This is a repository copy of *Forest crisis narratives: Illegal logging, datafication and the conservation frontier in the Romanian Carpathian Mountains*.

White Rose Research Online URL for this paper:
https://eprints.whiterose.ac.uk/184840/

Version: Published Version

Forest crisis narratives: Illegal logging, datafication and the conservation frontier in the Romanian Carpathian Mountains

Monica Vasile [a],[*], George Iordăchescu [b]

[a] *Maastricht University, Netherlands*
[b] *Department of Politics and International Relations, The University of Sheffield, Elmfield Lodge, 132 Northumberland Road Sheffield, S10 2TY, UK*

ABSTRACT

Environmental crisis narratives escalate around the world. Their production and consequences demand scholarly attention. Drawing on the analytical tools of political ecology and highlighting long-term historical developments, this article examines the shift to a new narrative of conservation in forestry, which displaces older structures of state forest management. In particular, we explore the emergence and unfolding of a crisis narrative of illegal logging, which escalated in Romania in the last thirty years. Based on long-term research of digital sources, interviews and fieldwork, we analyze the contents of this narrative, the way it produced heroes and villains, and its entanglements with processes of datafication, criminalization, and the surge of forest violence. We argue that (1) the genealogies of the forest crisis narrative can be understood in relation to frontier-specific processes of deregulation and re-territorialization, which generate acute struggles for forest control and legitimacy; (2) the narrative of illegal logging unravels as a media spectacle surrounding the production of data by a plurality of state and non-state actors (3) in the attempts to curtail illegal logging, the emphasis on law, surveillance and criminalization posits forest conservation one step short of militarization, fuelling the trends for global environmental law enforcement and securitization of conservation.

1. Introduction

'*We are open, we invited you to discuss things concretely*', said Mihăilescu, the head of the Romanian National Forest Service, to his audience, addressing directly the two representatives of Greenpeace seated at the table. People fretted and coughed, rustled papers, tapped pens, and waved cameras around: officials, representatives of forestry institutions, of the government, forest scientists and journalists. The event happened in 2019, at the Vama forestry district, in North-Eastern Romania.[1]

A month before, Greenpeace had posted on social media accusations towards this state forestry district, accompanied by photo evidence: "*We have found entire clear-cut plots, riverbeds destroyed by the heavy machines transporting the illegal timber, ecosystems endangered by abusive practices, undocumented timber trucks, divided local communities, and a general mood of dismay. What is more, it happens in forests owned by the state, under the very eyes of those responsible for them*". Those eyes were now in the room. The Forest Service, against whom these claims were made, organized the meeting to probe the veracity of the accusations, in the name of transparency and dialogue.

In his opening remarks at the meeting, the Forest Service director

mentioned: '*I sent an investigation in the respective areas (…) we identified the location that you talked about, it is the management unit 53 A*'. One of the Greenpeace activists interrupted '*First of all thank you for inviting us … one thing, we did not reveal in the Facebook post the exact location where we discovered the issues, but we have a full report with us today (…) we should go to these exact locations that we reveal in the report. In the Facebook post, there were no GPS coordinates …* ' In other words, based on the Facebook images, the Forest Service had prepared for the control, but Greenpeace pressed for control in 'unprepared' areas, saying that Facebook images are not meant to be specific. The director interrupted in his turn, '*I agree, but you presented images, a film on Facebook. Let's discuss these. We also have other plans for today, (…) we cannot run with you all over the county.*' The activist intervened again, '*We want to discuss what is happening in the forest for real (…) Let's go into the field. We want to be transparent.*' The director pointed to the papers, and photos, '*We go in the field where you signalled a problem, it is you who wrote here*'. The atmosphere became tense, and the activist countered: '*So you say today we go in an area where you verified … *', the director did not defer: '*Well, where you signalled*'. He pointed again to the photos on paper '*Is it this area, is this true?*' '*What is true?*'

The meeting turned into a passive-aggressive confrontation. The

---

* Corresponding author. Grote Gracht 90-92, Maastricht, Netherlands.
E-mail addresses: i.vasile@maastrichtuniversity.nl (M. Vasile), g.a.iordachescu@sheffield.ac.uk (G. Iordăchescu).
[1] Recorded meeting was published as public post on platform facebook on August 6, 2019 by Greenpeace, see https://www.facebook.com/greenpeace.ro/videos/2338705739549867/ [accessed January 2022].

keywords were truth, investigation, expertise, reality, clarification transparency, report, and evidence. The meeting looked like an attempt by the State Forest Service to rehabilitate some of its recently tarnished image by showing openness and transparency. The forestry officials defended themselves against the accusations, explaining that what Greenpeace showed as clear-cut logging was actually what in forestry jargon was called a 'regeneration cutting' meant to re-grow forest, and suggested that activists had no forestry expertise. Towards lunchtime, they went to the forest. There however, the same disputes emerged again. Dialogue did not seem to have been fruitful, and the meeting further antagonized the two camps.

Lurking beneath the surface of this confrontation was a deep resentment between the two camps - the foresters and the activists - generated by the rise of environmental activism against the forestry establishment. At the centre of the meeting had been the thorny issue of illegal logging, which had escalated into a full-blown crisis narrative over the past decade.

What are the genealogies of this antagonism, and what broader frictions did this battle expose? Furthermore, what does this antagonism tell us about the historical changes that forests go through in the contemporary age of conservation?

A shift to a new hegemony of conservation forestry occurred over the past decades world-wide, displacing older monopolistic structures of forest management led by states and principles of modern scientific forestry (Peluso & Vandergeest, 2020). Contemporary forests are shaped by the entry of new non-state actors, global conservation organizations and social movements, who intervene in national affairs to save forests on behalf of humanity, and set the standards for ecological management (Vandergeest and Peluso, 2015, 171). In an increasingly polarized world, struggles for forests are everywhere, and a perpetual state of crisis is about to become natural (Büscher & Fletcher, 2018). Romanian forests are no exception in this story. According to national and international media, they are in crisis. The collapse of forests is conveyed through the dominant trope of illegal logging – seen as a set of entrenched criminal practices perpetrated by a plurality of greedy and corrupt actors. The narrative is built on investigations and numerical data put forward by numerous expert sources. Dramatic images complement textual and numerical descriptions - iconic images of hilly stumpscapes presented as 'illegal deforestation', and red-spotted satellite maps showing forest loss. Recent headlines from international press entrenched this narrative: 'Romania's virgin forests ravaged by "wood mafia"' (Gauriat, 2020), "We are running out of time: Murder and corruption threaten Europe's last great forests' (McGrath, 2019). Yet, this crisis narrative is considered misleading, and therefore contested, by much of the Romanian forestry community – by state forest managers, forest scientists and even by some conservationists. For them, equally trustworthy and science-based seems to be the opposite narrative: Romanian forests are not in crisis (Palaghianu & Nichiforel, 2016).

The environmental crisis narrative has driven the reconfiguration of the Romanian postsocialist forest frontier: from extraction to conservation. To understand these shifts it is useful to draw on the wealth of research in political ecology depicting global changes in forest control. In particular we find useful the concept of frontiers - understood as historical moments and spaces of undoing control and blurring boundaries that drive extraction, accumulation of windfall profit and disenfranchisement of rural populations (Tsing, 2005; Li, 2014; Peluso & Lund, 2011). Frontier moments are about taking apart and reinventing. Institutional orders are undermined, and at the same time reinvented, and recycled, in a process of re-territorialization, which trigger battles for control and legitimacy over resources (Rasmussen & Lund, 2018). The creation of new configurations involves the reconstitution, sometimes violent, of socio-natural boundaries, producing new regimes of access to resources and authority (Vandergeest & Peluso, 2015; Lukas & Peluso, 2019), through processes of property reform, nationalization, delimitations of protected areas or enlisting virgin forests as world heritage (Blavascunas & Konczal, 2018; Kelly & Peluso, 2015).

In this paper we examine the recent shift towards conservation in Romania by looking at the forest crisis narrative, emerged around the notion of illegal logging. We are interested in examining the contents of this narrative, how it took root and how it unfolded until the present moment, the turning points in its production, and the actors who produced it. We also look at how the crisis narrative was contested, and how the legitimacy of scientific forestry and the State Forest Service continued to operate. We anchor the study in political ecology approaches, and contribute to a growing field of scholarship investigating conservation and political forests. We ask the following research questions: Which socialist and postsocialist processes account for the emergence of the illegal logging crisis narrative, i.e. what are its historical genealogies? Who constructed the narrative, through which mechanisms? How did various struggles and interests advance it? How did the narrative evolve, what were its turning points? Who contested it, how and why? How does it align or differ from the broader conservation narratives around the world? Before delving into the answers, we situate our arguments within the relevant body of literature.

2. Situating the forest crisis, argument and methods

Our core argument is that a shift from extraction to conservation was driven in Romania by the escalation of the illegal logging narrative, portraying an environmental disaster. Post-structuralist political ecologists have defined environmental narratives as beliefs about the nature, causes and impacts of environmental problems (Leach & Mearns, 1996), or as devices that position actors and attribute specific ideas of 'blame', 'responsibility', 'urgency' (Hajer, 1997). They offer readings of environmental history, and lenses to understand events in particular ways. We show that the Romanian postsocialist forest crisis narrative vilified a broad range of actors: rural dwellers in mountain areas and local state forestry agents, timber business operators (of all scales), as well as higher state officials involved in forest control, or prominent politicians. The anti-illegal logging movement merged with an anti-corruption agenda, and exploited existing political divisions and partisanships. However, it took this polarisation to a higher level, it generated radicalization. It solidified a moralizing binary rhetoric of 'forest destroyers' and 'forest guardians', which became a central normative vision of both environment and society (Forsyth & Walker, 2008). We argue that the crisis narrative was pushed forward by two main mechanisms: 1) datafying illegal logging in multiple reports from plural expert sources, which produced scientific-likeinformation with rhetorical purchase, such as red-dotted maps, and magnitude indicators – 'millions of cubic meters of wood illegally cut'; 2) producing spectacular imagery of destruction and deforestation through documentary and reportage, spread through the media. The surge of media platforms had recently augmented the power of narratives to epic proportions, allowing them to become a technology of control and a device for driving legislation and policy. Moreover, as the narrative started to gain traction, it became a political weapon. Governments and political parties incorporated 'fighting illegal logging' in policy and electoral agendas, which further drove restrictive legislation, with far-reaching effects for forestry and rural areas. And, while environmental problems do exist, and we do not mean to minimize them, we call attention to the danger that the narrative of an urgent environmental crisis tends to breed violence. It triggers intense command-and-control regulations that tend to blend conservation into global trends of increased securitization and militarization. Scholarly research has repeatedly and extensively shown that these trends drive the marginalization of forest-dependent communities, and generate evermore violence, thus deepening environmental and societal problems (Büscher, 2016; Cavanagh et al., 2015; Duffy, 2016; Lunstrum, 2014; Massé & Lunstrum, 2016; Neumann, 2001; Neumann, 2004; Peluso & Vandergeest, 2011; Peluso & Watts, 2001).

Historically, a well-documented reconfiguration of forest control occurred with the rise of scientific forestry and the emergence of national extractive economies, entangled with the rise of modern states

and a high modernist scientific rationality. Scholars have shown how state authority over forests was forged through violent politics, as well as through legal and institutional processes that constituted professional scientific forestry, transforming 'jungles' in Asia, Africa, and Latin America into national forests (Peluso & Vandergeest, 2001). Statistical and mapping tools, and generally techno-scientific expertise developed as part of a narrative of rational management, which legitimated extraction (Agrawal, 2005; Scott, 1998). Environmental historians debated vividly whether the pan-European wood scarcity proffered by elites and foresters around the time of the Industrial Revolution really existed as an ecological exhaustion of woodlands, or was mere rhetoric for justifying the restriction of use by peasants, a spread of state power and calculative logics into the woods (Radkau, 2012; Warde, 2006). Whether real or imagined, scarcity and degradation of woodlands as a hegemonic narrative produced effects. It produced confrontations between interests and forms of knowledge, triggered protests, and compromises (Whited, 2000). Yet, most often forest dwellers were disciplined as subjects of the state, and their forest use became heavily criminalised as illegal logging (McElwee, 2004).

Modern scientific forestry had reached Romanian territories in the 19th century, and state socialism after World War Two had merged a highly techno-scientific approach to forests with intense industrialized extraction, driven by the powers of a centralized apparatus. The National Forest Service, as well as a network of forestry enterprises, developed territorialized structures reaching far into the remotest areas. The state crafted forestry governance and management through disciplining crime, as elsewhere, but also through refashioning rural folks into waged forest labourers. It created an army of state employees engaged in mapping, cutting, controlling and reproducing state forests. Scientific forestry became not only a top-down governance and management system, but a deeply ingrained mindset in mountain areas (Vasile, 2015) and a state-saturated subjectivity (Verdery, 1996, p. 226). Yet, this state-dominated order allowed for multiple cracks to practice illegality through far-reaching patron-client networks, and in fact an informal secondary economy was widespread (Sampson, 1987; Kideckel, 1993; Verdery, 1996; Cartwright, 2001; Vasile, 2015, 2020b). These socialist histories reverberate in the present and help explain why postsocialist conservation narratives and structures did not simply displace old tenets of forestry practice, but generated violent struggle. This wide acceptance of informality and patron-client relations as part of how things work, also explains why illegal logging was not universally vilified, but accepted by certain potsocialist groups. Yet, at the same time, postsocialist societies sought to depart from these legacies, and indeed the rule of law and rule-based procedures came to hold special importance, in contrast to the personalized style of the early 1990s (Sikor et al., 2009), which illuminates why the term 'illegal' gained moralizing power.

Worldwide, criminalization of illegal logging serves as a mechanism in producing contemporary shifts towards conservation. Indeed, institutions, regulations, actors, knowledge about ecologies, change in a manner that displaces but parallels the paradigms of state-led modern scientific forestry (Peluso & Vandergeest, 2020). As Jacoby contends in his work on national parks in the United States, just as conservation increasingly became the hegemonic paradigm, local dwellers were again criminalised as poachers and lawless woodcutters, labelled as backward rural folk with no appreciation of wilderness (Jacoby, 2003), in ways reminiscent of colonial discourses. Recently, in many areas, Romania included, conservation vilified not only the petty thieves and the loggers, but also the foresters, as actors who colluded in crime, thus contributing to a shrinking in the authority of scientific forestry. Indeed, scholars have shown how, at the same time as the separation between state forestry agents and local loggers was operated, the two groups of actors acted together, enabling extraction. State actors operated as both governors and rent-seekers, and illicit forest revenues were generated using state authority (Milne, 2015; Mahanty, 2019; To & Mahanty, 2019; To, 2015; Sikor & To, 2011; McCarthy, 2002a; Vasile, 2020a,

2020b). This duality is precisely the conundrum of illegal logging used by the conservation movement against the forestry establishment that we observed in Romania. The contemporary shifts towards conservation show multiple continuities with past logics, but also departures from older models. It is noteworthy that the conservation movement uses the same criminalization techniques that fall within the boundaries of state authority – i.e. discipline as a technology of power (cf. Foucault, 1977). Yet, in the contemporary forests, non-state actors, and especially conservation NGOs are becoming more involved with the prosecution of environmental crimes, through crackdowns on illegal logging and corruption by augmenting surveillance and developing informant networks (Massé et al., 2017). A plurality of state and non-state actors, and the friction between them co-produce the new forests (Devine & Baca, 2020; Marijnen & Verweijen, 2018). Furthermore, moral and scientific claims to authority multiply over how forests should be used or represented (Blavascunas, 2014; Forsyth, 2019). A new phase in conservation posits environmental crimes as national or global security threats (Cavanagh et al., 2015; Massé & Lunstrum, 2016), pushing towards a militarization of conservation (Lunstrum, 2014; Duffy, 2016; Duffy et al., 2019), expanding the role of state agents in (re)territorialization processes of state-making (Dongol & Neumann, 2021; To & Mahanty, 2019; To, 2015).

We see much of these dynamics in the postsocialist Romanian forests. Postscialist forest extraction and the struggles that shaped it have been depicted in rich ethnographic studies (Dorondel, 2009, 2011, 2016; Herţa, 2016; Vasile, 2019, 2020a,b). These studies showed that the unruly coalitions that profited from the timber boom have created a nexus of forestry practice in which the rule of law had little significance, yet state actors held much authority (Vasile, 2020a, 2020b). Since the fall of state socialism in 1989, half of the forests were privatized or passed on to community ownership. The paradigm of scientific forestry held sway but the material base and authority of the once almighty State Forest Service diminished. Yet, at the same time, other state institutions regulating forest use had been established, and the parliament and government increased their leverage over forests through law-making. A strong involvement of state actors in forestry, even where ownership is considered 'private', was maintained because of environmental concern, as it was the case in other postsocialist contexts (Sikor et al., 2009). With the accession of Romania to the European Union in 2007, international environmental governance came to play an important role as well. Deep frictions emerged regarding forest access and governance, and accusations of illegal logging rose, exposing long chains of forest profits financing political parties and benefitting top officials. New forests of conservation emerged through a delineation of wilderness areas (protected areas, enlisted virgin forests), and also through profound changes in regulations concerning commercial felling. Thus, what we mean by 'new forests of conservation' is not only forests that were 'put aside', i.e. taken out of extraction and classified as protected, but also forests in which access and felling were curtailed and placed under surveillance. The entanglements of various state actors and extraction had been well documented by scholars, nevertheless, the entry of conservation actors since 2010, has been only tangentially studied (Iordăchescu, 2019). In the present article, we want to fill this gap, by looking in-depth at the recent shifts (for a timeline see Fig. 1).

The research for this article covers fifteen years of data collection by the authors - a research of events and discourses in their respective contexts, their conditions of production and interpretations by different actors. Our analysis draws on the following methods and sources: (1) interviews across all the regions of the country with forestry specialists, foresters and rangers, forestry academics, timber entrepreneurs, forest labourers, national and natural parks representatives, members of the parliament (MPs), representatives of environmental NGOs, investigation journalists; of these, 19 expert in-depth interviews have been conducted in 2020 exclusively focused on issues dealing with timber legality, enforcement and securitization; (2) participation in events, such as marches and protests, specialist forums and high-level forest-related
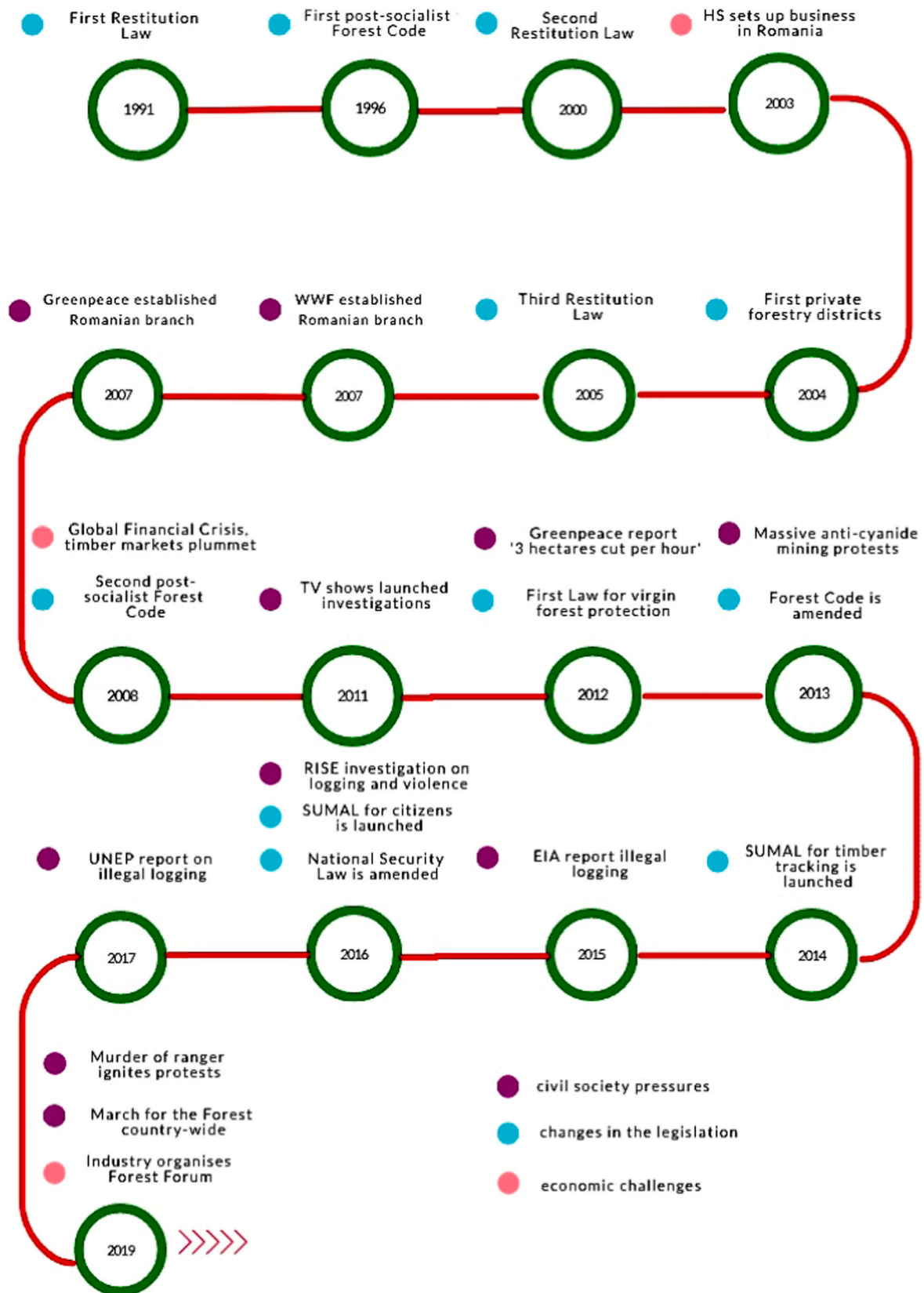
Fig. 1. Timeline for a selection of events that marked the history of Romanian forests in the last 30 years. In green circles are represented the years, and on top the corresponding events, which were categorized in 'civil society pressure' (purple dot) 'change in legislation' (turquoise dot) and 'economic challenge' (pink dot). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

political or industry conferences – the authors' engagement in these events varied from simple participants to invited guests or moderators; (3) long-term analysis of news material, press releases, Facebook posts, blog posts and documentaries covering topics related to illegal logging; (4) follow-the-policy methods to analyze turns and changes in forest policy and legislation development between 2011 and 2020; and (5) analysis of grey literature such as reports, campaign materials and briefs produced by environmental NGOs active in the country. We also did extensive periods of ethnographic fieldwork in mountain communities of Romania beginning with 2009 and culminating between 2015 and 2018 (approximately twenty-five months cumulated between the authors) as part of research periods associated with doctoral, postdoctoral or independent research projects, and this fieldwork informs us about general processes.

3. Postsocialist genealogies of the forest crisis narrative, 1990–2010

In the previous section we depicted some of the socialist roots of the contemporary forestry processes. Here we elaborate on frontier-like processes from the first two decades of postsocialism, which introduced groundbreaking property reforms and changes, and built up frictions between groups of actors that contributed to an escalation of the forest crisis narrative.

The 1990s. The postsocialist forest frontier had started with privatizations. Forest ownership was privatized, as well as the state forestry enterprises. Up to this day, slightly more than half of the forests of Romania had been restituted to private owners, individuals, communities and municipalities. The state forest administration had opposed this restitution, trying wherever possible to contest and halt the claims. At the end of 2017, 48,6% of forests were state property (3138781 hectares). State foresters launched severe accusations upon the new owners for cutting down forests (Dorondel, 2016).

Twelve years before the confrontation with Greenpeace that we exposed in the introduction, the forestry district of Vama claimed to have problems with the new private owners, who were allegedly logging illegally, encouraged by a very low level of sanctions. In a journal article from 1997, the then head of the forestry district, portrayed the new owners as rowdy profiteers: 'Immediately after they took possession of forests, many owners plundered their forests' (Nichiforel, 1997). Statements against illegal logging were not only blaming the new small-scale owners, but they were made in a politicized context, targeted at political opponents who supported privatization reforms. The then head of the forestry district was to become an important player in the county-level forestry institutions.

In the illegal logging narrative that took shape in the 1990s, the culprits were seen as the new private owners and the petty forest thieves. The ones seen as heroes fighting against illegal logging were state foresters, especially those enrolled as social-democrats, who aimed as legitimizing themselves in a growing field of neoliberal privatizations. A real timber boom was apace in the Romanian Carpathians in the 1990s (Vasile, 2019, Vasile, 2020a, 2020b). By the end of the 1990s, a small-scale timber industry run by local entrepreneurs had taken off. As in the case of other resource frontiers around the world, a system of law collapsed, and another one was yet to come (Watts, 2018). An 'undoing' of control emerged, a recession of state institutions, later reinvented and recycled in the process of reterritorialization, which challenged previous 'controls' through new legal and violent means (processes discussed in the literature by e.g. Peluso & Lund, 2011; Rasmussen & Lund, 2018).

The 2000s. Two more restitution laws enabled more privatizations (Laws 1/2000 and 247/2005). Starting in 2004, private forestry districts branched off the National Forest Service. They emerged as private businesses, offering forest management and guarding services, accredited by the government. By 2017, there were 144 private forestry districts, compared to 316 state forestry districts (Ministerul Apelor si Padurilor, 2017). The privatization of forestry districts enabled the

division of the whole field, and the noticeable waning of the once-almighty State Forest Service.

As the 2000s advanced, the narrative of illegal logging shifted. The logs-loaded truck became the emblem of illegal logging. From the popular image of the village forest thief, with an axe and a cart pulled by horses, the illegal logging narrative moved on to emphasize small companies equipped with trucks, tractors and chainsaws, meaning the better-off local businessmen. The scale increased. State foresters, enmeshed in a growing network of institutions, were held responsible for much of the illegal logging that characterised the 1990s and the early 2000s (Lawrence, 2009), together with control institutions and politicians as the perpetrators. Yet, blaming the little thieves persisted alongside, as a way of deflecting attention from state officials who patronised them. At the same time, forestry institutions became deeply politicized. State and private foresters alike became divided into political factions, supporting different political parties. Top posts in forestry institutions became political appointments, and as parties won or lost elections, heads of departments frequently changed positions.

These first two decades of postsocialism were a frontier moment. Patterns of extraction, land tenure regimes and access to resources were taken apart and reinvented, as well as laws and institutions. Struggles over forest control, and a pluralisation of actors, interests, and sources of expertise, characterized the historical moment. An environmental narrative of illegal logging took root in this period, which would escalate into a forest crisis narrative.

4. Polarizing narratives, contentious evidence-making and the datafication of illegal logging

In the 2010s, the illegal logging narrative took an environmentalist turn. A few years beforehand, in 2007, Romania became part of the European Union, a period in which both Greenpeace and World Wildlife Fund (WWF) established national branches (although WWF had already been active in several projects through its Germany branch), which meant an emergence of Romanian professional environmental activists. Other NGOs emerged as well. They expanded their activities in the following years, and joined forces with other actors, notably with journalists. Their environmentally-oriented agendas would resonate with the growing voices of the civil society, formed primarily by a critical mass of young middle-class urbanites, able to mobilize protests and to influence voting behaviour.

Two mechanisms advanced the forest crisis narrative: (1) representing illegal logging as a media spectacle and (2) datafying illegal logging in reports, producing data and visualizations of such data that would bear the legitimacy of the scientific veneer and would testify to the amount of forest crime - practices enabled by rapidly advancing digital technologies.

The media and journalists held a crucial role in formatting the illegal logging narrative through investigations and spectacular exposure. In 2011, the first journalist investigation into the so-called timber mafia was aired by a popular TV station. The show *In Premiere* broadcasted eleven episodes (2011–2018) titled e.g. '*Looted Romania', 'Sawdust magnates', 'A national disaster'*. The show put illegal logging in simple yet spectacular terms and blamed it on corrupt state institutions. It resorted to visual tropes of magnitude: '*Romania lost forest to timber mafia an equivalent of 7000 football pitches'* or '*put together, the trucks transporting illegal logs would stretch over 500 km'*. Another acclaimed TV show, '*Romania, I love you: The Great Deforestation Series',* aired investigations into illegal logging at the same time. In thirteen episodes spread across five years, it depicted an apocalyptic disaster: '*A treasure is lost under our eyes: the forest'*. Journalists in outdoor gear approached chainsaw buzz, swooped onto loggers, descended upon forestry offices with accusatory questions demanding justifications. They dissected the unruly coalitions of the frontier boom and singled out the actors responsible for the environmental disaster: the state for being a lousy administrator; the National Forest Service for being corrupt; rural folk for operating the

chainsaws; and international timber processing companies for providing market incentives. Their investigations held power: in 2013 for example, the director of the National Forest Service announced in a press release that following the unravelling of an episode of *Romania, I love you,* 870 employees of the service were sanctioned, and 170 were prosecuted (Stirile PROTV, 2013). After these shows ceased to air forestry investigations, the work was continued by RISE Project - a Romanian cooperative of investigation journalists publishing on web platforms. They brought violence to the fore through their 2016 documentary 'Clear Cut Crimes', focused mainly on the northern county of Maramureș, renowned for its violent forest entrepreneurs (Rise Project, 2016). Violence was exposed through portraying loggers as reckless gangsters: *'gangsters cut down the forest illegally; they steal 500 million $ worth of wood each year (…) the profits are so great that they threaten to kill anyone who gets in their way.'* (Rise Project, 2016). Drone footage of stumpscapes alternated with bird-eye views of processing plants featuring enormous log piles. It suggested that a long chain of state officials enabled the connection between gangsters and international timber processing magnates. The greatest legacy of the documentary was uncovering the collaboration between foresters and loggers - the unruly coalitions between timber business and state forestry officials (Vasile, 2019, 2020). Soon, another online publication, Recorder, manned by experienced journalists previously working for mainstream newspapers, launched investigations. In 2021 they exposed the 'black-mail campaign', in which the threat of criminalization was used as a mechanism for firing and hiring actors in key institutional positions according to political party affiliation. The documentary-reportage featured the testimony of a whistle-blower, and phone recordings with the voice of the former head of the forestry district of Vama, member of the liberal party, now promoted to the position of secretary of state at the Ministry of Environment (Nedea & Muntean, 2021). He allegedly suggested 'necessary' replacements, which, if not performed, could be forced by 'sending' auditors. Ironically, after the investigation was published, the alleged 'blackmailer' resigned. The journalists thus provided long-awaited evidence of politicians' involvement with forestry institutions.

Another group of important actors in the forest crisis conjuncture are environmental activists, who stirred the waters by producing data on illegal logging and publishing reports, organizing protests and lobby. *'3 hectares of forest are cut every hour in Romania'* was the first figure that bewildered the Romanian public, issued by a Greenpeace report in 2012, which never left the imagination of Romanians. This study overlapped Landsat imagery over the database created by United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), containing protected areas as well as over the map of virgin forests assembled by a research project from the early 2000s (Greenpeace, 2012). The conclusions sounded astonishing: between 1992 and 2011 Romania lost 3 hectares of forests each hour, some being virgin forests. This figure made an impressive career over the next decade, and it is still present, despite a thorough critique put forward by scientists, who called it an 'explosive cliché' (Palaghianu & Nichiforel, 2016). Starting with 2012, Greenpeace Romania published annually extensive reports on the scale of illegal logging, with data collected from forestry authorities. The number of investigations, the value of fines and the amount of damage resulted from illegal logging were the highlight of these reports. Rough data plotted onto geographical contours, captioned as 'deforestation maps', pointed to hotspots of environmental crime by ranking geographical areas. These reports operated by simplification and did not offer details about owners of the logged forests, rates of forest regeneration, names of companies involved in the business. Illegal logging was presented as a national phenomenon perpetrated by invisible actors.

The crisis narrative emphasised the forest conservation value: these forests were not just any forests, but some of the last old-growth in Europe, and legitimized these charismatic ecosystems, 'ours', as unique and worthy. 'Save the virgin forests' became a trope and a movement, deployed in public protests, petitions, influential reports and scientific studies (e.g. Biris et al., 2016), this being one of the few instances where activists joined forces with researchers. The element of the virgin forests added emotional and nationalistic undertones to the narrative. It portrayed Romania as the last bastion of European wilderness. It also triggered a plethora of datafication and techno-bureaucratic practices, elaboration of indicators and methodologies for classification (Iordăchescu, 2019, 2021, 2019). Environmentalists emphasised the danger of losing the virgin forests at the hand of merciless loggers and foresters, and the urgency of listing them as protected international heritage. They suggested that foresters were hurrying to (legally) log in areas known as potentially 'virgin' in order to disqualify them as heritage. This exposed a nuance: logging did not need to be 'illegal' to be harmful. In this instance, the forest crisis narrative called into question the entire forest management paradigm, and the scientific forestry tenets focused on 'quality timber' for production and marketization. Nevertheless, from our interviews we could grasp that much of the forestry community were aware of the value of virgin forests, and emphasised that forest management has a crucial role in preserving these national treasures in the first place.

After 2015, the crisis narrative gained a prominent international dimension. In 2015, the Environmental Investigation Agency, a Washington-based NGO known for its undercover operations, produced a report titled 'Stealing the last forest' (Environmental Investigation Agency, 2015), which became a real game-changer. They exposed foreign processing companies as villains, thus pointing a finger towards the chain of demand, and away from the small felons. Disguised as timber suppliers, the activists tracked timber trucks, and organised undercover meetings with processing companies. In the report, they presented compelling images of stumpscapes and loaded trucks, side by side with tables and charts: quantitative science-like visualisations lent authority to the content. The forest crimes documented in their report included overcutting, illicit restitution, abuse of salvage and sanitary forest cutting, fake paperwork and absence of transportation documents. All were linked to the supply chain of the largest processing company in Romania - an Austrian timber company. The explosive element of this investigation was a secretly filmed footage of a meeting between a pretend supplier and a representative of the Austrian company 'willingly and knowingly accepting illegally harvested timber and incentivizing additional cutting through a bonus system' (Environmental Investigation Agency, 2015). This was considered glaring evidence for the company's dirty business. Moreover, it rang the alarm that illegal logging was a source of finance for organised crime, feeding international markets. The report became referential. It channelled for the first time public attention towards the Austrian company, which consequentially lost its FSC certification. The national authority for combating organised crime started investigations into illegal logging. For a good while, the narrative of illegal logging became targeted towards a single enemy - a foreign one, thus triggering the nationalistic rhetoric.

In the fight against illegal logging, a diverse field of NGOs emerged. A part of these organizations worked closely with state institutions and forestry certification organizations, provided consultants for ministers and contributed to drafting forestry legislation. Others imitated an international tradition of direct radical action by swooping onto loggers, blocking logs-loaded trucks, chaining themselves to tractors or trees. There were also examples of green NGOs who adopted neo-protectionist approaches to halt illegal logging by securing exclusive ownership over tracts of forestland when the state seemed unable to do its job (Iordăchescu, 2018, 2019). Some NGO members have had careers or degrees in forestry before starting careers as conservationists. They held a good knowledge of the 'system'. Some were charismatic NGOs leaders that spent most of their time in Brussels in attempts to expose corruption in Romanian forests, yet others had become members of the parliament, councillors to ministers or secretaries of state.

Various state actors also drove the narrative forward. The public positioning of politicians, members of the government, ministers of

environment, and a multitude of forestry-related state officials produced events that became popular and fuelled the crisis, sometimes inadvertently. State agencies also contributed to the datafication of illegal logging. During 2012–2014, the topic of forests became heavily politicized and fighting illegal logging became a governmental priority, fuelled by public pressure (Davidescu & Buzogány, 2021). Authorities showed concern for illegal logging through official reports starting in 2013, as the government was confronted with sweeping public protests, which started with environmentalist demands, to stop gold mining and shale gas fracking, and transformed into anti-government demonstrations (Velicu 2015).

The Court of Accounts published in 2013 the first official document to inquire into the extent of unlawful forest practices (Curtea de Conturi 2013). The report showed that nearly 17% of the newly private forests were restituted based on forged documents, and that, between 1992 and 2011, Romania 'lost' 80 million cubic meters of timber harvested illegally. Interestingly, the document differentiated between state and private forests, concluding that forest crimes were rising in private forests and diminishing in state-owned forests. The report thus identified the villains in the actors related to restitution/privatization, and the heroes in state agents, i.e. the National Forest Service was painted as a diligent administrator. Although contested (Fordaq, 2013), mass media and NGOs used the arguments presented in this report to advance the illegal logging narrative, while the European Commission used the data uncritically in several infringement actions against the Romanian government (Iordăchescu, 2020b). Increasingly, forest-related topics became main points on governmental agendas, which also promoted party politics, with social-democrat governments advancing slightly more the interests of the industry, and the liberal-technocratic governments fostering conservationist inclinations. Yet, all governmental actors advanced a complex pattern of interests, promoting regulations that tended to become increasingly restrictive, and deemed largely 'populist' by the forestry establishment (more discussion on this point in following sections). In 2016, environmentalism and anti-corruption became the official ideology of a new political party which became the third-largest in the Parliament, and involved many vocal environmental activists.

'8,8 million cubic meters of wood are illegally logged every year'. This was the second famous figure that fuelled the narrative, advanced this time by state actors, not by activists. It was first calculated in May 2015, by the social-democrat government to justify a temporary export ban on raw timber, in reaction to public upheavals and NGO petitions against illegal logging. The quantity resulted from the research by the National Forest Inventory (NFI), covering the time interval 2008–2012. The NFI mainly provided raw data and deliberately avoided interpretations. However, this meant that the data was taken up by others and interpreted at will. To arrive at *8,8 million*, the figure reported by NFI - total volume of harvested wood, or the missing wood - was compared to the official reports of harvested wood, published by the National Institute of Statistics (NIS), and based on marketable timber. This latter figure resulted from the standing timber estimated by foresters and recorded in the tract evaluation forms. The difference between what was harvested (NFI figure) and what was reported (NIS figure), was interpreted as evidence of illegal logging. The 8,8 million was thus regarded as a science-based figure, with expert authority, although the comparison that it entailed was deemed flawed by scientists.

'Over 20 million cubic metres are illegally cut every year' was another figure that fuelled the narrative at the moment when things seemed to become quieter. The results of the second cycle of the national forest inventory (NFI2, 2013–2018) were published in 2018. Numbers were good. The total forest cover increased. Annual timber growth and volumes per hectare were higher than the European average (Ministerul Apelor si Padurilor, 2018). The forestry community relished. But journalists and environmentalists analysed the data and drew attention to a disproportionately large volume of 'missing' wood (drain). Using the same comparison with the official figures reported by the National Institute of Statistics (NIS yearly estimate), which previously yielded the

'8,8 million', they concluded that over 20 million cubic metres of timber was illegally logged every year between 2013 and 2018. The history of this figure is even more convoluted than the previous: the NFI2 figure of missing wood was not fully validated by the state institute under which the research was conducted. Officially, as reported in the press, the reason for its absence was lack of scientific support. Unofficially, it seems the reason was its explosive potential (as an NFI researcher told us in an interview on 2020.02.12). The reason was allegedly removed from official data reports, but apparently known to the ministry and to the heads of the State Forest Service. It surfaced when journalists investigated the issue, and it became a 'scandal' of manipulated data (Declic, 2019a, 2019b). A country-wide campaign started around the motto: 'For every cubic meter harvested legally, at least another one is harvested illegally!'. Activists and journalists used the figure as ammunition in complaints addressed to EU institutions, or in the international press.

The emergence of numbers quantifying illegal logging represented turning points in the forest crisis, and the last two 'numbers' brought a new set of actors in the frontline, the scientists. Numbers pertain to a techno-scientific type of representation, suggesting the same calculative logics, which built the authority of scientific forestry in the modern era. Data produced by the scientists held legitimacy, and a neutral-independent quality, but the data was brought into comparisons by interested actors, and presented in ways that were not neutral anymore, but served the legitimacy of governmental actors seeking support, or activists.

A scientific counter-narrative sought to debunk the circulated numerical figures, and to dampen the magnitude of the crisis portrayal. It was led by university scholars through publishing editorials, participating in online discussion forums and blogs (e.g. Declic, 2019a, 2019b; Drăgoi, 2018), and also in public debates like the Forest Forum organised in 2019 in Bucharest. They showed that behind forestry operations and calculations of data are a myriad of measurements based on approximations, in which underestimations are the rule, and errors occur at every step. Thus, they argued that the circulated figures of illegal logging can add up from various inherent precautions or errors of measurement, or from unused wood material resulting from logging, and therefore errors are not always ill-meant or a sign of felony. Within these debates, the crisis narrative, and its contestation, brought to light fissures in epistemological tenets of forestry knowledge. Modern scientific forestry and its accompanying techno-bureaucratic apparatus came under scrutiny, and foresters themselves acknowledged to some extent its shortcomings and obsoleteness. Moreover, the forestry community suggested that once the so-called alarming figures are regarded in the larger picture, as well as when compared to similar numerical figures from forest inventories elsewhere in Europe, they lose their edge. Their alarm-ringing quality only comes from taking them out of context. The scientists pointed to the damaging potential of the crisis narrative for dialogue on policy and real solutions, and their voice was influential in the circles that matter – policy and legislation.

International regulatory bodies were important in pushing the government to act for conservation, in many instances twisting its hands through infringement operations, which took as evidentiary basis reports produced by activists. UNEP published the first dedicated international report towards the end of 2017. On par with illicit caviar trade, mass-killing of birds and poaching of big carnivores, forest crimes were considered the largest threat for biodiversity and the local economy in the Danube-Carpathian region (Schlingemann et al., 2017). It was the first policy-oriented document to expose illegal logging as a European problem stemming from Romania: "Illegal logging has been widely recognized by the government, media and environmental activists as a serious and ongoing concern over recent decades" (p 12). This report pointed to illicit property restitution, lack of compliance with EU regulations and a weak law enforcement capacity of the Romanian state as the leading causes of illegal logging (pp.12-14). The report endorsed the tendencies of increasing control and surveillance already present in the country.

In response to the illegal logging narrative, the forestry community, composed of (1) forestry practitioners (2) representatives of the local industry, and (3) forest scientists, did not necessarily build a unified counter-narrative. However, voices and arguments existed. First, forestry practitioners argued that scientific forestry management is a legitimate and necessary practice, which helps forests. As in the excerpt from an interview '*The forest must produce timber. Society needs timber. Foresters must go on with sanitary cuts and other treatments. Also, as it reaches a certain age, the forest must be cut so that you create the conditions to regrow and accumulate carbon further. This way, the forest regenerates and can be productive (…)*' (Forestry engineer, 2020). They invoked various reforestation and volume growth indicators to show that the narrative of crisis is misplaced and exaggerated. Foresters constructed activists as villains, calling them 'amateurs', 'eco-terrorists', or 'toxic'. The National Forest Service portrayed themselves as the guardians of proper forest practice, despite their obvious diminishing prestige. Overall they did not accept the pluralisation of expertise and authority, denying the knowledge and legitimacy of other actors in producing data and performing investigations. Such as in this interview, '*There are many amateur ecologists who became radical (..). They propose extreme measures such as a moratorium on logging. As a rule, they are extremely suspicious towards any information coming from the authorities, and are extremely uneducated in forestry matters.*' (State forest service employee, 2020).

Overall, this section has shown how a plurality of actors were involved in co-producing and contesting the forest crisis narrative, drawing on multiple sources of expertise - a trademark of the new political forests of conservation worldwide. Everybody produced their own investigations and data – a domain once monopolized by state forestry experts, and a monopoly that they still attempted to hold. The main construction bricks of this narrative were spectacular images, swooping actions of high performative impact, and a plethora of data. The numerical figures were an important mechanism in advancing the interests of conservation actors and representing forests as wrecked, creating orders of magnitude with high rhetorical power. We do not contend that statistics are useless, but acknowledge the greater controversies in which such numerical narrative representations are embedded, and the influence of different political actors upon what is seen to be authoritative knowledge (as argued e.g. by Forsyth, 2019).

The heroes emerged in the process were conservation activists and journalists, who exposed the crimes and produced the evidence in compelling ways, which fuelled public mobilization (an important element also anlyzed by Davidescu & Buzogány, 2021). Their allies were European agencies, international journalists, the revolted Romanian progressive middle-class, and their political representatives. Interestingly, the report produced by the Court of Accounts, that attempted to make heroes out of state foresters, did not manage to do so, but instead it brought state-infused legitimacy to the circulated magnitude of illegal practice. In the next sections the picture of the new conservation frontier will become clearer, as we delve further into the processes that emerged from the narrative, and played a crucial role in structuring the field of forestry and conservation. Here we will show how the narrative of forest crisis articulated with law-making processes and criminalization, as well as with the production of technological surveillance.

5. Criminal laws, surveillance technologies and the rise of forest violence

In this section we examine the articulations of the crisis narrative with processes of frontier reconfigurations of institutions and patterns of control. We show how governments and political parties incorporated 'fighting illegal logging' in policy and electoral agendas, which drove restrictive legislation, and criminalization of wrongdoers with far-reaching effects. These were tendencies of re-territorialization, which reinforced the role of state agents in control and punishment. It triggered practices of technological policing and vigilantism, which articulated with intense command-and-control regulations. Further, this generated increased securitization and tendencies towards militarization of forest control. This in turn triggered the surge of forest-related violence.

In postsocialism, the law came to be a powerful metaphor for expressing a desire to break free from the socialist-like shackles of corruption and political patronage. Law-governed authority and access to resources was set in contrast to personalized ways of exercising authority and gaining access (Sikor et al., 2009; Verdery, 1996). Postsocialist forest narratives revolved around the term 'illegal', thus illustrating the power held by the ritual of law, and by a popular idea of state authority, some sort of 'center' to which people continued to appeal despite the fact that state power has been compromised in multiple ways (Verdery, 1996, 216).

The confrontation from North-Eastern Romania that we introduced in the opening paragraphs exposes the centrality of legalistic repertoires. The meeting resembled a courtroom trial. Legalist terms held sway. Greenpeace invoked the text of law to support allegations of forest crime. In turn, forestry officials invoked the expertise of state institutions as the only legitimate and lawful judges of (il)legality. Yet, both camps seemed to distrust the legal-bureaucratic system, the efficacy of law and its practical applicability. On the one hand, Greenpeace did not trust control institutions to 'apply the law', hinting at corruption. On the other hand, forestry officials implied that the law was cumbersome thus impossible to follow, and mistakes were understandable. How did forest laws and regulation change in the course of time as to reach this situation exposed by the meeting? For understanding the illegal logging crisis, we must understand who and how formulated and upheld laws and regulations.

In the 2010s, regulations and sanctions were increasingly invoked to stop illegal logging. The apparent solution to the forest crisis was to tighten control, prosecute and punish the criminals. By 2012, a rhetoric of law-and-order in the forest had become electoral ammunition for political parties and a governmental priority. Changes to forestry laws went through specialized parliamentary commissions and were debated and voted openly in the parliament. Every change of government supported different interests, which translated into new legal amendments, adding rules and regulations on top of the previous. The instability of law was reflected in the frequent changes to the Forest Code occurred after 2012 in four successive significant amendments – in 2013, 2015, 2017 and 2018 (Drăgoi & Toza, 2019). These changes were initiated in 2013, the then minister, responded to public pressure by proposing changes to the Forest Code, making promises popular with conservationists, such as to 'remove the timber merchant from the forest' – meaning economic agents will only purchase cut logs from deposits. The local timber industry strongly opposed this, and showed how this would mean the elimination of local businesses, advancing the interests of large transnational companies.[2] The government changed, and this proposal was abandoned. Forest policy scholars called out this unsteadiness and the daunting overregulation that impacted all logging operations as the 2010s advanced (Buliga & Nichiforel, 2019; Scriban et al., 2017). The abundance of regulations apparently sent the logging industry and the National Forest Service in a deadlock. Forestry districts approved less cuttings. A timber shortage and the skyrocketing of wood prices ensued in 2017. This unleashed a social crisis, a crisis of firewood that affected the whole Romanian countryside dependent on firewood supply for heating and cooking. In 2020, the timber industry representative, trying to counteract new punitive amendments proposed to the Forest Code, wrote: "*We are at the peak of the economic crisis provoked by populism and politicianism […] We don't need new changes to forest laws. These would only overcrowd regulations and block economic activity.*" (Fordaq, 2020). In a different tone, state foresters labelled environmentalism as anti-national. It was believed that activists advanced the economic interests of international competitors on the timber market, part of an

---

[2] An analysis and statements were provided in mainstream press articles https://evz.ro/cateva-indicii-despre-relatia-varga-holzindustrie-schweighofer.html.

anti-national conspiracy. For example, in an interview from 2020, a newly appointed director of the National Forest Service declared: *"… 90% of these [environmentalist] organizations are anti-Romanian! I mean they are funded with external money to hinder the development of Romanian economy (…) Romania has excellent quality timber which represents enormous competition. [Other countries, competitors] have millions of cubic meters of timber down from windthrows, storms (…) And then they pay organizations that advertise against Romania, to suggest that our timber comes exclusively from illegal logging"* (Balint, 2020).

In 2016, illegal logging was passed into law as threat to national security. The idea seems to have been first promoted by journalists from the TV show 'Romania, I love you, the Grand Deforestation' in 2013, who sought support from forestry scientists and the government; they titled *'ProTV News asks politicians to punish massive illegal logging as an attack to national security'* and *'In Romania, foresters attack our right to the environment and to clean air'*.[3] This became a legislative project in 2014 at the initiative of liberal MPs, and two years later was passed into law. The change meant that charges for forest crimes could be investigated by the secret services, with extreme intelligence means (e.g. tapping phones). Deployed as a rhetoric of national security, forest crisis narratives became more authoritarian, more moralizing, more nationalistic. However, in practice, this step towards securitization and increased criminalization did not bring more sentencing of alleged top forest 'criminals'. Public demands of tougher sanctions continued. During the first term of the Covid-19 pandemic, in August 2020, yet another amendment to the Forest Code was introduced (under public pressure created by allegations of increased illegal logging) demanding that regardless of the quantity of 'stolen' timber, the criminal should be sentenced to prison – a law with tough-on-crime appeal, which again toughened the sanctions for the pettiest criminals. Overall, increased criminalization targeted chiefly the vulnerable wrongdoers, the petty thieves.

Under pressure for fighting forest crime, from both Romanian and international side, in addition to legislation, governmental actors sought to implement policing technologies. Through them, the public became actively involved in detecting, signalling and punishing forest crime. How did this happen? From 2014, as part of the national implementation of European Timber Regulation (EUTR), Romania developed technologies for improving forestry accountability and transparency. One such technology was the Integrated System for Timber Monitoring (SUMAL). Initially, SUMAL was envisioned as a database showing what kind of timber is harvested where, who transports it, where it is stored and who sells it further down the commodity chain. It was intended for forest administrators, commercial operators and control authorities, to increase efficiency of forest crime control and to provide statistics. Soon, citizens started using it too. As the spectacle of illegal logging soared, concerned citizens started to call the national emergency hotline to signal clear-cut areas, timber trucks or carts loaded with logs, pressuring the authorities to investigate the alleged criminals. In response, during the pro-environment technocratic rule of 2016, an app interface of SUMAL was created to allow citizens to check online the legality of timber transports. The *Forest Inspector* app was downloaded over 100000 times in only a few months after launching. By popularising it, green NGOs increased the involvement of citizens in monitoring illegal logging, as a form of vigilantism. According to Greenpeace, in the first year, 42% of the timber transports investigated by the police were reported by citizens through the app (Greenpeace, 2017). 20% of the reports were

found to be cases of illegal logging and transport. This tool showed not only data about the transports, but also changes in the canopy, and legal harvesting permits plotted on the country's map as red spots. Many users mistook these for indications of illegal logging. For them, holes in the canopy equalled disappearing forests, and red logging spots worked as a psychological trigger of alarm. Screenshots of these maps of legal forestry stood as evidence of the nation-wide pillage of forests and flooded social media. Yet, the SUMAL technology stopped being operational in 2017. It needed updating, which was postponed by successive governments on the reason that too many false alarms makes the work of state institutions cumbersome. In November 2019, the *March for the Forests* organized in Bucharest, demanded updating the surveillance technology, and on their website, Greenpeace stated, *'SUMAL should be the guard dog of Romanian forests, the best friend of honest foresters and environmental activists (..) completely digitalized, [SUMAL] tracking system would make impossible the hiding and marketing of illegal wood'*.[4]

All told, technologies produced powerful means of representing the crisis, and drove the inflammation of the illegal logging narrative, as they involved citizens as active players. They were important in reconfiguring control in the new conservation forests and generated a pluralisation of actors with authority to intervene in the control and investigation process.

In 2019, violence against foresters escalated, and demands of the militarization of forestry ensued. The Foresters Union protested with funerary crosses, accusing the humiliation that they suffered as a professional guild, and the violence inflicted upon them by reckless loggers. "You humiliated us, you made fools out of us, you killed us", read a banner. They stated that six foresters had been killed in the last years and more than 650 foresters were aggressed, hit, received death threats, attacked with axes and knives by criminals caught in the act of stealing trees. Foresters demanded proper uniforms, field equipment and firearms. They pictured themselves as forest defenders, suggesting that the reputation they acquired in recent years as corrupt profiteers was unjust. Later in 2020, media reported that a forestry engineer committed suicide, and a forest guard subaltern attempted suicide, after activists launched illegal logging allegations followed by extensive legal investigations (Stirile PROTV 2020). This case drew attention once again to forestry officials, as blameable for illegal logging, but also media and activists portrayed them as 'sacrificed', precarious victims of law enforcement, and scapegoats for wider criminal networks.

The first explicit signs towards militarization were demands by state foresters (2019) for firearms equipment, invoking recent events in which foresters have been injured or killed while on duty. It was not the network of national park rangers who demanded firearms, but the foresters, who actually tend to become the officials 'defenders' with a tinge of military, justified, or victimized, by these acts of violence. The president of the Foresters Union declared for the press that only half of the state foresters were equipped with guns with gas and rubber bullets, with which they could 'not scare away even a stray dog'.[5] Also, politicians proposed that the army and the police become involved in guarding forests, which has happened during the Covid-19 state of emergency (Iordachescu, 2020).

The entanglements between criminalization, technologies and violence generated complex evolving relationships between state and non-state actors involved in forestry and conservation. This section highlighted the diversity of state actors involved in the reconfigurations triggered by the conservation movement. Governmental actors feature as: hiding relevant data; producing explosive data and publicizing it to

[3] The source articles can be found online at these links: https://stirileprotv.ro /romania-te-iubesc/emisiuni/2013/sezonul-2/marea-defrisare-3-padur arii-din-romania-oameni-care-atenteaza-la-dreptul-nostru-la-mediu-si-aer-curat .html [accessed May 2021] and https://stirileprotv.ro/romania-te-iubesc/emisi uni/2013/sezonul-2/marea-defrisare-1-stirile-protv-cer-politicienilor-ca-t aierile-masive-ilegale-de-padure-sa-fie-pedepsite-ca-atentat-la-siguranta-natio nala.html [accessed May 2021].

[4] https://www.greenpeace.org/romania/articol/5353/sumal-2-0-trebuie-re parat-nu-dezmembrat-la-loc/.

[5] Declaration in entire article can be found online here: https://www.g4medi a.ro/activistii-de-mediu-indignati-de-afirmatiile-sefului-romsilva-care-sustine-c a-doar-50-000-de-metri-cubi-de-padure-sunt-taiati-ilegal-anual-datele-pe-c are-noi-le-avem-vorbesc-despre-taieri.html [accessed April 2021].

justify absurd measures such as a ban on timber exports, demanded by popular unrest; as promoting interests of international timber industry; facilitating first steps towards militarization of forestry; advancing surveillance technologies, that expanded the power of control and sanction beyond state institutions, to concerned citizens. So, in most instances they expand the territorial authority of state institutions, yet they pluralize the source of authority as well. But their positions reflected their dual character, or perhaps even triple character. As governors, they had the mandate to fight illegal logging and to balance social, economic and environmental interests. As members of their political parties, they had to promote popular environmental policy and regulations that would win votes in the next elections, to show they are tough-on-crime or that they respond to protest demands. Also as members of their political parties, they were accused and sometimes charged with corruption, meant to advance their own and their party's financial interest from supporting illicit extraction. The forest crisis narrative had expanded the role of state control institutions, as well as the role of the judiciary system. Yet, the National Forest Service had seen a diminishing role as an extractive-economic force, and had lost much of its moral legitimacy as forest defenders, which was interestingly recuperated to some extent after the surge of violence. Within the Service, multiple divides emerged between those considered 'honest' foresters and 'dishonest' ones, as well as between higher-ranking officials of the Service, who were usually portrayed as more vicious (but also featuring a few positive examples of good professionals and whistle-blowers) and local agents operating in the field. All in all, foresters held an ambiguous position as both victims and perpetrators of illegal logging. More broadly, state actors involved in forestry held ambiguous and situational positions, portrayed by the forest crisis narrative as both villains and heroes.

6. Conclusions

Nature conservation emerged recently as a powerful trope in Romania, aligned with the worldwide rising tide of environmentalism. This historical moment focused on forests threatened by illegal logging. At this point, from a forest extraction frontier Romania morphed into a conservation frontier – in a decade of struggles with profound impacts on the environmental history of the Carpathian Mountains of Romania. The struggles were characteristic of worldwide frontier moments of deregulation and re-territorialization, which shape the patterns of forest use and control (Rasmussen & Lund, 2018; Peluso & Lund, 2011).

The power of narratives can explain a lot of the recent reconfigurations of Romanian forest-related processes. Environmental narratives fulfil the function to stabilize complex and uncertain physical processes, which draw selectively on intricate and spatially diverse realities (Forsyth & Walker, 2008). The (anti) illegal logging narrative that became increasingly hegemonic in the 2010s in Romania had a simple and powerful message: The valuable forests were cut down at colossal rates and sold cheaply under the protection of corrupt institutions and politicians. Its language was one of irreparable ecological loss, mischievous crime and urgency. It epitomized at once the anti-corruption fight and a surge of nationalism. Because of the fixation on illegality, the new conservation narrative called for practices of evidence-making and datafication, technological surveillance, legislative changes and criminalization, punishment and prohibition. Logging was framed in a deeply antagonistic way.

The genealogies of the forest crisis narrative can be understood in relation to the postsocialist timber boom (1990–2010) that was deeply entangled with the reckless politics of reforming state institutions, within a field that grew 'fragmented, with groups and individuals constantly shifting sides, coalitions, and party identities' (Verdery, 2003, 112). New narrative formations became embedded in battles between political parties, and forest fiefdoms rose strongly associated with the phenomena of corruption (discussed by e.g. Vasile, 2019, 2020a; Bouriaud & Marzano, 2016). This particular postsocialist context

influenced the mobilization of environmentalism, and the shift towards conservation through two central elements: the unfolding of the property restitution process that created a volatile and complex nexus of practice: it enforced a system of governing by procedures, and at the same time a patronage system persisting in the operation of state agencies. The lingering but emaciated power of a once-powerful central state, operated in postsocialism in fragmented and parasitic ways through unruly coalitions, while governmental representatives and party politicians did not shy away from intervening into the forestry sector. State forestry actors felt that they were losing their power base through restitution and accusations of corruption, but were trying to re-appropriate some of the decision-power by multiplying forest control institutions and diversifying nature protection regimes, generating thus new forms of re-territorialization.

The new forests were characterized by a pluralisation of actors, interests, sources of expertise and authority, and this represented a major departure form previous state actors monopoly. State-actors themselves deployed a diversity of interests and identities. And, most importantly, we have shown how in the contemporary forests, non-state actors, and especially conservation NGOs and journalists have become more involved with datafying the forests, representing them in spectacular images, and with prosecution of environmental crimes, through crackdowns on illegal logging and corruption. Forests in general, and especially the production of evidence for the forest crisis, gained a public dimension in the broader technological context that included the emergence of social media, drone-filming technologies and satellite mapping. The crisis narratives influenced voting behaviour and triggered civil society protests. Pro-conservation discourses won the hearts of progressive upper-and-middle classes, slowly reaching rural lower classes as well. However, the contestation of the forest crisis narrative occurred, and a number of counter-arguments ensued. The forestry community rejected the legitimacy of the data that accounted for 'disaster', debunking its numerical incarnations, even though some of the forestry actors acknowledged the existence of illegal logging and forestry corruption. The counter-narrative called for a scientific forestry type of perspective, which would take into account the survival of a local timber industry and would therefore not argue for an indiscriminate villification of logging as a practice. Overall, the increased criminalization that followed the escalation of the crisis narrative targeted chiefly the vulnerable wrongdoers, the petty thieves. The national fury against forest criminals, and the tough-on-crime rhetoric created a requisite emotional environment of anger and fear, which ultimately can breed violence.

In the new age of conservation, forests go through historical changes. Forest crisis narratives generate new command-and-control mechanisms. Citizen vigilantism apps, satellite-powered technologies and digital devices make the new forests 'smart'. Alongside, a war-like language and projection of forest danger and loss becomes widespread. Foresters demand firearms. Forest violence can ensue, as well as self-inflicted violence, under pressures of criminalization. The current emphasis on control, surveillance, securitization and organised crime paves the way towards militarization. In Romania, as elsewhere, the public demands and political support for increased punishment of forest crime and securitization are dangerous proposals as they can lead to increased violence and can push towards exclusionary conservation, providing incentives for the state to recentralize and enforce control, further marginalising local populations neighbouring forested areas.

Declaration of competing interest

We confirm hereby that there is no conflict of interest regarding the manuscript we submitted for consideration to journal Political Geography.

Acknowledgments

References

Agrawal, A. (2005). *Environmentality: Technologies of government and the making of subjects*. Durham: Duke University Press. New Ecologies for the Twenty-First Century.

Balint, O. (2020). *La Romsilva nu sunt bani de salarii. Inteviu cu Teodor Tigan*. Retrieved from https://ovidiubalint.ro/2020/06/25/la-romsilva-nu-sunt-bani-de-salarii-p iata-lemnului-e-cazuta-dar-curg-interesele-politice-interviu-cu-noul-director-gene ral-al-regiei-nationale-a-padurilor-teodor-tigan/. (Accessed 20 July 2020).

Biriș, I. A., Teodosiu, M., Turcu, D. O., Merce, O., Loren, A., Apostol, J., & Marcu, C. (2016). 24.000 ha de Paduri primare de Fag, propunerea româniei pentru patrimoniul mondial UNESCO/24000 ha of primary beech forests, the Romanian proposal in UNESCO world heritage. *Bucovina Forestiera, 16*(1), 107–116.

Blavascunas, E. (2014). When foresters reterritorialize the periphery: Post-socialist forest politics in Białowieża, Poland. *Journal of Political Ecology, 21*(1), 475–492.

Blavascunas, E., & Konczal, A. (2018). Bark-beetles and ultra-right nationalist outbreaks. In S. Brain, & V. Pal (Eds.), *Environmentalism under Authoritarian Regimes: Myth, Propaganda, Reality*. Routledge.

Bouriaud, L., & Marzano, M. (2016). Conservation, extraction and corruption: Is sustainable forest management possible in Romania. In E. Gilberthorpe, & G. Hilson (Eds.), *Natural resource extraction and indigenous livelihoods: Development challenges in an era of globalization* (pp. 221–240). London: Routledge.

Buliga, B., & Nichiforel, L. (2019). Voluntary forest certification vs. stringent legal frameworks: Romania as a case study. *Journal of Cleaner Production, 207*, 329–342.

Büscher, B. (2016). 'Rhino poaching is out of control!' Violence, race and the politics of hysteria in online conservation. *Environment & Planning A: Economy and Space, 48*(5), 979–998.

Büscher, B., & Fletcher, R. (2018). Under pressure: Conceptualising political ecologies of green wars. *Conservation and Society, 16*(2).

Cartwright, A. (2001). *The return of the peasant. Land reform in post-communist Romania.* Aldershot: Ashgate.

Cavanagh, C. J., Vedeld, P. O., & Trædal, L. T. (2015). Securitizing REDD+? Problematizing the emerging illegal timber trade and forest carbon interface in East Africa. *Geoforum, 60*, 72–82.

Curtea de Conturi a Romaniei. (2013). Situatia patrimoniala a fondului forestier din Romania. In *perioada 1990–2012*. Retrieved from https://www.fordaq.com/ne wsletter/3430/raportfondforestier.pdf.

Davidescu, S., & Buzogány, A. (2021). Cutting deals: Transnational advocacy networks and the European union timber regulation at the eastern border. *The International Spectator, 56*(3), 105–118. https://doi.org/10.1080/03932729.2021.1935680

Declic. (2019a). *Inventarul Forestier Național sau despre cum se furã pãdurea cu tabelul Excel.* Retrieved from https://inventarul-forestier-declic.mystrikingly.com/. (Accessed 20 July 2020).

Declic. (2019b). *Dezbaterea continua. Expert silvic contrazice autoritatile.* Retrieved from https://www.declic.ro/inventarul-forestier-national-avem-opinia-unui-profesor-uni versitar-expert-in-taieri-ilegale/. (Accessed 20 July 2020).

Devine, J. A., & Baca, J. A. (2020). The political forest in the era of green neoliberalism. *Antipode.* https://doi.org/10.1111/anti.12624. anti.12624.

Dongol, Y., & Neumann, R. P. (2021). State making through conservation: The case of post-conflict Nepal. *Political Geography, 85*(March), 102327.

Dorondel, Ş. (2009). 'They should be killed': Forest restitution, ethnic groups, and patronage in postsocialist Romania. In D. Fay, & D. James (Eds.), *The rights and wrongs of land restitution: 'restoring what was ours'* (pp. 43–65). Routledge-Cavendish.

Dorondel, Ş. (2011). Tenure rights, environmental interests, and the politics of local government in Romania. In T. Sikor, & J. Stahl (Eds.), *Forests and people. Property, governance and human rights* (pp. 175–186). Earthscan.

Dorondel, Ş. (2016). *Disrupted landscapes: State, peasants and the politics of land in postsocialist Romania.* Berghahn.

Drăgoi M. (2018). *Padurile noastre. Cine si cum le numara?* Dezacorduri. Available on https://www.dezacorduri.ro/padurile-noastre-cine-si-cum-le-numara/.

Drăgoi, M., & Toza, V. (2019). Did forestland restitution facilitate institutional amnesia? Some evidence from Romanian forest policy. *Land, 8*(6), 99. https://doi.org/10.3390/land8060099

Duffy, R. (2016). War, by conservation. *Geoforum, 69*, 238–248. https://doi.org/10.1016/j.geoforum.2015.09.014

Duffy, R., Massé, F., Smidt, E., Marijnen, E., Büscher, B., Verweijen, J., Ramutsindela, M., Simlai, T., Joanny, L., & Lunstrum, E. (2019). Why we must question the militarisation of conservation. *Biological Conservation, 232*, 66–73.

Environmental Investigation Agency. (2015). *Stealing the last forest. Austria's largest timber company, land rights and corruption in Romania.* Retrieved from https://cont ent.eia-global.org/assets/2015/10/Stealing_the_Last_Forest/EIA_2015_Report_Steal ing_the_Last_Forest.pdf. (Accessed 30 August 2020).

Fordaq. (2013). *Raportul Curtii de Conturi si modificarea Codului Silvic.* Available on htt ps://lemn.fordaq.com/news/Raport_paduri_curtea_conturi_taieriilegale_CodSilvic_3 2097.html.

Fordaq. (2020). *STOP populismului si pseudo-masurilor de salvare a padurilor.* Retrieved from https://lemn.fordaq.com/news/STOP_populismului_si_pseudo-m%C4%83suri lor_de_69079.html. (Accessed 20 July 2020).

Forsyth, T. (2019). *Who shapes the politics of expertise? Co-Production and authoritative knowledge in Thailand's political forests.* Antipode. https://doi.org/10.1111/anti.12545

Forsyth, T., & Walker, A. (2008). *Forest guardians, forest destroyers: The politics of environmental knowledge in northern Thailand.* University of Washington Press.

Foucault, M. (1977). *Discipline and punish: The birth of the prison.* Vintage Books.

Gauriat, V. (2020). *Romania's virgin forests ravaged by 'wood mafia'.* Euronews. Retrieved from https://www.euronews.com/2020/03/13/romania-s-forests-ravaged-by-wood-mafia. (Accessed 30 August 2020).

Greenpeace. (2012). *Forest cover change in Romania 2000-2011.* Retrieved from https://storage.googleapis.com/planet4-romania-stateless/2019/07/0e87ca5e-0e87ca5e-fo restcover-change-in-romania-2000-2011.pdf. (Accessed 20 July 2020).

Greenpeace. (2017). *Raportul taierilor ilegale din padurile Romaniei.* Retrieved from http s://storage.googleapis.com/planet4-romania-stateless/2018/09/e0d36bd6-raport ul-t%C4%83ierilor-ilegale-din-p%C4%83durile-rom%C3%A2niei-%C3%AEn-2017-compressed.pdf. (Accessed 30 August 2020).

Hajer, M. A. (1997). *The politics of environmental discourse.* Oxford University Press.

Herța, A.-S. (2016). Pădureni–un experiment neoliberal. *Anuarul Institutului de Istorie George Baritiu din Cluj-Napoca - Seria Humanistica, 14*(14), 53–72.

Iordăchescu, G. (2018). Making the 'European Yellowstone' – unintended consequences or unrealistic intentions? *Arcadia: Explorations in Environmental History*, (10). Spring 2018.

Iordăchescu, G. (2019). *Wilderness Production in the Southern Romanian Carpathians: Towards a political ecology of 'untouched nature'.* PhD Thesis defended at School for Advanced Studies Lucca. Available on http://e-theses.imtlucca.it/298/.

Iordăchescu, G. (2020b). *Criminalisation, crisis narratives and the Commission: The fight against deforestation in Europe. Biosecproject.org.* Available on https://biosecproject.or g/2020/05/19/blog-criminalisation-crisis-narratives-and-the-commission-the-figh t-against-deforestation-in-europe/.

Iordăchescu, G. (2021). Becoming a virgin forest: From remote sensing to erasing environmental history. *Arcadia: Explorations in Environmental History*, (10). Spring 2021.

Jacoby, K. (2003). *Crimes against nature: Squatters, poachers, thieves, and the hidden history of American conservation.* Berkeley: University of California Press.

Kelly, A., & Peluso, N. L. (2015). Frontiers and commodification: State lands and their formalization. *Society & Natural Resources, 28*(5), 473–495.

Kideckel, D. A. (1993). *The Solitude of collectivism: Romanian Villagers to the Revolution and beyond. Anthropology of contemporary issues.* Ithaca: Cornell University Press.

Lawrence, A. (2009). Forestry in transition: Imperial legacy and negotiated expertise in Romania and Poland. *Forest Policy and Economics, 11*(5–6), 429–436. https://doi.org/10.1016/j.forpol.2009.02.003

Leach, M., & Mearns, R. (Eds.). (1996). *The lie of the land: Challenging received wisdom on the African environment.* Heinemann: International African Institute in assocation with James Currey.

Li, T. (2014). *Land's end: Capitalist relations on an indigenous frontier.* Duke University Press.

Lukas, M. C., & Peluso, N. L. (2019). Transforming the classic political forest: Contentious territories in java. *Antipode*, (August)https://doi.org/10.1111/anti.12563

Lunstrum, E. (2014). Green militarization: Anti-poaching efforts and the spatial contours of kruger national park. *Annals of the Association of American Geographers, 104*(4), 816–832.

Mahanty, S. (2019). Shadow economies and the state: A comparison of cassava and timber networks on the Cambodia-Vietnam frontier. *Journal of Contemporary Asia, 49*(2), 193–215.

Marijnen, E., & Verweijen, J. (2018). *Pluralising political forests: Unpacking "the state" by tracing Virunga's charcoal chain.* Antipode.

Massé, F., Gardiner, A., Lubilo, R., & Themba, M. (2017). Inclusive anti-poaching? Exploring the potential and challenges of community-based anti-poaching. *South African Crime Quarterly, 60*.

Massé, F., & Lunstrum, E. (2016). Accumulation by securitization: Commercial poaching, neoliberal conservation, and the creation of new wildlife frontiers. *Geoforum, 69*, 227–237.

McCarthy, J. F. (2002a). Power and interest on sumatra's rainforest frontier: Clientelist coalitions, illegal logging and conservation in the alas valley. *Journal of Southeast Asian Studies, 33*, 01.

McElwee, P. (2004). You say illegal, I say legal: The relationship between "illegal" logging and land tenure, poverty, and forest use rights in Vietnam. *Journal of Sustainable Forestry, 19*(1–3), 97–135.

McGrath, S. (2019). *'We are running out of time': Murder and corruption threaten Europe's last great forests.* Retrieved from https://www.independent.co.uk/news/world/euro pe/romania-forest-ranger-murder-deforestation-environment-illegal-logging-a919 3896.html. (Accessed 30 August 2020).

Milne, S. (2015). Cambodia's unofficial regime of extraction: Illicit logging in the shadow of transnational governance and investment. *Critical Asian Studies, 47*(2), 200–228.

Ministerul Apelor si Padurilor. (2017). *Raport privind starea pădurilor din România.* Retrieved from http://apepaduri.gov.ro/wp-content/uploads/2014/07/Starea-p% C4%83durilor-%C3%AEn-anul-2017.pdf. (Accessed 30 August 2020).

Ministerul Apelor si Padurilor. (2018). *Rezultatele Inventarului Forestier National - Ciclul II.* Retrieved from http://apepaduri.gov.ro/rezultatele-inventarului-forestier-national-c iclul-ii/. (Accessed 20 July 2020).

Nedea, A., & Muntean, D. (2021). *Lecție de șantaj în guvernul româniei: Cum se eliberează funcții pentru membrii de partid [blackmail lesson in the Romanian government: How positions are made available for party members].* Recorder, 20 April 2021 https://recorder.ro/lectie-de-santaj-in-guvernul-romaniei-cum-se-elibereaza-functii-pentru-membrii-de-partid/.

Neumann, R. (2001). Disciplining peasants in Tanzania: From state violence to self-surveillance in wildlife conservation. In N. L. Peluso, & M. J. Watts (Eds.), *Violent environments* (pp. 305–327). Cornell University Press.

Neumann, R. P. (2004). Moral and discursive geographies in the war for biodiversity in Africa. *Political Geography, 23*(7), 813–837.

Nichiforel, G. (1997). Regimul silvic între teorie și realitate. [Forestry regime between theory and reality]. *Bucovina Forestiera, 5*(1–2), 10–15.

Palaghianu, C., & Nichiforel, L. (2016). Intre perceptii si precepte in dialogul despre padurile Romaniei. *Bucovina Forestiera, 16*(1), 3.

Peluso, N. L., & Lund, C. (2011). New frontiers of land control: Introduction. *Journal of Peasant Studies, 38*(4), 667–681.

Peluso, N. L., & Vandergeest, P. (2001). Genealogies of the political forest and customary rights in Indonesia, Malaysia, and Thailand. *Journal of Asian Studies, 60*(3), 761.

Peluso, N. L., & Vandergeest, P. (2011). Political ecologies of war and forests: Counterinsurgencies and the making of national natures. *Annals of the Association of American Geographers, 101*(3), 587–608.

Peluso, N. L., & Vandergeest, P. (2020). *Writing political forests* (p. 12636). anti: Antipode.

Peluso, N. L., & Watts, M. (Eds.). (2001). *Violent environments*. Cornell University Press.

Radkau, J. (2012). *Wood: A history*. Cambridge: Polity Press.

Rasmussen, M. B., & Lund, C. (2018). Reconfiguring Frontier Spaces: The territorialization of resource control. *World Development, 101*, 388–399. https://doi.org/10.1016/j.worlddev.2017.01.018

Rise Project. (2016). *Clear Cut Crimes, 42'*. Available on https://www.riseproject.ro/film-documentar-clear-cut-crimes/.

Sampson, S. L. (1987). The second economy of the soviet union and eastern Europe. *The Annals of the American Academy of Political and Social Science, 493*(1), 120–136.

Schlingemann, L., et al. (2017). *Combating wildlife and forest crime in the danube-carpathian region*. Vienna, Austria: UNEP.

Scott, J. C. (1998). *Seeing like a state: How certain schemes to improve the human condition have failed*. New Haven: Yale University Press. Yale Agrarian Studies.

Scriban, R. E., Nichiforel, L., Bouriaud, L. G., Barnoaiea, I., Cosofret, V. C., & Barbu, C. O. (2017). *Governance of the forest restitution process in Romania: An application of the DPSIR model*. Forest Policy and Economics.

Sikor, T., Stahl, J., & Dorondel, S. (2009). Negotiating post-socialist property *and* state: Struggles over forests in Albania and Romania. *Development and Change, 40*(1), 171–193.

Sikor, T., & To, P. X. (2011). Illegal logging in Vietnam: *Lam tac* (forest Hijackers) in practice and talk. *Society & Natural Resources, 24*(7), 688–701.

Stirile PROTV. (2013). *Stirile PROTV cer politicienilor ca taierile ilegale de padure sa fie pedepsite ca atentat la siguranta nationala*. Retrieved from https://stirileprotv.ro/romania-te-iubesc/emisiuni/2013/sezonul-2/marea-defrisare-1-stirile-protv-cer-politicienilor-ca-taierile-masive-ilegale-de-padure-sa-fie-pedepsite-ca-atentat-la-siguranta-nationala.html. (Accessed 30 August 2020).

Stirile, P. R. O. T. V. (2020). *Un brigadier silvic din mureș S-a spânzurat ?i un pădurar a încercat să Se sinucidă după un control de La ministerul mediului*. Stirile ProTV Website, 2020 https://stirileprotv.ro/stiri/actualitate/un-brigadier-silvic-din-mures-s-a-spanzurat-si-un-padurar-a-incercat-sa-se-sinucida-dupa-un-control-de-la-ministerul-mediului.html.

To, P. X. (2015). State territorialization and illegal logging: The dynamic relationships between practices and images of the state in Vietnam. *Critical Asian Studies, 47*(2), 229–252.

To, P. X., & Mahanty, S. (2019). Vietnam's cross-border timber crackdown and the quest for state legitimacy. *Political Geography, 75*(November), 102066.

Tsing, A. L. (2005). *Friction: An ethnography of global connection*. Princeton University Press.

Vandergeest, P., & Peluso, N. L. (2015). Political forests. In R. Bryant (Ed.), *The international handbook of Political Ecology* (pp. 162–176). Edward Elgar Publishing.

Vasile, M. (2015). 'Being one's own master': Reciprocity and technology among Transylvanian forest dwellers. In S. Gudeman, & C. Hann (Eds.), *Oikos and market: Explorations in self-sufficiency after socialism* (pp. 162–188). Berghahn.

Vasile, M. (2019). Fiefdom forests and authoritarianism: Timber barons and the limits of resistance in the Carpathian Mountains. *Geoforum, 106*, 155–166. https://doi.org/10.1016/j.geoforum.2019.08.001

Vasile, M. (2020). The rise and fall of a timber baron: Political forests and unruly coalitions in the carpathian mountains of Romania. *Annals of the Association of American Geographers, 110*(6), 1952–1968. https://doi.org/10.1080/24694452.2020.1723399

Vasile, M. (2020). The other frontier: Forest rush and small-scale timbermen of postsocialist Transylvania. *Journal of Peasant Studies, 1–26.* https://doi.org/10.1080/03066150.2020.1803286

Velicu, I. (2015). Demonizing the sensible and the 'revolution of our generation' in rosia Montana. *Globalizations, 12*(6), 846–858.

Verdery, K. (1996). *What was socialism, and what comes next?* Princeton, N.J.: Princeton University Press.

Verdery, K. (2003). *The vanishing hectare: Property and value in postsocialist Transylvania*. Cornell University Press.

Warde, P. (2006). Fear of wood shortage and the reality of the woodland in Europe, c.1450-1850. *History Workshop Journal, 62*(1), 28–57. https://doi.org/10.1093/hwj/dbl009

Watts, M. J. (2018). Frontiers: Authority, precarity, and insurgency at the edge of the state. *World Development, 101*, 477–488. https://doi.org/10.1016/j.worlddev.2017.03.024

Whited, T. L. (2000). Forests and peasant politics in modern France. In *Yale agrarian studies Series*. New Haven: Yale University Press.

Monica Vasile has conducted anthropological and historical research in environmental issues. Her projects explored forest practices, illegal logging, timber trade, human-animal relations and and the revival of forest and pasture commons in postsocialist Romanian Carpathians. Currently, she works on the history of the reintroduction of endangered species, as part of the research group 'Moving Animals: A history of Science, Media and Policy in the 20th century' at Maastricht University since March 2020. She holds a doctorate from the University of Bucharest (awarded 2008), and held research positions and visiting fellowships at the Rachel Carson Center for Environment and Society in Munich, at the Romanian Academy, Institute of Sociology, and at the Max Planck Institute of Social Anthropology in Halle, among others.

George Iordăchescu is a Postdoctoral Research Fellow in the Beastly Business Project (and formerly in the BIOSEC Project) at the University of Sheffield. His PhD thesis investigated the wilderness production and protection movement in Eastern Europe. Over the last few years, he has done fieldwork in the Romanian Carpathian Mountains and Poland where he focused on private conservation projects, commons and forest livelihoods. George studies the impact of EU regulations on timber trade and securitization in Romania. He aims to understand how a redefinition of illegal logging and timber trade as a security threat has triggered a massive citizen involvement in monitoring and reporting of environmental crimes.