore not required to formally implement the EUTR, there are no national authorities in charge of EUTR enforcement. The body that performs the administrative functions, which would be under the responsibility of a EUTR competent authority, is the directorate for forests within the ministry responsible for forestry. Inspectional obligations of competent authorities would be under the Republic Administration for Inspection Affairs, the Forestry and Hunting Inspection, and the Market Inspection.

The Forest Law [41] (Article 63-65) prescribes the obligations of forest protection against illegal activities in state forests by forest guards, and the Action Plan for preventing illegal activities prescribes that forest guards are constantly visiting their areas in order to prevent illegal logging and transporting of timber assortments [62]. For private forests, the Forest Law assigns the responsibility for forest protection to owners, while it grants the exclusive right to perform professional technical works within these forests to the public forest enterprise Šume Republike Srpske [41] (Article 39).

Supervision of timber transport is carried out by Šume Republike Srpske, forest guards, forestry and hunting inspection, and market inspection. Stamping of timber and issuance of a shipping statement for timber from state forests are performed by the public forest enterprise Šume Republike Srpske while stamping of timber and issuing of a shipment statement for timber from privately owned forests are performed by an authorized, certified professional. Stamping of timber and issuing a dispatch statement for timber originating from areas that are not considered forests should be performed by a professional technical contractor [41] (Article 72). The competent inspection body, as well as the public forest enterprise, has the right to confiscate timber that is placed on the market without any proof of origin.

The Action Plan for illegal activities mostly prescribes measures related to control and monitoring [42], including control of:

1. The implementation of forest management planning (Measure 1.2);
2. The implementation of work procedures and the execution of expert technical work by the public forest enterprise Šume Republike Srpske (Measure 1.3);
3. Timber processing plants, compliance of documentation with assortments by type, quantity, and class in relation to the valid standards, including the correctness of the classification according to the numbers of the timber tags by sampling (Measure 1.4);
4. Transport of timber assortments by comparing accompanying documentation with the actual condition of the specific cargo, especially during the night and non-working days (Measure 1.5);
5. Control of forest districts (Measure 1.6).

For each of the above-listed measures, the Action Plan defines shared responsibilities between at least two public bodies [42]. For infringements of the Forest Law, monetary sanctions are prescribed. As for Montenegro, the fines depend on the type of entity that commits the infringement (i.e., physical person or legal entity). For physical persons, fines are from EUR 150 to EUR 450, while for legal entities, they vary between EUR 1500 and EUR 7500 [41] (Articles 101-103).

5. Discussion

Within this section, the results presented in Section 4 are discussed.

a. Forest Laws as a Basis for Timber Legality

This study analyzed the alignment of the national forest policy frameworks of Montenegro and the Republic of Srpska with EUTR requirements. Both similarities and differences were found between the two countries. While similarities are visible in the policy structure (i.e., forest policy-action plan for preventing illegal activities-forest law) and the prevalence of public actors in all domains (forest policy-making-forest planning-forest management-forest monitoring), differences are reflected in the diversity of due-diligence documents (stemming from different forest management systems and institutional arrangements, e.g., forest certification), division of legal responsibilities, as well as the available capacities of public actors for ensuring timber legality.

In both Montenegro and the Republic of Srpska, the Forest Law represents a core regulatory policy document relevant to EUTR requirements, as it prohibits felling that is not done in accordance with forest planning documents defining the legal and technical basis for felling. This is the case for many other countries in the Western Balkan region, although some countries (e.g., Croatia) opted to adopt separate laws for EUTR implementation. Table 6 presents an overview of the documentation needed for ensuring compliance with EUTR requirements for Montenegro and the Republic of Srpska (based on presented results) vis a vis the information for Serbia, Croatia, and Slovenia as from [22].

Montenegro and the Republic of Srpska differ from Serbia, Croatia, and Slovenia due to the existence of Action Plans for preventing illegal activities. Such operational policy documents contain specific measures for preventing and fighting illegal logging and other illegal forestry activities, such as amendments to forest laws and redesigning the organization of the forestry sector. Although this might indicate political attention to illegal logging, most of the measures from the Action Plans in both countries are still in the early implementation stages. For example, the fight against corruption in the state and private bodies and the restructuring of the forestry sector was one of the main measures prescribed by Action Plans for preventing illegal logging in both countries, but prevention measures are still not fully implemented. Similarly, the development of a new forestry strategy is just starting in Montenegro, and what changes it will bring to the system are still uncertain.

Triggered by changes in political, social, and economic systems, in the past, forestry reforms in the Western Balkan region [64] brought changes in property rights such as the denationalization of private and church property [65], and agricultural commons [66], the development of national forest action programs and strategies [67,68] and the reorganization of forestry administration

[48]. It seems that although many attempts exist to reorganize and improve the state of the forestry sector in Western Balkan countries exist, they remain dominated by command-and-control policy instruments [69] and public actors with constrained capacities for implementation [22,23,70,71].

Table 9. Summary of policy documents addressing EUTR obligations and.

EUTR Obligation	Montenegro	Republic of Srpska	Serbia
EUTR implementation	<ul style="list-style-type: none"> • Explicitly not applicable • Implicitly addressed in forest strategies, laws on forests, and action plans on illegal activities 	<ul style="list-style-type: none"> • Explicitly not applicable • Implicitly addressed in forest strategies, laws on forests, and action plans on illegal activities 	<ul style="list-style-type: none"> • Explicitly not applicable • Implicitly addressed in forest strategies, laws on forests
Prohibition	<ul style="list-style-type: none"> • Forest Law • Forest management program and the Contractor’s project Plan for forest management in private property • Decision on felling 	<ul style="list-style-type: none"> • Forest Law • Forest management basis, Long-term karst area management program, Investment program of forest plantation management, and Executive project • Decision on felling • Remittance book 	<ul style="list-style-type: none"> • Forest Law • Forest Management Plan • Consignment or Delivery Note
Due diligence	<ul style="list-style-type: none"> • Certificate of origin 	<ul style="list-style-type: none"> • Receipt from remittance book • Shipping statement • Dispatch note/report • Certification 	<ul style="list-style-type: none"> • Book of Consignment or Delivery Notes • Certification
Traceability	<ul style="list-style-type: none"> • Reception book • Register of shipping documents • National forestry register 	<ul style="list-style-type: none"> • Receipt from remittance book • Shipping statement • Dispatch note/report 	<ul style="list-style-type: none"> • Book of Consignment or Delivery Notes
Enforcement	<ul style="list-style-type: none"> • Forest guards • Forestry and Hunting Inspection • Ministry responsible for forestry • Customs administration 	<ul style="list-style-type: none"> • Forest guards • Public enterprise • Ministry responsible for forestry, directorate for forests • Forestry and Hunting Inspection • Market Inspection • Customs administration 	<ul style="list-style-type: none"> • Forestry and Hunting Inspection • Ministry responsible for forestry • Customs administration

EUTR Obligation	Slovenia	Croatia
EUTR implementation	<ul style="list-style-type: none"> • Forest Act 	<ul style="list-style-type: none"> • Law on the Implementation of European Union Regulations on the Trade of Timber and Timber Products • Law on Forests
Prohibition	<ul style="list-style-type: none"> • Forest Act • Forest Management Plan • Decision on felling • Accounting document 	<ul style="list-style-type: none"> • Law on Forests • Law on the Implementation of European Union Regulations on the Trade of Timber and Timber Products • Forest Management Plan • Consignment Note
Due diligence	<ul style="list-style-type: none"> • Record sheet • Certification 	<ul style="list-style-type: none"> • Notice of Public Tender • Specification of Timber Assortments • EUTR Consignment Note • Certification
Traceability	<ul style="list-style-type: none"> • Record sheet 	<ul style="list-style-type: none"> • Instructions for Operators and Traders • National Register • Remittance Book • Consignment Book
Enforcement	<ul style="list-style-type: none"> • Ministry of Agriculture, forestry and Food-Forestry Inspectorate (CA) • Financial Administration of the Republic of Slovenia 	<ul style="list-style-type: none"> • Ministry of Agriculture • Customs administration

Source: Updated from [22] based on own elaborations.

Ensuring timber legality remains a worldwide challenge [12,72-74], and implementation of the EUTR requirements has been demanding for many EU member states, including Western Balkan ones such as Slovenia and Croatia, with delays and gaps reported by different studies [11,75]. In addition, implementation of the EUTR requirements implies compliance costs for the EU forest-based industry [76]. To prove the legality of timber and timber products, operators need to collect several documents, e.g., documentation on logging rights, payments for logging, legal rights of third parties regarding the use and possession of land affected by logging, trade and customs documents, etc., that prove that the timber has been legally sourced and traded. As evident from Table 6, in each county, information gathering for the aims of implementing due diligence includes several documents and permits that contain specific information about the timber and its origins and must accompany timber from the logging site to the final destination. In addition to collecting information, documents, and evidence, the EUTR also requires a risk assessment to be performed to identify the likelihood of importing illegally sourced materials. In the case of Montenegro and the Republic of Srpska, Action Plans for preventing illegal forestry activities in geographically defined critical forest areas exposed to illegal activities could facilitate risk assessment and due diligence procedures.

5.2 Forest Certification as a Due-Diligence Tool

The two main international forest certification schemes (i.e., the Programme for the Endorsement of Forest Certification, PEFC, and the Forest Stewardship Council, FSC) substantially aligned their standards with EUTR requirements [77]. Thus, holding an FSC or PEFC certificate considerably lowers the risks of illegality and ultimately contains the costs of implementing EUTR and, in particular, developing, running, and maintaining a Due Diligence System [78]. In the Western Balkan region, forest certification “is, to a certain extent, perceived as a guarantee for the legality of wood operations and origin” [18]; even though forest certification does not ensure a green lane against EUTR requirements and its scope goes beyond just meeting legality requirements. Montenegro and the Republic of Srpska show different figures in terms of certified forest areas. While in the Republic of Srpska, all state forests, for a total area of 1,011,218 ha, are certified according to FSC standards, there are no certified forest areas in Montenegro. With regard to chain of custody standards, Bosnia and Herzegovina holds 331, and Montenegro only one [79]. The other three Western Balkan countries (Serbia, Croatia, and Slovenia) have more than 50% of forests certified and aim to promote forest certification and increase certified forest areas [18,20,80].

Additionally, in the forest strategy of Montenegro, it is reported that since the sector is mainly oriented to the domestic timber market, certification is considered a useful tool but not critically needed for the timber industry. In Montenegro, there are ongoing changes and forestry sector reforms, and a state forest management organization is expected to be formed by the end of 2023. Based on data provided by the Ministry of Agriculture, Forestry and Water Management,

Directorate for Timber Industry, in 2021, 85% of timber and timber products exported are related to Serbia, Kosovo, and Albania. Only 10% of the total export value finds a way to EU buyers. Private companies currently selling on the EU market are proving legality thanks to verification bodies and Ministry support in providing necessary documents.

5.3 Limited Capacities for Implementation

The effective implementation of EUTR requirements implies strict cooperation among all relevant actors, both public and private, from within and outside the forestry sector [10,81]. For example, the Forest Law in Montenegro and the Republic of Srpska (as well as in Serbia, Croatia, and Slovenia) prescribes divided responsibility between forest owners, forest guards, inspectorate, and police. In terms of EUTR enforcement, the responsibilities of the competent authority would probably be under the ministry responsible for forestry, the inspectorate responsible for forestry, and customs. This adds to the complexity of coordination among multiple bodies and imposes further challenges to the already limited capacities of public authorities [82], thus potentially creating bottlenecks and inefficiencies while simultaneously strengthening their dominant positions in the sector [71].

Such findings are complementary to those reported by [22] for Serbia and, to a lesser extent, for Slovenia and Croatia, as mentioned in the previous literature [9,11,83,84]. Both countries, as well as Serbia, Croatia, and Slovenia, have a limited and relatively small number of forest inspectors and do not have separate budgets for timber legality verification, which are impediments to an effective EUTR implementation across the EU [11]. To successfully combat illegal timber, more robust law enforcement would be needed in terms of an increased number of checks, more efficient and effective monitoring, and stricter fines [14]. To achieve this, all analyzed countries will need to increase their capacities in terms of human resources, technology, and financing.

5.4 Availability and Transparency of Information

Transparency, availability, and accessibility of information on timber legality are still low in both Montenegro and the Republic of Srpska. Forest management plans, felling permits, consignment, and delivery notes should be kept as archive material, but not all are freely accessible in the two countries. There is no easily and freely available information about progress in implementing action plans for preventing illegal activities. As in other Western Balkan countries (e.g., Serbia and Croatia), the websites of ministries responsible for forestry list documents relevant to forestry (e.g., strategies, laws, etc.), yet those lists are not regularly updated, nor are all listed documents available online. Additionally, our results point to the discrepancy concerning the EUTR traceability requirement, as for some documents, the record-keeping time in Montenegro is three years, while EUTR requires a retention time of five years.

Thus, further improvements are possible and necessary to ensure complete alignment with EU requirements and increase transparency and accessibility of information.

In Montenegro and the Republic of Srpska (as well as in Serbia, Croatia, and Slovenia), the Forest Law and other policy documents prescribe the formulation of the digitalized and centralized national information system for forests and timber. Those systems should serve multiple purposes (e.g., forest management planning, forest monitoring, timber trade, etc.) and are planned to be developed in Montenegro and the Republic of Srpska while they are being developed in Serbia. On 19 April 2023, the European Parliament formally approved a new European Union Deforestation Regulation on commodities and products associated with deforestation and forest degradation. With a focus on “deforestation-free” commodities, this new regulation will replace the EUTR and pose severe challenges to many EU member states. It is reasonable to assume that it will be even more challenging for countries with less developed/advanced systems to enforce legality requirements. Western Balkan countries will be no exception, and the preparedness of forest sector actors for the current (e.g., EUTR) or upcoming EU policies is unknown. Policy and decision-makers should follow up and take into consideration the developments and requirements of upcoming EU regulations dealing with zero-deforestation targets (e.g., the requirement of georeferencing) and strive to create national information systems in tune with the latest technological developments (e.g., remote sensing) and inter-operable with those of the EU. Currently, in the Western Balkan countries, much greater awareness of policy makers, as well as public and private organizations, is needed on the importance of EUTR implementation and appropriate measures for preventing illegal forest activities, followed by strong financial support for the successful building of capacity.^{5.5} Research Limitations

Although policy analysis was useful for identifying the alignment of policy frameworks with EUTR requirements, the limitations of this study might be seen in the exploratory and descriptive character of the analyzed policies and measures. Regardless of its descriptive character, this approach was suitable for identifying relevant policies as well as recognizing EUTR requirements. However, relevant, current, and future implications related to trade relations between the analyzed countries and the EU are beyond the scope of this paper, as our first aim was to analyze national legislation regarding future EUTR implementation in the targeted countries. Another limitation is related to the scope of the study, which is limited to the national level. As the issue of timber legality is an issue of practice, future research should also focus on regional or local levels and the implementation of adopted policies.

6. Conclusions

This study analyzed forest policy documents for Montenegro and the Republic of Srpska, finding that the current framework is largely aligned with the EUTR requirements; however, some minor discrepancies were noted. Building on previous studies, in our discussion, we broadened the scope to Serbia, Croatia, and Slovenia, contributing to a wider picture of EUTR implementation within the Western Balkan region. We found that the forestry sectors in all five countries are dynamic ones, currently undergoing changes vis a vis multiple challenges, including aligning with EU policies and regulations. We also pointed out that there is room for improvement in terms of capacities (e.g., human, technological, and infrastructural), legal responsibilities, and information access and availability. In several Western Balkan countries (including the Republic of Srpska and Montenegro), changes in the forestry sectors are ongoing. New policies will likely not be enough to ensure an appropriate promotion of legality. It seems that to ensure better governance of the forestry sector in the Western Balkans, in addition to an effective mix of policy tools, a true political will, multi-level and cross-sectoral cooperation, as well as higher awareness of all relevant actors are needed. However, how much of that will be changed remains to be seen after another “Western Balkan transition” chapter. Hopefully, ongoing forestry reforms (in Montenegro and the Republic of Srpska) will bring forward policies accommodating not just the EUTR but even stricter requirements of the forthcoming “zero deforestation” regulation.

Since forest certification goes beyond mere legality and there is room for it to be further developed in the region, it would deserve better attention from both policies and stakeholders in general. While supporting (though not being determinant or sufficient for) meeting EUTR requirements, it would help to ensure sustainable forest management. At the same time, it could add value to marketed forest products, especially when exported to sensitive markets, as well as create opportunities (in the case of FSC) with regard to the valuation of forest-based ecosystem services. Certifying forest areas is not enough for this, as it only represents a preliminary, though important, step that should be complemented by supporting certification along the supply chain (chain of custody certification) and increasing market awareness, including within domestic markets. Recent activities promoting FSC certification in the Balkans and possible future plans for stronger and better-coordinated initiatives in the area might help achieve these goals.

To overcome forthcoming challenges and fulfill the EU accession requirements, the Western Balkan countries will need to strengthen cooperation, build capacities, increase transparency, and improve legality verification. Future research should follow up on the dynamic situation in the Western Balkans to provide scientific guidance and know-how for policymakers to build capacities and identify feasible solutions for addressing illegal logging. Research focusing on actors’ knowledge, perceptions, and information exchange would facilitate the research-policy interface.

Author Contributions: Conceptualization, M.R. and T.R.; methodology, M.R. and T.R.; software, M.R. and T.R.; validation, T.R. and M.M.; formal analysis, M.R. and D.C.; investigation, M.R. and D.C.; resources, M.R. and M.M.; data curation, M.R. and D.C.; writing-original draft preparation, M.R.; writing-review and editing, M.R., T.R., M.M. and D.C.; visualization, M.R. and T.R.; supervision, M.M.; project administration, M.R. and M.M.; funding acquisition, M.R., M.M. and D.C. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the University of Padua (CARIPARO Foundation), except for part of the research on the Republic of Srpska (Bosnia and Herzegovina), which was supported by the Faculty of Forestry, University of Banja Luka.

Data Availability Statement: Data may be provided upon request.

Acknowledgments: This study presents part of the Ph.D. project titled “Integration of the EU timber regulation requirements into the forest policy framework of selected Western Balkan countries: A multiple case study analysis for Slovenia, Croatia, Serbia, Montenegro, and Bosnia and Herzegovina”). We are grateful to all experts from Montenegro and the Republic of Srpska (Bosnia and Herzegovina) who dedicated their time to making this research possible.

Conflicts of Interest: The authors declare no conflict of interest.

5.3 Article 3: Institutional and actor-oriented factors influencing timber legality in selected Western Balkan countries: Multiple case study of Croatia, Montenegro, Serbia, Slovenia, and the Republic of Srpska (Bosnia and Herzegovina)

1. Introduction

Despite all the efforts to address deforestation and forest degradation (Bager *et al.*, 2021), unsustainable forest management practices and illegal logging remain a widespread problem (Masiero *et al.*, 2015), representing a major threat to the world’s forests (Segato, 2007 and 2017; Paluš *et al.*, 2018; WWF, 2019). Fuelwood and industrial wood harvesting and trade have been identified as direct deforestation and forest degradation drivers (FAO, 2010 and 2020; Sotirov *et al.*, 2020), and their impacts may be emphasised by the illegal practices often associated with them (Kouelis, 2015; FAO, 2023)

To ensure the legality and sustainability of timber and timber products placed on the internal market, the European Union (EU) adopted several regulations, such as the EU Forest Law Enforcement, Governance, and Trade (FLEGT) Action Plan in 2003 and the EU Timber Regulation (EUTR) in 2013. Legislation banning illegally logged timber and related products from entering the EU

should safeguard the sector from illegal trade and form part of the regulatory framework that promotes sustainable forest management (European Commission, 2010).

However, despite the EU's efforts to stop the flow of illegally sourced timber and timber products, EU consumption plays a significant role in global deforestation. EU responsibilities go far beyond wood and are linked to international trade and agricultural expansion for producing several key commodities, with soya, beef, and palm oil accounting for about 80% of tropical deforestation worldwide (European Commission, 2021). In 2022, within the broader framework of the Green Deal, the EU adopted the EU Deforestation Regulation (EUDR) (EC, 2023). Since the EUDR is a relatively new regulation, the implications of its implementation are not yet fully understood. Recent studies (e.g., Berning and Sotirov, 2023) have expressed concerns and doubts about meeting the requirements of the EUDR. Implementing the regulation may be perceived as complex by actors in need to demonstrate compliance (Lidskog *et al.*, 2013). Challenges in achieving compliance could be related to ensuring complete transparency in the supply chain (Apeti and N'doua, 2023), managing increased administrative responsibilities (Henn, 2021) and likely hardening of corporate accountability (Berning and Sotirov, 2023).

In light of such challenges associated with EUDR (i.e., policy spill-overs, perverse subsidies, etc.), particular attention should be given to countries where corruption and inadequate forest governance are associated with illegal practices, such as developing countries and countries in transition (Chatham House, 2018). Western Balkan countries targeted by our research - i.e., Serbia, Bosnia and Herzegovina, Montenegro, Croatia and Slovenia - are characterised by shared history, similar cultures, political and economic instability, and different EU membership statuses. They are also known as an area exposed to a high risk of corruption (Forest Europe, UNECE & FAO, 2016; European Commission, 2020; Transparency International, 2021), with illegal activities being recognised as one of the key problems for the forestry sector in the region (Balkan Investigative Reporting Network, 2018). Due to their strategic geographical position, failing in implementing legality and sustainability standards like those set within EUTR and EUDR might transform international timber flows by opening the doors of opportunity to other countries or operators with less stringent legality requirements.

Although Western Balkan countries are regarded as priority areas for improving legality monitoring systems in line with EUTR requirements, research on timber legality in these countries is still patchy and shows several gaps. Researchers mostly looked into forest certification as a means for sustainable forest management (Keary and Strand, 2011; Poje and Mavsar, 2014; Pezdevsek-Malovrh, *et al.*, 2019; Avdibegović *et al.* 2021) including chain of custody (CoC) certification (Penikar *et al.*, 2012; Nasto and Poje, 2014) and trade of timber and timber products (Nasto and Poje, 2014; Čomić *et al.*, 2021a and 2021b). A limited number of studies (Nonić *et al.*, 2011 and 2016; Avdibegović *et al.*, 2012; Dobšinská, 2015; Giurca *et al.*, 2016; Matović *et al.*, 2017; EFI, 2018) analysed the adaptation of national forest sectors to the newest European laws on the

legality of timber and timber products (e.g., EUTR and EUDR). Our study aims to contribute to the literature on timber legality by exploring policies and actors that influence timber legality in five Western Balkan countries: Croatia, Montenegro, Serbia, Slovenia, and the Republic of Srpska (Bosnia and Herzegovina). Grounding its theoretical framework in actor-centred institutionalism (Scharpf, 1997), this paper investigates key actors' perceptions with the aim of answering the following research question:

What institutional and actor-oriented factors influence the transposition of European timber legality requirements in selected Western Balkan countries?

In Section 2 we briefly present European timber legality requirements, also reflecting on the Western Balkan region in relation to illegal activities in forestry, while in Section 3, we describe the actor-centred institutionalism (ACI) framework and present our assumptions that guided our data collection and analysis. In Section 4, we outline our methodology and methods, while in Section 5 we present results on institutional and actor-oriented factors organised country by country. Section 6 discusses the findings, examining similarities and differences among the analysed countries and the relevant literature. Finally, in Section 7, we draw conclusions and make recommendations for policy and practice.

2. European requirements on the legality of timber and timber products

On May 31, 2023, the European Parliament and the Council of the European Union adopted Regulation (EU) 2023/1115 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation (in short, EUDR) and repealing Regulation (EU) No 995/2010 (EUTR). The EUDR (EC, 2023) entered into force on June 29, 2023, although the main prohibitions and obligations will not apply until December 30, 2024. The EUDR aims to minimise the EU's contribution to deforestation and forest degradation worldwide and reduce the Union's contribution to greenhouse gas emissions and global biodiversity loss.

The new Regulation will prohibit placing or exporting certain products in the EU market unless they meet specific criteria: they must be deforestation-free, adhere to their production country's laws, and require a due diligence statement confirming compliance. The EUDR requires operators and large² traders to conduct an extensive due diligence process regarding all relevant products supplied by suppliers and provide geolocation information on all plots of production land. This process includes information gathering, risk assessment, and risk mitigation.

2. i.e., trading companies that do not qualify as small and medium-sized enterprises according to Directive (UE) 2013/34.

Simplified requirements apply to products from low-risk countries, while small and medium-sized enterprises (SMEs), as defined by Directive (UE) 2013/34, must collect identity information and due diligence references (EC, 2023).

EUDR establishes an extensive enforcement framework, with competent authorities in member states conducting checks based on risk levels to ensure compliance. Investigative powers are granted to authorities, and minimum check thresholds are set for different product risk categories. Corrective actions and penalties for non-compliance are defined, including fines and temporary exclusion from public procurement. Reporting mechanisms enhance enforcement transparency. Entities subject to the Regulation must assess their due diligence mechanisms by December 30, 2024, considering complexities in supply chains, compliance risks, and relevant laws. Producers should ensure compliance and provide necessary information to customers.

EUDR prohibition clauses and due diligence requirements are similar to those set by the EUTR, yet the EUDR expands legal obligations through more detailed due diligence, monitoring and enforcement requirements. As mentioned above, it expands the regulatory approach and scope beyond timber legality to include other FRCs (i.e. cattle, cocoa, coffee, oil palm, rubber, soya) and institutionalises new environmental sustainability standards (i.e. zero-deforestation and zero forest degradation) (Berning and Sotirov, 2023a). Furthermore, the EUDR expands the EUTR scope also by extending the operator status and obligations to exporters from the EU market as well as embodying some social issues into risk assessment criteria. Finally, and similarly to EUTR requirements, the EUDR also applies to targeted products produced within the EU, therefore e.g. timber harvested from EU forests as well as wood products derived from it are subject to EUDR requirements. This is quite a relevant issue for some Western Balkan countries, as they have strict commercial connections with the EU market and wood industry and are regarded as priority countries for EUTR (and, by extension, EUDR) implementation.

3. Actor-centred institutionalism

Given the perverse nature of the illegal trade of timber and timber products, it is important to understand the institutional setting around timber legality. In the context of timber legality, the actor-centred institutionalism (ACI) framework (Scharpf, 1997), posits that the compliance or violation of timber-related regulations is contingent upon a complex interplay between institutional structures and the strategic behaviour of key actors within the timber supply chain. The interactions among actors and their institutional environment are a multi-faceted process, and actors both respond to and modify the institutional environment in which they are embedded over time to maintain competitive advantages (Hollingsworth, 2000).

Drawing on core concepts of the ACI framework (Scharpf, 1997), the following analysis centres on the two key elements of (1) institutions and (2) actors. Accordingly, we considered both the formal and informal institutional and actor-oriented factors at the respective national levels related to ensuring timber legality.

According to the ACI framework, institutions can be defined as formal and informal rules and/or a system of procedures that structure social interactions and shape the courses of action that actors may choose (Scharpf, 1997). Formal institutions reflect the official 'rules of the game' that affect actors' behaviour by specifying required, prohibited, or permitted actions. Regarding the formal institutions, in the analysis we further distinguish between the focus on regulatory institutions, such as laws, policies, and strategies (binding and non-binding), and the monitoring and fines arising from government regulations.

Specifically, we hypothesise that the transposition of European timber legality requirements is influenced by both institutional factors and the preferences, resources, and strategic choices of relevant actors involved in the timber supply chain (Scharpf, 1997). With respect to formal institutional factors, we start from the premise (P) that ***P1 Legally binding formal institutions strongly influence the transposition of EUTR requirements into national Western Balkan policies.*** We assume that:

A1.1: The EU Western Balkan countries comply with the EUTR and fully incorporate the EUTR requirements into their policies.

A1.2: The non-EU Western Balkan countries partially comply with EUTR requirements, focusing on the supply side.

Informal institutions refer to more implicit, slowly changing, culturally transmitted, and socially constructed rules (Scott, 2005). Starting from the premise that ***P2 Informal institutions, such as organisational culture, strongly influence the way and further transposition of the EU legality requirements from national to sub-national levels in all analysed Western Balkan countries,*** we assume that:

A2.1 Low political priority and high levels of corruption impede the transposition of EUTR requirements from national to sub-national levels in all analysed Western Balkan countries.

A2.2 Top-down, hierarchical structures and low transparency impede cross-sectoral collaboration and information exchange on timber legality.

When examining actors, following the ACI framework, we concentrated on two main categories, i.e. actor's roles and attitudes (Scharpf, 1997; Baycheva-Merger *et al.*, 2018). Each category was further divided into subcategories, i.e., (i) responsibilities and resources and (ii) awareness and perceptions, respectively. In relation to formal actor-oriented factors, we started from the premise that ***P3 Roles with clearly defined responsibilities and adequate resources positively influence the transposition of EUTR requirements into Western Balkan countries***, assuming that:

A3.1: The main actors involved in the transposition of EUTR requirements are governmental bodies and public forest enterprises in all analysed Western Balkan countries.

A3.2: Shared responsibilities and lack of resources of governmental actors impede the transposition of EUTR requirements into Western Balkan countries.

Lastly, in relation to informal actor-oriented factors, we start from the premise that ***P4 The awareness and perceptions of key actors significantly influence the transposition of EUTR requirements in Western Balkan countries***. We assume that:

A4.1 The actors from EU Western Balkan countries have a positive attitude and higher awareness towards EUTR than the actors from non-EU Western Balkan countries.

A4.2 Perceptions of key actors on timber legitimacy, sustainable forest management and EU timber trade influence the transposition of EUTR requirements into Western Balkan countries.

These assumptions provided the framework for structuring, organising, analysing, and interpreting the empirical data from interviews and two previous studies (Radosavljevic *et al.*, 2021 and 2023), as presented in Table 1.

Table 1: Stakeholders interview table - number of interviews per type of actor and per country

Key elements	Category	Sub-category	Criteria
Institutions	Formal rules -the official 'rules of the game' that, via policy instruments, affect actors' behaviour by specifying required, prohibited or permitted actions (Scott, 2005).	Regulations, policy	existing, non-existing, in development legally binding, non-legally binding
		Monitoring, fines	existing, non-existing, in development level of fines (low, moderate, high)
	Organisational culture - implicit, slowly changing, culturally transmitted and socially constructed rules (Scott, 2005).	Governance arrangements	top-down, bottom-up political priority corruption
		Information exchange	Transparency availability
Actors	Individuals, groups, organisations, and institutions that have a stake in or influence the policymaking process.	Responsibilities	shared, divided clear, unclear
		Resources	adequate, inadequate human, financial, institutional, and infrastructural
		Perceptions	attitudes towards EUTR (positive, negative) perceptions of challenges (political, legal, and monitoring)
		Awareness	about EUTR and EUDR (high to low) timber trade, certification, sustainable forest management

Source: Own elaboration from Scharpf (1997), updated based on Radosavljevic (2023) under review.

4. Methodology and methods

In this section, methodological approaches and methods adopted for the research are presented in two subsections.

4.1 Data collection and analysis

Our study used an exploratory research approach with combined deductive and inductive reasoning. We used a multiple-embedded case study design (Yin, 2009) to analyse institutional and actors-oriented factors and draw a single set of cross-case conclusions. Within each case, units of analysis included formal and informal institutions that influence legality according to European requirements and as actors' roles, namely responsibilities and perceptions. Data on an analysis of formal institutional and actor-oriented factors was grounded in previous research (see Radosavljevic *et al.*, 2021 and 2023), which in-depth investigated timber legality in relation to European requirements in accordance with the regulation in force (at the time of the research, the EUTR). As methodological details of policy content analysis as well as results are already detailed in two previous studies (see Radosavljevic *et al.*, 2021 and 2023), we synthesised and reorganised them according to the ACI framework, obtaining results on formal institutional factors as well as on actors' mandated responsibilities and resources based on previous research. To this aim, we operationalised the ACI framework following key issues described in session 3 and already highlighted in Table 1.

To investigate informal institutional and actor-oriented factors, we conducted a total of 36 semi-structured face-to-face interviews with policymakers and other key actors (Table 2) in two waves. Initial respondents were selected based on a policy analysis - i.e., actors with mandated roles - and previous studies, while others were identified using a snowball sampling approach - i.e., a non-probability sampling technique in which existing subjects provide referrals to the next suitable person to be interviewed (Christopoulos, 2009). The first wave of interviews took place in the spring and summer of 2022 across all five countries; the second wave took place online during the spring of 2023. Questions were related to the respondents' knowledge and perceptions on 1) timber legality and awareness of EU regulations on force; 2) organisational roles as well as activities and procedures for ensuring timber legality, due diligence, and traceability; 3) availability and adequacy of resources; 4) challenges related to ensuring timber legality; and 5) future steps, policies, and projects.

Table 2: Stakeholders interview table - number of interviews per type of actor and per country

State organisations and stakeholders						
Country/ Institution	Ministry of Agriculture, Forestry and Water	General Inspectorate, Inspection Unit for Forestry	State Forest Management Organization	Ministry of Finance	Industry of Chamber, Section for forestry and timber industry	Total State organisations and stake- holders
Slovenia (SLO)	1	1	2	1	1	5
Croatia (CRO)	2	-	1	-	1	3
Serbia (SRB)	1	1	2	-	1	4
Montenegro (MNE)	4	1	n/a	1	1	6
Republic of Srpska (BiH)	1	1	1	-	-	3
TOTAL:						21

Country/ Institution	Non-State organisations and stakeholders					
	NGO	Scientific Institution	Private Company	Total Non-State organisa-tions and stakehold-ers	Total number of respond- ents (Inter- view)	Total number of respond- ents (Survey)
Slovenia (SLO)	-	-	-	1	6	3
Croatia (CRO)	1	1	1	4	7	5
Serbia (SRB)	1	1	1	4	8	6
Montenegro (MNE)	1	-	1	3	9	5
Republic of Srpska (BiH)	2	1	-	3	6	6
TOTAL:				15	36	25

Legend:	
n/a	not interviewed (no response or decline)
	not applicable (the organisation does not exist in the country)
Ministry responsible for forestry:	Ministry of Agriculture, Forestry, and Water Management, Directorate for Forests (SRB) Department for Forestry, Hunting and Wood Processing (RS-BH) Directorate for Forestry, Timber Industry, and Hunting (MNE, CRO, SLO).
Inspectorate responsible for forestry:	General Inspectorate, Inspection Unit for Forestry
Forestry chamber:	Industry of Chamber, Section for Forestry and Timber Industry (SLO, SRB, MNE) Chamber of Forestry and Wood Technology Engineers (CRO)
Ministry responsible for customs:	Ministry of Finance (SLO) or Custom Administration (MNE)
State Forest Management Organisations	State Forest Management Organisation (SRB, CRO, RS-BH) or Slovenski drzavni gozdovi doo (SLO) or Slovenian Forest Service (SLO)

Source: Own elaboration

4.2 Case study area: Countries' backgrounds

This subsection presents background information on forestry and illegal activities in the five selected countries. They differ with respect to (among others) forest cover, forest ownership, as well as forest management organisation. While most of the analysed countries are characterised by relatively stable sectoral dynamics, Montenegro is currently in the process of restructuring and policy reformulation (MAFWM, 2022). Additionally, illegal forestry activities are present in all countries, although the number of illegal activities, the amount of illegally harvested timber and related forest area vary from country to country. Basic data on forestry and illegal activities per country are presented in Table 3.

Table 3. Basic data on forestry and illegal activities per country

Country	Slovenia	Croatia	Serbia	Montenegro	Republic of Srpska (BH)
Forest Area¹ (1000 ha)	<u>1 237.83</u> (61.47%)	2 755.28 (34.65%)	<u>2 722.65</u> (31.13%)	<u>827.00</u> (61.49%)	<u>1309.79</u> (53%) ²
Ownership³ (% state: private)	<u>23:77</u>	<u>76: 24</u>	<u>53: 47</u>	52:48	77:23
Certified forest area (1000 ha)¹	292.20	2 044.67	948.10	0.00	1 011.2 ⁴
FSC (%)⁴ PEFC (No of certificates)⁵	22% FSC 116 PEFC	74% FSC 24 PEFC	38% FSC 5 PEFC	n.a.	100%FSC 2 PEFC
Amount of illegally harvested timber (m3/year)	23.397 ⁶	not available	197 774 ⁷	6 037.50 (state forests), 436.08 (private forests) ⁸	92 977 ⁸ (approx. 240 000 estimates FAO, 2020)
EUTR Implementation Year	2013	2013	N/A (pre- accession period)	N/A (internal reorganisation)	N/A (pre- accession period)

Country	Slovenia	Croatia	Serbia	Montenegro	Republic of Srpska (BH)
Legal Basis for EUTR implementation	Forest Act, by laws	Forest Law, by laws; Law on EUTR Implementation	Forest Law, by laws	Forest Law, by laws	Forest Law, by laws
Main Forest Management Organizations	Slovenia Forest Service, PE Slovenski gozdovi	PE Hrvatske šume	PE Srbijašume; PE Vojvodinašume	Directorate of Forests, Ministry of AFWM	PE Šume Republike Srpske
Competent Authority	Ministry responsible for forestry; Inspectorate for forestry; Financial Administration - Customs office	Ministry responsible for forestry; The Ministry of Finance - Customs office.	Ministry responsible for agriculture and forestry	Ministry responsible for agriculture and forestry	Ministry responsible for agriculture and forestry
Data sources	1 - FAO FRA, 2020; 2- Petrovic, 2022; 3 - GFRA 2020; 4 - FSC, 2023; 5 - PEFC, 2023; 6 - Zavod za Gozdove Slovenije, 2023; 7 - Birou of Statistics of Republic of Serbia, 2022; 8 - Bjegovic et al, 2021				

Source: Own elaboration, 2023³

3. The data presented in the table is derived from official statistics and national reports for the years 2020 and 2022. It is important to note that the information will undergo further updates before publication.

5. Results

This section presents results of original data on actors' perceptions on the transposition of the EUTR requirements in each selected country. Results are presented country by country to enable getting a comprehensive picture of perceptions and opinions of key decision-makers and other identified actors on the EUTR transposition and timber legality.

5.1 Croatia

Actors' perceptions on institutions

According to all seven respondents, the EUTR requirements have been completely transposed nationally. The Customs Administration provides information on imports to the Ministry of Agriculture, Forestry, and Water Management, performing risk analyses to identify areas needing attention. However, according to two respondents (non-state representatives), enforcement might be enhanced, especially with regard to the penalties and oversight procedures. The absence of preventive measures against illicit activities and the increased costs for private forest owners were cited as relevant issues by three respondents. Based on opinions of two respondents one of the challenges is the implementation of biodiversity legislation consistently with EU regulations and policies that should recognise the protection function of forests, but this is in contrast with the needs of the timber industry that is mainly stressing for wood production and economic valuation of forests. Respondents also indicated that "green procurements" and "green architecture" are new issues for the forestry sector in Croatia.

Three respondents (non-state representatives) point out that field inspections by the police are infrequent and sometimes not thorough enough. Concerning the Forest Stewardship Council (FSC) certification approach, two respondents voiced worry that unlawful commodities would mix with certified goods at sawmills or warehouses. As one of the respondents noted, "It is clear that there is a great demand for raw materials, that prices are lower in the surrounding area than in Europe, and of course that there is increasing profit and increasing interest in these illegal assortments. I would like to point out that these illegal products are then mixed with the certified ones at sawmills and then exported to Europe as such" (ID_HR1).

Four respondents (two state and two non-state representatives) believe that information about illegal activities should be more centralised and accessible, with multiple data sources made available. They pointed out that more exchange of information between the Competent Authority and timber industry representatives, as well as education of private sector representatives that are dealing with EUTR would be needed.

Actors' perceptions on roles and responsibilities

Five respondents (three non-state and two state representatives) emphasised that the competent Ministry of Forestry has one person responsible for matters related to the EUTR, but other competent institutions are not clearly defined. Five respondents (three non-state and two state representatives) reported that the forestry inspection and the state inspectorate are in charge of addressing the problem of illegal logging with some assistance from the Ministry of Internal Affairs and the Customs Administration. They also note that the human resources capacity in the forestry sector is insufficient for successfully implementing the EUTR.

Three respondents (one state and two non-state representatives) noted the war in Ukraine and its effects on the European wood industry, as they predict that this will result in a lack of raw materials and further strain Europe's current wood supplies. They also pointed out that businesses in the Western Balkans are ill-equipped to respond to the current situation. To promote greater value-added outputs, they recommended better allocation of wood resources among local companies, which is directly associated with timber trade procedures from state forests. One respondent (state representative) brought up that, in general, the European consumer culture promotes over-exploitation and deforestation for agricultural purposes. Additionally, respondents noted the pressure from the abundance of readily accessible wood supplies, overproduction, yearly logging restrictions, and low-value finalisation. They contended that wages for forestry workers are insufficient, rules are rigid and do not allow for flexibility in response to changing circumstances.

5.2 Montenegro

Actors' perceptions on institutions

Five respondents (four state and one non-state representative) emphasised that wood processors in Montenegro do not prioritise the EU market, hence alleviating any pressure for the adoption of the EUTR. Nevertheless, the implementation of the EUTR is a mandatory requirement during the EU admission process and, notwithstanding the hurdles, the assurance of institutional capability to assist EUTR implementation remains intact. All respondents noted that by the end of 2022, 10-year concession agreements for forest management expire, giving an opportunity to further regulate the forestry sector in Montenegro differently from how it has been regulated until now.

They noted that the Directorate for Forests was operating (at the time of the research, 2023) as an independent body within the relevant Ministry of Agriculture, Forestry, and Water Management and should be organised as a state forest management organisation (SFMO) like SFMO's in Serbia or Croatia. This was identified as the main problem within the forestry sector in Montenegro. Inadequate institutional structures were also considered by four respondents (three state and one non-state representative) as one of the reasons why forest certification in Montenegro has not been yet implemented, keeping in mind that this is mainly an administrative issue related to

defining the organisation and business responsibilities of the Directorate for Forests. The process for developing a new forest strategy that recognises and takes into consideration all the mentioned challenges should begin in 2023, and four respondents highlighted that improved work activities may be expected when the prerequisites for forest certification and the enforcement of the EUTR are fulfilled.

Actors' perceptions on roles and responsibilities

Five respondents (four state and one non-state representative) stated that the Forest Administration and the Inspection for Forestry oversee the state of illicit activities within the forestry sector. Four respondents (all of them being state representatives) reported that the Directorate for Wood Industry, a division operating under the Ministry of Agriculture, Forestry, and Water Management, is responsible for overseeing matters pertaining to the wood industry as well as the enforcement of forestry laws. The respondents emphasised that sawnwood produced in Montenegro is exported to Kosovo, Albania, and South-Western Serbia.

A total of seven respondents highlighted the constraints associated with the current organisational strategies used within the forest industry. The user highlighted the dearth of forestry and hunting inspections within the Ministry of Agriculture, Forestry, and Water Management, as well as the absence of a state-owned enterprise tasked with the responsibility of managing state forests. It has been proposed that the Forest Administration takes a regulatory role in administrative processes pertaining to state forests, with other responsibilities being delegated to management companies. As one respondent (state representative) noted *"The key assumption is the restructuring of personnel regulations, strengthening the workforce of the Ministry, and affiliation with the relevant inspection department, MPŠV. This marks the beginning of the successful implementation of the EUTR. Additionally, the existence of an information system linked to the tax administration regarding timber and timber product transactions is crucial to eliminating further reasons for non-compliance with the EUTR"* (ID_MNE1).

Consensus was reached among all respondents about the primary obstacle encountered within the forest industry, which pertains to the institutional structure, reform initiatives, and the creation of a governmental entity responsible for forest management. The respondents highlighted the need to establish regulatory entities tasked with overseeing and guaranteeing adherence to the EUTR stipulations.

All respondents in the study also emphasised concerns such as inadequate remuneration for forestry specialists, limited access to up-to-date computer equipment, and inadequate training in the use of modern information technology. The forest and wood industry sector in Montenegro has a certain level of familiarity with the EUTR but lacks a comprehensive understanding of the Regulation's requirements and how to implement them.

5.3 Republic of Srpska (Bosnia and Herzegovina)

Actors' perceptions on institutions

Although the development of the Forestry Development Strategy of the Republic of Srpska is in the final stage (2023) and there are indications of planning for a new Forest Law, two respondents noted that the existing Forest Law provides already an excellent basis for the prevention and fight against illegal activities. One of them (state representative) noted: *"The forestry sector of the Republic of Srpska is ready for EUTR implementation in terms of most institutional and personnel prerequisites. The key issue at this point lies in the complex functioning structure of Bosnia and Herzegovina as a state, particularly in determining the competent institutions for enforcement"* (ID_RS4).

In contrast, four respondents (three state and one non-state representative) believe that it is crucial to implement a new Forest Law. This law would serve the vital purpose of establishing clear regulations concerning the import of wood assortments and the management of privately-owned forests.

More than 50% of the respondents (three state and one non-state representative) indicate that the state forests in the Republic of Srpska are FSC certified, which signifies their adherence to sustainable forest management practices. Implementing this certification has proven to be crucial in addressing the problem of illicit activities within the forestry sector. The same respondents state that a significant number of timber processing businesses, totaling more than 350, hold a valid FSC CoC certificate. Additionally, one processing organisation holds a valid Programme for the Endorsement of Forest Certification (PEFC) CoC certificate. Nevertheless, the administration of privately-owned forests, especially those containing valuable species such as oak and noble hardwoods, presents a significant obstacle due to their lack of certification in accordance with the FSC standards. The proposed remedy under consideration is the implementation of PEFC standards, which was successful in neighbouring countries (e.g. Slovenia).

Actors' perceptions on roles and responsibilities

Two respondents (non-state representatives) point out that there is no adequate political will to eliminate illegal activities and that institutions such as prosecutors and courts are often inert and susceptible to influences that are not interested in resolving the situation in forestry. They propose reorganising the sector whereby the responsibility for planning and monitoring tasks are shifted from forest users to owners. Additionally, they suggest adopting distinct laws inspired by the Croatian model and establishing a wood processing department under the Ministry of Agriculture, Forestry, and Water Management. This department would be responsible for supervising the execution of the EU Trade Terms Regulation.

According to the findings, four respondents (two state and two non-state representatives) point out that wood processing operations can encounter illicit assortments of timber sourced from private forests. This circumstance often arises due to unresolved property and legal matters pertaining to the forest owners. Issues might also emerge when importing wood from other nations due to the potential lack of correct stamping or numbering of assortments. To tackle this issue, a regulatory framework has been implemented to provide a standardised system for numbering imported timber assortments.

Although the Forest Law of the Republic of Srpska is well-known among key players in the forest and wood processing industries, their understanding of the precise rules outlined in the EUTR is limited. Many wood processors lack familiarity with the complex protocols for acquiring essential paperwork to put timber and wood products on the European Union market.

5.4 Serbia

Actors' perceptions on institutions

Four respondents (state representatives) noted that the Forest Law in Serbia mandates forest users to implement measures for forest protection to prevent illegal activities. Private forests, which comprise 57.5% of the total forests, are particularly vulnerable to unauthorised actions due to various circumstances. The distribution of private forests is slow and inefficient due to property relations and demographic changes. Private forest owners often neglect or leave their forests under inadequate supervision, failing to fulfil their obligations. To address these issues, organisational changes are needed, including creating associations of private forest owners.

Actors' perceptions on roles and responsibilities

Four respondents (two state and two non-state representatives) noted that the wood industry is not considered part of the forestry sector at the state administration level. Two respondents (state representatives) suggested future organisational changes, such as creating a new position i.e., an inspector responsible for checking the EUTR at wood processing facilities. They highlighted that Forestry inspectors in Serbia are primarily responsible for enforcing legal obligations and the Forest Law and generating monthly reports, but their number is insufficient. They also reported that there is a plan to employ inspectors specialised in wood processing instead of forestry engineers, as the latter lack the necessary training for wood grading and assessments. Four respondents (two state and two non-state representatives) pointed out that inspectors' safety during the seizing of timber is often compromised due to the value of the goods and the potential fines involved. Seizing timber on forest truck roads also poses challenges, requiring the involvement of traffic police for safety reasons. Confiscation of timber raises issues related to storage and transportation. Illegal logging in Serbia primarily occurs in the land security zone (Integrated Border/ Boundary Management

between Serbia and Kosovo)⁴ and involves organised armed illegal loggers, posing a direct threat to the safety of forest guards, inspectors, and others. Restricted movement of representatives of Serbian institutions in this security zone often leads to forest devastation.

All respondents emphasised that forest users are familiar with the process of timber legality, while private forest owners lack sufficient information. Producers are aware of the EUTR but may not fully understand its importance or are unaware of how to implement it. The lack of cooperation between institutions results in the export of high-quality industrial timber, negatively impacting the national industry. Serbia also exports large quantities of sawnwood instead of further processing it, thus affecting the value added to the domestic industry. The disconnection between the forestry and wood-based sectors is further exacerbated by the distribution of timber from state forests and pressure from wood processors.

Implementing the EUTR will play a central role for the Directorate for Forests and the Customs Administration in Serbia. Existing legislation is likely to undergo changes to align with EU regulations. The need for new digital technologies and engagement of stakeholders, such as police, market inspectors, and public enterprises, is recognised. Implementing the EUTR should be comprehensive and efficient, especially for the wood industry sector, which is oriented towards the EU market. The increasing demand for wood in Balkan countries is expected to grow Serbian exports to the EU. Serbian products are of high quality, and companies with long-standing partnerships with EU customers will adapt to EU regulations to continue their operations smoothly. As one of the respondents (non-state representative) stressed: *“Why is the EUTR not working the way we would like it to? For the simple reason that importers in EU countries do not insist on this application...when the situation changes and there is a large supply but weaker demand, then EUTR, certificates, FSC, PEFC, etc. issues are raised. Everything is based on the goodwill of the decision maker”* (ID_SRB8).

5.5 Slovenia

Actors' perceptions on institutions

Five out of six respondents (all state representatives) did not consider illegal logging to be a significant issue in Slovenia. They stated the Forest Act incorporates robust rules to prevent illegal logging, and individual cases were not seen as alarming. All respondents mentioned that state forests are certified, and there is also a PEFC certification group for private owners managed by the Chamber of Agriculture and Forestry. One respondent (non-state representative) mentioned that group certification was affordable for private forest owners due to relatively low prices. Two respondents (both state representatives) highlighted that Slovenski Gozdovi, a public enterprise,

4. <https://dialogue-info.com/integrated-border-boundary-management/>

had implemented a due diligence system and internal codes of conduct to ensure the legality of timber from state forests. As one of the respondents (state representative) highlighted “*The EUTR implementation in Slovenia represents an example of best practices for other Western Balkan countries*” (ID_SI1).

However, one respondent (non-state representative) had a different opinion, stating that there were cases of wood theft and illegal logging that were not officially addressed, indicating a certain level of corruption in the forestry sector. The same respondent also mentioned that most timber logged on farms for firewood is often not marked, making Slovenia potentially the country with the largest proportion of informal logging in the EU. This respondent criticised the lack of controls and oversight by the State Forest Service and the Ministry responsible for forestry.

The major challenges faced by the respondents from the public administration were related to tropical timber from high-risk countries and the limited resources for field inspections (three state respondents). They mentioned well-established procedures for monitoring, combining targeted field checks with random sampling. However, they acknowledged that the system is not perfect.

Actors’ perceptions on roles and responsibilities

All respondents agreed that awareness of the EUTR in the forest sector is high in Slovenia, as it had been implemented more than five years ago. Four respondents (three state and one non-state) mentioned awareness-raising campaigns that were conducted by the Directorate for Forests and the Slovenian State Forest Service. Private forest owners are considered to be quite aware of the documentation needed to prove timber legality. District foresters from the State Forest Service worked with private forest owners in the field and effectively introduced EUTR requirements.

Three respondents mentioned somewhat limited capacities in terms of human resources, such as the number of district foresters, inspectors, and customs administration officials. They believed that with more employees, there could be a wider outreach in terms of awareness raising and monitoring. The affordability of certification for private forest owners was also mentioned as a challenge, leading to regional private forest certification under the PEFC scheme.

Regarding future developments, all respondents did not expect major changes in policy, the legal framework, or the structure of the forest sector. They mentioned that the forthcoming EUDR might impose new requirements, but they felt prepared based on their experience with the EUTR. One respondent (state representative) suggested improving the forest management system and reorganising the State Forest Service to enhance private forests and the forest sector as a whole. One respondent (non-state respondent), though, had critical viewpoints on the future EUDR implementation regarding efficiency and desired outcomes.

6. Discussion

In this section, results are discussed by comparing institutional and actor-oriented factors across the five selected case studies and then by presenting possible implications of institutional and actor-oriented factors on the future transposition of EUDR requirements in the analysed countries.

6.1. Comparison of institutional and actor-oriented factors across five selected case studies

Looking at all the analysed countries and applying the ACI framework, we were able to derive institutional (6.1.1) and actor-oriented (6.1.2) factors of timber legality in each country and to notice both similarities and differences between countries (Table 3).

6.1.1. Institutional factors

In our research, we start from the premise that (P1) Legally binding formal institutions strongly influence the transposition of EUTR requirements into national Western Balkan policies. Policies and laws shape the approaches and prescribe measures to address illegal timber activities (Cashore, 2012; Henn, 2021). Respondents in each analysed country (except Montenegro) recognised that European legislation and policy frameworks significantly influence the approach to mitigating illicit practices within the forestry sector (P1). Their perceptions are aligned with other research founding that the integration of EUTR requirements into regulatory texts is driven by international governance regimes (Sotirov *et al.*, 2020). In our case, integration corresponds to the EU status of analysed countries as assumed under A1.1. This is evident in EU-member Western Balkan countries like Slovenia and Croatia: both complied with the EUTR and implemented its requirements (Radosavljevic *et al.*, 2021 and 2023), though deploying different approaches to policy transposition. The Croatian approach resembles layering as it adopted a new policy on the EUTR implementation (Sotirov, 2022), yet the policy instruments and procedures did not significantly change from procedures already prescribed by the Forest Act (Radosavljevic *et al.*, 2021). Slovenia opted for a conversion approach (Sotirov, 2022) as it introduced EUTR obligation through amendments to the Forest Act (Radosavljevic *et al.*, 2021). As for the three Western Balkan countries in accession to the EU (i.e., Serbia, Montenegro, and the Republic of Srpska (BiH)), national forest laws were largely aligned with the EUTR requirements, although not fully aligned yet (Radosavljevic *et al.*, 2022 and 2023).

Upon examining institutional factors, it is evident that all countries exhibit robust formal institutions (Radosavljevic *et al.*, 2022 and 2023), except for Montenegro, which is undergoing sector restructuring. These institutions are characterised by top-down policies and stringent legislation pertaining to timber legality, particularly forest acts and rulebooks (Bjegović *et al.*, 2021; Radosavljevic *et al.*, 2021 and 2023). Such frameworks must be clear enough to disincentivize unsustainable forest exploitation to be effective (Begemann *et al.*, 2021). As our results pointed

out, in non-EU member countries, this was not the case, which might further incentivise the private sector or private forest owners to comply with applicable law requirements, as noted also by respondents from all analysed countries.

Our second assumption was related to monitoring and enforcement mechanisms (A1.2). Although rules and procedures are formally defined in all analysed countries (Radosavljevic *et al.*, 2022 and 2023), compliance with timber legality regulations is contingent upon the efficiency of monitoring and enforcement mechanisms (Bosh, 2021). Slovenia and Croatia have a paucity of inspectors and relatively low fines for violations (Radosavljevic *et al.*, 2022, semi-structured interviews), and as determined through interviews, the situation seems even heightened in non-EU Western Balkan countries, where additional difficulties originate from poor coordination of multiple enforcement agencies (Serbia), limited knowledge and training (Montenegro), as well as a lack of adequate information technology and field equipment (Republic of Srpska). This results in poor effectiveness in the implementation of timber legality measures on the ground, being also related with accessibility of information.

In all countries, national forestry information systems are centralised, incomplete and under the jurisdiction of forestry and financial public administration (UNEP-WCMC, 2020). Semi-structured interviews pointed out that several analysed countries struggle with limited transparency and information accessibility (Croatia and Slovenia), low transparency and quality of data (Serbia and Republic of Srpska, BiH), as well as non-existence of the data (Montenegro). This confirms that the lack of consolidated data and data systems makes monitoring of specific instances, such as illegal forest activities, difficult, finally indicating a lack of robust law enforcement (Bjegovic *et al.*, 2021). Thus, to ensure timber legality, measures such as data collection and sharing, monitoring, and law enforcement should be improved in all countries.

Our second premise (P2) referred to informal institutions, with assumptions related to the influence of political priority, corruption, transparency and information exchange as influencing factors on transposition of EUTR requirements into analysed Western Balkan countries. In line with A2.1, organisational culture seems to considerably influence the enforcement of timber legality measures in each analysed country. While Slovenia and Croatia demonstrate a dedication to adherence and compliance with overall EU goals, as a consequence of their EU members' condition, the political priority of illegal logging is relatively low. Additionally, those countries do not have common action plans or guidelines for combating illegal logging and local organisations rely on inter-organizational protocols, codes, or rule books. In contrast, Montenegro and the Republic of Srpska have action plans to counter illicit activities.

Our second assumption related to organisational culture (A2.2) was related to the influence of top-down, hierarchical structures and low transparency on cross-sectoral collaboration and information exchange on timber legality. Our research pointed out that although in all analysed countries

forestry sectors are characterised by top down decision making (Radosavljevic *et al.*, 2022 and 2023; Rogelja and Shannon, 2028) none of the countries have complete forest information systems (Radosavljevic *et al.*, 2022 and 2023, semi-structured interviews), and all face challenges related to evidence of property rights and land use changes (Dobšinská *et al.*, 2011 and 2020; Živojinović *et al.*, 2015; Weiss *et al.*, 2019). Moreover, in all targeted countries, corruption plays a role in illicit activities to a certain extent, as noted by respondents across all countries and reported also in previous literature (FEA, 2020). Although the perceived level of illegal activities varies from low in the EU-member Western Balkan countries, to medium (in Serbia and BiH) and high (Montenegro) (FEA, 2020), in any case it undermines the effectiveness of timber legality measures by opening doors to illegal logging and trade.

The effectiveness of timber -legality measures in all analysed countries is further constrained by weak inter-sectoral, multi-actor cooperation and low trust among actors. As noted by respondents in all analysed countries and confirmed by previous studies (FEA, 2020; Bjegović *et al.*, 2021), complex bureaucratic procedures and unclear shared responsibilities are one of the major factors for weak inter-sectoral cooperation (Živojinović *et al.*, 2015; Weiss *et al.*, 2019). This is particularly notable in the crucial connection between public forestry actors (such as ministries responsible for forestry, forestry inspections, and public enterprises) and law enforcement agencies (such as police and judicial bodies), as noted by respondents in all countries. Similar findings were presented for Serbia also by previous research (Rogelja and Shannon 2018; Dobšinská *et al.*, 2011 and 2020).

6.1.2. Actor-oriented factors

Looking into actors-oriented factors, we started from the premise that (P3) roles with clearly defined responsibilities and adequate resources positively influence the transposition of EUTR requirements into Western Balkan countries. The allocation of responsibilities among various stakeholders within the forestry sector is crucial for coordinating among actors and efficiently enforcing timber legislation and adequate forest governance (Cashore and Stone, 2012; Aggestamx and Pülzl, 2018; Dobšinská *et al.*, 2020).

In relation to our assumption A3.1 (The main actors involved in the transposition of EUTR requirements are governmental bodies and public forest enterprises in all analysed Western Balkan countries), we found that in all analysed countries the most significant entities are those that possess legally acknowledged rights and resources, as in line with literature on forest governance (e.g. Winkel and Sotirov, 2016). On the one hand, the aforementioned entities are present in all countries as public entities, particularly within ministries that oversee forestry, financial inspectorates, customs offices, and traffic police departments (Radosavljevice *et al.*, 20022 and 2023). In addition to these entities, state enterprises or extension services, such as the Slovenian Forest Service, play significant roles, particularly at the ground level (semi-structured interviews). This indicates that public actors are connected through strong and formal ties across different sectors at the national

level, while in practice, they stay poorly connected to private forest owners, forest industry or civil society. Such dominance and power of state actors in ensuring timber legality indicate a siloed approach and “policy elites” (Rogelja and Shannon, 2018), thus being aligned with the findings of previous broader studies on traditional modes of governance (Behagel, 2018), polycentric forest governance (Lazdinis, Angelstam, and Pülzl, 2019) and policy integration (Sotirov and Memmler, 2012). For example, the current actors’ arrangements in Serbia resemble those found in Rogelja and Shannon (2017) with regard to the incorporation of anti-corruption measures in forestry, being also in line with the findings of Sotirov and Memmler (2012) on enduring policies due to unchanging actors’ constellations.

As successfully implementing timber legality measures depends on the actors’ resources and capacities (Scharpf, 1997), we also assumed that (A3.2) Shared responsibilities and lack of resources of governmental actors impede the transposition of EUTR requirements into Western Balkan countries. Results pointed out that Slovenia places significant emphasis on delineating and assigning roles and responsibilities, while in Croatia concerns exist regarding the concurrent involvement of a state forest enterprise in various roles of timber utilisation, monitoring, and trade, which may give rise to conflicts of interest (Turner, 2021). Despite the commitment demonstrated by Slovenia and Croatia, there is a notable lack of resource allocation for the implementation of the EUTR, as none of the analysed countries has a separate budget. Non-EU countries (Serbia, Republic of Srpska and Montenegro) also encounter difficulties due to a limited number of forest inspectors and resource limitations, mirroring comparable concerns observed in Croatia and Slovenia. In Serbia, there is no clearly defined procedure or authority in cases where a wood processing company seeks documentation issuance as defined by the EUTR, which EU buyers require.

Thus, all countries share the challenge of managing a shared responsibility landscape, which is in non-EU countries even further complicated by ongoing reforms and limitations in know-how and technical capacity (FEA, 2020). However, sufficient financial and adequately trained human resources are essential to effectively address and mitigate illegal timber activities, thereby ensuring significant positive outcomes (Sotirov *et al.*, 2020). Adequate funding, labour force and technical expertise are essential to establish distinct responsibilities and efficient collaboration. Additionally, investing in the necessary resources will enable these entities to overcome limitations in their capacity and successfully implement ongoing reforms. Without the necessary resources, achieving comprehensive timber legality outcomes will be difficult, if not impossible. Therefore, it is crucial for all countries to prioritise resource allocation to address the challenges they face in managing their shared responsibility landscape.

Our fourth premise (P4) referred to the awareness and perceptions of key actors. The importance of awareness of timber legality and European requirements, as well as transparent, accessible and reliable information, are crucial for the successful execution of policies and the engagement

of stakeholders, policymakers, and the wider public (Cashore and Stone, 2012; Sotirov *et al.*, 2020). Awareness raising and training are crucial in cultivating a shared comprehension regarding the significance of timber legality measures and EU timber legality requirements (European Commission, 2020 and 2021). We assumed that (A4.1) the actors from EU Western Balkan countries have a positive attitude and higher awareness towards EUTR than the actors from non-EU Western Balkan countries. In this regard, based on semi-structured interviews, we noted that Slovenia and Croatia exhibit a notable level of awareness among policymakers, which has the potential to facilitate the implementation of regulations. In contrast, Serbia shows a moderate awareness level that is gradually growing, primarily influenced by civil society engagement and protests. Both Montenegro and the Republic of Srpska place significant importance on the necessity of awareness-raising among diverse stakeholders, primarily the forest industry and private forest owners.

With respect to informal actors-oriented factors we assumed that (A4.2) perceptions of key actors on timber legitimacy and forest certification influence the transposition of EUTR requirements into Western Balkan countries. As semi-structured interviews showed, in all analysed countries (except Montenegro), illegal activities are not perceived as worrying activities due to a perceived small-scale, and subsistence nature of illegal logging. This is also in line with the study done by FEA (2020) covering illegal activities in four countries (Bosnia and Herzegovina, Serbia, Montenegro and North Macedonia). This study identified that the most common type of illegal activities in analysed countries are small scale logging for self-consumption, followed by theft, nepotism, political influence. The same study furthermore found that “*Bribery and corruption*” and “*Political influence on forest public companies and institutions*” were assessed as the most harmful types of corrupt and illegal actions in the forestry sector (FEA, 2020, pp. 24-26).

On a more positive note, forest certification was perceived as an influencing factor in ensuring timber legality in all countries. This is in line with other literature that showcase that in the Western Balkan countries FSC certification “*is, to a certain extent, perceived as a guarantee for the legality of wood operations and origin*” (Malovrh *et al.*, p. 17).

Table 4. Institutional and actor-oriented factors influencing timber legality in selected countries

Institutional Factors	Croatia		Montenegro		Serbia		
	Sub-category	Specification	Description	Specification	Description	Specification	Description
	Legislation and policy	On the force, rigid	Forest Act, Law on EUTR, rulebooks	Not fully applied No forest certification	Action plan for preventing illegal activities Forest Act, rulebooks	On the force, rigid Forest certification	Forest Act, rulebooks
	Monitoring and fines	Defined financial fines	Relatively low fines	Defined financial fines	Inefficient procedures Relatively low fines	Defined financial fines	Relatively low fines
	Organisational culture	Centralised approach	Top-down dominance of the state Relatively low political priority Export mostly within the EU	Sectoral reorganisation	Relatively high political priority Low exports to less demanding markets High corruption	Centralised approach	Top-down dominance of the state Relatively low political priority
		Exchange of information	Formal, centralised systems and registers. low transparency of information, low collaboration	Exchange of information	Formal, low transparency of information, low collaboration	Formal exchange of information	Formal, centralised systems and registers
	Sub-category	Republic of Srpska			Slovenia		
	Sub-category	Specification	Description	Specification	Description	Specification	Description
	Legislation and policy	On the force, rigid Forest certification	Action plan for preventing illegal activities Forest Act, rulebooks	On the force, rigid Forest certification	Forest Act, rulebooks		
	Monitoring and fines	Defined financial fines	Inefficient procedures Relatively low fines	Defined financial fines	Relatively low fines		
Organisational culture	Centralised, dependent on broader political BH developments	Relatively high political priority High corruption	Centralised approach	Top-down dominance of the state Relatively low political priority			
	Exchange of information	Formal, low transparency of information, low collaboration	Formal exchange of information	Formal, centralised systems and registers			

Actors-oriented factors	Croatia		Montenegro		Serbia		
	Sub-category	Specification	Description	Specification	Description	Specification	Description
	Responsibilities	Divided, unclear	Shared responsibilities between ministries and inspectorates	Divided, unclear	Overlapping responsibilities between ministries and inspectorates	Divided, unclear	Shared responsibilities between ministries and inspectorates
	Resources	Limited capacities	Lack of data, lack of inspectors, lack of knowledge	Limited capacities, knowledge and resources	Lack of data, lack of inspectors, lack of knowledge, low salaries	Limited human capacities	Lack of inspectors, lack of equipment, inadequate knowledge
	Awareness	Familiarity with EUTR	Relatively low in Private Forest Owners, and the wood industry	Low familiarity with EUTR	Low export to the EU No interest in implementing the EUTR	High familiarity with EUTR	Relatively low in private forest owners, and the wood industry
	Perceptions	cross-sectoral, multi-actor cooperation, market volatility	Poor information sharing and networking	Poor cross-sectoral cooperation	Lack of certification, Low interest; Corruption	Poor cross-sectoral, multi-actor cooperation, market volatility, inactive private forest owners	Poor information sharing and networking Nepotism
		Republic of Srpska			Slovenia		
	Sub-category	Specification	Description	Specification	Description		
	Legislation and policy	Divided, unclear	Overlapping responsibilities between ministries and inspectorates	Divided, clear	Shared responsibilities between ministries and inspectorates		
	Resources	Limited capacities, knowledge and resources	Lack of data, lack of inspectors, lack of knowledge, low salaries	Limited human capacities	Lack of inspectors		
Awareness	High familiarity with EUTR	Private forest owners familiarised through the laws Industry familiarised due to export orientation	Small scale, substantial illegal logging High familiarity with EUTR	Word of mouth for familiarising private forest owners			
Perceptions	Poor cross-sectoral, multi-actor cooperation,	FSC & PEFC as confirmation of legality	Poor cross-sectoral, multi-actor cooperation, market volatility, inactive private forest owners	Difference between de jure and de facto procedures			

6.2. Implications of institutional and actor-oriented factors on the future transposition of EUDR requirements in the analysed countries

Implementing the EUTR and EUDR in the region requires a combination of institutional capacity, collaboration, and enhanced monitoring and enforcement procedures. Slovenia's commitment to forest certification and legality verification aligns with EU standards, while Croatia's experience with EUTR and existing legal frameworks may serve as a basis for transitioning to EUDR. However, the expanded due diligence standards and risk assessment procedure will probably impose significant administrative obligations on forest management and monitoring agencies (Ross and Johnston, 2023; Köthke, Lippe, and Elsasser, 2023).

Serbia's institutional framework for wood legality and sustainable forest management has been strengthened, but ongoing obstacles include developing inter-institutional coordination and enhancing monitoring and enforcement capacity. There is a lack of coordination between the forestry sector and the wood industry, which needs to be improved for better outcomes. Serbia's current attempts to build a new information system for forestry and undertake a new national forest inventory aligned with EUDR data needs are essential for compliance. Further developments in terms of integration with various forestry reporting systems (e.g., FAOSTAT, EEA, EUFIS, EUFORGEN, to mention a few) could be worth investigating more in depth, as synergies would open access to additional resources and capacity building.

Establishing a Competent Authority and improving coordination among public entities will be essential to achieving the enforcement requirements of the law. Awareness and comprehension of EUDR among Serbia forest owners, operators, and traders is crucial for compliance. The prospective inclusion of Serbia within the EUDR list of countries with a higher deforestation and forest degradation risk might entail further measures to ensure the legality of exports to the EU market. Strengthening the skills of accountable actors and developing cooperation with other EU member states can facilitate the implementation of the EUDR.

Montenegro's focus on preventing unlawful activities and establishing a state forest management organisation could help meet EUDR requirements. However, due to the lack of certified forest areas - that might help comply with EUTR and EUDR requirements - and limited information accessibility, due diligence is still a challenge. To ensure compliance, Montenegro's forest industry stakeholders must work closely together through awareness campaigns and capacity-building programs. Besides that, forest certification could be perceived as a possible green lane - or at least a huge support - for legality (Dieguez and Sotirov, 2021) and introducing it would be a logical step after finalising the current sectoral reforms. At present, Montenegro is the only country among the five targeted by our research without an official or ad-interim FSC national standard which represents a major barrier to the development of forest management certification in the country.

Bosnia and Herzegovina, with their fragmented government systems, face challenges in uniform application and enforcement of EUTR rules. The Republic of Srpska needs to align its legislative structure with EU criteria and establish an organisational culture to enhance human resources for monitoring purposes. The emphasis on forest certification, as seen in the certification of all state forests according to FSC standards and the development of the only official FSC national standard within the region, could make it easier to meet EUDR's legality criteria (Avdibegović *et al.*, 2021).

To combat illegal logging in the Western Balkans, country-specific strategies are required. National legal frameworks for forest management are largely in place, but implementation and enforcement are falling behind due to inadequate resources. Monitoring, inspection, and enforcement through the criminal justice system remain one of the most problematic aspects due to highly formal, long official procedures and inefficient corrective measures. To adapt to the EDUR (as well as the requirements of other European Green Deal policies), all analysed countries will need to amend existing laws and policies or adopt new ones to integrate European timber legality and multiple other requirements. While this might pose a challenge in terms of policy integration and coordination, it will likely create the momentum for timber legality to gain importance on policy agendas and attract necessary resources for policy alignment and implementation. In light of such circumstances, increased regional cooperation, capacity building and training, as well as increasing information exchange and forest certification, seem to be the first necessary steps towards improving timber legality in the Western Balkan region.

In our study, ACI proved to be a useful approach to ensuring the analysis of actors and institutional factors that influence policy transposition. It pointed out that timber legality is shaped by a dynamic interaction between formal regulations, cultural norms, institutional responsibilities, available resources, and levels of awareness, which collectively affect the effectiveness of public actors in preventing illicit logging and the wood trade. Although the ACI framework was useful for the aims of our study, such messages should always be considered with respect to the given context. In that sense, our study also encompasses certain limitations due, for example, to a relatively small and homogeneous sample (all respondents occupied key positions within the national forestry sectors at the time of the research) or national-level research. While future studies should strive to overcome those shortcomings (i.e. extending the sample to other stakeholder groups, such as private forest owners and industries), they should also benefit from multiple case study methods).

7. Conclusions

This research paper delved into the pressing issue of illegal logging in the analysed Western Balkan countries (Serbia, Bosnia and Herzegovina, Montenegro, Croatia and Slovenia), a region known for its political and economic instability and high risk of corruption. Against the backdrop of EUTR and EUDR requirements, this study explores the factors that influence timber legality in the Western Balkans using the ACI framework. We built on original findings of stakeholder interviews to better understand institutional and actor-oriented factors of timber legality in the targeted Western Balkan countries. The interviews conducted with stakeholders have enriched the analysis, providing a deeper understanding of the underlying factors of timber legality. In-depth interviews were highly valuable in Slovenia and Croatia, where the EUTR has already been fully implemented, and stakeholders have a clearer understanding of how the regulation affects their interests. For EU candidate countries, it remains important to continue enhancing understanding of stakeholder awareness and exploring effective strategies for implementing EU requirements related to timber trade. It is evident that non-EU-analysed countries will face the need for clarification and specific interpretation of EU requirements related to timber trade in the future. By understanding stakeholder perspectives and experiences, policymakers and relevant stakeholders can work towards a more successful implementation of the EUTR and EUDR.

In summary, key factors for the successful implementation of EU timber legality requirements include legislation and implementation, forest governance, enforcement mechanisms, stakeholder engagement, and capacity building. These factors must be addressed and improved upon to ensure the effective implementation of European and national legislation and combat illegal logging in the Western Balkan countries. Additionally, collaboration among the Western Balkan countries themselves is crucial to address the issue collectively and in a harmonised, consistent manner and share best practices. Strengthening cooperation and information exchange between governments, law enforcement agencies, and relevant stakeholders will enhance the effectiveness of timber legality requirements. Moreover, investments in technology and surveillance systems can aid in monitoring and detecting illegal logging activities, enabling timely intervention and enforcement measures. Ultimately, by addressing these key factors and implementing comprehensive strategies, the Western Balkan countries can promote sustainable timber trade and protect their valuable forest resources.

In synthesising these elements within the ACI framework, it becomes evident that each country's approach to ensuring timber legality is shaped by a dynamic interplay of formal regulations, cultural norms, institutional responsibilities, available resources, and levels of awareness. These components collectively influence the effectiveness of their efforts to combat illegal logging and the timber trade, highlighting the need for comprehensive and coordinated strategies to address this multifaceted challenge. Addressing corruption is crucial for ensuring the successful

implementation of timber legality measures and promoting sustainable forestry practices globally. This requires not only strengthening legal frameworks and accountability mechanisms but also fostering a culture of integrity and transparency within the industry.

Lastly, the EUDR presents examples of the formally complex institutions produced by the EU. Through the implementation by the member states, the formally complex system of controlling legality is being produced. There is empirical evidence showing that behind such formal EU-driven complex systems the space for illegality is rather shrinking rather than growing. In terms of implementation of the EUDR in the Western Balkan countries, this might imply difficulties and spill-over effects. If EUDR requirements are too complex to be implemented on a national level in certain Western Balkan countries, they may further opt to reorient timber related business towards other less stringent markets than the EU.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) used Bing Chat+, Bard, Chat GPT3.5, Grammarly in order to improve the language clarity, conciseness and grammar. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

5.4 Article 4 (In draft): Perceptions of information exchange networks on timber legality among key actors in Serbia: An illustrative case study

This chapter presents the findings on information exchange networks and sheds light on key actors and their structural positions to influence decision-making, policy change and, consequently, efficient implementation of EU timber legality requirements in Serbia. The conceptual grounding of policy networks and exchange of information was already presented in detail within 3.3, so here, more details on structural network analysis are presented, followed by results for a preliminary analysis applied to Serbia.

As presented in the article, network analysis should support providing answers to assumptions (A) related to research question number two (see Table 1 in Chapter 2), in particular:

A2.1.1: The main actors involved in the adaptation of policies in Western Balkan countries are governmental bodies and public forest enterprises.

A2.1.2: Private sector actors and research and education institutions were marginally involved in the adaptation of policies in Western Balkan countries.

In relation to the first two presented assumptions of particular interest it would be to investigate the following additional assumptions:

A2.3.1: Information exchange relations are strong among state actors.

A2.3.2: Information exchange relations are weak among state and non-state actors.

The article 4 is presented in a draft form and is based on the data for Serbia, as sole unit of analysis. As such, it provides in-depth insights into policy network of key decision makers, and pinpointing to potential gaps that needs to be overcome for efficient compliance with the EU timber legality requirements. Building on the analysis for Serbia, the methodologies applied in terms of networks visualisation and metrics are aimed to be improved and applied to the other four targeted Western Balkan countries for which the data were also collected analysed.

Abstract: Despite the considerable efforts to mitigate deforestation and forest degradation, illegal logging and unsustainable forest management practices remain pervasive challenges. To deal with the issue of the illegal timber market, the European Union (EU) implemented several initiatives and regulations, the most recent being the EU Deforestation Regulation (EUDR) in 2022. The Regulation brings more stringent requirements and places an additional burden on public authorities and timber traders, which might influence its future implementation. This article provides an illustrative case focusing on the exploration of the policy network of actors that exchange information on timber legality in Serbia, aiming to pinpoint potential gaps and avenues for improvement. Data were collected using an ego-centric approach and based on interviews with key decision-makers in Serbia. The data were then analysed, and networks were visualised using Gephi. Our results pinpoint ten key actors connected with 58 connections. The findings highlight the importance of strong connections between governmental and the non-governmental actors and suggest that the dominance of public actors in the information exchange network for timber legality in Serbia remains a potential weakness for future EUDR implementation and beyond. As trust is essential for building strong relationships and facilitating cooperation, captured network structure may be indicative of high levels of trust among state actors and weak ones with the scientific community, private forest owners and enterprises. This indicates that the policymakers should focus on strengthening connections with non-state actors, promoting more balanced and inclusive information exchange, and improving the perceived quantity and quality of information exchange.

Keywords: timber legality information, policy actors, social network analysis, EUTR, EUDR

1. Introduction

Despite the considerable efforts to mitigate deforestation and forest degradation (Bager *et al.*, 2021), illegal logging and unsustainable forest management practices continue to be pervasive challenges (Masiero *et al.*, 2015; Segato, 2007 and 2017; Paluš *et al.*, 2018; WWF, 2019). Direct deforestation and forest degradation drivers include the harvesting and trafficking of fuelwood and industrial wood (FAO, 2010 and 2020; Sotirov *et al.*, 2020). The detrimental effects of these practices are further compounded by the illicit activities that are often linked to them (Kouelis, 2015; FAO, 2023).

As part of the legislative framework that supports sustainable forest management, legislation prohibiting the entry of illegally logged wood and associated goods into the European Union (EU) should protect the forests, associated industry and society at large against illicit trafficking (European Commission, 2010). To this aim, the EU implemented several initiatives and regulations, including the EU Forest Law Enforcement, Governance, and Trade (FLEGT) Action Plan in 2003 and the EU Timber Regulation (EUTR) in 2011. Most recently, the EU adopted the EU Deforestation Regulation (EUDR) in 2023, which broadens the scope of EUTR from timber to six more commodities, addressing the phenomenon of embedded deforestation and operating within the overarching framework of the Green Deal (EC, 2023).

As the EUDR is a relatively new legislation, the full extent of its implementation effects is not yet known. Recent research has raised questions and uncertainties over compliance with the EUDR's standards (Berning and Sotirov, 2023a and 2023b; Polo Villanueva *et al.*, 2023; Köthke, 2020; McDermott and Sotirov, 2018; Leipold, 2017). The complexity of implementing rules might be experienced by entities obligated to exhibit conformity (Lidskog *et al.*, 2013). Difficulties in attaining adherence to normative requirements may be associated with the need to improve transparency and information disclosure about supply chains (Apeti and N'doua, 2023), effectively oversee heightened administrative obligations (Henn, 2021), and a probable intensification of corporate responsibility (Berning and Sotirov, 2023b).

Considering such challenges associated with EUDR (i.e., policy spillovers, perverse subsidies, etc.), particular attention should be given to countries where corruption and inadequate forest governance are associated with illegal practices (Polo Villanueva *et al.*, 2023). Besides major tropical producing countries, countries in transition, such as Western Balkan countries, deserve attention as they are subject to illegal logging risks (Chatham House, 2018). Western Balkan countries, indeed, are known as an area exposed to a high risk of corruption (Forest Europe, UNECE and FAO, 2016; European Commission, 2020; Transparency International, 2021), and illegal activities are recognised as one of the key problems for the forestry sector in the region (Balkan Investigative Reporting Network, 2018).

Due to their strategic geographical position, failing in implementing legality and sustainability standards like those set within EUTR and EUDR might affect domestic, regional and international timber flows by opening the doors to countries or operators with less stringent legality requirements.

Although Western Balkan countries are regarded as priority areas for improving legality monitoring systems in line with EUTR requirements, research on timber legality in these countries is still patchy and shows several gaps. Researchers mostly investigated forest certification as a means to promote sustainable forest management (Keary and Strand, 2011; Poje and Mavsar, 2014; Malovrh *et al.*, 2019; Avdibegović *et al.* 2021) including chain of custody certification (Penikar *et al.*, 2012; Nasto and Poje, 2014) and trade of timber and timber products (Nasto and Poje, 2014; Čomić *et al.*, 2021a and 2021b). A limited number of studies (Nonić *et al.*, 2011 and 2016; Avdibegović *et al.*, 2012; Dobšinská, 2015; Giurca *et al.*, 2016; Matović *et al.*, 2017; EFI, 2018) analysed the adaptation of national forest sectors to European regulations on timber and timber products legality (e.g., EUTR and EUDR), with limited studies focusing on legality and corruption (e.g., Rogelja and Shannon, 2017).

Our study aims to contribute to the literature on timber legality in Western Balkan countries based on the illustrative case of perceived information exchange among key actors in timber legality in Serbia. Grounding the assumptions in the network governance and the policy network approach, this paper utilises network analysis to aid in answering the following research questions:

- 1. Who are the main actors involved in the adaptation of policies to EU timber legality requirements in Serbia?*
- 2. What are their roles and relations?*

Section 2 briefly presents the conceptual framework of the paper, while section 3 provides theoretical aspects associated to the network analysis. In section 4, methodology and methods are outlined, while in section 5 results about the perceived network of information exchange is presented. Section 6 discusses the findings in light of the relevant literature. Finally, in section 7, we draw conclusions and make recommendations for policy-making and practice.

2. Conceptual frameworks

This section introduces conceptual frameworks behind this research, deepening network governance, policy networks and information exchange concepts (5.2.1) as well as structural network analysis (5.2.3).

2.1 Network governance, policy networks and information exchange

Access to key information about natural resource management and product flows is essential in addressing illegal logging and supporting sustainable forest management. Information plays a crucial role in facilitating well-informed policies and choices and advocating for appropriate actions and solutions (Bajcheva-Merger and Sotirov, 2020; Weible, 2008; Weible *et al.*, 2010). Over the past two decades, Europe-wide information on forest resources has been increasingly used to assess the state of European forests and to respond to global environmental challenges such as deforestation and biodiversity decline. Indeed, the information on the EU role in global deforestation (Bausano *et al.*, 2023; Pendril, *et al.*, 2019a and 2019b) was used to aid policymakers in addressing wicked environmental problems via newly adopted and forthcoming Green Deal policies (Lidskog, 2014).

The significance of information reliability and information exchange among actors in the timber trade is becoming increasingly important in the framework of the newly adopted EUDR and the forthcoming EU Forest Information Regulation.

Policy networks are the *"patterns of interactions among different individual and organisational stakeholders involved in a policy decision-making process to deal with a common policy problem, to favor joint and shared solutions"* (Dal Molin and Masella, 2015, p. 830). Policy networks involving various stakeholders are essential in the policy definition process (Borzel, 1998; Klijn, 1996; Marsh and Rhodes, 1992) and within them (as well as within network governance), the State maintains the task of defining the goals, actors to be involved, interaction modalities, dedicated resources and services to be provided (Dal Molin and Masella, 2015; Borzel, 1998).

The traditional centralistic model of service provision and decision-making has evolved towards more collaborative arrangements and service delivery networks (Dal Molin and Masella, 2015). Existing literature refers to such a transition with the term *"from government to governance"* (Bellamy and Palumbo, 2010). The shift from traditional "command and control" governmental regulatory administration to participatory decision-making within a complex system of public and private actors is expected to redistribute power and improve governance of complex issues (Baccaro and Mele, 2009; Borzel, 1998). Governmental control is seen as limited due to lack of legitimacy, complexity of policy processes, and institutional issues (Peters and Pierre, 2010). Network governance involves inter-organizational linkages between public and private actors, allowing them to exchange resources to achieve objectives, maximize influence, and avoid dependence on other players (Guy Peters and Pierre, 1998; Rhodes, 1996). This approach aims to redistribute power and enhance the capacity to govern complex issues.

Thus, collaborative arrangements between a variety of actors imply the creation of (mutual) relationships among actors (both individuals and organisations) and the delegation and redistribution of powers (Rhodes, 1998; Borzel, 1998). In the context of forest policy, power can be interpreted as the ability to regulate or have jurisdiction over forest resources (Edwards and Kleinschmit, 2013). Often, this delegation and redistribution of powers is not voluntary and leads to the creation of actors' coalitions (Rhodes, 1998; Berning, and Sotirov, 2023). In such a context, information can be strategically employed to gain power and increase authority or it can be selectively employed or framed to legitimise political agendas and provide justification for political decisions (Baycheva-Merger and Sotirov, 2020; Pregernig and Böcher, 2008; Shannon *et al.*, 1996). In network governance, the State covers two main roles related to the level of acting. At a macro-level, it defines goals and objectives, and establishes adequate communication and accountability mechanisms (Keast and Brown, 2002). At a micro-level it acts within the network through public agencies, participating as a member in negotiations and decision-making; throughout, it should pursue the necessary balance between its steering role and controlling activities (Keast and Brown, 2002).

The policy network approach (Peters and Pierre, 2010) assumes coordination with other organisations. The number of allies who trust an organisation is a good indicator of its information quality. A strongly related social opportunity structure is related to social trust. Actors, both individuals and organisations, need common "friends" to reduce uncertainty about the contacts and information received. Relying on one's contacts to establish new ties lowers the costs of searching for new contacts and deciding whether they are worth the effort. For the aims of this research, we consider particularly interesting to investigate what actors have the power of controlling the information flow about timber legality.

2.2 Structural network analysis

Structural network analysis is used to understand and describe the networks and "*how the patterns of relationships within a social system allocate resources, such as support, money and power*" (Sharp, 1998, p. 18). A network "...[i]s a structure composed of a set of actors, some of whose members are connected by a set of one or more relations" (Knoke and Yang, 2019, p. 8). Actors are also referred to as nodes or vertices, whereas relations are referred to as ties (arcs and edges).

We use the term structural network analysis (Berkowitz, 1982; Knoke, 1994) as we want to illustrate the potential positional power of the actors within the network. The distribution of power among actors is partly a function of the positions that actors occupy within the network. A given position has greater power if other actors depend on it for information or other resources (Knoke, 1994). A position lacks power when other actors enjoy many alternatives for securing their preferences or obtaining resources (Knoke, 1994).

Structural network analysis focuses on the actors (in this case, organisations) and linkages among them (in this case, exchange of information on timber legality). Since network governance is focused on the distribution of power among an interacting system of actors, structural network analysis is a useful lens for understanding how information is shared and power is organised within a network (Knoke, 1994).

Trusting others is more efficient, and so common neighbourhoods' matter, as actors are more likely to trust information from another organisation if it is within the same coalition. At the meso-level, this results in self-reinforcing coalitions (Sabatier and Weible, 2007). The number of shared partners is also related to the concept of "bonding" structures as transitive triads increase the ego's trust in alter (Leifeld and Schneider, 2012; Berardo and Scholz, 2010). It is therefore useful to include a transitivity-related analysis that checks whether two directed paths between two actors correspond positively (Leifeld and Schneider, 2012).

For the aims of this research, we used an egocentric approach to networks (Tabassum *et al.*, 2018) of information exchange on the legality of timber and timber products by key actors in Serbia. Ego networks are one of the fundamental building blocks of social network analysis. The structural properties of ego networks are known to determine many aspects of human social behaviour, such as willingness to cooperate and share resources (Arnaboldi *et al.*, 2017). They consist of a focal node (ego) and its immediate connections (alters) (Hanneman and Riddle, 2009). In egocentric network research, a set of actors is sampled from a population to provide data about members of their network. The result is a set of separate networks, one for each ego. Ego networks provide a snapshot of an organisation's social environment and can be used to analyse various social phenomena (Borgatti and Halgin, 2011).

Different statistical metrics can be used to describe different dimensions of ego networks, as briefly outlined in Table 6. below.

Table 6. Network metrics with definitions and scope of application

Metrics	Definition
Size of ego network	Measures the total number of alters the ego is connected with.
Number of directed ties	<p>The total number of ties between pairs of nodes in the network.</p> <p>Directed ties can be reciprocal, meaning both the ego and alter have ties pointing in each direction. This might suggest a balanced and symmetrical relationship, where both parties equally perceive the exchange of information on timber legality.</p>
Neighbourhoods	<p>An "out" neighbourhood would include all the alters to whom ties are directed from ego.</p> <p>An "in" neighbourhood would include all the alters who sent ties directly to the ego (Borgatti <i>et al.</i>, 2018).</p>
A number of ordered pairs (dyadic connections)	<p>An ordered pair in an ego network is a connection between two alter nodes mediated by the ego (Wasserman and Faust, 1994).</p> <p>In other words, an ordered pair is a path of length two in the ego network, where the ego is the first node and the two alter nodes are the second and third node.</p>
Density	The proportion of possible ties that exist within a network. A higher density indicates more connections among the alter nodes in an ego network, suggesting a more cohesive and interconnected subgroup. A lower density indicates fewer connections among alter nodes, suggesting a more dispersed or loosely connected subgroup.

Metrics	Definition
Local clustering coefficient	Measures the tendency of nodes in a network to cluster together. It is calculated for a particular node in a network by examining the number of triades its direct neighbours form.
Number of weak components	Represent subnetworks within an ego network composed of solely weak ties. Weak components are characterised by low density and low clustering coefficient (Wasserman and Faust, 1994). Strong components, on the other hand, tend to have high density and high clustering coefficients (Krackhardt, 1990).
Two-step reach	The percentage of all actors in the whole network that are within two directed steps of ego
Brokerage	Measures how many times pairs of neighbours in ego's network are not directly connected
Clicks	Number of triads, complete
Structural holes	The absence of a tie between an altar and the third party

Source: Own elaboration (2024)

In addition to these basic statistical metrics, there are many other specialised measures that can be used to analyse ego networks. The choice of measures depends on the specific research question being addressed. This research was interested in visualising networks of key actors engaged in information exchange and their potential roles. Network analysis should support providing answers to assumptions (A) related to research question number two (see Table 1. in Chapter 2), in particular:

A2.1.1: The main actors involved in the adaptation of policies on timber legality in Serbia are governmental bodies and public forest enterprises.

A2.1.2: Private sector actors and research and education institutions are marginally involved in the adaptation of policies on timber legality in Serbia.

In relation to the first two presented assumptions it was considered of particular interest to derive metrics related to the actors' positions in the information exchange network. This corresponded to investigating the following additional assumptions:

A2.3.1: Information exchange relations are strong among state actors.

A2.3.2: Information exchange relations are weak among state and non-state actors.

3. Methodology

This section reports details about research methodology, providing detailed information about data collection (3.1) and analysis (3.2) as well as highlighting research limitations and possible improvement opportunities (3.3).

3.1 Data collection

Data was collected in Spring 2023 via a structured survey to deepen and analyse information exchange among relevant actors. For this purpose, two tables were created to allow respondents to identify answers and provide relevant feedback (Annex 2). Based on the first round of interviews, a list of all identified actors was prepared for each country separately. Respondents were required to select organisations with whom they exchanged information about the legality of timber and timber products. They were requested to indicate the providers and recipients of such information, using predefined values for quantity, quality, mode, and communication channels. In the second table, respondents were asked to assess the quantity of information exchanged between the selected actors based on their knowledge and experience. The questionnaire was sent to all 36 identified key informants (Table 7), with two follow-up reminders.

A total of 25 responses were collected from January to May 2023 (overall corresponding to a 69% response rate, with rates ranging from 50 to 100% at single country level): three from Slovenia, five from Croatia, six from Serbia, five from Montenegro, and six from the Republic of Srpska (BiH). Given the exploratory aim of this research and due to time constraints, data were analysed only for Serbia.

Table 7. Stakeholders interview table: type and number of interviewed actors per targeted country

ID	Country/ Institution	Respondents
1	Ministry of Agriculture, Forestry and Water Management	1
2	General Inspectorate, Inspection Unit for Forestry	1
3	State Forest Management Organization	2
4	Ministry of Finance	-
5	Industry of Chamber, Section for forestry and timber industry	1
6	NGO	1
7	Scientific Institution	1
8	Private Companies	1
Total number of respondents / Stakeholders Perceptions		8
Total number of respondents / Network Analysis		6

Source: Own elaboration (as presented in Article 3), 2023

3.2 Data analysis

In our research, nodes are organisations, and relations refer to information exchange about illegal logging and associated trade. In this case, information exchange was understood as a directional relation (i.e., from node A to node B and/or from node B to node A), characterised by four attributes, as presented in Table 8. Two attributes were considered for the network analysis, each with three possible attribute levels, i.e. quantity (sufficient, insufficient, no exchange) and quality (reliable, unreliable, unknown) of information exchange. We assumed that if the exchange was evaluated as sufficient and reliable, it can be considered a strong tie. If the relation is insufficient and reliable, it could be taken as an indication of a weak positive tie. If the exchange is evaluated insufficient and reliable, it could be taken as a weak negative tie. Finally, when a relation between actors is evaluated insufficient and unreliable, it could be considered as a strong negative tie, which could further imply low levels of trust between organisations.

Table 8: Attributes of information exchange relations and their characterisation and interpretation

Attribute	Country/ Institution	Respondents
Direction	Uni-directional (only A->B or B ->A)	Sufficient + Reliable = Strong positive exchange = 4
	Bi-directional (A->B and B->A)	Insufficient + Reliable = Weak positive exchange = 3
		Sufficient + Unreliable = Weak negative exchange = 2
		Insufficient + Unreliable = Strong negative exchange = 1
Quantity	Sufficient = 4	
	Insufficient = 2	
Quality	Reliable information = 4	
	Unreliable information = 2	
	Unable to assess = 1	

Source: Own elaboration, 2024

Data for each identified key actor in each selected country were gathered via the above-mentioned survey (3.1). Based on these data, individual organisational (i.e., key actor) ego networks of information exchange were created. Those ego networks were merged into one “complete” network, and basic network statistics were computed. In this research we were particularly interested in network visualisation, as we wanted to visualise who is included (and who is not) in the exchange of information and how those exchanges could be characterised by providing the most relevant network metrics. For visualisation, the Gephi software was used.

3.3. Limitations and possible improvements

A potential issue with egocentric designs is that all the information about the alters and the ties among them are elicited from the ego and are, therefore, potentially inaccurate. Another key limitation of an egocentric approach may lie in the inability to map the broader social structure in which ego networks are embedded. That is, while ego network data can tell us about local networks (and ego’s position within those local networks), they cannot provide information about the larger and more complex structural context in which these local networks operate (Perry *et al.*, 2018). Regardless, insights from network analysis can shed light on actors' potential structural advantages and provide valuable information on information exchange and potential dispersion among the actors. Results can be used in efforts to investigate the network composition and its characteristics further. In this sense, conducting the study on sub-national and national levels could potentially provide insights into complete chains of information exchange and bottlenecks in communication.

4. Background of the study

Serbia has 2,237,511 ha covered by forests which correspond to about 29% of the national land (Republican Bureau of Statistics, 2021a). 57% of forests in Serbia are owned by private forest owners and 43% are state-owned. Private forests are small and fragmented, being owned by approximately 900,000 forest owners (Malovrh *et al.*, 2015) with an average size for private forests of about 1.42 ha. State forests are managed by the Public Enterprise Srbijasume in all Serbia but the autonomous province of Vojvodina, where public forests are under the responsibility of the Public Enterprise Vojvodinasume.

In 2019, 26,678 m³ of timber were illegally logged in Serbia, while an additional 700 m³ were damaged by human activities (Republican Bureau of Statistics, 2021b, p. 51) including theft of forest assortments and other damages. As Serbia is a non-EU country, it is not directly obliged to transpose EU timber legality requirements, such as those of EUTR or EUDR, within its normative framework. Nevertheless, since Serbia was granted EU candidate status in 2003, it is requested to align its national law and policies framework to the EU one. To this aim, the Policy and Legal Advice Centre (PLAC) project focuses on legal assistance, through amending the legislation in

the process of harmonizing the national legislation with the EU acquis. Preparation to embodying EUTR requirements into national law and policies so far proceeded slowly, and due diligence standards and systems are not well developed yet. Unregistered/illegal logging occurs in the country in some instances because of government corruption, administrative procedures needed for felling in private forests, and weak connections between forestry and the wood processing industry (Radosavljevic *et al.*, 2023). It seems that legality is not considered a priority in the wood processing industry and forestry, as there were no meetings among forest producers/companies in Serbia to discuss illegality risks (Ministry of Agriculture of the Czech Republic, 2015).

The proposals put out by the PLAC project titled "Legal Harmonization with FLEGT and EUTR-Demands, Needs, and Consequences" aimed to bring the Forests Law into conformity with the EUTR Directive. Furthermore, recent research revealed that the FLEGT Regulation has not been incorporated into domestic laws, strongly suggesting the development and ratification of timber-specific legislation consistent with EUTR (Radosavljevic *et al.*, 2023).

The Forestry Directorate was engaged in the project "Improvement of forest management in Serbia as a contribution to climate change adaptation and mitigation" financed via the EU Twinning Tool (Ministry of Agriculture, Forestry and Water Managements, 2020). The primary aim of this project was to enhance the capabilities of the Serbian forest sector to effectively implement responsibilities arising from EU regulations and standards pertaining to forestry and its associated domains, such as the timber market, Forest Information System, subsidies, Natura 2000, and bioeconomy (Ministry of Agriculture, Forestry and Water Management, Directorate of Forests. 2020, p. 3). As a consequence of the project's completion in December 2022, a new guideline for forest information systems in Serbia is expected to be released shortly (personal conversation with a representative of the Ministry, 2023).

5 Results: Perceived Information Exchange Network in Serbia

Research results are reported below, by providing an overall description of the network(s) (5.5.1) and then focusing on actors' roles and relations in terms of information exchange (5.5.2).

5.1. Who is in the network?

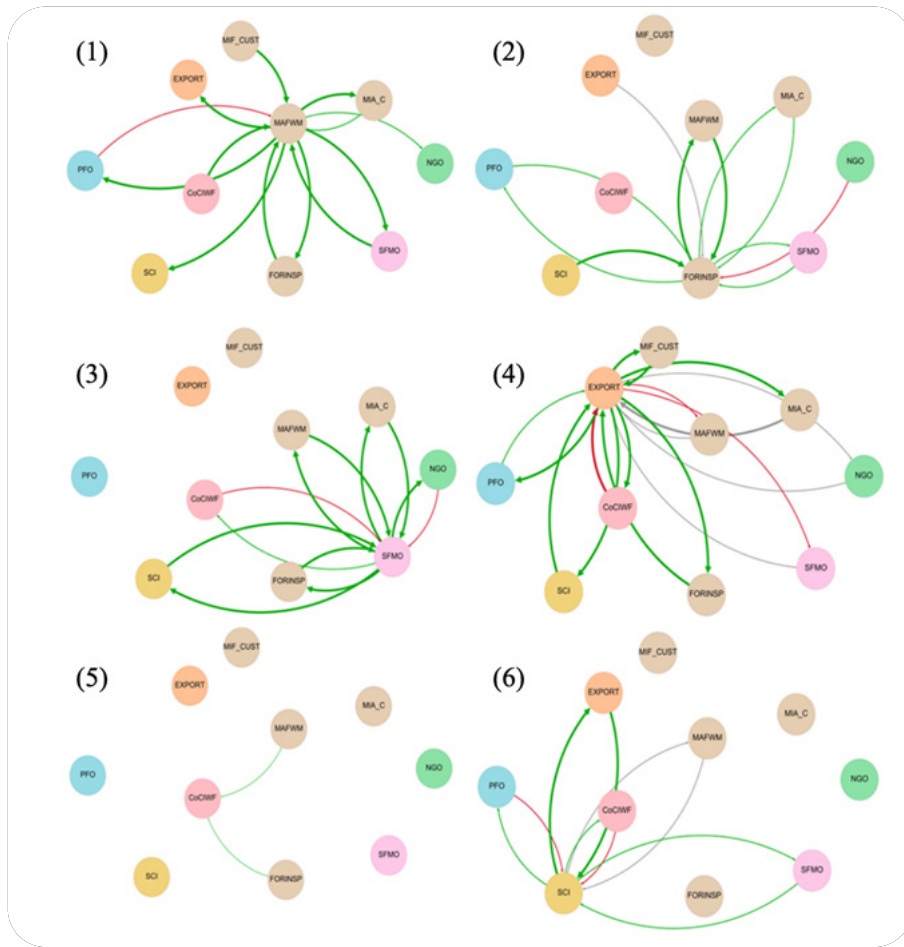
In Serbia, six actors provided responses on exchanging information, so the network was based on six perceived ego networks and illustrates ten key actors (organisations) exchanging information on timber legality in Serbia, as perceived by the six decision-makers responding to our survey (Table 9). Based on respondent answers, the ego network visualisation was created (Figure 2) with corresponding basic metrics (Table 10).

Table 9. List of organisations that exchange information on timber legality as perceived by respondents

Id	Organisation	Abbreviation	Type		Role
1	Ministry of Agriculture, Forestry and Water Management	MAFWM	GOV	Governmental body	Forest policy-making, forest monitoring, forest funding.,
2	State Forest Management Organizations	SFMO	STATE COM	Public enterprise	Sustainable management of state-owned forests.
3	Forestry Inspection	FORINSP	GOV	Governmental body	Monitoring and enforcing compliance with forestry laws, regulations, and sustainable management practices.
4	Private forestry owners	PFO	PRIVATE	NGO	Forest management of private forests.
5	Customs Office	MIF_CUST	GOV	Governmental body	Facilitates trade, ensures rule compliance, secures borders, preventing the entry of illegal goods.
6	Ministry of Internal Affairs, Courts	MIA_C	GOV	Governmental body	Ensure law enforcement and public safety, administer justice, and uphold the principles of the rule of law.
7	Chamber of Commerce and Industry, Wood and Forestry Sector	CoCIWF	ASSOC	Governmental Body	Promoting business interests and facilitating collaboration within the wood and forestry industry.
8	Private Companies-Exporters	EXPORT	PRIVATE COM	Private Enterprise	The export of wood products, contributing to economic growth, and enhancing the competitiveness of the timber industry.
9	Scientific institutions	SCI	SCI_INST	Scientific Organization	Education, research, and expertise, advancing sustainable forestry practices.
10	Non-governmental organisations	NGO	NGO	Non-Governmental Organization	Advocating for the protection and sustainable management of the forests, fostering environmental awareness.

Source: Own elaboration (2023)

a. Ego networks for Serbia (1-MAFWM; 2-FORINSP; 3 - SFMO; 4 - EXPORT; 5-COCFWI; 6- SCI)



b. Network of ego networks for Serbia

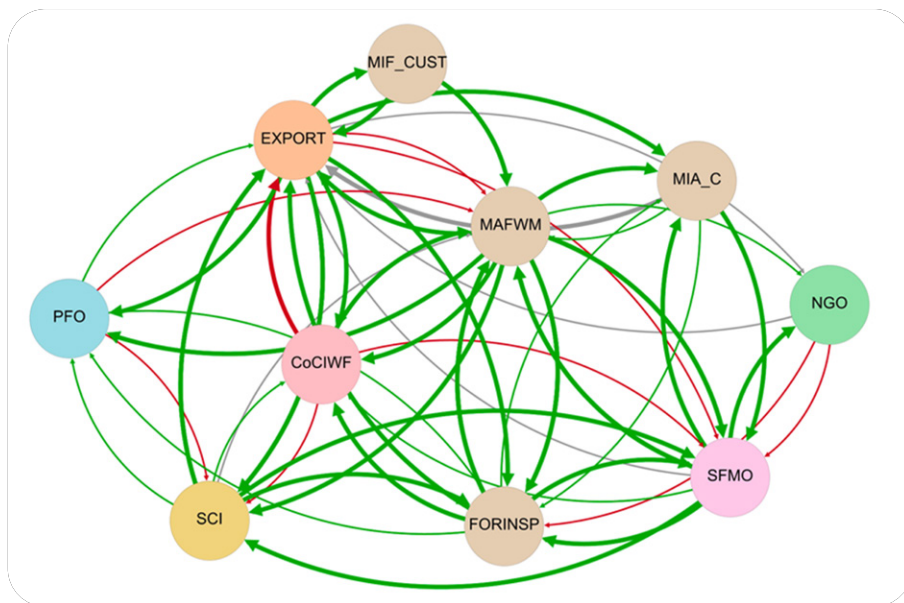


Figure 2. Six ego networks and b. Network of ego networks (with duplicated relations); the colour of the line presents quantity (thick - sufficient exchange, thin - insufficient exchange); while thickness represents quality (green - reliable, red - unreliable exchange); Source: Own elaboration, 2024

Table 10. Network metrics with duplicate relations

Id	Abbr.	Role	Indegree	Outdegree	Degree	Weighted indegree	Weighted outdegree	Betweenness centrality
1	MAFWM	GOV	10	12	22	32	42	8957143
2	SFMO	STATE COM	10	10	20	30	32	4902381
3	FORINSP	GOV	10	8	18	30	26	3471429
4	PFO	PRIVATE	4	4	8	12	8	0
5	MIF_ CUST	GOV	1	2	3	4	8	0
6	MIA_C	GOV	4	4	8	14	12	0
7	CoCIWF	ASSOC	5	4	9	16	12	0
8	EXPORT	PRIVATE COM	11	11	22	36	36	18204762
9	SCI	SCI_INST	8	8	16	24	24	1297619
10	NGO	NGO	3	3	6	8	6	0

Source: Own elaboration (2024)

EXPORT has the highest degree and centrality scores as it is the most connected node, with the most incoming and outgoing connections. It indicates it can act as a bridge between other nodes in the network more often than any other node. MAFWM also has a high degree and centrality scores, but a lower Betweenness Centrality (8957143) compared to EXPORT. This suggests that MAFWM is also a highly connected node. MIF_CUST, PFO, MIA_C, CoCIWF, and NGO all have a Betweenness Centrality of 0, indicating that they do not act as bridges between other nodes in the network. MIF_CUST has the lowest degree scores suggesting that MIF_CUST is the least connected node in the network.

5.2. Actors roles and relations: focus on information exchange

To appropriately manipulate the network data and represent the network structure, duplicate relations were cleaned (deleted). The resulting cleaned network contains ten nodes and a total of 53 connections (arcs) (Figure 3).

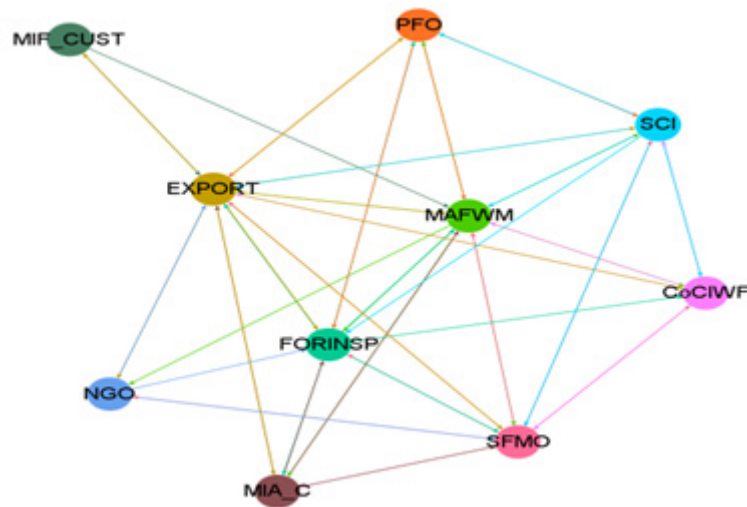


Figure 3. Network of actors (organisations) that exchange information on timber legality in Serbia based on the perceptions of key actors; layout Force Atlas; each node presents one of the identified actors in information exchange and has a unique colour; colour of arcs corresponds to the colour of the nodes. (Source: Own elaboration, 2024)

The average degree of the cleaned network is 5.3, meaning that each actor is connected with 5.3 other actors on average. The network's density is 0.589, meaning 58.9% of all possible connections are present (Borgatti *et al.*, 2018).

Looking into the network metrics (Table 11), it can be noticed that several nodes that are central to the network. The nodes with the highest centrality scores are likely to play an important role in communication and information flow within the network. The actor with the most connections is EXPORT Degree 18.00), who is also closest to all other nodes in the network (Closeness Centrality 1.00). MAFWM has the highest Eigen Centrality (0.93), suggesting that it is connected to many nodes who themselves have high centrality scores. FORINSP has the highest Betweenness Centrality (3416667), indicating that it acts as a bridge between other nodes in the network more often than any other node. Low scores of MIF_CUST (degrees scores, centrality scores, hubs and authority scores and page ranks), suggest that MIF_CUST is the least connected node in the network. PFO, MIA_C, and NGO all have a Clustering score of 1.00, indicating that their neighbours are all directly connected.

The network is relatively well-connected. The average clustering coefficient is 0.803. Since the coefficient ranges from 0 to 1 (Borgatti *et al.*, 2018; Chalancon *et al.*, 2013), this value indicates a high clustering level. This means that the nodes in the network tend to group together or to form densely connected subgroups. The average path length is 1.141.

Table 10. Network metrics with duplicate relations

Id	Label	Indegree	Outdegree	Degree	Closeness Centrality	Betweenness Centrality	Clustering
1	MAFWM	8.00	8.00	16.00	0.90	45481	0.51
2	SFMO	7.00	7.00	14.00	0.82	16528	0.67
3	FORINSP	7.00	6.00	13.00	0.75	3416667	0.66
4	PFO	4.00	4.00	8.00	0.64	0.20	0.92
5	MIF_CUST	1.00	2.00	3.00	0.56	0.00	1.00
6	MIA_C	4.00	4.00	8.00	0.64	0.00	1.00
7	CoCIWF	5.00	4.00	9.00	0.64	0.20	0.95
8	EXPORT	9.00	9.00	18.00	1.00	45491	0.49
9	SCI	5.00	6.00	11.00	0.75	1333333	0.83
10	NGO	3.00	3.00	6.00	0.60	0.00	1.00

Id	Eigen Centrality	Authority	Hub	Page Ranks
1	0.93	0.40	0.42	0.14
2	0.89	0.38	0.38	0.13
3	0.87	0.38	0.34	0.13
4	0.59	0.26	0.25	0.08
5	0.17	0.07	0.14	0.03
6	0.62	0.26	0.26	0.08
7	0.73	0.32	0.25	0.09
8	1.00	0.43	0.43	0.16
9	0.69	0.29	0.36	0.10
10	0.47	0.20	0.20	0.06

Source: Own elaboration (2024)

From the 53 identified arcs, 48 (90.57%) present edges, meaning mutual, two-sided information exchange (Figures 4 and 5).

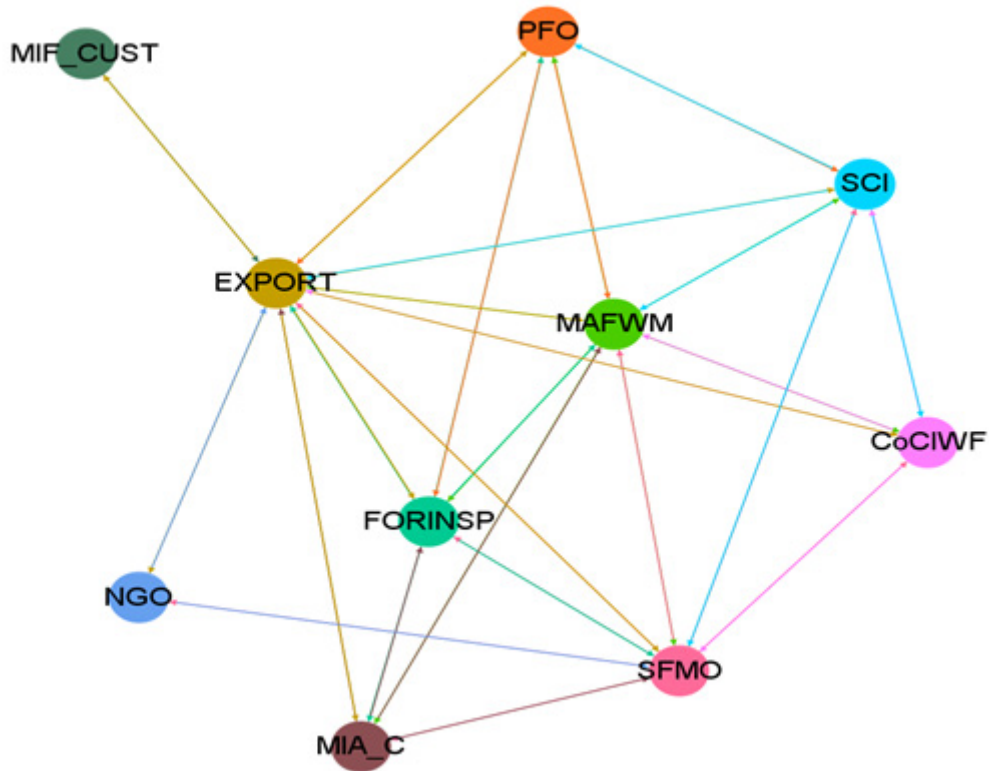


Figure 4. Network of actors with mutual connections

The network is relatively heterogeneous as the nodes vary in indegree, outdegree, and centrality metrics. This suggests that the nodes play different roles within the network. The average closeness centrality is 0.75, and the average harmonic closeness centrality is 0.83, indicating that it is relatively easy for information to flow from one node to any other node in the network.

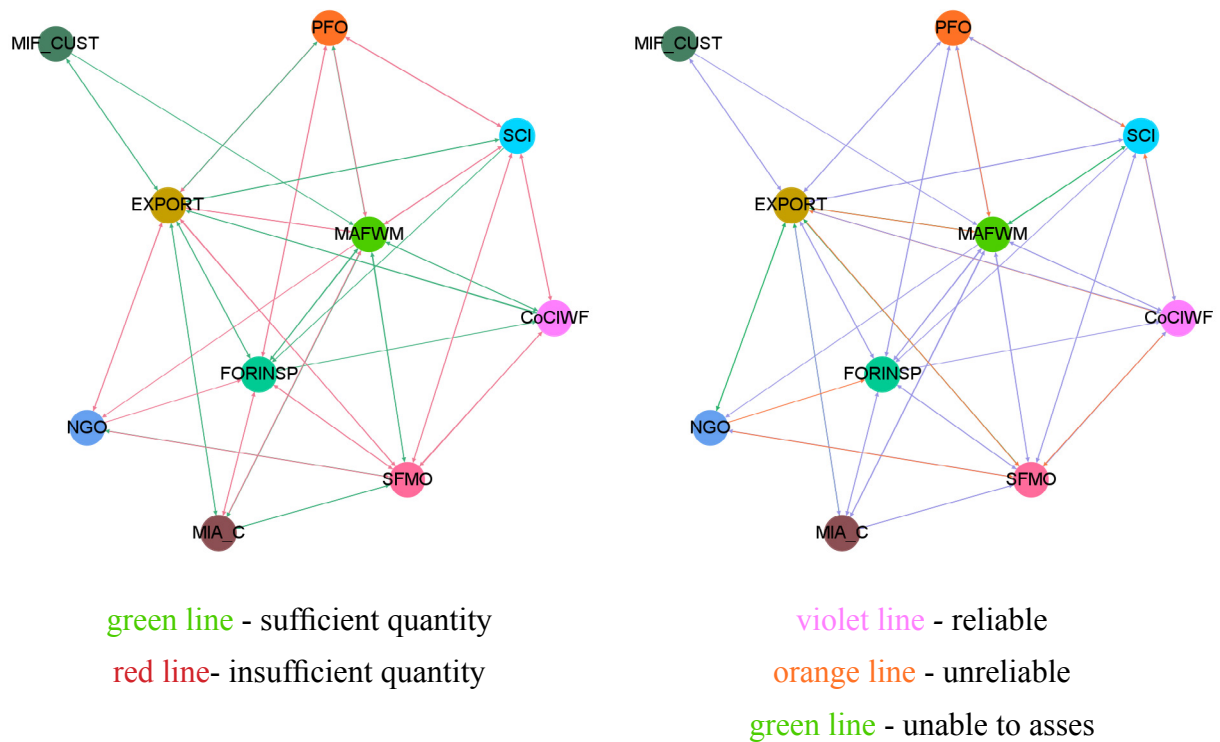


Figure 5. Perceived quantity (left) and quality (right) of information exchange among actors

State actors, namely MAFWM, SFMO, and FORINSP are well connected among themselves. From Figure 6 it is observable that between state actors (MAFWM, SFMO, FORINSP, MIF_CUST) exchange of information is perceived as mutual, sufficient and reliable indicating strong ties. On the other side, non-state actors (PFOs, NGOs, COCIFW) or non-forestry actors (MIF_CUST, MIA_C) are less connected with the state actors and among themselves. They exhibit fewer mutual sufficient exchanges of information, with fewer actors, indicating weaker ties (Granovetter, 1973).

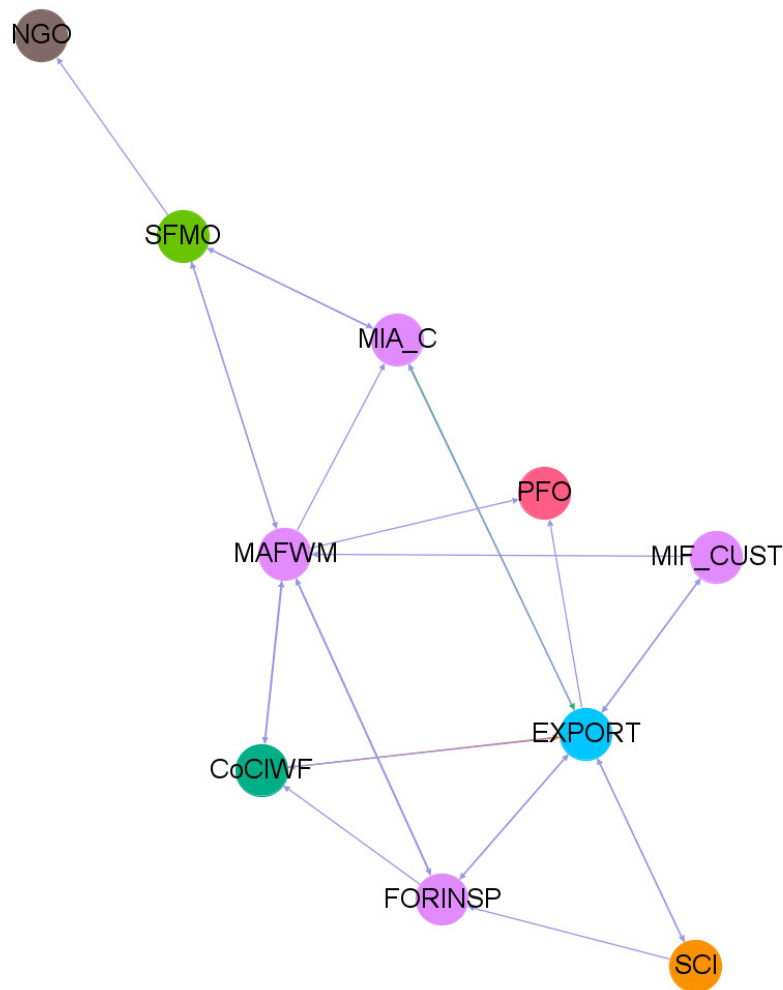


Figure 6. Network with only sufficient exchange of information. The colour of edges indicates the perceived quality of the information exchange among actors (reliable - violet, unreliable-red, unassessed - green).

6. Discussion

The network analysis of the perceived information exchange on timber legality in Serbia reveals several types of actors, ranging from governmental bodies to private enterprises and non-governmental organizations (NGOs). The involvement of governmental and non-governmental actors is said to be essential to addressing the complex and fragmented social needs, as traditional governments do not always have the required skills and resources to provide adequate services and fulfil needs (Dal Mollin and Masela, 2015; Baycheva-Merger and Sotirov, 2020).

At the core of this network, entities such as the Ministry of Agriculture, Forestry and Water Management (MAFWM), State Forest Management Organizations (SFMO), and Forestry Inspection (FORINSP) emerged as central actors, reminiscent of the policy network approach's emphasis on coordination and shared partnerships (Knoke, 1994). Their roles in forest policy-

making, sustainable forest management, and law enforcement contribute significantly to the network's overall connectivity and information flow, showcasing their pivotal roles in facilitating information exchange (Baycheva-Merger and Sotirov, 2020). Yet, the connections between governmental and non-governmental actors seem weak, illustrating the dominance of public actors (Rogelja and Shannon, 2017).

The high density of the network (58.9) underscores the substantial interconnectedness among state actors (Borgatti *et al.*, 2018). Further examining network metrics, the average degree of 5.3 reflects a reasonably connected network and a clustering coefficient of 0.803 indicates the formation of tightly connected subgroups (Borgatti *et al.*, 2018). The high average closeness centrality of MAFWM, SFMO, and FORINSP indicates their ability to disseminate information rapidly (Leifeld and Schneider, 2012), echoing the policy network's emphasis on shared partnerships in efficient information exchange (Peters and Pierre, 2010).

Private enterprises, particularly those involved in exporting wood products (EXPORT), seem to contribute significantly to the network's structure. Yet, such an image might be deceiving, as the category of private enterprises depicts the perceptions of the sole respondents. As such, this depiction cannot be generalised on the whole “population” of private forest enterprises in Serbia and is not representative of the connections between the country's private and public forest sectors. While this represents a methodological limitation of the study, it still brings valuable contributions, as Serbian timber exporters have to exchange information with all identified public actors.

Interestingly, the organisation (CoC) that should represent the interest of private companies seems to be relatively poorly connected with other actors, reporting exchanges with only two actors. Additionally, organisations such as the Association of Private Forest Owners, managers of protected areas and Anti-corruption agencies were not recognised as key actors exchanging information on the timber legality. Moreover, although respondents recognised the importance of forest certification in ensuring timber legality, none indicated any information exchange with forest certification organisations (FSC and PEFC, or FSC/PEFC accredited certification bodies). Similarly, no information exchange with EUTR Monitoring Organisations were reported. Whilst this might be reasonable for actors that have regulatory roles, it is more surprising for actors such as forest management organisations or exporters. Timber operators and control authorities will have a significant burden in future EUDR implementation (Köthke, *et al.*, 2023), so strengthening of relations with certification organisations, forest owners, and managers could be expected.

Despite the robustness of the network, the perceived quantity and quality of information exchange reveal areas for improvement, emphasizing the need for policy interventions to enhance collaboration and information flow (Krackhardt, 1990; Knoke, 1994). Approximately 53% of exchanges are deemed insufficient in quantity, indicating potential gaps in the flow of essential information.

Policymakers should address these gaps to ensure a comprehensive understanding of timber legality matters among network actors.

The further analysis uncovers a pattern where governmental agencies and state enterprises engage in significant mutual information exchange, forming strong positive ties. However, non-state actors, including scientific institutions (SCI) and private forestry owners (PFO), exhibit fewer connections, indicating a potential need for targeted efforts to foster collaboration and reduce information isolation (Baycheva-Merger and Sotirov, 2020).

A low number of weak components (one) suggests that the actor's network is more cohesive and that the actor has fewer weak ties to different stakeholder groups. Whilst this can benefit the actors in terms of maintaining strong social relationships and receiving support from their network (Granovetter, 1973), it limits the opportunity to access new and diverse information from other stakeholder groups.

To address these dynamics, policymakers might consider strengthening connections among non-state actors, promoting more balanced and inclusive information exchange (Leifeld and Schneider, 2012). Additionally, efforts to improve the perceived quantity and quality of information exchange, especially among less connected actors, could enhance the overall effectiveness of timber legality policies. The observed transitivity and bonding structures underscore the importance of trust and common partnerships (Leifeld and Schneider, 2012), suggesting that building on existing relationships may be key to fostering a more resilient information exchange network in the context of timber legality in Serbia.

Information is a political asset as it can be used strategically to steer its recipients in a particular direction (Sabatier, 1978; Weible *et al.*, 2010). This implies that, in Serbia, state actors may benefit from the strategic use of forest information and satisfy their interests based on their structural positions and mandatory powers (Baycheva-Merger and Sotirov, 2020). Other actors, such as private forest owners, NGOs and private enterprises, may be disadvantaged or have conflicting interests.

7. Conclusions

This article investigated and discussed the role of policy networks in the context of timber legality in Serbia. It argued that policy networks are essential for effective collaboration and information exchange and that network governance can be used to promote more equitable and inclusive decision-making.

The network analysis aligns with the principles of the policy network approach, emphasizing the collaborative nature of governance structures and the interconnected roles of diverse stakeholders (Krackhardt, 1990; Knoke, 1994; Borgatti et al. 2018). The network's effectiveness hinges on the synergistic collaboration of governmental bodies, private enterprises, and non-state actors, underscoring the need for targeted interventions to enhance information exchange, address gaps, and fortify the overall resilience of timber legality policies in Serbia.

The findings highlight the importance of strong connections between governmental and non-governmental actors and suggest that the dominance of public actors in the information exchange network for timber legality in Serbia remains a potential weakness. As trust is essential for building strong relationships and facilitating cooperation, captured network structure may be indicative of high levels of trust among state actors and weak ones with the scientific community, private forest owners, enterprises and civil society organizations. This indicates that the policymakers should focus on strengthening connections with non-state actors, promoting more balanced and inclusive information exchange, and improving the perceived quantity and quality of information exchange.

Overall, the results provide a valuable contribution to the first steps of understanding policy networks and network governance in the context of timber legality in Serbia. Findings highlight the challenges and opportunities associated with these concepts and suggest that policymakers should focus on strengthening connections, fostering trust, and promoting more equitable decision-making. Although methodological biases should be highly acknowledged, the research that has been undertaken illustrates the usability of network analysis and the application of policy network concepts. Future research activities will develop similar analyses also for the other targeted countries, allowing for additional considerations and a more complete picture of the region.

6.COMMON DISCUSSION

While Article 3 synthesised and discussed the findings on institutional and actors-oriented factors influencing timber legality in selected Western Balkan countries (Croatia, Montenegro, Serbia, Slovenia, and the Republic of Srpska (Bosnia and Herzegovina)), Article 4, as selected an illustrative case, zooming in on Serbia and discussing a policy actor network involved in information exchange. This chapter consolidates all the findings and provides conclusive answers to the research questions posed, offering a comprehensive discussion (Table 12).

This exploratory research deployed a multiple case study approach and a combination of qualitative methods, with the general objective to contribute to advancing knowledge on the transposition of EU timber legality requirements in selected Western Balkan countries. Framed within a three-year period, the research explored policies and key actors in the transposition of the EU timber legality requirements, thus providing useful novel information and perspectives to inform future research as well as policy-making in the region.

Concerning the initial specific objective (SO1: To analyse the adaptation of policies in Western Balkan countries to the EUTR), two pertinent questions were addressed: (RQ1.1) How did the Western Balkan countries adjust their policies to align with the EUTR? and (RQ1.2) To what degree and in what manner did they implement the requirements stipulated by the EUTR?

Articles 1 and 2 addressed the first research question (RQ1.1). Our findings indicate that integrating EUTR requirements into regulatory texts is driven by international governance regimes (Begemann *et al.*, 2021). This is evident in EU member states like Slovenia and Croatia: both complied with the EUTR and implemented its requirements (Radosavljevic *et al.*, 2021 and 2023), though deploying different approaches to policy integration. Croatian approach resembles layering as it adopted a new policy on the EUTR implementation (Sotirov, 2022), yet the policy instruments and procedures did not significantly change from procedures already prescribed by the Forest Act (Radosavljevic *et al.*, 2021). Slovenia opted for a conversion approach (Sotirov, 2022) as it introduced EUTR obligation through amendments to the Forest Act (Radosavljevic *et al.*, 2021). Analysed non-EU Western Balkan countries (Serbia, Republic of Srpska and Montenegro) did not fully adapt their policies to the EUTR; it is worth noting that Montenegro and the Republic of Srpska have Action plans for the prevention of illegal logging. The national forest laws were largely aligned with the European Union Timber Regulation (EUTR), although not fully.

In short, all countries exhibit robust formal institutions characterised by top-down policies and stringent legislation about timber legality, being aligned with other studies on governance arrangements of the forest sector (Giessen *et al.*, 2016). Such frameworks must be clear enough to disincentivize unsustainable forest exploitation to be effective (Begemann *et al.*, 2021).

Unfortunately, in non-EU member countries, this was not the case, which might further incentivise the private sector or private forest owners to comply. So, the extent of adaptation to the EUTR requirements varies from country to country, influenced by international governance regimes (Begermann *et al.*, 2021; Giesen *et al.*, 2016; Cashore, 2016) as well as national institutional and actors-oriented factors (Radosavljevic *et al.* in review).

Compliance with timber legality regulations and effective implementation is contingent upon the efficiency of monitoring and enforcement mechanisms (Begermann *et al.*, 2021). Despite the official commitment, there is a notable lack of resource allocation for the implementation of the European Union Timber Regulation (EUTR) in all analysed EU member countries, although in varying degree (European Commission, 2020, Radosavljevic *et al.*, 2021). Non-EU countries encounter even more difficulties than EU member countries in implementation of national legislation pertaining to timber legality, due to a limited number of forest inspectors and other resource limitations (Radosavljevic *et al.*, 2021, 2023), mirroring similar concerns observed in EU countries (European Commission, 2020). Thus, monitoring and enforcement should be imperative in all analysed countries to ensure efficient implementation of timber legality measures.

Besides adequate funding, manpower, and technical expertise, information is essential to effectively address and mitigate illegal timber activities and implement the EUDR (Polo Villanueva *et al.*, 2023); information is essential (Baycheva-Merger and Sotirov, 2022) and this remains quite challenging in all analysed countries (Radosavljevic *et al.*, in review) where national forestry systems of information are centralised, incomplete, and under the jurisdiction of forestry and financial public administration (Radosavljevic *et al.*, 2021, 2023, in review). Several countries struggle with limited transparency and information accessibility, low data quality or missing data (Radosavljevic *et al.*, 2021 and 2023), further indicating a lack of robust enforcement.

Table 12: An overview of research questions and answers

Specific objectives	Research questions	Assumptions	Assumption status	Brief answer
1.To analyse the adaptation of policies of the Western Balkan countries to the EUTR	1.1 How did the Western Balkan countries adapt their policies to the EUTR?	<p>A1.1.1: The EU Western Balkan countries complied with the EUTR and implemented EUTR requirements.</p> <p>A1.1.2: The non-EU Western Balkan countries did not adapt their policies to the EUTR</p>	Confirmed	<p>Analysed EU Western Balkan countries (Croatia and Slovenia) complied with the EUTR and implemented its requirements.</p> <p>Analysed non-EU Western Balkan countries (Serbia, Republic of Srpska and Montenegro) did not fully adapt their policies to the EUTR</p>
	1.2 To what extent and how did they implement the EUTR requirements?	<p>A1.2.1: The EU Western Balkan countries complied with the EUTR and fully incorporated the EUTR requirements into policies.</p> <p>A1.2.2: The non-EU Western Balkan countries partially implemented EUTR requirements focusing on the supply side.</p>	Confirmed	<p>Analysed EU Western Balkan countries (Croatia and Slovenia) fully transposed EUTR requirements in regulatory policy documents, while policies of analysed non-EU Western Balkan countries (Serbia, Republic of Srpska and Montenegro) partially transpose the EUTR requirements.</p>

Specific objectives	Research questions	Assumptions	Assumption status	Brief answer
2.To identify the main actors involved in the adaptation of policies in Western Balkan countries, their roles, and relations	2.1 Who are the main actors involved in implementing policies in Western Balkan countries?	<p>A2.1.1: The main actors involved in the adaptation of policies in Western Balkan countries are governmental bodies and public forest enterprises.</p> <p>A2.1.2: Private sector actors and research and education institutions were marginally involved in the adaptation of policies in Western Balkan.</p>	Confirmed	<p>The main actors involved in the adaptation of policies in all analysed Western Balkan countries are governmental bodies and public forest enterprises.</p> <p>Private sector actors and research and education institutions are marginally involved in the adaptation of policies in all analysed Western Balkan countries.</p>
	2.2 What are the attitudes of main actors on EUTR/EUDR transposition/ implementation?	<p>A2.2.1: Actors from the EU countries have a positive attitude towards EUTR</p> <p>A2.2.2: Actors from the non-EU countries have a sceptic attitude towards EUTR</p>	Inconclusive	<p>Actors from EU-countries were more familiarised with EU polices than the actors from non-EU countries.</p> <p>Actors from state organisations with regulatory, management and monitoring roles have more positive attitudes towards EUTR than actors with advisory roles or scientific organisations</p>

Specific objectives	Research questions	Assumptions	Assumption status	Brief answer
2.To identify the main actors involved in the adaptation of policies in Western Balkan countries, their roles, and relations	2.3 What are their roles and relations?	A2.3.1: Information exchange relations are strong among state actors A2.3.2: Information exchange relations are weak among state and non-state actors	Confirmed (in case of Serbia, other cases in the pipe-line)	State actors from forest sector share mutual, sufficient and reliable information exchange relations among themselves. State actors from forest sector share either insufficient or unreliable information exchange relations with non-state actors.

Source: Own elaboration

Regarding the second research question (RQ1.2) concerning the key stakeholders, research confirmed that public entities, such as ministries overseeing forestry, financial inspectorates, customs offices, and traffic police departments, play key roles in ensuring timber legality, being aligned with similar studies on actors' constellations in the region (Dobšinská, 2020; Rogelja and Shannon, 2017).

The allocation of responsibilities among various stakeholders within the forestry sector is crucial for ensuring efficient enforcement of timber legislation and adequate forest governance (Arts, 2006; Cashore and Stone, 2012; Peters and Piere, 2010). State enterprises or extension services, such as the Slovenian Forest Service, also play significant roles at the ground level. Thus, all countries share the challenge of managing a shared responsibility landscape, which is further complicated by ongoing reforms and limitations in know-how and technical capacity.

Strengthening capacities among responsible actors and fostering cooperation with other EU member states can contribute to smoother EUDR implementation. Non-EU member countries are taking steps to strengthen their institutional framework for timber legality and sustainable forest management, but ongoing challenges include enhancing cooperation among different institutions and improving monitoring and enforcement capacities. This indicates the need for future strengthened cooperation among various types of actors, which in analysed countries is often influenced by political instability (Avdibegovic *et al.*, 2010).

Our research also found that inter-sectoral, multi-actor cooperation is weak, trust among actors is low, and - confirming what is largely reported by existing literature on illegal logging (e.g., Seneca Creeks and Wood Resources International, 2004; Cozma and Achim, 2023; Hrynyk *et al.*, 2023) - corruption plays a role in illicit activities (Radosavljevic *et al.*, 2021 and 2023; Segato, 2017). While EU member states demonstrate dedication to adherence and compliance with overall EU goals, political priority in targeted Western Balkan countries is relatively low, as illegal activities are not perceived as worrying due to small-scale, subsistence illegal logging. Two analysed countries, i.e. Republic of Srpska (BiH) and Montenegro, have action plans to counter illicit activities, indicating heightened formal political attention on resolving concerns. They also have high levels of corruption, creating unfavourable institutional conditions for access to the EU market.

Commitment to forest certification and legality verification aligns with EUTR efforts (Vasiljevic and Glavonjic, 2011; Glavonjic, 2015), but increased due diligence requirements and risk assessment processes may place additional administrative burdens on authorities, as well as costs on public and private companies. However, the expanded scope of EUDR will require adjustments to existing institutional arrangements to cover a broader range of supply chains. Civil society organisations' involvement in monitoring forest activities and advocating for sustainable practices could play a significant role in raising awareness and ensuring compliance with EUDR (Kleinsmith *et al.*, 2016).

In conclusion, addressing illegal logging in the Western Balkans requires clear and systematic approaches, emphasizing the need for country-specific measures to effectively combat this issue. The motivation and readiness of the forestry sector in the Western Balkans is questionable, so to successfully implement EUDR, Western Balkan countries should address problems in monitoring, inspection, and enforcement through the criminal justice system and corruption as a systemic social phenomenon.

7. CONCLUSIONS

The Western Balkans face several challenges in implementing and enforcing forest legality. Despite the low political priority given to this issue, approaches in transposing the EUTR at the national level vary on a broad range across targeted countries. While some developments and restructuring dynamics are observed in the forest sector across the region, enduring policies due to some conservative attitude and a persistent network of actors challenges deeper structural changes and innovation. It is crucial to address common challenges, including limited capacities for monitoring forest practices in general, not forgetting those at risk of illegality, as well as specifically monitoring and reporting illegal practices, the necessity for motivation of public and private operators and corruption risk mitigation, and the dominance of public actors in EUTR and future EUDR implementation. These challenges belong to different domains, i.e. sector governance and power distribution (the dominant role of public actors), cultural and behavioral issues associated to professional figures operating in the forest sector and how they are perceived by society (awareness of their role, social recognition, professional behavior) and effective implementation of specific actions on the ground (monitoring and reporting). Altogether they move towards a more transparent and balanced approach to illegal logging management. Ensuring technically robust, science-grounded and reliable information as well as improving transparency are reported as essential requirements to improve policy making, including in the field of contrasting forest illegality and effectively implementing EUTR in the Western Balkans.

Key factors for the successful implementation of EU timber legality requirements include improving forest governance, revising and updating the normative and policy framework, ensuring effective and efficient enforcement mechanisms, supporting implementation through capacity building and increasing awareness and commitment via enhanced transparency and stakeholder engagement. These factors must be addressed and improved upon to ensure the effective implementation of European and national legislation and combat illegal logging in the Western Balkan countries.

This research has taken initial steps in understanding stakeholder perceptions regarding the potential implementation of the EUTR and EUDR in the targeted Western Balkan countries. Acknowledging the heterogeneity of stakeholders and their varying perspectives on topics addressed by the study has been a crucial aspect of this research. By understanding stakeholder perspectives and experiences, policymakers and practitioners can work towards a more successful implementation of the EUTR and EUDR. Collaboration among the Western Balkan countries themselves is crucial to address the issue collectively and in a harmonised, consistent manner, learning from each other and sharing best practices. Strengthening cooperation and information exchange between governments, law enforcement agencies, and relevant stakeholders will enhance the effectiveness of timber legality requirements.

Addressing corruption is crucial for ensuring the successful implementation of timber legality measures and promoting sustainable forestry practices globally. This requires not only strengthening legal frameworks and accountability mechanisms but also fostering a culture of integrity and transparency within both the private sector industry and public institutions.

In synthesising these elements within the ACI framework, it becomes evident that each country's approach to ensuring timber legality is shaped by a dynamic interplay of formal regulations, cultural norms, institutional responsibilities, available resources, and levels of awareness. These components collectively influence the effectiveness of their efforts to combat illegal logging and the timber trade, highlighting the need for comprehensive and coordinated strategies to address this wicked problem.

Based on our findings, the forestry sector in all five targeted countries is dynamic, currently undergoing changes vis-a-vis multiple challenges, including aligning with EU policies and regulations. We pointed out that there is room for improvement in terms of capacities (e.g., human, technological, and infrastructural), legal responsibilities, and information access and availability. It seems that to ensure better governance of the forestry sector in the Western Balkans, in addition to an effective mix of policy tools, a true political will, multi-level and cross-sectoral cooperation, as well as higher awareness of all relevant actors are needed. However, how much of that will be changed remains to be seen after another “Western Balkan transition” chapter.

Our findings extend beyond just addressing illegal logging and EUTR implementation, as they are pre-requirements for contributing to a better and more effective policy-making in analysed Western Balkan countries with the final aim to improve and innovate the forest sector. As forestry is a multidisciplinary subject a real cross-sectoral policy approach is needed. This includes an interplay of different stakeholder groups and an effective combination of multiple policy instruments. Besides regulatory ones, voluntary instruments, like (among others) forest certification, can also be further adopted as while providing (some) support in dealing with by-law requirements. Such instruments hold the potential to support the transition towards a better forest sector governance - including by reinforcing the role of the private sector and supporting private-public partnerships, as well as providing marketing tools for forest-based products and services. This is particularly important given the dominant position of public/state actors highlighted by our research and, in particular, by the preliminary results of the network analysis.

The implementation of forest certification schemes and standards across the region remains patchy and uneven across countries. Nonetheless recent developments, including the reinforcing of the Adria-Balkan FSC regional program and the issuing of the first FSC group chain of custody certification in Bosnia and Herzegovina, may stand as early signals of emerging forces and trends.

Future research should follow up on the dynamic situation in the Western Balkans to provide scientific guidance and know-how for policymakers to build capacities and identify feasible solutions for addressing illegal logging and improve forest governance in the region. Research focusing on actors' knowledge, perceptions, and information exchange would facilitate the research-policy interface.

REFERENCES

References Chapter 1

Acheampong, E., & Maryudi, A. (2020). Avoiding legality: Timber producers' strategies and motivations under FLEGT in Ghana and Indonesia. *Forest Policy and Economics*, 111, 102047.

Aggestam, F., & Pülzl, H. (2018). Coordinating the Uncoordinated: The EU Forest Strategy. *Forests*, 9 (3), 125. <https://doi.org/10.3390/F9030125>

Akyüz, K. C., Yildirim, I., Balaban, Y., Gedik, T., & Korkut, S. (2010). Examination of forest products trade between Turkey and European Union countries with gravity model approach. *African Journal of Biotechnology*, 9, 2375-2380. doi:10.5897/AJB2010.000-3046.

Austin, K. G., González-Roglich, M., Schaffer-Smith, D., Schwantes, A. M., & Swenson, J. J. (2017). Trends in size of tropical deforestation events signal increasing dominance of industrial-scale drivers. *Environmental Research Letters*, 12. <https://doi.org/10.1088/1748-9326/aa6a88>

Avdibegović, M., Nonić Dragan, D., Posavec, S., Petrović, N., Marić, B., Milijić, V., Krajter, S., Ioras, F., & Abrudan, I. V. (2010). Policy options for private forest owners in Western Balkans: A qualitative study.

Bausano, G., Masiero, M., Migliavacca, M., et al. (2023). Food, biofuels or cosmetics? Land-use, deforestation and CO2 emissions embodied in the palm oil consumption of four European countries: a biophysical accounting approach. *Agricultural Economics*, 11, 35. <https://doi.org/10.1186/s40100-023-00268-5>

Begemann, A., Giessen, L., Roitsch, D., Roux, J. L., Lovrić, M., Azevedo-Ramos, C., Boerner, J., Beeko, C., Cashore, B., Cerutti, P. O., de Jong, W., Fosse, L. J., Hinrichs, A., Humphreys, D., Pülzl, H., Santamaria, C., Sotirov, M., Wunder, S., & Winkel, G. (2021). Quo vadis global forest governance? A transdisciplinary Delphi study. *Environmental Science and Policy*, 123, 131-141. <https://doi.org/10.1016/j.envsci.2021.03.011>

Berning, L., & Sotirov, M. (2023a). The coalitional politics of the European Union Regulation on deforestation-free products. *Forest Policy and Economics*, 158, 103102. <https://doi.org/10.1016/j.forpol.2023.103102>

Berning, L., & Sotirov, M. (2023b). Hardening corporate accountability in commodity supply chains under the European Union Deforestation Regulation. *Regulation and Governance*, 17, 870-890. <https://doi.org/10.1111/rego.12540>

Borsky, S., Leiter, A., & Pfaffermayr, M. (2018). Product quality and sustainability: The effect of international environmental agreements on bilateral trade. *World Economy*, 41, 3098-3129. <https://doi.org/10.1111/twec.12718>

Botric, V. (2012). Intra-industry Trade between the European Union and Western Balkans: A Close-up. In EIZ Working Papers. The Institute of Economics. https://www.eizg.hr/UserDocsImages/publikacije/serijske-publikacije/radni-materijali/Intra-industry_Trade_between_the_European_Union_and_Western_Balkans_A_Close-up.pdf?vel=335990

Brusselaers, J., & Buysse, J. (2021). Legality requirements for wood import in the EU: Who wins, who loses? *Forest Policy and Economics*, 123, 102338. <https://doi.org/10.1016/J.FORPOL.2020.102338>

Buongiorno, J. (2016). Gravity models of forest products trade: Applications to forecasting and policy analysis. *Forestry*, 89, 117-126. <https://doi.org/10.1093/forestry/cpw005>

Clientearth. (2020). Internal Illegal logging-evaluation of EU rules (fitness check)-EUTR and FLEGT Regulation: Our call for a more effective regulatory approach to tackle illegal logging.

Donoso, P. J., & Gerding, V. (2018). Forest Degradation: When Is a Forest Degraded? *Forests*, 9(11), 726. <https://doi.org/10.3390/f9110726>

EU FLEGT Facility (2023). VPA Unpacked. Retrieved from <https://vpaunpacked.org/www.vpaunpacked.org/en/vpa-unpacked.html> (last accessed: 06.01.2024)

European Commission. (2020). COM (2020) 629 final REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL (the EU Timber Regulation) Biennial report for the period March 2017 - February 2019.

European Commission. (2020). Environment/Forests/Timber Regulation. Retrieved from https://ec.europa.eu/environment/forests/timber_regulation.html (last accessed on 07.12.2020)

European Commission. (2021a). Proposal for a Regulation of the European Parliament and of the Council on the making available on the union market as well as export from the union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010. COM (2021) 706 final.

European Commission. (2021b). New EU Forest Strategy for 2030. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. COM (2021) 572 final. Brussels: European Commission.

European Commission. (2023). Regulation (EU) 2023/1115 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation.

European Court of Auditors (ECA). (2015). Special Report NO 13: EU support to timber-producing countries under the FLEGT action plan. Luxembourg: European Court of Auditors. (https://www.eca.europa.eu/lists/ecadocuments/sr15_13/sr_flegt_en.pdf)

European Parliament and the Council of the European Union. (2010). REGULATION (EU) No 995/2010 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market.

FAO (2023). Reducing forest degradation. Available at: <https://www.fao.org/sustainable-forest-management/toolbox/modules/reducing-forest-degradation/basic-knowledge/ru/> (last accessed: 04.01.2024)

FAO, UNEP. (2020). The State of the World's Forests 2020: Forests, biodiversity and people, The State of the World's Forests 2020. Rome. DOI: 10.4060/ca8642en

Federici, S., Tubiello, F. N., Salvatore, M., Jacobs, H., Schmidhuber, J. (2015). New estimates of CO2 forest emissions and removals: 1990-2015. *Forest Ecology and Management*, 352, 89-98. <https://doi.org/10.1016/j.foreco.2015.04.022>.

Food and Agriculture Organization of the United Nations (FAO). (2020). Global Forest Resources Assessment 2020: Key Findings. (<https://www.fao.org/3/CA8753EN/CA8753EN.pdf>)

Gan, J., Cerutti, P. O., Masiero, M., Pettenella, D., Andrighetto, N., & Dawson, T. (2016). Quantifying Illegal Logging and Related Timber Trade. Vienna.

Gebert, A. (2019). Remote Sensing Methods for Detecting Deforestation and Illegal Logging in Bosnia and Herzegovina. Lund University.

Giurca, A., Jonsson, R., Rinaldi, F., & Priyadi, H. (2013). Ambiguity in Timber Trade Regarding Efforts to Combat Illegal Logging: Potential Impacts on Trade between South-East Asia and Europe. *Forests*, 4, 730-750. doi:10.3390/f4040730.

Glavonjić, B. (2015). Proving legality of wood and wood products-current development in Serbia.

Glavonjić, B. (2021). The Impact of the Covid-19 Pandemic on the Wood and Furniture Industry in Serbia. *Drvotehnika*, 6-8.

Hoare, A. (2015). Chatham House Report Tackling Illegal Logging and the Related Trade. What Progress and Where Next?

Houghton, K., & Naughton, H. (2017). Trade and sustainability: the impact of the International Tropical Timber Agreements on exports. *International Environmental Agreements: Politics, Law and Economics*, 17, 755-778. doi:10.1007/s10784-017-9373-x.

Jonsson, R., Giurca, A., Masiero, M., Pepke, E., Pettenella, D., Prestemon, J., & Winkel, G. (2015). EU Timber Regulation and FLEGT Action Plan: Lessons learned and policy implications.

Kissinger, G., Herold, M., & De Sy, V. (2012). Drivers of Deforestation and Forest Degradation: A Synthesis Report for REDD+ Policymakers. Lexeme Consulting, Vancouver Canada. https://www.forestcarbonpartnership.org/sites/fcp/files/DriversOfDeforestation.pdf_N_S.pdf

Kleinschmit, D., Blum, M., Brockhaus, M., Karambiri, M., Kröger, M., Ramcilovic-Suominen, S., & Reinecke, S. (2023). Key Logics of International Forest Governance and SDG 15. In *The Environment in Global Sustainability Governance*. Bristol, UK: Bristol University Press. <https://doi.org/10.51952/9781529228021.ch004>

Kleinschmit, D., Mansourian, S., Wildburger, C., & Purret, A. (2016). Illegal Logging and Related Timber Trade-Dimensions, Drivers, Impacts and Responses: A Global Scientific Rapid Response Assessment Report. In *IUFRO World Series (Vol. 35)*

Lawson, S. (2015). *Stolen Goods: The EU's complicity in illegal tropical deforestation*. Ed. Fenton. Cartoon: Patrick Blower. Design: Daan van Beek. ISBN: 978-1-906607-40-1. March 2015. FERN

Masiero, M., Pettenella, D., & Cerutti, P. O. (2015). Legality constraints: The emergence of a dual market for tropical timber products? *Forests*, 6, 3452-3482. doi:10.3390/f6103452.

Morland, C., Schier, F., & Weimar, H. (2020). The Structural Gravity Model and Its Implications on Global Forest Product Trade. *Forests*, 11, 178. doi:10.3390/f11020178.

Nellemann, C., INTERPOL Environmental Crime Programme (eds). (2012). *Green Carbon, Black Trade: Illegal Logging, Tax Fraud and Laundering in the World's Tropical Forests. A Rapid Response Assessment*. United Nations Environment Programme, GRID-Arendal. www.grida.no ISBN: 978-82-7701-102-8

Official Journal of the European Union L 295/23. (2010). REGULATION (EU) No 995/2010 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market.

Pacheco, P., Cerutti, P. O., Boekhout Van Solinge, T., Kissinger, G., & Tacconi, L. (2012). Chapter 4 Drivers of Illegal and Destructive Forest Use. https://www.cifor.org/publications/pdf_files/Books/BIUFRO1604.pdf

Paluš, H., Parobek, J., Vlosky, R. P., Motik, D., Oblak, L., Jošt, M., Glavonjić, B., Dudik, R., & Wanat, L. (2018). The status of chain-of-custody certification in the countries of Central and South Europe. *Eur. J. Wood Wood Prod.*, 76, 699-710. doi:10.1007/s00107-017-1261-0.

Pendrill, F., Persson, U. M., Godar, J., Kastner, T., Moran, D., Schmidt, S., & Wood, R. (2019b). Agricultural and forestry trade drives a large share of tropical deforestation emissions. *Global Environmental Change*, 56, 1-10. <https://doi.org/10.1016/j.gloenvcha.2019.03.002>.

Pendrill, F., Persson, U.M., Godar, J., Kastner, T. (2019a). Deforestation displaced: trade in forest-risk commodities and the prospects for a global forest transition. *Environ. Res. Lett.*, 14, 055003. <https://doi.org/10.1088/1748-9326/ab0d41>

Pepke, E., Bowyer, J., Bratkovich, S., Fernholz, K., Frank, M., Groot, H., & Howe, J. (2015). IMPACTS OF POLICIES TO ELIMINATE ILLEGAL TIMBER TRADE.

Polo Villanueva, F. D., Tegegne, Y. T., Winkel, G., Cerutti, P. O., Ramcilovic-Suominen, S., McDermott, C. L., ... & Giessen, L. (2023). Effects of EU illegal logging policy on timber-supplying countries: A systematic review. *Journal of Environmental Management*, 327, 116874. <https://doi.org/10.1016/j.jenvman.2022.116874>

Rogelja, T., & Shannon, M. A. (2017). Structural power in Serbian anti-corruption forest policy network. *Forest Policy and Economics*, 82(C), 52-60.

Segato, L. (2017). Tackling corruption in the framework of the EUTR; the TREES project. In 27th Illegal Logging Update and Stakeholder Consultation Meeting; Chatham House: London.

Sotirov, M., Pokorny, B., Kleinschmit, D., & Kanowski, P. (2020). International forest governance and policy: institutional architecture and pathways of influence in global sustainability. *Sustainability*, 12, 7010. <https://doi.org/10.3390/su12177010>.

Tacconi L, Cerutti PO, Leipold S, Rodrigues RJ, Savaresi A, To PX and Weng X (2016). Defining Illegal Forest Activities and Illegal Logging. Kleinschmit D (Editor), Mansourian S (Editor), Wildburger C (Editor) and Purret A (Editor) International Union of Forest Research Organizations (IUFRO) IUFRO World Series, 35. Austria: International Union of Forest Research Organizations (IUFRO). <http://www.iufro.org/publications/article/2016/12/03/world-series-vol-35-illegal-logging-and-related-timber-trade-dimensions-drivers-impacts-and/>

Tacconi, L. (2007). *Illegal Logging: Law Enforcement, Livelihoods and the Timber Trade*. Routledge.

Terziyska, P., Rantala, A., Posavec, S., Malovrh, E. K., Sarniak, S., Betlejewska, S., & Bu, G. (2020). *MANAGEMENT ASPECTS IN FORESTRY AND FOREST-BASED INDUSTRIES*; Jelacic, D., Ed.; WoodEMA i.a.: Zagreb, Croatia, 2020; ISBN 9789535782278.

Vasiljević, A., & Glavonjic, B. (2011). Certification of forests and wood products in Serbia in the context of new European Union legislations-current situation, problems and challenges. *Glas. šumarskog Fak.*, 103, 7-28. doi:10.2298/GSF1103007V.

Vásquez-Grandón, A., Donoso, P. J., & Gerding, V. (2018). Forest degradation: when is a forest degraded? *Forests*, 9(11), 726.

World Bank Group. (2019). *Illegal Logging, Fishing, And Wildlife Trade: The Costs And How To Combat It*. <https://thedocs.worldbank.org/en/doc/482771571323560234-0120022019/original/WBGReport1017Digital.pdf>

WWF. (2019). *Enforcement Review of the EU Timber Regulation (EUTR) 2019*.

References Chapter 2

Peters, B. G., & Pierre, J. (2010). Governance, institutions, and the state: The executive branch. In B. G. Peters & J. Pierre (Eds.), *Handbook of public administration* (2nd ed., pp. 177-195). Sage Publications.

Scharpf, F. W. (1997). *Games Real Actors Play: Actor-Centred Institutionalism in Policy Research*. Westview Press: Oxford, UK. ISBN 0-8133-6879-0

Sotirov, M. (2022). M5.1 Methodological framework for assessment of policy coherence. Horizon 2020 Project No. 101036849, European Commission.

References Chapter 3

Ansell, C., & Gash, A. (2008). Collaborative Governance in Theory and Practice. *Journal of Public Administration Research and Theory*, 18(4), 543-571. <https://doi.org/10.1093/jopart/mum032>

Baycheva-Merger, T., & Sotirov, M. (2020). The politics of an EU forest information system: Unpacking distributive conflicts associated with the use of forest information. *Forest Policy and Economics*, 112. <https://doi.org/10.1016/j.forpol.2020.102110>

Baycheva-Merger, T., Sotirov, M., Holmgren, S., & Selter, A. (2018). Institutional and Actor-Oriented Factors Constraining Expert-Based Forest Information Exchange in Europe: A Policy Analysis from an Actor-Centred Institutional Approach. *Forests*, 9(3), 129. <https://doi.org/10.3390/F9030129>

Berardo, R., & Scholz, J. T. (2010). Self-Organizing Policy Networks: Risk, Partner Selection, and Cooperation in Estuaries. *American Journal of Political Science*, 54(3), 632-649. <https://doi.org/10.1111/j.1540-5907.2010.00451.x>

Börzel, T. A. (1998). Organizing Babylon: On the Different Conceptions of Policy Networks. *Public Administration*, 76, 253-273. <https://doi.org/10.1111/1467-9299.00100>

Cashore, B., & Howlett, M. (2007). Punctuating which equilibrium? Understanding thermostatic policy dynamics in Pacific Northwest forestry. *American journal of political science*, 51(3), 532-551.

Crabb, A., & Leroy, P. (2008). *The Handbook of Environmental Policy Evaluation*. Routledge. <https://doi.org/10.4324/9781849773072>

Dal Molin, M., & Masella, C. (2015). Networks in policy, management and governance: a comparative literature review to stimulate future research avenues. *Journal of Manag. Gov.*, 822-849. <https://doi.org/10.1007/s10997-015-9329-x>

Degeling, P. (1995). The Significance Of ‘Sectors’ In Calls For Urban Public Health Intersectoralism: an Australian perspective. *Policy & Politics*, 23(4), 289-301. <https://doi.org/10.1332/030557395782200518>

Edwards, P., Kleinschmit, D. (2013). Towards a European forest policy - Conflicting courses. *Forest Policy and Economics*, 33, 87-93. <https://doi.org/10.1016/j.forpol.2012.06.002>

FEINDT, P.H. (2010). POLICY-LEARNING AND ENVIRONMENTAL POLICY INTEGRATION IN THE COMMON AGRICULTURAL POLICY, 1973-2003. *Public Administration*, 88, 296-314. <https://doi.org/10.1111/j.1467-9299.2010.01833.x>

Fischer, F., Miller, G.J., Sidney, M.S., (2007). *Handbook of public policy analysis: theory, politics, and methods*. doi:10.4135/9781848608054

Hall, P. A. (1993). Policy Paradigms, Social Learning, and the State: The Case of Economic Policymaking in Britain. *Comparative Politics*, 25(3), 275-296. <https://doi.org/10.2307/422246>

Hollingsworth, J. R. (2000). Doing institutional analysis: Implications for the study of innovations. *Review of International Political Economy*, 7(4), 595-644. <https://doi.org/10.1080/096922900750034563>

Keast, R., & Brown, K. (2002). The Government Service Delivery Project: A Case Study of the Push and Pull of Central Government Coordination. *Public Management Review*, 4(4), 439-459. DOI: 10.1080/14616670210163015

Klijn, E. H. (1996). Analyzing and managing policy processes in complex networks. A theoretical examination of the concept policy network and its problems. *Administration & Society*, 28(1), 90-119.

Knoepfel, P., Larrue, C., Varone, F., & Hill, M. (2007). *Public policy analysis* (1st ed.). Bristol University Press. <https://doi.org/10.2307/j.ctt9qgz7q>

Krott, M. (2005). Forest policy analysis, Statewide Agricultural Land Use Baseline 2015. doi:10.1017/CBO9781107415324.004

Ludvig, A., Weiss, G., Sarkki, S., Nijnik, M., & Živojinović, I. (2018). Mapping European and forest-related policies supporting social innovation for rural settings. *Forest Policy and Economics*, 97, 146-152. <https://doi.org/10.1016/j.forpol.2018.09.015>

Malovrh, Š.P., Kumer, P., Glavonjić, P., Nonić, D., Nedeljković, J., Kisin, B., Avdibegović, M., (2017). Different organizational models of private forest owners as a possibility to increase wood mobilization in Slovenia and Serbia 38, 127-140.

Marsh, D., & Rhodes, R. A. W. (1992). *Policy Networks in British Government*. Oxford Academic. <https://doi.org/10.1093/acprof:oso/9780198278528.001.0001>

Mayntz, R., & Scharpf, F. W. (Eds.). (1995). *Gesellschaftliche Selbstregelung und politische Steuerung*. Campus Verlag.

Mayring, P. (2014). *Qualitative Content Analysis Theoretical Foundation, Basic Procedures and Software Solution*. e-book, Klagenfurt, Austria.

Morgado, R. (2020). *The Use of Open Data to Tackle Illegal Logging in Brazil*. Chatham House Available at <https://forestgovernance.chathamhouse.org/publications/open-data-in-brazil-the-challenges-and-opportunities-for-tackling-illegal-logging>

Lovrić, N., Fraccaroli, C., Bozzano, M. (2023). A future EU overall strategy for agriculture and forest genetic resources management: Finding consensus through policymakers' participation. *Futures*, 151, 2023,103179. <https://doi.org/10.1016/j.futures.2023.103179>

Persson, Å. (2004). PINTS - Policy Integration for Sustainability: Background Paper Environmental Policy Integration: An Introduction. Stockholm Environment Institute. Available at: https://www.sei.org/wp-content/uploads/2013/04/PINTS_Background_Paper.pdf

Peters, B. G., & Pierre, J. (2010). Governance, institutions, and the state: The executive branch. In B. G. Peters & J. Pierre (Eds.), *Handbook of public administration* (2nd ed., pp. 177-195). Sage Publications.

Pregernig, M., & Böcher, M. (2008, February). The role of expertise in environmental governance: tensions between effectiveness and democratic accountability. In Paper to be presented at the 2008 Berlin conference on the human dimensions of global environmental change, Berlin.

Sabatier, P. A. (1988). An advocacy coalition framework of policy change and the role of policy-oriented learning therein. *Policy Sci*, 21, 129-168. <https://doi.org/10.1007/BF00136406>

Sabatier, P. A., & Weible, C. M. (2007). The Advocacy Coalition Framework: Innovations and Clarifications. In P. A. Sabatier (Ed.), *Theories of the Policy Process*. West Press, Colorado, 189-220.

Scharpf, F. W. (1997). *Games Real Actors Play: Actor-centered Institutionalism In Policy Research* (1st ed.). Routledge. <https://doi.org/10.4324/9780429500275>

Scott, W. R. (2005). Institutional theory: Contributing to a theoretical research program. *Great minds in management: The process of theory development*, 37(2), 460-484.

Shannon, M. A., Meidinger, E. E., & Clark, R. N. (1996). Science Advocacy is Inevitable: Deal with It. *Proceedings of the Society of American Foresters*, 347. Available at: https://digitalcommons.law.buffalo.edu/journal_articles/687

Sørensen, E., & Torfing, J. (2009). Making governance networks effective and democratic through metagovernance. *Public administration*, 87(2), 234-258.

Sotirov, M. (2022). M5.1 Methodological framework for assessment of policy coherence. Horizon 2020 Project No. 101036849, European Commission.

Torring, J. (2005). Discourse Theory: Achievements, Arguments, and Challenges. In: Howarth, D., Torring, J. (eds) Discourse Theory in European Politics. Palgrave Macmillan, London. https://doi.org/10.1057/9780230523364_1

Trein, P., Meyer, I., & Maggetti, M. (2019). The Integration and Coordination of Public Policies: A Systematic Comparative Review. *Journal of Comparative Policy Analysis: Research and Practice*, 21(4), 332-349. <https://doi.org/10.1080/13876988.2018.1496667>

Trein, P., Biesbroek, R., Bolognesi, T., Cejudo, G. M., Duffy, R., Hustedt, T., & Meyer, I. (2020). Policy Coordination and Integration: A Research Agenda. *Public Administration Review*. <https://doi.org/10.1111/puar.13180>

Vedung, E. (1998). Policy Instruments: Typologies and Theories, in: Bemelmans-Videc, M.-L., Rist, R.C., Vedung, E. (Eds.), *Carrots, Sticks, and Sermons: Policy Instruments and Their Evaluation*. Transaction Publishers, New Brunswick and New Jersey, pp. 21-59.

Winkel, G., & Sotirov, M. (2015). Whose integration is this? European forest policy between the gospel of coordination, institutional competition, and a new spirit of integration. *Environment and Planning C: Government and Policy*. <https://doi.org/10.1068/c1356j>

Yin, R. K. (2009). *Case Study Research Design and Methods*, 4th ed. Sage Publications Inc.

References Chapter 4

Avdibegović, M., Nonić Dragan, D., Posavec, S., Petrović, N., Marić, B., Milijić, V., Krajter, S., Ioras, F., & Abrudan, I. V. (2010). Policy options for private forest owners in Western Balkans: A qualitative study.

Botric, V. (2012). Intra-industry Trade between the European Union and Western Balkans: A Close-up. In EIZ Working Papers. The Institute of Economics. Available at: https://www.eizg.hr/UserDocsImages/publikacije/serijske-publikacije/radni-materijali/Intra-industry_Trade_between_the_European_Union_and_Western_Balkans_A_Close-up.pdf?vel=335990

Čomic, D.; Škrbić, N.; Bećirović, D.; Milovanović, M. (2013) Pregled Organizacija i Institucija Šumarstva u Republici Srpskoj, Federaciji BiH, Srbiji, Hrvatskoj i Crnoj Gori. *Glas. Sumar. Fak. Univ.*, 18, 57-90.

Corbin, J., & Strauss, A. (2008). *Qualitative research. Techniques and procedures for developing grounded theory*, 3.

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Sage Publications.

Directorate for Forests, Montenegro. (2021). *Business Year Report 2021*, 27p. Available at: http://www.upravazasume.me/razni_fajlovi/1660553732.pdf (accessed on 14 August 2022).

Eisenhardt, K. M. (1989). Building theories from case study research. *The Academy of Management Review*, 14(4), 532-550.

European Commission, Joint Research Centre, Barredo, J., Brailescu, C., Teller, A. (2021). *Mapping and assessment of primary and old-growth forests in Europe*, Publications Office. Available at: <https://data.europa.eu/doi/10.2760/797591>

European Commission. (2023). *EU trade relations with Western Balkans*. Available at: https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/western-balkans_en

European Commission. Key findings of the 2022 Report on Montenegro. (2022). Available at: https://ec.europa.eu/commission/presscorner/detail/en/COUNTRY_22_6103 (accessed on 14 August 2022).

Forest Act. Official Gazette of RS No. 30/93, 56/99-ZON, 67/02, 110/02-ZGO-1, 115/06-ORZG40, 110/07, 106/10, 63/13, 101/13-ZDavNepr, 17/14, 22/14-odl. US, 24/15, 9/16-ZGGLRS in 77/16. Available at: <https://www.gov.si/drzavni-organi/ministrstva/ministrstvo-za-kmetijstvo-gozdarstvo-in-prehrano/zakonodaja/> (accessed on 30 May 2021).

FOREST EUROPE. (2020). *State of Europe's Forests 2020*. Available at: https://foresteurope.org/wp-content/uploads/2016/08/SoEF_2020.pdf

Forest Trends; Ministry of Agriculture of the Czech Republic. (2015) Meeting Summary: Timber Regulation Enforcement Exchange: Eastern Europe and the Balkans, Cameroon, Peru 2015, 1-17.

Glaser, B. G., & Strauss, A. L. (2017). *The discovery of grounded theory: Strategies for qualitative research* (4th ed.). Transaction Publishers.

Glavonjic, B., Vlosky, R.P., Borlea, G.F., Petrovic, S., & Sretenovic, P. (2009). The wood products industry in the western Balkan region. *For. Prod. J.*, 59, 98-111.

Grgic, V. Report on Deforestation in the Republic of Croatia (2020). VIDRA-Association of Veterans and Social Action: Zagreb, Croatia, 2020.

Kaloyanchev, P., Kusen, I., & Mouzakitis, A. (2018). Untapped Potential: Intra-Regional Trade in the Western Balkans. In *European Economy Discussion Papers*. Publications Office of the European Union. <https://doi.org/10.2765/453103>

Law on Forests. Official Gazette Republic Croatia No. 68/2018, 115/2018, 98/2019, 32/2020, 145/2020. 2018. Available at: <https://poljoprivreda.gov.hr/pristup-informacijama/zakoni-i-propisi/sumarstvo-297/297> (accessed on 17 June 2021).

Malovrh, Š. P., Nonić, D., Glavonjić, P., Nedeljković, J., Avdibegović, M., & Krč, J. (2015). Private forest owner typologies in Slovenia and Serbia: Targeting private forest owner groups for policy implementation. *Small-scale Forestry*, 14, 423-440.

Marek Dabrowski & Yana Myachenkova. (2018). "The Western Balkans on the road to the European Union," Policy Contributions 24313, Bruegel.

Markus-Johansson, M., Mesquita, B., Nemeth, A., Dimovski, M., Monnier, C., & Kiss-Parciu Szentendre, P. (2010). REC, Working Paper: Illegal Logging in South Eastern Europe. Regional report, Szentendre, Hungary.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. Jossey-Bass.

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage Publications.

Ministry of Agriculture, Forestry and Food (2016). Summary of the Report on Slovenian Forests and Forestry 2007-2014; Ministry of Agriculture, Forestry and Food: Ljubljana, Slovenia

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Sage Publications.

Petrova, S. (2014). Contesting forest neoliberalization: Recombinant geographies of "illegal" logging in the Balkans. *Geoforum*, 55, 13-21. <https://doi.org/10.1016/j.geoforum.2014.04.008>.

Sandelowski, M., & Barroso, J. (2007). *Handbook for synthesizing qualitative research*. Springer.

Slovenian Forest Service (2019). Report of the Slovenian Forest Service on Forests for 2019;

The Ministry for Agriculture (2021). Available at: <https://poljoprivreda.gov.hr/o-ministarstvu/9> (accessed on 8 June 2021).

Tracy, S. J. (2013). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact* (2nd ed.). Wiley-Blackwell.

UNEP-WCMC EUTR Analysis 2019. (2020). Background analysis of the 2017-2019 national biennial reports on the implementation of the European Union's Timber Regulation (Regulation EU No 995/2010). Cambridge.

Yin, R. K. (2009). Case study research: Design and methods (Vol. 5). Sage.

References Chapter 5 Article 1

1. Jonsson, R.; Giurca, A.; Masiero, M.; Pepke, E.; Pettenella, D.; Prestemon, J.; Winkel, G. EU Timber Regulation and Flegt Action Plan: Lessons Learned and Policy Implications; European Forest Institute: Joensuu, Finland, 2015.
2. WWF-World Wide Fund For Nature. WWF Enforcement Review of the EU Timber Regulation (EUTR): EU Synthesis Report; WWF-World Wide Fund For Nature: Brussels, Belgium, 2019.
3. European Commission. COM(2020)629: Final Report from the Commission to the European Parliament and the Council (the EU Timber Regulation); Biennial Report for the Period March 2017-February 2019; European Commission: Brussels, Belgium, 2020.
4. ClientEarth. Internal Illegal Logging-Evaluation of EU Rules (Fitness Check)-Eutr and Flegt Regulation. Our Call for a More Effective Regulatory Approach to Tackle Illegal Logging; ClientEarth: London, UK; Brussels, Belgium; Warsaw, Poland; Berlin, Germany; Beijing, China, 2020.
5. Becher, G. Analysis of Time Series to Examine the Impact of the EU Timber Regulation (EUTR) on European Timber Trade; Thünen Working Paper No. 134; Johann Heinrich von Thünen-Institute: Braunschweig, Germany, 2019; Volume 56. [\[CrossRef\]](#)
6. Giurca, A.; Jonsson, R.; Rinaldi, F.; Priyadi, H. Ambiguity in Timber trade regarding efforts to combat illegal logging: Potential impacts on trade between South-East Asia and Europe. *Forests* 2013, 4, 730-750. [\[CrossRef\]](#)
7. Rougieux, P.; Jonsson, R. Impacts of the FLEGT action plan and the EU timber regulation on EU trade in timber product. *Sustainability* 2021, 13, 6030. [\[CrossRef\]](#)
8. Borsky, S.; Leiter, A.; Pfaffermayr, M. Product quality and sustainability: The effect of international environmental agreements on bilateral trade. *World Econ.* 2018, 41, 3098-3129. [\[CrossRef\]](#)

9. Houghton, K.; Naughton, H. Trade and sustainability: The impact of the International Tropical Timber Agreements on exports. *Int. Environ. Agreements Polit. Law Econ.* 2017, 17, 755-778. [CrossRef]
10. Pepke, E.; Bowyer, J.; Bratkovich, S.; Fernholz, K.; Frank, M.; Groot, H.; Howe, J. *Impacts of Policies to Eliminate Illegal Timber Trade*; Dovetail Partners, Inc.: Minneapolis, MN, USA, 2015.
11. Masiero, M.; Pettenella, D.; Cerutti, P.O. Legality constraints: The emergence of a dual market for tropical timber products? *Forests* 2015, 6, 3452-3482. [CrossRef]
12. Buongiorno, J. Gravity models of forest products trade: Applications to forecasting and policy analysis. *Forestry* 2016, 89, 117-126. [CrossRef]
13. Akyüz, K.C.; Yildirim, I.; Balaban, Y.; Gedik, T.; Korkut, S. Examination of forest products trade between Turkey and European Union countries with gravity model approach. *Afr. J. Biotechnol.* 2010, 9, 2375-2380. [CrossRef]
14. Morland, C.; Schier, F.; Weimar, H. The structural gravity model and its implications on global forest product trade. *Forests* 2020, 11, 178. [CrossRef]
15. Malovrh, Š.P.; Bećirović, D.; Marić, B.; Nedeljković, J.; Posavec, S.; Petrović, N.; Avdibegović, M. Contribution of forest stewardship council certification to sustainable forest management of state forests in selected Southeast European countries. *Forests* 2019, 10, 648. [CrossRef]
16. Vasiljević, A.; Glavonjic, B. Certification of forests and wood products in Serbia in the context of new European Union legislations- current situation, problems and challenges. *Glas. Šumarskog Fak.* 2011, 103, 7-28. [CrossRef]
17. Paluš, H.; Parobek, J.; Vlosky, R.P.; Motik, D.; Oblak, L.; Jošt, M.; Glavonjić, B.; Dudik, R.; Wanat, L. The status of chain-of-custody certification in the countries of Central and South Europe. *Eur. J. Wood Wood Prod.* 2018, 76, 699-710. [CrossRef]
18. Glavonjić, B. Proving legality of wood and wood products-Current development in Serbia. In *Proceedings of the Balkan Workshop on Forest Products Markets and Forest Sector Workforce*, Podgorica, Montenegro, 8-10 December 2015.
19. Hoare, A. *Chatham House Report: Tackling Illegal Logging and the Related Trade. What Progress and Where Next?* Chatham House: London, UK, 2015.
20. Segato, L. Tackling corruption in the framework of the EUTR; the TREES project. In *Proceedings of the 27th Illegal Logging Update and Stakeholder Consultation Meeting*, London, UK, 19-20 June 2017.

21. Environment and Climate Regional Accession Network (ECRAN). Workshop report on fighting illegal logging and associated trade: Cooperation between the EU and EU candidate countries and potential candidates on implementation of the EU timber regulation. In Proceedings of the Fighting Illegal logging and associated trade: Cooperation between the EU and EU Candidate Countries and Potential Candidates on Implementation of the EU Timber Regulation, Zagreb, Croatia, 3-6 June 2016.

22. European Commission. Report from the Commission to the European Parliament and the Council Regulation (EU) No 995/2010 of the

European Parliament and of the Council of 20 October 2010 Laying down the Obligations of Operators Who Place Timber and Timber Products on the Market; European Commission: Brussels, Belgium; Louxemburg, 2020.

23. European Parliament, Council of the European Union. L 295/23 Regulation (EU) No 995/2010 of the European Parliament and of the council of 20 october 2010 laying down the obligations of operators who place timber and timber products on the market. Off. J. Eur. Union 2010, 7, 290-301.

24. European Commission. Environment/Forests/Timber Regulation. Available online: https://ec.europa.eu/environment/forests/timber_regulation.htm (accessed on 7 December 2020).

25. UNEP-WCMC. EUTR Analysis 2019: Background Analysis of the 2017-2019 National Biennial Reports on the Implementation of the European Union's Timber Regulation (Regulation EU No 995/2010); UNEP-WCMC Technical Report; UNEP-WCMC: Cambridge, UK, 2020.

26. Yin, R.K. Case Study Research Design and Methods, 4th ed.; Sage Publications Inc.: Thousand Oaks, CA, USA, 2009; ISBN 978-1-4129-6099-1.

27. Malovrh, Š.P.; Nonić, D.; Glavonjić, P.; Nedeljković, J.; Avdibegović, M.; Krč, J. Private forest owner typologies in Slovenia and Serbia: Targeting private forest owner groups for policy implementation. Small-Scale For. 2015, 14, 423-440. [CrossRef]

28. Fischer, F.; Miller, G.J.; Sidney, M.S. Handbook of Public Policy Analysis: Theory, Politics, and Methods; Routledge: London, UK, 2007; Volume 125, ISBN 9781574445619.

29. Knoepfel, P.; Larrue, C.; Varone, F.; Hill, M. Public Policy Analysis; Policy Press: Bristol, UK, 2013; Volume 53, ISBN 9788578110796.

30. Rogelja, T.; Ludvig, A.; Weiss, G.; Secco, L. Implications of policy framework conditions for the development of forestry-based social innovation initiatives in Slovenia. *For. Policy Econ.* 2018, 95, 147-155. [CrossRef]
31. Drisko, J.W.; Maschi, T. *Content Analysis*; Oxford University Press: Oxford, UK, 2016; ISBN 9780190215491.
32. Mayring, P. Qualitative content analysis. *Forum Qual. Soc. Res.* 2000, 1, 10.
33. Slovenian Forest Service. *Report of the Slovenian Forest Service on Forests for 2019*; Slovenian Forest Service: Ljubljana, Slovenia, 2019.
34. Statistical Office of the Republic of Slovenia. *Production of Forest Wood Assortments*. Available online: <https://pxweb.stat.si/SiStatData/pxweb/sl/Data/-/1673145S.px> (accessed on 30 May 2021).
35. Slovenian Forestry Institute. *Forest Wood Assortments Market in 2019 in Numbers*; Slovenian Forestry Institute: Ljubljana, Slovenia, 2020; pp. 1-8.
36. Ministry of Agriculture, Forestry and Food; Ministry of Economic Development and Technology. *Action Plan for Increasing the Competitiveness of the Forest-Wood Chain in Slovenia by 2020 "Wood is Beautiful"*; Ministry of Agriculture, Forestry and Food: Ljubljana, Slovenia; Ministry of Economic Development and Technology: Ljubljana, Slovenia, 2012.
37. Management of State Forests Act. *Official Gazette RS No. 9/16, 1117-1124*. 2016. Available online: <https://www.gov.si/drzavni-organi/ministrstva/ministrstvo-za-kmetijstvo-gozdarstvo-in-prehrano/zakonodaja/> (accessed on 30 May 2021).
38. FSC. *Public Certificate Search*. Available online: <https://info.fsc.org/details.php?id=a0240000006u0U1AAI&type=certificate#> (accessed on 3 August 2021).
39. Chamber of Agriculture and Forestry of Slovenia. *Implementation of Regional Certification of Forests Under the PEFC System in 2019*; Chamber of Agriculture and Forestry of Slovenia: Ljubljana, Slovenia, 2019.
40. Ministry of Agriculture, Forestry and Food. *Summary of the Report on Slovenian Forests and Forestry 2007-2014*; Ministry of Agriculture, Forestry and Food: Ljubljana, Slovenia, 2016.
41. Ministry of Agriculture. *National Biennial Report on the Implementation and Enforcement of EUTR for Croatia for the Period 2017-2019*; Ministry of Agriculture: Zagreb, Croatia, 2019.

42. Ministry for Agriculture. EUTR National Report for the Republic of Croatia; Ministry of Agriculture: Zagreb, Croatia, 2019.
43. Hrvatske Šume. Forest Management Basis; Hrvatske Šume: Zagreb, Croatia, 2017; p. 926.
44. Croatian Association of Private Forest Owners. Forests in Republic of Croatia. Available online: <https://www.hsups.hr/privatno-sumarstvo> (accessed on 7 June 2021).
45. Central Bureau of Statistics of the Republic of Croatia. Production of Forest Products. Available online: <https://www.dzs.hr/> (accessed on 8 June 2021).
46. Law on Trade. 1987. Official Gazette of the Republic of Croatia. No. 87/08, 96/08, 116/08, 76/09-OURH, 114/11, 68/13, 30/14, 32/19, 98/19 i 32/20. Available online: https://narodne-novine.nn.hr/clanci/sluzbeni/2008_07_87_2790.html (accessed on 17 June 2021).
47. Croatian Chamber of Commerce Wood Industry and Furniture. Production in the Republic of Croatia-Analysis of Export Opportunities; Croatian Chamber of Commerce Wood Industry and Furniture: Zagreb, Croatia, 2021.
48. Hrvatske Šume. About us. Available online: <https://www.hrsume.hr/index.php/hr/tvrtka/onama> (accessed on 8 June 2021).
49. Hrvatske Šume. Forest Certification. Available online: <https://www.hrsume.hr/index.php/hr/ume/certsuma> (accessed on 7 June 2021).
50. Grgic, V. Report on Deforestation in the Republic of Croatia; VIDRA“-Association of Veterans and Social Action: Zagreb, Croatia, 2020.
51. European Parliament. Answer to Question of Large-Scale Deforestation in Croatia. Available online: https://www.europarl.europa.eu/doceo/document/P-9-2019-004545-ASW_EN.html (accessed on 17 June 2021).
52. The Ministry for Agriculture. About Ministry. Available online: <https://poljoprivreda.gov.hr/oministarstvu/9> (accessed on 8 June 2021).
53. Directorate-General for Environment E.C. The EU Environmental Implementation Review 2019 Country Report-Croatia; Publications Office of the European Union: Luxembourg, 2019.
54. Republican Bureau of Statistics. Forestry. Available online: <https://data.stat.gov.rs/?caller=SDDB> (accessed on 18 May 2021).

55. Public Enterprise Srbijašume. About Us. Available online: <https://srbijasume.rs/en/preduzece/o-nama> (accessed on 23 May 2021).
56. Vojvodinasume. About company. Available online: <https://www.vojvodinasume.rs/en/about-company> (accessed on 8 October 2021).
57. Public Enterprise Vojvodinasume. Company's Scope of Activities. Available online: <https://www.vojvodinasume.rs/en/about-company/companys-scope-of-activities> (accessed on 23 May 2021).
58. Republican Bureau of Statistics. Forestry in the Republic of Serbia in 2020; Republican Bureau of Statistics: Belgrade, Serbia, 2021.
59. Glavonjić, B. The impact of the Covid 19 pandemic on the wood and furniture industry in Serbia. *Drvotehnika* 2021, 6-8. Available online: <https://drvotehnika.info/clanci/uticaj-pandemije-covid-19-na-drvnu-industriju-i-industriju-namestaja-srbije> (accessed on 23 May 2021).
60. United Nations Office for Project Services. Action plan to Support the Serbian Wood Industry in the Export of Products with High Added Value; United Nations Office for Project Services (UNOPS): Copenhagen, Denmark, 2016.
61. Meeting Summary: Timber Regulation Enforcement Exchange: Eastern Europe and the Balkans, Cameroon, Peru; Forest Trends: Washington, DC, USA; Ministry of Agriculture of the Czech Republic: Prague, The Czech Republic, 2015; pp. 1-17.
62. Ministry of Agriculture, Forestry and Water Managements. Information on the work of the Directorate for Forests; Ministry of Agriculture, Forestry and Water Managements: Belgrade, Serbia, 2020.
63. Ministry of Agriculture, Forestry and Water Management-Directorate of Forests. Improvement of Forest Management in Serbia as a Contribution to Climate Change Adaptation and Mitigation-Annex C1: Twinning Fiche 2020; Ministry of Agriculture, Forestry and Water Management-Directorate of Forests: Belgrade, Serbia, 2020.
64. Ministry for Agriculture, Forestry and Food. Operational Program for the Implementation of the National Forest Program 2017-2021; Ministry for Agriculture, Forestry and Food: Ljubljana, Slovenia, 2017.
65. Forest Development Program. Official Gazette of RS No.14/96. 1996. Available online: <https://upravazasume.gov.rs/sumarstvo/dokumenti-i-propisi-sumarstvo/> (accessed on 23 May 2021).

66. The Resolution on the National Forest Program. Official Gazette of RS No.1/07. 2007. Available online: <https://upravazasume.gov.rs/sumarstvo/dokumenti-i-propisi-sumarstvo/> (accessed on 23 May 2021).

67. Forest Act. Official Gazette of RS No. 30/93, 56/99-ZON, 67/02, 110/02-ZGO-1, 115/06-ORZG40, 110/07, 106/10, 63/13,

101/13-ZDavNepr, 17/14, 22/14-odl. US, 24/15, 9/16-ZGGLRS in 77/16. Available online: <https://www.gov.si/drzavni-organi/ministrstva/ministrstvo-za-kmetijstvo-gozdarstvo-in-prehrano/zakonodaja/> (accessed on 30 May 2021).

68. Ministry for Agriculture, Forestry and Food. Explanations on the Record Sheet on the Use and Trade of Forest Wood Assortments; Ministry for Agriculture, Forestry and Food: Ljubljana, Slovenia, 2016. Available online: <https://www.gov.si teme/sledljivost-prometa-z-gozdnimi-lesnimi-sortimenti/> (accessed on 30 May 2021).

69. Government of the Republic of Croatia. National Forest Policy and Strategy. Official Gazette of RS No. 120/2003. 2003. Available online: <https://poljoprivreda.gov.hr/pristup-informacijama/zakoni-i-propisi/sumarstvo-297/297> (accessed on 17 June 2021).

70. Government of the Republic of Croatia. Strategy for the Development of Wood Processing and Furniture Production; Government of the Republic of Croatia: Zagreb, Croatia, 2017. Available online: <https://poljoprivreda.gov.hr/pristup-informacijama/zakoni-i-propisi/sumarstvo-297/297> (accessed on 17 June 2021).

71. Law on the Implementation of European Union Regulations on the Trade of Wood and Wood Products. Official Gazette Republic Croatia No. 25/18, 16/20. 2020. Available online: <https://poljoprivreda.gov.hr/pristup-informacijama/zakoni-i-propisi/sumarstvo-297/297> (accessed on 17 June 2021).

72. Forestry Development Strategy for the Republic of Serbia. Official Gazette Republic Serbia 46. 2006. Available online: <https://upravazasume.gov.rs/sumarstvo/dokumenti-i-propisi-sumarstvo/> (accessed on 23 May 2021).

73. Law on Forests. Official Gazette of RS 30/10, 93/12, 89/15. 2015. Available online: <https://upravazasume.gov.rs/sumarstvo/dokumenti-i-propisi-sumarstvo/> (accessed on 23 May 2021).

74. Ministry of Agriculture, Forestry and Food. Explanations on the Accounting Document 2016; Ministry of Agriculture, Forestry and Food: Ljubljana, Slovenia, 2016. Available online: <https://upravazasume.gov.rs/sumarstvo/dokumenti-i-propisi-sumarstvo/> (accessed on 23 May 2021).

75. Law on Forests. Official Gazette Republic Croatia No. 68/2018, 115/2018, 98/2019, 32/2020, 145/2020. 2018. Available online: <https://poljoprivreda.gov.hr/pristup-informacijama/zakoni-i-propisi/sumarstvo-297/297> (accessed on 17 June 2021).
76. Regulation on the Auction of Certain Wood Assortments. Off. Gaz. Repub. Croat. 2011, 2014, 5030116. Available online: <https://poljoprivreda.gov.hr/pristup-informacijama/zakoni-i-propisi/sumarstvo-297/297> (accessed on 17 June 2021).
77. Ordinance on Remittance of Trees, Marking of Wood Assortments, Consignment Note and Forest Order. Official Gazette Republic Croatia No.68/201817/2015. 2014. Available online: <https://poljoprivreda.gov.hr/pristup-informacijama/zakoni-i-propisi/sumarstvo-297/297> (accessed on 17 June 2021).
78. The Ministry for Agriculture. Instructions for Operators and Traders; The Ministry for Agriculture: Belgrade, Serbia, 2018. Available online: <https://poljoprivreda.gov.hr/istaknute-teme/sume-112/drvna-industrija/provedba-strucnog-nadzora-gospodarskih-subjekata-i-trgovaca/243> (accessed on 17 June 2021).
79. Rulebook on the Form and Content of the Forest Stamp, the Form of the Consignment Note, the Conditions and Manner of Stamping of the Tree for Cutting, the Manner of Keeping Records. Official Gazette of RS No. 93/16. 2016. Available online: <https://upravazasume.gov.rs/sumarstvo/dokumenti-i-propisi-sumarstvo/> (accessed on 23 May 2021).
80. Regional Action for Combating Forest Crime and Corruption. The Survey on Corruption and Illegal Activities in Forestry-The Report of the Activity 3.2. 2020, p. 197. Available online: https://watchtheforests.org/documents_files/The_Survey_on_Corruption_and_Illegal_activities_in_forestry.pdf (accessed on 23 May 2021).
81. Transparency International Corruption Perception Index. 2020. Available online: <https://www.transparency.org/en/cpi/2020/index/nzl> (accessed on 8 October 2021).
82. Turner, R.H. Role Theory. In Handbook of Sociological Theory. Handbooks of Sociology and Social Research; Turner, J.H., Ed.; Springer: Boston, MA, USA, 2001; pp. 233-254, ISBN 9780387324586.
83. Cashore, B.; Stone, M.W. Can legality verification rescue global forest governance? Analyzing the potential of public and private policy intersection to ameliorate forest challenges in Southeast Asia. For. Policy Econ. 2012, 18, 13-22. [CrossRef]

References Chapter 5 Article 2

1. Polo Villanueva, F.D.; Tegegne, Y.T.; Winkel, G.; Omar, P.; Ramcilovic-Suominen, S.; Mcdermott, C.L.; Zeitlin, J.; Sotirov, M.; Cashore, B.; Andrew, D.; et al. Effects of EU illegal logging policy on timber-supplying countries: A systematic review. *J. Environ. Manag.* 2023, 327, 116874. [CrossRef]
2. Bösch, M. Institutional quality, economic development and illegal logging: A quantitative cross-national analysis. *Eur. J. For. Res.* 2021, 140, 1049-1064. [CrossRef]
3. Kleinschmit, D.; Mansourian, S.; Wildburger, C.; Purret, A. (Eds.) *Illegal Logging and Related Timber Trade -Dimensions, Drivers, Impacts and Responses. A Global Scientific Rapid Response Assessment Report*; IUFRO World: Vienna, Austria, 2016; Volume 35, ISBN 978-3-902762-70-2.
4. FAO: Deforestation and Forest Degradation Persist. Available online: <https://www.fao.org/3/cb9360en/online/src/html/deforestation-land-degradation.html> (accessed on 18 March 2023).
5. FAO. *Global Forest Resources Assessment 2020: Main report*; FAO: Rome, Italy, 2020. [CrossRef]
6. Austin, K.G.; González-Roglich, M.; Schaffer-Smith, D.; Schwantes, A.M.; Swenson, J.J. Trends in size of tropical deforestation events signal increasing dominance of industrial-scale drivers. *Environ. Res. Lett.* 2017, 12, 054009. [CrossRef]
7. Houghton, K.; Naughton, H. Trade and sustainability: The impact of the International Tropical Timber Agreements on exports. *Int. Environ. Agreem. Politics Law Econ.* 2017, 17, 755-778. [CrossRef]
8. Reboredo, F. Socio-economic, environmental, and governance impacts of illegal logging. *Environ. Syst. Decis.* 2013, 33, 295-304. [CrossRef]
9. European Commission (2020) 629 Final. Report from the Commission to the European Parliament and the Council (the EU Timber Regulation) Biennial Report for the Period March 2017-February 2019; European Commission: Brussels, Belgium, 2020.
10. Sotirov, M.; Stelter, M.; Winkel, G. The emergence of the European Union Timber Regulation: How Baptists, Bootleggers, devil shifting and moral legitimacy drive change in the environmental governance of global timber trade. *For. Policy Econ.* 2017, 81, 69-81. [CrossRef]

11. European Commission. European Commission Executive Summary of the Fitness Check on Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 (the EU Timber Regulation) and on Regulation (EC) No 2173/2005 of 20 December 2005 (FL). Comm. Staff Work. Doc. 2021. Available online: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021SC0329> (accessed on 14 August 2022).
12. Masiero, M.; Pettenella, D.; Cerutti, P.O. Legality constraints: The emergence of a dual market for tropical timber products? *Forests* 2015, 6, 3452-3482. [CrossRef]
13. Rougieux, P.; Jonsson, R. Impacts of the FLEGT Action Plan and the EU Timber Regulation on EU trade in timber product. *Sustainability* 2021, 13, 6030. [CrossRef]
14. Giurca, A.; Jonsson, R.; Rinaldi, F.; Priyadi, H. Ambiguity in timber trade regarding efforts to combat illegal logging: Potential impacts on trade between south-east Asia and Europe. *Forests* 2013, 4, 730-750. [CrossRef]
15. Moreira-Dantas, I.R.; Söder, M. Global deforestation revisited: The role of weak institutions. *Land Use Policy* 2022, 122, 106383. [CrossRef]
16. Gebert, A. Remote Sensing Methods for Detecting Deforestation and Illegal Logging in Bosnia and Herzegovina. Bachelor's Thesis, Lund University, Lund, Sweden, 2019.
17. Segato, L. Tackling corruption in the framework of the EUTR; the TREES project. In *Proceedings of the 27th Illegal Logging Update and Stakeholder Consultation Meeting*, London, UK, 19-20 June 2017; Chatam House: London, UK, 2017.
18. Malovrh, Š.P.; Bećirović, D.; Marić, B.; Nedeljković, J.; Posavec, S.; Petrović, N.; Avdibegović, M. Contribution of Forest Stewardship Council Certification to sustainable forest management of state forests in selected Southeast European Countries. *Forests* 2019, 10, 648. [CrossRef]
19. Vasiljević, A.; Glavonjic, B. Certification of forests and wood products in Serbia in the context of new European Union legislations- current situation, problems and challenges. *Glas. Šumarskog Fak.* 2011, 103, 7-28. [CrossRef]
20. Paluš, H.; Parobek, J.; Vlosky, R.P.; Motik, D.; Oblak, L.; Jošt, M.; Glavonjić, B.; Dudik, R.; Wanat, L. The status of chain-of-custody certification in the countries of Central and South Europe. *Eur. J. Wood Wood Prod.* 2018, 76, 699-710. [CrossRef]
21. Glavonjić, B.; Vlosky, R.P.; Borlea, G.F.; Petrović, S.; Sretenović, P. The wood products industry in the western balkan region. *For. Prod. J.* 2009, 59, 98-111. [CrossRef]

22. Radosavljević, M.; Masiero, M.; Rogelja, T.; Glavonjić, B. Adaptation to EUTR requirements: Insights from Slovenia, Croatia and Serbia. *Forests* 2021, 12, 1665. [CrossRef]

23. Avdibegović, M.; Vuletić, D.; Makedonka, S.; Peri, L.; Nonić, D.; Delić, S.; Keča, L.; Nenad, P.; Radosavljević, A.; Marić, B.; et al.

The Adaptation of National Forest Policy Systems in South-East European Countries (Albania, Bosnia-Herzegovina, Croatia, Macedonia and Serbia) to New Modes of International Forest Governance; Conference Paper, IUFRO - All Division 9 Conference “Assessing Forest Governance in a Context of Change”, Sarajevo, Bosnia and Herzegovina; 2012. Available online: https://www.researchgate.net/profile/Leonidha-Peri/publication/272164288_The_adaptation_of_national_forest_policy_systems_in_South-East_European_countries_Albania_Bosnia-Herzegovina_Croatia_Macedonia_and_Serbia_to_new_modes_of_international_forest_governance/links/573f7c6408ae9f741b321ff0/The-adaptation-of-national-forest-policy-systems-in-South-East-European-countries-Albania-Bosnia-Herzegovina-Croatia-Macedonia-and-Serbia-to-new-modes-of-international-forest-governance.pdf (accessed on 4 November 2022).

24. Glavonjić, B. Proving Legality of Wood and Wood Products-Current Development in Serbia 2015. Balkan Workshop on Forest Products Markets and Forest Sector Workforce, Podgorica, Montenegro, 8-10 December 2015. Available online: <https://unece.org/fileadmin/DAM/timber/workshops/2015/5-Glavonic-proving-legality.pdf> (accessed on 4 November 2022).

25. Stanisić, M.; Jović, D.; Nonić, D. Legal similarities and differences of environmental protection and forestry in West Balkan countries. In *Legal Aspects of European Forest Sustainable Development. Proceedings of the 7th International Symposium Organized Jointly by the IUFRO Research Group 6.13.00 and the Faculty of Forestry, University of Belgrade/Serbia; Zlatibor Mountain, Serbia; Schmithüsen, F., Herbst, P., Nonić, D., Jović, D., Stanišić, M., Eds.; Swiss Federal Institute of Technology, ETH: Zürich, Switzerland, 2006; Volume 35, pp. 49-56.*

26. Petrova, S. Contesting forest neoliberalization: Recombinant geographies of “illegal” logging in the Balkans. *Geoforum* 2014, 55, 13-21. [CrossRef]

27. M. Markus-Johansson, B.; Mesquita, A.; Nemeth, M.; Dimovski, C.; Monnier, P. Kiss-Parciu, *Illegal Logging in South Eastern Europe Regional Report, REC Working Paper; The Regional Environmental Center for Central and Eastern Europe (REC): Szentendre, Hungary, 2010.*

28. FEA, GreenHome, CNVP, Regional Action for Combating Forest Crime and Corruption, *The Survey on Corruption and Illegal Activities in Forestry -The Report of the Activity 3.2. 2020.* Available online: https://watchtheforests.org/documents_files/The_Survey_on_Corruption_and_Illegal_activities_in_forestry.pdf (accessed on 14 August 2022).

29. Transparency International 2022 Corruption Perceptions Index. Available online: <https://www.transparency.org/en/cpi/2022> (accessed on 11 February 2023).
30. Barredo, J.I.; Brailescu, C.; Teller, A.; Sabatini, F.M.; Mauri, A.; Janouskova, K. Mapping and Assessment of Primary and Old-Growth Forests in Europe; EUR 30661 EN; Publications Office of the European Union: Luxembourg, 2021; ISBN 978-92-76-34230-4. [CrossRef]
31. Maria Sabatini, F.; Burrascano, S.; Keeton, W.S.; Levers, C.; Lindner, M.; Pötzschner, F.; Johannes Verkerk, P.; Bauhus, J.; Buchwald, E.; Chaskovsky, O.; et al. Where are Europe's last primary forests? *Divers. Distrib.* 2018, 24, 1426-1439. [CrossRef]
32. Polunin, O. Flower of Greece and the Balkans -A Field Guide; Oxford University Press: Oxford, UK, 1987; ISBN 9780192819987.
33. Kranjc, A. History of deforestation and reforestation in the dinaric karst. *Geogr. Res.* 2009, 47, 15-23. [CrossRef]
34. Boncina, A. History, current status and future prospects of uneven-aged forest management in the Dinaric region: An overview. *Forestry* 2011, 84, 467-478. [CrossRef]
35. Stevanov, M.; Krott, M.; Curman, M.; Krajter Ostoić, S.; Stojanovski, V. The (New) role of public forest administration in Western Balkans: Examples from Serbia, Croatia, FYR Macedonia, and Republika Srpska. *Can. J. For. Res.* 2018, 48, 898-912. [CrossRef]
36. Avdibegović, M.; Nonić Dragan, D.; Posavec, S.; Petrović, N.; Marić, B.; Milijić, V.; Krajter, S.; Ioras, F.; Abrudan, I.V. Policy options for private forest owners in Western Balkans: A qualitative study. *Not. Bot. Horti Agrobot. Cluj-Napoca* 2010, 38, 257-261.
37. European Commission Stabilisation and Association Process. Available online: https://neighbourhood-enlargement.ec.europa.eu/enlargement-policy/glossary/stabilisation-and-association-process_en (accessed on 14 August 2022).
38. Kittova, Z.; Steinhauser, D. The international economic position of Western Balkan countries in light of their European integration ambitions. *J. Compet.* 2018, 10, 51-68. [CrossRef]
39. European Commission. Montenegro 2022 Report Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 2022 Communication on EU Enlargement policy. *Comm. Staff Work. Doc.* 2022, 1-135. Available online: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022SC0335> (accessed on 14 August 2022).

40. European Commission. Key findings of the 2022 Report on Montenegro. Press Corner Ctry Insights 2022. Available online: https://ec.europa.eu/commission/presscorner/detail/en/COUNTRY_22_6103 (accessed on 14 August 2022).
41. Yin, R.K. Case Study Research Design and Methods, 4th ed.; Sage Publications Inc.: Southend Oaks, CA, USA, 2009; ISBN 978-1-4129-6099-1. [CrossRef]
42. Malovrh, Š.P.; Kumer, P.; Glavonjić, P.; Nonić, D.; Nedeljković, J.; Kisin, B.; Avdibegović, M. Different organizational models of private forest owners as a possibility to increase wood mobilization in Slovenia and Serbia. *Croat. J. For. Eng. J. Theory Appl. For. Eng.* 2017, 38, 127-140.
43. Bjegović, J.K.; Diku, A.; Vukovic, A.; Dorfer, A.; Vasic, J.; Kadiouglu, B.; Stavrevska-Panajotova, A. Study on Illegal Logging and Timber Trade Flows -Legal and Administrative Aspects, Implementation and Enforcement; Publications Office of the European Union: Luxembourg, 2021.
44. Mayring, P. Qualitative Content Analysis. *Forum Qualitative Soc. Res.* 2000, 1, 10.
45. FAO. GFRA 2020 Report, Montenegro; FAO: Rome, Italy, 2020.
46. Kankaras, R. Montenegro Country Profile. Available online: <http://www.china-ceecforestry.org/country/montenegro/> (accessed on 14 August 2022).
47. Official Gazette of the Republic of Montenegro, No. 074/10, 040/11, 047/15, Forest Law, 2015, 1-25. Available online: <https://wapi.gov.me/download-preview/79727e36-026a-4bd5-9473-568a8e2334a2?version=1.0> (accessed on 14 August 2022).
48. Čomic, D.; Skrbic, N.; Becirovic, D.; Milovanovic, M. Pregled Organizacija i Institucija Šumarstva u Republici Srpskoj, Federaciji BiH, Srbiji, Hrvatskoj i Crnoj Gori. *Glas. Sumar. Fak. Univ. U Banjoj Luci* 2013, 18, 57-90.
49. Directorate for Forests, Montenegro. Business Year Report 2021, 2021, 27p. Available online: http://www.upravazasume.me/razni_fajlovi/1660553732.pdf (accessed on 14 August 2022).
50. Ministry of Agriculture, Forestry and Water Management, Montenegro. Proposal of the Rulebook on Internal Organization, 2022. Available online: <https://www.gov.me/dokumenta/aaa2a303-e222-455b-ba3d-3bf993aa218c> (accessed on 4 November 2022).
51. Administration for Inspection Affairs, Montenegro. Rulebook on Internal Organization, 2021. Available online: <https://www.gov.me/dokumenta/ed5676df-e660-4574-8187-bdd09d15b69f> (accessed on 4 November 2022).

52. Stanicek, B. Bosnia and Herzegovina: Difficult path towards EU membership. A Glance 2021. Available online: <https://cor.europa.eu/en/events/Documents/CIVEX/6th-enlargement-day/Bosnia%20and%20Herzegovina%20-%20Difficult%20path%20towards%20EU%20membership.pdf> (accessed on 14 August 2022).
53. UN-WCMC, Bosnia and Herzegovina -Country Overview to Aid Implementation of the EUTR, 2020. Available online: https://www.miteco.gob.es/es/biodiversidad/temas/internacional-especies-madera/countryoverviewbosniaandherzegovina190_42020_tcm30-522513.pdf (accessed on 14 August 2022).
54. FAO. GFRA 2020 Desk Study Bosnia and Herzegovina; FAO: Rome, Italy, 2020.
55. WWF. Illegal Wood for the European Market. An Analysis of the EU Import and Export of Illegal Wood and Related Products; WWF: Frankfurt am Main, Germany, 2008.
56. Ministry of Agriculture and Rural Development, Montenegro. Program of Reorganization of Concession Use of Forests, 2020. Available online: <https://www.gov.me/dokumenta/df17d16f-5565-4439-b291-2884605d144c> (accessed on 4 November 2022).
57. Ministry of Ecology, Spatial Planning and Urbanism. Action Plan for Meeting the Final Criteria in Chapter 27 -Environment and Climate Change 2021, 152. Available online: <https://www.gov.me/dokumenta/abaef2f4-d824-4d42-a05d-e6a8ad92a09d> (accessed on 9 November 2022).
58. Government of Montenegro. Action Plan for Combating Illegal Activities in Forestry 2022-2023, 2021. Available online: <https://wapi.gov.me/download/d66ad413-24b5-43d4-8a65-7529872bd7f2?version=1.0> (accessed on 15 November 2022).
59. Government of Montenegro. Revised Forest Strategy, 2018-2023, 2018, 33. Available online: <https://www.gov.me/dokumenta/47673bc4-b66d-45f2-975e-db4743bf81a6> (accessed on 4 November 2022).
60. Government of the Republic of Srpska, Ministry of Agriculture, Forestry and Water Managamanet. Forestry Development Strategy 2011-2021. Available online: <https://www.vladars.net/eng/vlada/ministries/MAFW/Pages/default.aspx> (accessed on 14 August 2022).
61. Official Gazzete of the Republic of Srpska, No, 75/08, 60/13, 70/20, Law Forest, 2020. Available online: https://www.vladars.net/sr-SP-Cyrl/Vlada/Ministarstva/mps/Documents/Prijedlog%20zakona%20o%20izmjenama%20i%20dopunama%20Zakona%20o%20sumama_240068094.pdf (accessed on 5 December 2022).

62. Government of the Republic of Srpska, Action Plan for the Suppression of Illegal Felling, Theft and Illegal Traffic Of Timber Assortments. 2015.
63. Official Gazette of the Republic of Srpska, Rulebook on the Tree Markation, 2009. Available online: https://rzsm.org/images/stories/RZSM/Propisi/MPSV/SumarstvoLovstvo/MPSV_Sum_Vazeci/4-13-09%20pravilnik%20o%20vršenju%20doznake%20stabala%20za%20sjecu.pdf (accessed on 5 December 2022).
64. Nonić, D.; Ranković, N.; Nedeljković, J.; Glavonjić, P.; Marinković, M. Transition process in forestry in Serbia and selected CSEE countries: Policy and property rights reforms. In *Legal Aspects of European Forest Sustainable Development*; Deltuvas, R., Herbst, P., Činga, G., Eds.; Aleksandras Stulginskis University Romualdas: Kaunas, Lithuania, 2011; pp. 177-186.
65. Nonić, D.; Petrović, N.; Medarević, M.; Glavonjić, P.; Nedeljković, J.; Stevanov, M.; Orlović, S.; Rakonjac, L.; Djordjević, I.; Poduška, Z.; et al. Forest Land Ownership Change in Serbia. COST Action FP1201 FACESMAP Country Report; Serbia. COST Action FP1201 FACESMAP Country Report; European Forest Institute Central -East and South-East European Regional Office: Vienna, Austria, 2015.
66. Premrl, T.; Udovč, A.; Bogataj, N.; Krč, J. From restitution to revival: A case of commons re-establishment and restitution in Slovenia. *For. Policy Econ.* 2015, 59, 19-26. [CrossRef]
67. Nonić, D.; Milijić, V. Analysis of Current Situation of Private Forests in Serbia and Its Role in the Process of Defining the Forestry Development Strategy (SDS) and the National Forest Programme (NFP); PROFOR i CEPF: Belgrade, Serbian, 2008.
68. Stojanovska, M.; Miovska, M.; Jovanovska, J.; Stojanovski, V. The process of forest management plans preparation in the Republic of Macedonia: Does it comprise governance principles of participation, transparency and accountability? *For. Policy Econ.* 2014, 49, 51-56. [CrossRef]
69. Sergent, A.; Arts, B.; Edwards, P. Governance arrangements in the European forest sector: Shifts towards 'new governance' or maintenance of state authority? *Land Use Policy* 2018, 79, 968-976. [CrossRef]
70. Liubachyna, A.; Bubbico, A.; Secco, L.; Pettenella, D. Management goals and performance: Clustering state forest management organizations in Europe with multivariate statistics. *Forests* 2017, 8, 504. [CrossRef]
71. Rogelja, T.; Shannon, M.A. Structural power in Serbian anti-corruption forest policy network. *For. Policy Econ.* 2017, 82, 52-60. [CrossRef]

72. Kleinschmit, D.; Ferraz Ziegert, R.; Walther, L. Framing illegal logging and its governance responses in Brazil -A structured review of diagnosis and prognosis. *Front. For. Glob. Chang.* 2021, 4, 59. [CrossRef]
73. Acheampong, E.; Maryudi, A. Avoiding legality: Timber producers' strategies and motivations under FLEGT in Ghana and Indonesia. *For. Policy Econ.* 2020, 111, 102047. [CrossRef]
74. Pendrill, F.; Persson, U.M.; Godar, J.; Kastner, T.; Moran, D.; Schmidt, S.; Wood, R. Agricultural and forestry trade drives large share of tropical deforestation emissions. *Glob. Environ. Chang.* 2019, 56, 1-10. [CrossRef]
75. Ministry of Agriculture. National Biennial Report on the Implementation and Enforcement of EUTR for Croatia for the Period 2017-2019; Ministry of Agriculture: Zagreb, Croatia, 2019.
76. Köthke, M. Implementation of the European Timber Regulation by German importing operators: An empirical investigation. *For. Policy Econ.* 2020, 111, 102028. [CrossRef]
77. Holopainen, J.; Toppinen, A.; Perttula, S. Impact of European Union timber regulation on forest certification strategies in the Finnish wood industry value chain. *Forests* 2015, 6, 2879-2896. [CrossRef]
78. Brusselaers, J.; Buysse, J. Legality requirements for wood import in the EU: Who wins, who loses? *For. Policy Econ.* 2021, 123, 102338. [CrossRef]
79. Forest Stewardship Council Certification in Numbers. Available online: <https://adria-balkan.fsc.org/sr/sta-je-fsc/certifikacija-u-brojevima> (accessed on 22 March 2023).
80. Terziyska, P.; Rantala, A.; Posavec, S.; Malovrh, E.K.; Sarniak, S.; Betlejewska, S.; Bu, G. Management Aspects in Forestry and Forest Based Industries; Jelacic, D., Ed.; WoodEMA i.a.: Zagreb, Croatia, 2020; ISBN 9789535782278.
81. Giurca, A.; Jonsson, R. The opinions of some stakeholders on the European Union Timber Regulation (EUTR): An analysis of secondary sources. *IForest* 2015, 8, 681-686. [CrossRef]
82. Lodge, M.; Wegrich, K. (Eds.) *The Problem-Solving Capacity of the Modern State: Governance Challenges and Administrative Capacities*; Oxford University Press: Oxford, UK, 2014.
83. World Wide Fund For Nature, Brussels, Belgium, Enforcement Review of the EU Timber Regulation (EUTR) 2019. Available online: https://wwfeu.awsassets.panda.org/downloads/wwf_eutr_implementation_eu_synthesis_report_2019.pdf (accessed on 14 August 2022).

84. Clientearth. Internal Illegal Logging-Evaluation of EU Rules (Fitness Check) -EUTR and FLEGT Regulation Our Call for a More Effective Regulatory Approach to Tackle Illegal Logging. 2020. Available online: <https://www.clientearth.org/media/iljoaqaf/position-paper-eutr-flegt-consultation.pdf> (accessed on 14 August 2022).

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.

References Chapter 5 Article 3

Administration for Inspection Affairs, Montenegro, the Rulebook on Internal Organisation, 2021. Internal document

Aggestam, F., & Pülzl, H., 2018. Coordinating the Uncoordinated: The EU Forest Strategy. *For-ests* 2018, Vol. 9, Page 125, 9(3), 125. <https://doi.org/10.3390/F9030125>

Apeti, A. E., & Doriane N'doua, B. (2023). The impact of timber regulations on timber and timber product trade. <https://doi.org/10.1016/j.ecolecon.2023.107943>

Avdibegović, M., Marić, B., Bećirović, D., Brajić, A., Hodžić, R., Pezdevšek Malovrh, Š., 2021. Teoretski I praktični aspekti certificiranja u šumarstvu Bosne I Hercegovine. Šumarski Fakultet Univerziteta u Sarajevu, Sarajevo

Avdibegović, M., Vuletić, D., Makedonka, S., Peri, L., Nonić, D., Delić, S., Keča, L., Nenad, P., Radosavljević, A., Marić, B., Bećirović, D., Mutabdžija, S., Brajić, A., Grašić, T., Nikolić, V., Pezdevšek Malovrh, Š., 2012. The Adaptation of National Forest Policy Systems in South-East European Countries (Albania, Bosnia-Herzegovina, Croatia, Macedonia and Serbia) to New Modes of International Forest Governance, Proceedings of Abstracts from the IUFRO Seminar Assessing Forest Governance in a Context of Change;

Bager, S. L.; Persson, U. M.; dos Reis, T. N. P. 2021. Eighty-six EU policy options for reducing imported deforestation *One Earth*, 4, 289-306, doi:10.1016/J.ONEEAR.2021.01.011.

Balkan Investigative Reporting Network, 2018. Illegal Logging Takes Root in Bosnia's Protected Areas. Retrieved from <https://balkaninsight.com/2018/07/12/illegal-logging-takes-root-in-Bosnia-s-protected-areas-07-11-2018/>

Baycheva-Merger, T., Sotirov, M., Holmgren, S., & Selter, A. ,2018. Institutional and Actor-Oriented Factors Constraining Expert-Based Forest Information Exchange in Europe: A Policy Analysis from an Actor-Centred Institutional Approach. *Forests* 2018, Vol. 9, Page 129, 9(3), 129. <https://doi.org/10.3390/F9030129>

Berning, L., & Sotirov, M., 2023. Hardening corporate accountability in commodity supply chains under the European Union Deforestation Regulation. <https://doi.org/10.1111/rego.12540>

Birou for Statistics of the Republic of Serbia. 2022. Forest damages. In *Forest statistics*. <https://publikacije.stat.gov.rs/G2023/Pdf/G20231147.pdf>

Bjegović, J.K.; Diku, A.; Vukovic, A.; Dorfer, A.; Vasic, J.; Kadiouglu, B.; Stavrevska-Panajotova, A. Study on Illegal Logging and Timber Trade Flows-Legal and Administrative Aspects, Implementation, and Enforcement; Publications Office of the European Union: Lux-embourg, Luxembourg; 2021

Bösch, M. 2021. Institutional quality, economic development and illegal logging: A quantitative cross-national analysis. *Eur. J. For. Res.*, 140, 1049-1064.

Bouriaud L., Nichiforel L., Weiss G., Bajraktari A., Curovic M., Dobšinská Z., Glavonjic P., Jarský V., Sarvasova Z., Teder M., et al., 2013. Governance of private forests in Eastern and Central Europe: An analysis of forest harvesting and management rights. *Annals of Forest Re-search*, 56, 199-215, DOI: 10.15287/afr.2013.54

Cashore, B.; Stone, M.W. 2012. Can legality verification rescue global forest governance? Analysing the potential of public and private policy intersection to ameliorate forest challenges in Southeast Asia. *For. Policy Econ.*, 18, 13-22. <https://doi.org/10.1016/j.forpol.2011.12.005>

Chatham House, 2018. *Illegal Logging and Related Trade: Indicators of the Global Response* London: Chatham House.

Christopoulos, D., 2009. Peer Esteem Snowballing: A Methodology for Expert Surveys. *Euro-stat Conference for New Techniques and Technologies for Statistics*, 171-179.

Čomić, D., Glavonjić, B., Anikić, N., Avdibegović, M. 2021a. Comparative Analysis of Wood Fuels Consumption in Households in the Federation of Bosnia and Herzegovina. *South-east European forestry: SEEFOR*, 12(1), 43-56

Čomić, D., Glavonjić, B., Anikić, N., Bilić, S. 2021b. Wood fuels consumption in households in the Republic of Srpska: A comparative analysis of the wisdom methodology and official statistics. *Glasnik Sumarskog fakulteta*, (123), 55-86.

Čomic, D.; Škrbic, N.; Becirovic, D.; Milovanovic, M., 2013. Pregled Organizacija i Institucija Šumarstva u Republici Srpskoj, Federaciji BiH, Srbiji, Hrvatskoj i Crnoj Gori. *Glas. Sumar. Fak. Univ. U Banjoj Luci*, 18, 57-90

Dieguez, L., & Sotirov, M., 2021. FSC sustainability certification as green-lane for legality verification under the EUTR? Changes and policy learning at the interplay of private governance and public policy. *Forest Policy and Economics*, 131, 102568. <https://doi.org/10.1016/J.FORPOL.2021.102568>

Directorate for Forests, Montenegro, 2021 Business Year Report 2021, 27 p. Available online: http://www.upravazasume.me/razni_fajlovi/1660553732.pdf (accessed on August 14, 2022). Internal document

Dobšinská Z., Živojinović I., Nedeljković J., Petrović N., Jarský V., Oliva J., Šálka J., Sarvašová Z., and Weiss G., 2020. Actor power in the restitution processes of forests in three European countries in transition. *Forest Policy and Economics*, 113, 102090, DOI: 10.1016/j.forpol.2020.102090.

Dobšinská, Z., Rathke, J., Weber, N., 2015. COST FP 1207: Orchestrating Forest-related Policy Analysis in Europe (ORCHESTRA) Synthesis Report of WG1 Country Reports.

EC, 2021. Study on Illegal Logging and Timber Trade Flows. EU Environment Partnership Programme for Accession (EPPA) in the Western Balkans and Turkey, NIRAS International Consulting and Umweltbundesamt GmbH,

EC.2023. Regulation (EU) 2023/1115 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation

European Commission, 2010. Communication from the Commission to the European Parliament and the Council: Options to Enhance the EU Approach Against Deforestation Brussels: European Commission

European Commission, 2020. Western Balkans 2020 Report Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/default/files/western_balkans_report_2020.pdf

European Commission. 2021. Impact Assessment Minimising The Risk of Deforestation and Forest Degradation Associated with Products Placed on the EU Market. In Commission Staff Working

Document, Commission Staff Working Document (pp. 1-87). European Commission. https://eur-lex.europa.eu/resource.html?uri=cellar:c34ecf63-4878-11ec-91ac-01aa75ed71a1.0001.02/DOC_1&format=PDF

European Forest Institute. 2018. Forest Governance in the Western Balkans: An Assessment of Forest Governance Challenges and Opportunities in Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia Retrieved from <https://www.efi.int/sites/default/files/files/publication-bank/2018/efi-fgr-2018-04.pdf>.

FAO and Ministry for Agriculture, Forestry and Water Management of the Republic of Serbia, Second National Forest Inventory, final report, Belgrade, 2023

FAO, 2020 GFRA Desk Study: Bosnia and Herzegovina; FAO: Rome, Italy; 2020.

FAO, 2020. Global Forest Resources Assessment 2020: Main report; FAO: Rome, Italy,

FAO: Deforestation and Forest Degradation Persist. Available online: <https://www.fao.org/3/cb9360en/online/src/html/deforestation-land-degradation.html> (accessed on 18 March 2023).

FAOSTAT. 2023. SDG Indicators. Data: Forest cover; Share of forest cover in total land, Forest area certified. Year 2020. Available at <https://www.fao.org/faostat/en/#data/SDGB>, Accessed 17.10.2023)

FEA, 2020- Regional Action for Combating Forest Crime and Corruption. The Survey on Corruption and Illegal Activities in Forestry-The Report of the Activity 3.2. 2020, p. 197. Available online: https://watchtheforests.org/documents_files/The_Survey_on_Corruption_and_Illegal_activities_in_forestry.pdf (accessed on 23 May 2021).

Food and Agriculture Organisation (FAO). 2010. Global Forest Resources Assessment 2010 Rome: FAO.

Forest Act. 2015. Official Journal of the Republic of Slovenia No 30/93, 56/99 - ZON, 67/02, 110/02 - ZGO-1, 115/06 - ORZG40, 110/07, 106/10, 63/13, 101/13 - ZDavNepr in 17/14)

Forest Europe, UNECE, and FAO, 2016. State of Europe's Forests 2015 Retrieved from <http://foresteurope.org/state-forests-2015-report/>

FSC, 2023. FSC in the Adria Balkan Region. Available on [https://adria-balkan.fsc.org/en/fsc-in-the-adria-balkan-region/slo#:~:text=22%25%20of%20the%20total%20forest,M%20ha%20\(i.e.%2027%25\)](https://adria-balkan.fsc.org/en/fsc-in-the-adria-balkan-region/slo#:~:text=22%25%20of%20the%20total%20forest,M%20ha%20(i.e.%2027%25))

Giurca, A., Abrudan, I. V., & Giurca, D. 2016. An Analysis of the European Timber Regulation in Romania *Procedia Economics and Finance*, 39: 3-8.

Glavonjić, B. D., Oblak, L. Z., Čomić, D. R., Lazerević, A. V., Kalem, M. S. (2017). Wood fuels consumption in households in Bosnia and Herzegovina. *Thermal Science*, 21(5), 1881-1892

Global Forest Resource Assessment.2020. Country reports, FAO, <https://www.fao.org/forest-resources-assessment/fra-2020/country-reports/en/>

Government of Montenegro, 2018. Revised Forest Strategy, 2018-2023, 33. Available online: <https://www.gov.me/dokumenta/47673bc4-b66d-45f2-975e-db4743bf81a6> (accessed on 4 November 2022).

Government of Montenegro, 2021. Action Plan for Combating Illegal Activities in Forestry 2022-2023 Available online: <https://wapi.gov.me/download/d66ad413-24b5-43d4-8a65-7529872bd7f2?version=1.0> (accessed on 15 November 2022)

Henn, E. V., 2021. Protecting forests or saving trees? The EU's regulatory approach to global deforestation. *Review of European, Comparative and International Environmental Law*, 30(3), 336-348. <https://doi.org/10.1111/REEL.12413>

Hollingsworth, J. R.,2000. Doing institutional analysis: Implications for the study of innovations. *Review of International Political Economy*, 7(4), 595-644. <https://doi.org/10.1080/096922900750034563>

Hrvatske sume. 2021. About us Available online: <https://www.hrsume.hr/index.php/hr/tvrtka/onama> (accessed on June 8, 2021).

Keary, K., & Strand, J. 2011. Forest Certification and Sustainable Forest Management in South-east Europe: Insights from the Forest Products Sector *European Journal of Forest Research*, 130(6): 1019-1031

Koulelis, P., 2015. Leading countries in tropical timber trade and consumption in the EU. A quantitative analysis. [WWW Document]. URL <https://mpra.ub.uni-muenchen.de/68773/> (accessed 8.12.23).

Köthke, M., Lippe, M., & Elsasser, P. (2023). Comparing the former EUTR and upcoming EUDR: Some implications for the private sector and authorities. *Forest Policy and Economics*, 157, 103079. <https://doi.org/10.1016/J.FORPOL.2023.103079>

Lazdinis, M., Angelstam, P., & Pülzl, H., 2019. Towards sustainable forest management in the European Union through polycentric forest governance and an integrated landscape approach. *Landscape Ecology*, 34, 1737-1749. <https://doi.org/10.1007/s10980-019-00864-1>

MAFWM, 2022. Proposal of the rulebook on internal organisation, Internal document Ministry of Agriculture, Forestry and Water Management of Montenegro

Malovrh, Š.P.; Bećirović, D.; Marić, B.; Nedeljković, J.; Posavec, S.; Petrović, N.; Avdibegović, M. 2019. Contribution of forest stewardship council certification to sustainable forest management of state forests in selected Southeast European countries. *Forests*, 10, 648

MARD, 2020. Program of Reorganisation of Concession Use of Forests. Ministry of Agriculture and Rural Development, Montenegro. Available online: <https://www.gov.me/dokumenta/df17d16f-5565-4439-b291-2884605d144c> (accessed on 4 November 2022)

Masiero, M., Pettenella, D., Cerutti, P. O., 2015. Legality constraints: The emergence of a dual market for tropical timber products? *Forests*, 6, 3452-3482, doi:10.3390/f6103452.

Matović, B., Nonić, D., & Nonić, M. 2017. European Union Timber Regulation: Challenges and Opportunities for Serbia *Bulletin of the Faculty of Forestry*, 117: 15-26

MESPU, 2021. Action Plan for Meeting the Final Criteria in Chapter 27-Environment and Climate Change, 152. Ministry of Ecology, Spatial Planning and Urbanism. Available online: <https://www.gov.me/dokumenta/abaef2f4-d824-4d42-a05d-e6a8ad92a09d> (accessed on 9 November 2022).

Ministry of Agriculture, Forestry and Water Management of Montenegro. 2022. Proposal of the rulebook on internal organisation, Internal document

Nasto, V. A., & Poje, A. 2014. Timber Trade Flows in Southeast Europe *Zbornik Gozdarstva in Lesarstva*, 101: 3-14

Nonić, D., & Krajter, S. 2016. Assessment of Adaptation to New European Union Regulations on the Legality of Timber in the Republic of Croatia. *Croatian Journal of Forest Engineering*, 37(1): 117-118.

Nonić, D., Ranković, N., Nedeljković, J., Glavonjić, P., Marinković, M., 2011. Transition process in forestry in Serbia and selected CSEE countries: policy and property rights reforms, in: Deltuvas, R., Herbst, P., Činga, G. (Eds.), *Legal Aspects of European Forest Sustainable Development*. Aleksandras Stulginskis University Romualdas, Kaunas, Lithuania, pp. 177-186.

Official Gazette of the Republic of Montenegro, No. 074/10, 040/11, 047/15, Forest Law, 2015, 1-25. Available online: <https://wapi.gov.me/download-preview/79727e36-026a-4bd5-9473-568a8e2334a2?version=1.0> (accessed on 14 August 2022).

Official Gazette of the Republic of Srpska, Rulebook on the Tree Markation, 2009. Available online: https://rzsm.org/images/stories/RZSM/Propisi/MPSV/SumarstvoLovstvo/MPSV_Sum_Vazeci/4-13-09%20pravilnik%20o%20vrsenju%20doznake%20stabala%20za%20sjecu.pdf (accessed on 5 December 2022).

Official Gazzettte of the Republic of Srpska, No, 75/08, 60/13, 70/20, 2020, 2020. Forest Law,. Available online: https://www.vladars.net/sr-SP-Cyrl/Vlada/Ministarstva/mps/Documents/Prijedlog%20zakona%20o%20izmjenama%20i%20dopunama%20Zakona%20o%20sumama_240068094.pdf (accessed on 5 December 2022). 62. Government of the Republic of Srpska, Action Plan for the Suppression of Illegal Felling, Theft and Illegal Traffic Of Timber Assortments. 2015.

Paluš, H.; Parobek, J.; Vlosky, R.P.; Motik, D.; Oblak, L.; Jošt, M.; Glavonjić, B.; Dudík, R.; Wanat, L. , 2018, The status of chain-of-custody certification in the countries of Central and South Europe. *Eur. J. Wood Wood Prod.* 76, 699-710.

PEFC, 2023. Find certified. Available at <https://pefc.org/find-certified>

Penikar, M., & Gartner, D. 2012. Chain of Custody Certification in the Slovenian Wood Processing Industry *Zbornik Gozdarstva in Lesarstva*, 98: 29-38.

PETROVIC, N., 2022. Sustainable forest management in the Western Balkan region. In *Regional Rural Development Standing Working Group in SEE (SWG)*. <https://seerural.org/wp-content/uploads/2022/12/Sustainable-forest-management-in-the-western-balkan-region.pdf>.

Poje, A., & Mavsar, R. 2014. An Analysis of Sustainable Forest Management Practices in South-east Europe *Forest Policy and Economics*, 38: 142-152.

Public Enterprise Srbijašume, 2021. About Us. Available online: <https://srbijasume.rs/en/preduzece/o-nama> (accessed on 23 May 2021).

Radosavljević, M., Masiero, M., Rogelja, T., & Glavonjić, B. 2021. Adaptation to EUTR Requirements: Insights from Slovenia, Croatia and Serbia. *Forests* 2021, Vol. 12, Page 1665, 12(12), 1665. <https://doi.org/10.3390/F12121665>

Radosavljevic, M.; Masiero, M.; Rogelja, T.; Comic, D. 2023. Alignment of National Forest Policy Frameworks with the EU Timber Regulation Requirements: Insights from Montenegro and the Republic of Srpska (Bosnia and Herzegovina). *Forests* 2023, 14, 1157. <https://doi.org/10.3390/f14061157>

Radosavljevic, M.; (2024) Integration of the EU Timber Regulation Requirements into the Forest Policy Framework of Selected Western Balkan Countries: A Multiple Case Study Analysis for Slovenia, Croatia, Serbia, Montenegro, and Bosnia and Herzegovina (PhD Thesis in revision). University of Padova, Department of Land, Environment, Agriculture and Forestry (TESAF), PhD Program in Land, Environment, Resources and Health (LERH), Batch XXXVI.

Republican Bureau of Statistics, 2021. Forestry in the Republic of Serbia in 2020; Republican Bureau of Statistics: Belgrade, Serbia.

Rogelja, T., Shannon, M.A., 2017. Structural power in Serbian anti-corruption forest policy network. *For. Policy Econ.* 82, 52-60. doi:10.1016/j.forpol.2017.05.008

Ross, S., & Johnston, D., 2023. Timber sector not yet prepared for incoming EU regulations. SPOTT.Org <https://www.spott.org/news/timber-sector-unprepared-for-incoming-eudr-deforestation-regulations/> (Assessed, August 15 2023)

Scharpf, F.W. 1997. *Games Real Actors Play: Actor-Centred Institutionalism in Policy Research*; Westview Press: Oxford, UK,; ISBN 0-8133-6879-0

Scott, W.R., 2005. Institutional theory: Contributing to a theoretical research program. *Great minds in management: The process of theory development*, 37(2), pp.460-484.

Segato, L. , 2017. Tackling corruption in the framework of the EUTR: the TREES project In 27th Illegal Logging Update and Stakeholder Consultation Meeting; Chatham House: London↑

Segato, V. 2007. *Illegal Logging in Southeast Europe: A Preliminary Analysis of Markets and Institutions* The World Bank, Washington, DC

SFS (Slovenian Forest Service), 2022. Report of the Slovenian Forest Service on Forests for 2022: Ljubljana, Slovenia,

Sotirov, M., & Memmler, M. (2012). The Advocacy Coalition Framework in natural resource policy studies - Recent experiences and further prospects. *Forest Policy and Economics*, 16, 51-64. <https://doi.org/10.1016/J.FORPOL.2011.06.007>

Sotirov, M., Pokorny, B., Kleinschmit, D., & Kanowski, P. (2020). International Forest Governance and Policy: Institutional Architecture and Pathways of Influence in Global Sustainability. *Sustainability* 2020, Vol. 12, Page 7010, 12(17), 7010. <https://doi.org/10.3390/SU12177010>

Transparency International (2021) Corruption Perceptions Index 2020 Retrieved from <https://www.transparency.org/en/cpi/2020/index>

UN-WCMC, 2020 Bosnia and Herzegovina-Country Overview to Aid Implementation of the EUTR. Available online: https://www.miteco.gob.es/es/biodiversidad/temas/internacional-especies-madera/countryoverviewbosniaandherzegovina19042020_tcm30-522513.pdf (accessed on 14 August 2022).

van Rijn, S. 2022. A Qualitative Cross-Sectional Study: From EU Timber Regulation to EU De-forestation-Free Products Regulation. Rijksuniversiteit Groningen, Germnaz. Master thesis. Available at <https://campus-fryslan.studenttheses.ub.rug.nl/186/1/MA%204871219%20S.%20van%20Rijn.pdf>

Vojvodinasume. About the company. Available online: <https://www.vojvodinasume.rs/en/about-company> (accessed on 8 October 2021).

Weiss G., Lawrence A., Hujala T., Lidestav G., Nichiforel L., Nybakk E., Quiroga S., Sarvašová Z., Sua-rez C., and Živojinović I. 2019. Forest ownership changes in Europe: State of knowledge and conceptual foundations. *Forest Policy and Economics*, 99, 9-20, DOI: 10.1016/j.forpol.2018.03.003.

Winkel, G., & Sotirov, M. ,2016. Whose integration is this? European forest policy between the gospel of coordination, institutional competition, and a new spirit of integration. *Environment and Planning C: Government and Policy*, 34(3), 496-514. <https://doi.org/10.1068/C1356J> Ministry of Agriculture, Forestry, and Water Management, Mon-tenegro, Proposal of the Rulebook on Internal Organisation, 2022 Internal document

WWF, 2008. *Illegal Wood for the European Market An Analysis of the EU Import and Export of Illegal Wood and Related Products*; WWF: Frankfurt am Main, Germany

WWF, 2019. *World Wide Fund For Nature. WWF Enforcement Review of the EU Timber Regulation (EUTR): EU Synthesis Report*; WWF-World Wide Fund For Nature: Brussels, Belgium

Yin, R.K., 2009. *Case Study Research Design and Methods*, 4th ed. Sage Publications Inc.

Zavod za Gozdove Slovenije, 2023. *Poročilo Zavoda za Gozdove Slovenije o Gozdovih za Leto 2022*.Ljubljana, Slovenija

Živojinović I., Weiss G., Dobšinská Z., Lidestav G., Feliciano D., Hujala T., Lawrence A., Nybakk E., Quiroga S., and Schraml U. (2015). Forest Land Ownership Change in Europe. COST Action FP1201 FACESMAP Country Reports, Joint Volume. pp. 720. ISBN: 978-3-900932-26-8.

References Chapter 5 Article 4

Arnaboldi, V., Conti, M., Passarella, A., & Dunbar, R. I. M. (2017). Online Social Networks and information diffusion: The role of ego networks. *Online Social Networks and Media*, 1, 44-55. <https://doi.org/10.1016/j.osnem.2017.04.001>

Avdibegović, M., Marić, B., Bećirović, D., Brajić, A., Hodžić, R., & Pezdevšek Malovrh, Š. (2021). Teoretski i praktični aspekti certificiranja u šumarstvu Bosne i Hercegovine. Sarajevo: Šumarski fakultet Univerziteta u Sarajevu.

Avdibegović, M., Vuletić, D., Stojanovska, M., Peri, L., Nonić, D., & Delić, S. (2012). Keča Lj. Petrović N., Radosavljević A., Marić B., Bećirović Dž., Mutabdžija S., Brajić A., Grašić T., Nikolić V., Pezdevšek Malovrh Š, 1-3.

Baccaro, L., & Mele, V. (2009). Network Governance in International Organizations: The Case of Global Codes of Conduct (Issue February).

Bager, S. L.; Persson, U. M.; dos Reis, T. N. P. 2021. Eighty-six EU policy options for reducing imported deforestation *One Earth*, 4, 289-306, doi:10.1016/J.ONEEAR.2021.01.011.

Bausano, G., Masiero, M., Migliavacca, M., et al. (2023). Food, biofuels or cosmetics? Land-use, deforestation and CO2 emissions embodied in the palm oil consumption of four European countries: a biophysical accounting approach. *Agricultural Economics*, 11, 35. <https://doi.org/10.1186/s40100-023-00268-5>

Bellamy, R., Palumbo, A. (eds.) (2010). From government to governance. *The Library of Contemporary Essays in Political Theory and Public Policy*. Routledge, London.

Berardo, R., & Scholz, J. T. (2010). Self-Organizing Policy Networks: Risk, Partner Selection, and Cooperation in Estuaries. *American Journal of Political Science*, 54 (3), 632-649. <https://doi.org/10.1111/j.1540-5907.2010.00451.x>

Berkowitz, S. D. (2013), *An introduction to structural analysis: The network approach to social research*, Elsevier

Berning, L., & Sotirov, M. (2023a). The coalitional politics of the European Union Regulation on deforestation-free products. *Forest Policy and Economics*, 158, 103102. <https://doi.org/10.1016/j.forpol.2023.103102>

Berning, L., & Sotirov, M. (2023b). Hardening corporate accountability in commodity supply chains under the European Union Deforestation Regulation. *Regulation and Governance*, 17, 870-890. <https://doi.org/10.1111/rego.12540>

Borgatti, S. P., & Halgin, D. S. (2011). On Network Theory. *Organization Science*, 22(5), 1168-1181. <http://www.jstor.org/stable/41303110>

Borgatti, S. P., Everett, M. G., & Johnson, J. C. (2018). *Analyzing social networks*. Sage Publications.

Börzel, T. A. (1998). Organizing Babylon: On the Different Conceptions of Policy Networks. *Public Administration*, 76, 253-273. <https://doi.org/10.1111/1467-9299.00100>

Chalancon, G., Kruse, K., Babu, M.M. (2013). Clustering Coefficient. In: Dubitzky, W., Wolkenhauer, O., Cho, KH., Yokota, H. (eds) *Encyclopedia of Systems Biology*. Springer, New York, NY. https://doi.org/10.1007/978-1-4419-9863-7_1239

Granovetter, M. (1973) The Strength of Weak Ties. *The American Journal of Sociology*, Vol. 78, No. 6, 1360-1380.

Weible, C. M., Pattison, A., Sabatier, P. A. (2010). Harnessing expert-based information for learning and the sustainable management of complex socio-ecological systems. *Environmental Science & Policy*, 13 (6), 522-534. <https://doi.org/10.1016/j.envsci.2010.05.005>

Čomić, D., Glavonjić, B., Anikić, N., Avdibegović, M. (2021a). Comparative Analysis of Wood Fuels Consumption in Households in the Federation of Bosnia and Herzegovina. *South-east European forestry: SEEFOR*, 12 (1), 43-56.

Čomić, D., Glavonjić, B., Anikić, N., Bilić, S. (2021b). Wood fuels consumption in households in the Republic of Srpska: A comparative analysis of the wisdom methodology and official statistics. *Glasnik Sumarskog fakulteta*, (123), 55-86.

Dal Molin, M., & Masella, C. (2015). Networks in policy, management and governance: a comparative literature review to stimulate future research avenues. *Journal of Manag. Gov.*, 822-849. <https://doi.org/10.1007/s10997-015-9329-x>

Dobšinská Z., Živojinović I., Nedeljković J., Petrović N., Jarský V., Oliva J., Šálka J., Sarvašová Z., and Weiss G. (2020). Actor power in the restitution processes of forests in three European countries in transition. *Forest Policy and Economics*, 113, 102090. DOI: 10.1016/j.forpol.2020.102090.

European Commission. (2010). Communication from the Commission to the European Parliament and the Council: Options to Enhance the EU Approach Against Deforestation. Brussels: European Commission.

European Forest Institute. (2018). Forest Governance in the Western Balkans: An Assessment of Forest Governance Challenges and Opportunities in Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia. Retrieved from https://www.efi.int/sites/default/files/files/publication-2_bank/2018/efi-fgr-2018-04.pdf.

FAO. (2020). Global Forest Resources Assessment 2020: Main report. Rome, Italy.

FAO. (n.d.). Deforestation and Forest Degradation Persist. Available online: <https://www.fao.org/3/cb9360en/online/src/html/deforestation-land-degradation.html> (accessed on 7 March 2023).

FAOSTAT. (2023). SDG Indicators. Data: Forest cover; Share of forest cover in total land, Forest area certified. Year 2020. Available at <https://www.fao.org/faostat/en/#data/SDGB> (Accessed 17.10.2023)

Food and Agriculture Organisation (FAO). (2010). Global Forest Resources Assessment 2010. Rome, FAO.

Forest Europe, UNECE, and FAO. (2016). State of Europe's Forests 2015. Retrieved from <http://foresteurope.org/state-forests-2015-report/>

Giurca, A., Abrudan, I. V., & Giurca, D. (2016). An Analysis of the European Timber Regulation in Romania. *Procedia Economics and Finance*, 39, 3-8.

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6).

Guy Peters, B and Pierre,. (1998) Governance without government? Rethinking public administration. *J. Public Adm. Res. Theory*.

Hanneman and Riddle. (2005). Introduction to social network methods. Riverside, CA: University of California, Riverside (published in digital form at <http://faculty.ucr.edu/~hanneman/>)

Hanneman and Riddle. (2009). Introduction to social network methods: Chapter 9. Ego networks. Available at https://faculty.ucr.edu/~hanneman/nettext/C9_Ego_networks.html

- Jonsson, R., Giurca, A., Masiero, M., Pepke, E., Pettenella, D., Prestemon, J., & Winkel, G. (2015). EU Timber Regulation and FLEGT Action Plan: Lessons learned and policy implications.
- Keary, K., & Strand, J. (2011). Forest Certification and Sustainable Forest Management in Southeast Europe: Insights from the Forest Products Sector. *European Journal of Forest Research*, 130(6), 1019-1031.
- Klijn, E. H. (1996). Analyzing and managing policy processes in complex networks. A theoretical examination of the concept policy network and its problems. *Administration & Society*, 28(1), 90-119.
- Knoke, D. (1990). *Political networks: The structural perspective*(Vol. 4). Cambridge University Press.
- Knoke, D., & Yang, S. (2019). *Social network analysis*. Sage Publications.
- Köthke, M., Lippe, M., & Elsasser, P. (2023). Comparing the former EUTR and upcoming EUDR: Some implications for the private sector and authorities. *Forest Policy and Economics*, 157, 103079. <https://doi.org/10.1016/J.FORPOL.2023.103079>
- Krackhardt, D. (1990). Assessing the strength of weak ties. *Scandinavian Journal of Management*, 6(1), 21-39.
- Leifeld, P., & Schneider, V. (2012). Information Exchange in Policy Networks. *American Journal of Political Science*, 56(3), 731-744.
- Leipold, S. (2017). How to move companies to source responsibly? German implementation of the European timber regulation between persuasion and coercion. *Forest Policy and Economics*, 82, 41-51.
- Malovrh, Š.P.; Bećirović, D.; Marić, B.; Nedeljković, J.; Posavec, S.; Petrović, N.; Avdibegović, M. (2019). Contribution of forest stewardship council certification to sustainable forest management of state forests in selected Southeast European countries. *Forests*, 10, 648.
- Malovrh, Š.P.; Nonić, D.; Glavonjić, P.; Nedeljković, J.; Avdibegović, M.; Krč, J. (2015). Private forest owner typologies in Slovenia and Serbia: Targeting private forest owner groups for policy implementation. *Small-Scale For.*, 14, 423-440.
- Margaret A. Shannon, Errol E. Meidinger & Roger N. Clark. (1996). Science Advocacy is Inevitable: Deal with It. *Proceedings of the Society of American Foresters*, 347. Available at: https://digitalcommons.law.buffalo.edu/journal_articles/687.

Marín Durán, G., Scott, J. (2022). Regulating trade in Forest-risk commodities: two cheers for the European Union. *J. Environ. Law*, 34(2), 245-267.

Marsh, David, and R. A. W. Rhodes (eds). (1992). *Policy Networks in British Government*. Oxford Academic. <https://doi.org/10.1093/acprof:oso/9780198278528.001.0001>, accessed 1 Jan. 2024.

Matović, B., Nonić, D., & Nonić, M. (2017). European Union Timber Regulation: Challenges and Opportunities for Serbia. *Bulletin of the Faculty of Forestry*, 117, 15-26.

McDermott, C.L., Sotirov, M. (2018). A political economy of the European Union's timber regulation: which member states would, should or could support and implement EU rules on the import of illegal wood? *Forest Policy Econ.*, 90, 180-190.

McDermott, C.L., Zeitlin, J., Sotirov, M., Cashore, B, Wardell, D.A., Haywood, A., Giessen, L. (2023). Effects of EU illegal logging policy on timber-supplying countries: a systematic review. *J. Environ. Manag.*, 327.

Paluš, H., Parobek, J., Vlosky, R. P., Motik, D., Oblak, L., Jošt, M., Glavonjić, B., Dudík, R., & Wanat, L. (2018). The status of chain-of-custody certification in the countries of Central and South Europe. *Eur. J. Wood Wood Prod.*, 76, 699-710. doi:10.1007/s00107-017-1261-0.

Pendrill, F., Persson, U. M., Godar, J., Kastner, T., Moran, D., Schmidt, S., & Wood, R. (2019b). Agricultural and forestry trade drives a large share of tropical deforestation emissions. *Global Environmental Change*, 56, 1-10. <https://doi.org/10.1016/j.gloenvcha.2019.03.002>.

Pendrill, F., Persson, U.M., Godar, J., Kastner, T. (2019a). Deforestation displaced: trade in forest-risk commodities and the prospects for a global forest transition. *Environ. Res. Lett.*, 14, 055003. <https://doi.org/10.1088/1748-9326/ab0d41>.

Penikar, M., & Gartner, D. (2012). Chain of Custody Certification in the Slovenian Wood Processing Industry. *Zbornik Gozdarstva in Lesarstva*, 98, 29-38.

Perry, B. L., Pescosolido, B. A., & Borgatti, S. P. (2018). Sociocentric and Egocentric Approaches to Networks. In *Egocentric Network Analysis* (pp. 20-34). Cambridge University Press. <https://doi.org/10.1017/9781316443255.003>.

Peter Edwards, Daniela Kleinschmit. (2013). Towards a European forest policy - Conflicting courses. *Forest Policy and Economics*, 33, 87-93. <https://doi.org/10.1016/j.forpol.2012.06.002>.

Peters, B. G., & Pierre, J. (2010). Economic Crisis, Public Administration, and Governance. *Journal of Policy Studies*, 25(1), 59-71. <https://doi.org/10.52372/kjps25105>.

Pezdevšek Malovrh, Š. (2012). The Adaptation of National Forest Policy Systems in South-East European Countries (Albania, Bosnia-Herzegovina, Croatia, Macedonia and Serbia) to New Modes of International Forest Governance, Proceedings of Abstracts from the IUFRO Seminar Assessing Forest Governance in a Context of Change.

Poje, A., & Mavsar, R. (2014). An Analysis of Sustainable Forest Management Practises in Southeast Europe. *Forest Policy and Economics*, 38, 142-152.

Polo Villanueva, D, Tegegne, Y.T., Winkel., Cerutti, P.O, Ramcilovic-Suominen, S., McDermott, C.L., Zeitlin, J., Sotirov, M., Cashore, B, Wardell, D.A., Haywood, A., Giessen, L. (2023). Effects of EU illegal logging policy on timber-supplying countries: a systematic review. *J. Environ. Manag.*, 327.

Pregernig, M., & Böcher, M. (2008, February). The role of expertise in environmental governance: tensions between effectiveness and democratic accountability. In Paper presented at the 2008 Berlin conference on the human dimensions of global environmental change, Berlin.

Radosavljevic, M.; Masiero, M.; Rogelja, T.; Comic, D. (2023). Alignment of National Forest Policy Frameworks with the EU Timber Regulation Requirements: Insights from Montenegro and the Republic of Srpska (Bosnia and Herzegovina). *Forests* 2023, 14, 1157. <https://doi.org/10.3390/f14061157>.

Republican Bureau of Statistics. (2021). Forestry in the Republic of Serbia in 2020. Republican Bureau of Statistics: Belgrade, Serbia. Available online: <https://data.stat.gov.rs/?caller=SDDB> (accessed on 18 May 2021).

Riverside, CA: University of California, Riverside. (published in digital form at <http://faculty.ucr.edu/~hanneman/>).

Robyn Keast & Kerry Brown. (2002). The Government Service Delivery Project: A Case Study of the Push and Pull of Central Government Coordination. *Public Management Review*, 4(4), 439-459. DOI: 10.1080/14616670210163015.

Rogelja, T., & Shannon, M. A. (2017). Structural power in Serbian anti-corruption forest policy network. *Forest Policy and Economics*, 82(C), 52-60.

Rolf Lidskog. (2014). Representing and regulating nature: boundary organisations, portable representations, and the science-policy interface. *Environmental Politics*, 23(4), 670-687. DOI: 10.1080/09644016.2013.898820.

Berkowitz, S. D. (1982). *An Introduction to Structural Analysis*. Butterworth-Heinemann. ISBN 9780409813623. Pages 203-221. <https://doi.org/10.1016/B978-0-409-81362-3.50011-9>.

Sabatier, P. (1978). The Acquisition and Utilization of Technical Information by Administrative Agencies. *Administrative Science Quarterly*, 23(3), 396-417. <https://doi.org/10.2307/2392417>.

Sabatier, P. A., & Weible, C. M. (2007). The Advocacy Coalition Framework: Innovations and Clarifications. In P. A. Sabatier (Ed.), *Theories of the Policy Process*. West Press, Colorado, 189-220.

Segato, L. (2017). Tackling corruption in the framework of the EUTR; the TREES project. In 27th Illegal Logging Update and Stakeholder Consultation Meeting; Chatham House: London.

Segato, V. (2007). *Illegal Logging in Southeast Europe: A Preliminary Analysis of Markets and Institutions*. The World Bank, Washington, DC.

Sharp, J. S. (1998). *The interactional community: A structural network analysis of community action in three Midwestern towns*. Iowa State University.

Sotirov, M., Pokorny, B., Kleinschmit, D., Kanowski, P. (2020). International forest governance and policy: institutional architecture and pathways of influence in global sustainability. *Sustainability*, 12, 7010. <https://doi.org/10.3390/su12177010>.

Tabassum, S. (2018). "Social Network Analysis: An Overview." ResearchGate.

Tanya Baycheva-Merger, Metodi Sotirov. (2020). The politics of an EU forest information system: Unpacking distributive conflicts associated with the use of forest information. *Forest Policy and Economics*, 112, 102110. <https://doi.org/10.1016/j.forpol.2020.102110>.

Uzzi, B. (1997). Social structure and competition in labor markets: The case of the retail industry. *American Sociological Review*, 62(1), 77-95.

Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications* (Vol. 8). Cambridge University Press.

Weible, C.M. (2008). Expert-Based Information and Policy Subsystems: A Review and Synthesis. *Policy Studies Journal*, 36, 615-635. <https://doi.org/10.1111/j.1541-0072.2008.00287.x>.

WWF. (2019). *Enforcement Review of the EU Timber Regulation (EUTR) 201*

References Chapter 6

Arts, B. (2006). Non-state actors in global environmental governance: New arrangements beyond the State. In *New Modes of Governance in the Global System* (pp. 177-200). Palgrave Macmillan. https://doi.org/10.1057/9780230372887_8

Baycheva-Merger, T., Sotirov, M., Holmgren, S., & Selter, A. (2018). Institutional and Actor-Oriented Factors Constraining Expert-Based Forest Information Exchange in Europe: A Policy Analysis from an Actor-Centred Institutional Approach. *Forests*, 9(3), 129. <https://doi.org/10.3390/F9030129>

Begemann, A., Giessen, L., Roitsch, D., Roux, J. L., Lovrić, M., Azevedo-Ramos, C., Boerner, J., Beeko, C., Cashore, B., Cerutti, P. O., de Jong, W., Fosse, L. J., Hinrichs, A., Humphreys, D., Pülzl, H., Santamaria, C., Sotirov, M., Wunder, S., & Winkel, G. (2021). Quo vadis global forest governance? A transdisciplinary Delphi study. *Environmental Science and Policy*, 123, 131-141. <https://doi.org/10.1016/j.envsci.2021.03.011>

Cashore, B., & Stone, M. W. (2012). Can legality verification rescue global forest governance? Analyzing the potential of public and private policy intersection to ameliorate forest challenges in Southeast Asia. *Forest Policy and Economics*, 18, 13-22.

Cozma, A. C. & Achim, M. V. (2023). A SWOT Analysis on Illegal Logging and Corruption: Romania Case Study. In: Achim, M.V. (eds). *Economic and Financial Crime, Sustainability and Good Governance. Contributions to Finance and Accounting*. Springer: Cham. 53-72. https://doi.org/10.1007/978-3-031-34082-6_3

Dobšinská, Z., Živojinović, I., Nedeljković, J., Petrović, N., Jarský, V., Oliva, J., Šálka, J., Sarvašová, Z., & Weiss, G. (2020). Actor power in the restitution processes of forests in three European countries in transition. *Forest Policy and Economics*, 113, 102090. DOI: 10.1016/j.forpol.2020.102090.

European Commission. (2020). COM (2020) 629 final REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL (the EU Timber Regulation) Biennial report for the period March 2017 - February 2019.

Giessen, L., Burns, S., Sahide, M. A. K., & Wibowo, A. (2016). From governance to government: The strengthened role of state bureaucracies in forest and agricultural certification. *Policy and Society*, 35(1), 71-89. <https://doi.org/10.1016/j.polsoc.2016.02.001>

- Glavonjić, B. (2015). Proving legality of wood and wood products-current development in Serbia.
- Hrynyk, Y., Biletskyi, A., & Cabrejo le Roux, A. (2023). How corruption threatens the forests of Ukraine: Typology and case studies on corruption and illegal logging. Working Paper 43, Environmental Corruption, Deep Dive Series. Basel Institute on Governance: Basel.
- Köthke, M., Lippe, M., & Elsasser, P. (2023). Comparing the former EUTR and upcoming EUDR: Some implications for private sector and authorities. *Forest Policy and Economics*, 157, 103079. <https://doi.org/10.1016/J.FORPOL.2023.103079>
- Peters, B. G., & Pierre, J. (2010). Governance, institutions, and the state: The executive branch. In B. G. Peters and J. Pierre (Eds.), *Handbook of Public Administration* (2nd ed., pp. 177-195). Sage Publications.
- Radosavljević, M., Masiero, M., Rogelja, T., & Glavonjić, B. (2021). Adaptation to EUTR Requirements: Insights from Slovenia, Croatia and Serbia. *Forests*, 12(12), 1665.
- Radosavljevic, M., Masiero, M., Rogelja, T., & Comic, D. (2023). Alignment of National Forest Policy Frameworks with the EU Timber Regulation Requirements: Insights from Montenegro and the Republic of Srpska (Bosnia and Herzegovina). *Forests*, 14(6), 1157.
- RADOSAVLJEVIC, M, Rogelja, T., Masiero, M., Comic, D., Glavonjic, B. and Pettenella, D. (2023,in review), Institutional and Actor-Oriented Factors Influencing Timber Legality in Selected Western Balkan Countries: Multiple Case Study of Croatia, Montenegro, Serbia, Slovenia, and the Republic of Srpska (Bosnia and Herzegovina). Submitted to *Journal of Forest Policy and Economics*, Available at SSRN: <https://ssrn.com/abstract=4621856> or <http://dx.doi.org/10.2139/ssrn.4621856>
- Rogelja, T., & Shannon, M. A. (2017). Structural power in Serbian anti-corruption forest policy network. *Forest Policy and Economics*, 82, 52-60. <https://doi.org/10.1016/j.forpol.2017.05.008>
- Segato, L. (2017). Tackling corruption in the framework of the EUTR; the TREES project. In 27th Illegal Logging Update and Stakeholder Consultation Meeting; Chatham House: London.
- Seneca Creek Associates & Wood Resources International (2004). "Illegal" Logging and Global Wood Markets: The Competitive Impacts on the U.S. Wood Products Industry. Seneca Creek Associates & Wood Resources International: Poolesville.