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INTERNATIONAL FOREST GOVERNANCE: A CRITICAL REVIEW OF TRENDS, DRAWBACKS, AND NEW APPROACHES

A Global Assessment Report

Daniela Kleinschmit, Christoph Wildburger, Nelson Grima, and Brendan Fisher

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Chapter 4

Current Forest-related discourses

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Abstract

Discourses about forests matter as they mediate or shape action. Chapter 4 presents an update to the work of Arts et al. (2010), which used a longitudinal analysis of global forest[1](-related) discourses and interrelated meta- and regulatory discourses and their prevalence over time take stock of the discursive shifts that emerge from the literature. This is based on a literature search in Google Scholar, Scopus, and ISI Web of Science for the time from January 2011 to June 2023. The results were discussed with experts in the field to understand whether: i) important themes were missing, and ii) discursive dynamics were misrepresented or misinterpreted. In addition, main framing devices that have recently appeared were identified.

The analysis found that a 'climatization' of the environmental meta-discourse clearly has taken place, and has had an impact on how forests are problematized and understood to provide climate solutions. It identified also a refurbished discourse on 'ecological modernisation' with a neoliberal twist, and several of growth-based discourses that stretch from de-growth to pro-growth, as well as transition discourses that centre around civic environmentalism and justice. Regulatory discourses were found to not have changed considerably, but new modes of governance based on markets have become more common. New and refurbished forest-related discourses were also identified along several framings that impact forests, such as seeing forests as carbon sinks, ecosystem service providers, landscape managers, and suppliers of nature-based solutions in actual political debates.

Mechanisms of power are particularly pronounced in procedures of exclusion. Knowing forests and giving meaning to forest-related activities steers the way we see and use forests. Therefore, the chapter analyses results around frames of 'constantly better knowledge' about forests, the commodification of forests into 'tradable entities', as well as silences (i.e., not addressing certain aspects of forests). These frames are seen as forms of power expression. The Chapter concludes that, while the academic literature and debates mostly reflect current dynamics in decision-making, this analysis shows that there is an ongoing polarization between different actor positions, which is likely to increase as discourses drift apart or confront each other. Therefore, finding common positions and compromise could become more complex and difficult in the future.

4.1 Introduction

Discourses, frames, and narratives are now regarded as playing important roles in the formation of public policies, including on forests (Fischer and Forester, 1993; Fischer and Gottweis, 2012). Heightened interest in the role of language in policy-making has led to the production of a variety of understandings of the term "discourse" itself (Leipold, 2014). It stretches from understanding it as synonymous with "discussion", to viewing it from a Foucauldian perspective as a system of ideas and practices that construct 'truths' about objects, subjects, and social realities. Consequently, problems are understood as constructed, and policy processes are conducted according to specific ideas (Hajer, 1993). Building on Arts et al. (2010), this Chapter understands discourses as "an ensemble of ideas, concepts, and categorizations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities" (Hajer and Versteeg, 2005, p. 175).

Dominant discourses and frames typically shape and narrow the range of governance mechanisms as they "operate as tools from which problems are constructed and acted upon" (Bidone, 2022, p. 112; Reinecke and Blum, 2018). They arise at a particular time and place under specific cultural and socio-historical conditions, and are observable and describable as "regulated practices of sign usage" (Holmgren, 2013, p. 370). Actors form coalitions based on shared discourses and overlapping perceptions (Hajer, 1995; Nielsen, 2014; Rantala et al., 2022) in order to navigate complexity (Hajer, 1995). According to social constructivism, reality is perceived as relying on "shared assumptions" (Bidone, 2023, p. 4; Nielsen, 2016), while narratives provide explanations of causes and effects, and assign roles to different actors in complex forest-policy making processes (Beymer-Farris and Bassett, 2012).

1 All terms that are defined in the glossary of this report (Appendix 1) appear in italics the first time they are mentioned in a Chapter.

Many approaches to analyse discourses have been developed over time. These have been influenced by different philosophical and disciplinary traditions (Leipold et al., 2019; Wagenaar, 2014). Arts et al. (2010) differentiated between 'thin' and 'thick' discourse analysis: while 'thin approaches' consider discourse "as one factor among others" and thus, also include agency, resources, and rules in their analysis of politics, 'thick approaches' build on Foucault's post-structuralist philosophy and define discourses as 'disciplinary' ensembles of language, knowledge, and power (Bidone, 2023).

The analysis of discourses reveals how "relationships of dominance, discrimination, power, and control" are manifested in language (Fairclough, 2012; Wodak, 1995, p. 204). This relates to the Foucauldian concept of governmentality, referring to subtle techniques of controlling the conduct of individuals and making them "governable". This is intrinsically linked to (neo)liberalism, as it "identifies a domain outside of politics and seeks to manage it without destroying its existence and autonomy" (Foucault et al., 2009; Rose and Miller, 2010, p. 278). Arts and Buizer (2009), along with many other authors, differentiated between discourses understood as communication, texts, frames, and social practices. Discourses are, thus, both, an expression of, and a prerequisite for, social interaction (Holmgren, 2015; Kleinschmit et al., 2017, p. 44).

Box 4.1

What are frames?

Rein and Schön (1993, p. 146) defined frames as "a way of selecting, organizing, interpreting, and making sense of a complex reality to provide guideposts for knowing, analysing, persuading, and acting". They are diagnostic and prescriptive stories and give coherence to the analysis of an issue, often through reliance on unifying metaphors (Leach et al., 2010; Rein and Schön, 1996, 1993). Goffman conceptualised frames as essential to structuring experience around core metaphors (Goffman, 1974; Jameson, 1976), which also opens the perspective of the effects of culture on shared understandings and the formation of frames.

The process of discursive construction is essentially one of perceiving and framing problems, of including certain aspects in a frame and excluding others; ideas supporting specific discourses also change over time (Bidone, 2022). Framing processes not only construct meaning, but also have a mobilizing function, allowing for collective action (Benford and Snow, 2000). Several frames provide meaning to forests, amplifying ideas inscribed in forest-related discourses often within a single concept, and exposing core ideological traits of related meta-discourses – and on many instances, also manifesting Western ideals.

The different frames emphasize different qualities of forests and their values (in a qualitative and quantitative understanding) for human societies. It does not assume that ecological or economic problems do not exist or are purely constructed. Rather, it acknowledges that they become a matter for society and politics by way of analysing, defining, explaining, and relating. Therefore, all of these frames are naturally contested, not only regarding the definition of the problem (diagnostic framing), but also concerning the best way to address the problem (motivational framing) (Benford and Snow, 2000; Vanhala and Hestbaek, 2016).

The main aim of this Chapter is to identify discourses and framings that are found in the academic literature from 2011 till June 2023. It is thus a continuation of the work done by Arts et al. (2010) in their longitudinal analysis of global forest(-related) discourses, including meta- and regulatory discourses. As an update rather than stock-taking from 2011, analysis was aimed at establishing which discourses are still prevalent or have newly emerged in academic literature, as it analyses, discusses and critically engages with the goals, instruments, and effects of global forest governance.

The literature search was done in Google Scholar, Scopus, and ISI Web of Science. We used the terms "global", "forest", "discourse", "governance", *"regime"*, "instrument", "actor", and their synonyms/combinations for the time from January 2011- June 2023. Critical policy analysis studies always take a critical perspective on the researchers and the way they analyse and interpret results. Therefore, these results were discussed with several experts in the field to understand whether: i) important themes were missing, and ii) discursive dynamics were misrepresented or misinterpreted.

The literature (210 articles, drawing on journals and publications in the area of forestry and forest policy, environmental science, sustainability studies, *climate change*, management and regulation, development and critical African studies, political economy, and economics) was then analysed and inductively coded with MAXQDA, relying on discourses already identified and named in the literature, along with new codes to identify new or major shifts in dominant discourses that appeared in the analysed time period. Still, the result is not a discourse analysis, but a review of literature on global forest(-related) discourses (also including critical approaches) and, as such, it is a work in progress.

In addition, we describe main framing devices that are used in new forest-related discourses, as those have important implications for forest policy-making. On a more critical note, we finally address the intricate connection between power and knowledge as it emerges from the analysed discourses, in particular mechanisms of exclusion. While we acknowledge that our focus on publications in English is a limitation and excludes valuable insights published in other languages, we consider English to be the lingua franca of global academic debate and exchange, and, thus, best suited to capture prevalent (global) discourses and framings.

4.2 Overview of meta-, regulatory, and forest-related discourses

4.2.1 Brief overview of meta- and regulatory discourses from 1960s-2010

According to Arts et al. (2010) meta-discourses are related to global economics, politics, and culture in general. They are not to be understood as specific for, and limited to, forests alone, but are influential across different policy fields. The authors identified seven meta-discourses that have gained prominence since the 1960s (for a summary see Table 4.1). In addition, they found discourses of a regulatory nature which relate to state regulation, hard law, de-regulation, self-regulation and soft law, and smart regulation and instrument mixes.

Table 4.1

Meta-Environmental discourses (1960s-2010)	
Modernity	Focused on economic growth, industrialisation, and control over natural resources (prevalent in the middle of the 20th century).
Limits to growth	Emerged as a critical response to the modernisation discourse, triggered by perception of ecological crisis and suggesting absolute limits to economic growth (late 1960s and early 1970s).
Ecological modernisation	Combines technological progress within capitalist political economies and argues that economic growth can be achieved while protecting the environment – nature as resources and pollutant recycler – and shifting from 'government' to 'governance'.
Sustainable development	Draws on ecological modernisation discourse and aims at solving global environmental and development problems through a more equitable (and also inter-generational) and co-operative approach.

Neoliberalism	Emphasizes the role of market incentives, 'empowerment' (i.e., emphasising individual action and responsibility) and the private sector, as well as voluntary and non-binding agreements (deregulation) for solving environmental and economic issues, and builds on 'technological' rather than 'political' solutions.
Civic environmentalism	Speaks the language of stakeholders to increase the legitimacy and accountability of multilateral institutions, and focuses on democratic efficiency, bottom-up approaches, and governance arrangements, while not necessarily challenging neoliberal dynamics or persistent power relations.
Global governance	Engages with the global dynamics of governing common problems (environmental, but also economic challenges) through a diversity of rules and actors by also trying to establish norms for 'good' governance.

Source: Arts et al. (2010)

According to Leipold et al. (2019, p. 452), earlier environmental discourses are still playing their role. But, over time, "a considerable spatial and temporal variation in the articulation and institutionalization of environmental policy discourses" has happened. This is convincingly supported through comparative case analysis by various authors (e.g., Beland Lindahl et al., 2017; Edwards et al., 2022). Recently, four important changes to these earlier discourses have emerged.

4.2.2 New discourse developments

4.2.2.1 The 'climatization' of environmental meta-discourses

The "drama of climate change" (Holmgren, 2013, p. 373) has prompted the 'climatization' of already existing meta-discourses, and has also caused the emergence of new meta-discourses. The increasing urgency of the "battle against climate change" and the understanding that there is limited time available to solve the crisis (Holmgren, 2013, p. 373) over the last decade has given environmental discourses new visibility, and greatly privileged climate change centred environmentalism. The question of how to address, mitigate, and adapt to anthropogenic climate change is regarded as the key challenge of the 21st century (e.g., Buizer et al., 2014; Hoogeveen and Verkooijen, 2011). Climate change has reached the top of the political agenda (Wolfslehner et al., 2020), as it holds serious implications for the political and social order (Aykut, 2016).

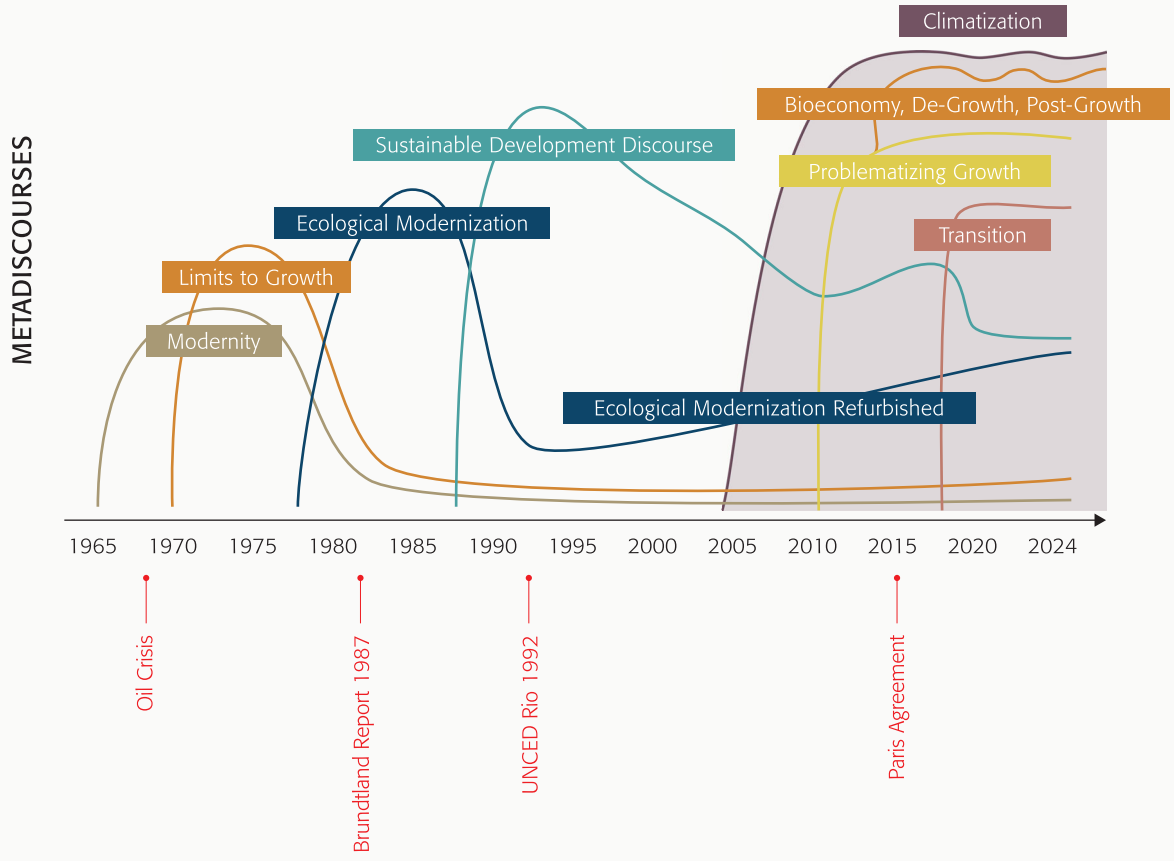
When categorizing this discourse, we see that the 'logic of markets' prevails (neoliberalism and ecological modernisation), while at the same time 'avenues of resistance' to a commodified climate change regime are opened up through a discursive mix on sustainable development, de-growth, civic environmentalism, and environmental justice. This conforms with the findings of Bäckstrand and Lövbrand (2019) that green governmentality (based on a Foucauldian approach to governing), ecological modernization, and civic environmentalism inform climate governance by being incorporated in a "liberal environmental" compromise, which becomes pervasive as it broadens the range of actors, but nevertheless relies on economic rationalities. It is challenged by a climate justice movement and a renewed discourse of civic environmentalism from the left, but these discourses are subjugated, they remain "active, but also sidelined" (Bäckstrand and Lövbrand, 2019; Leipold et al., 2019, p. 452).

Based in the logic of the Stern Report (Stern, 2006), which emphasised the economic costs of inaction in the face of climate change, climate change is constructed as "business opportunity" (Holmgren and Arora-Jonsson, 2015, p. 244), building on the ideas of markets and their capacities for innovation and efficient resource

allocation (Nielsen, 2014), and redefining nature in terms of "ecosystem services" (Nelson, 2015). This deploys a neoliberal logic of market efficiency and monetary value on 'ecological commodities' and endorses the idea that "nature can be saved by selling it" (Buizer et al., 2014, p. 4). This framing of climate change, and what is consequently considered a remedy, effectively shapes the design of institutions and the governance modes applied.

Figure 4.1

Old and new discourse developments over the years (1960-2024)



The Kyoto Protocol has been characterized as an instrument of neoliberal environmental governance, allowing industrialized countries to reduce their emissions cost-effectively while remaining geographically flexible (Osborne, 2015). It is now argued by some, that this neoliberal governance has been further institutionalised with the Paris Agreement (Ciplet and Roberts, 2017). It builds on a 'technocratic rationale' (Nielsen, 2014), by emphasizing capacities and measurement capabilities, and thus, holding a tendency of "de-politicisation" (Brockhaus et al., 2021; Müller, 2017, p. 187; Skutsch and Turnhout, 2020) as it turns the greening of economies into a technical and scientific issue (Holmgren, 2013). But it should not be overlooked that the turn from Kyoto to Paris also heralded a return of radical civic environmentalism, which is critical of inequitable power structures and emphasises aspects of climate justice, demanding better representation for vulnerable groups. Climate activists now demand to move beyond Paris, to "reflect the structural change invoked by the climate justice terminology" (Bäckstrand and Lövbrand, 2019, p. 526).

4.2.2.2 The refurbished ecological modernisation discourse

Control over resources to stimulate economic growth, which has been characteristic of the modernisation discourse in the 20th century, still plays an unabated role in decision-making. De-

spite that it has been led also to a refurbished discourse on **'ecological modernisation'** with a neoliberal twist, by further emphasising the importance of market incentives, the reliance on profit-maximising rational market actors and a framing of climate mitigation and sustainability as business opportunities.

The ecological modernisation discourse proposes, at a minimum, 'win-win' solutions (ecological and economic) (Edwards et al., 2022; Rahmani et al., 2022), but with the potential to efficiently tackle also social and developmental issues (quadruple wins). Its pragmatist and reformist approach to ecological and climate crises aims at decoupling economic growth from environmental degradation by making environmental damage calculable (Rossita et al., 2021). Nature conservation consequently is framed in utilitarian terms (Bidone, 2023, 2022).

As a collective action problem, better coordination and better incentive setting, as well as technological and social innovation, are seen to lead the way to a green economy (Hajer, 2020), which uses markets to manage nature and climate change without major changes to existing institutions and power structures (Gibbs, 2020). Market environmentalism recognises nature as a constraint or opportunity for economic activity, thus providing it with a market value and splitting complex ecosystems into economically tradable property rights, for example, carbon markets (Beymer-Farris and Bassett, 2012).

4.2.2.3 Problematizing growth: Pro-/de-growth and bioeconomy discourses

The **'economic growth'** discourse continues to increase in salience, but has also been recently contested. Alternative growth discourses were identified during the literature analysis for this chapter:

The **'pro-growth'** discourse is mainly concerned with unlocking and commercializing the potential of biological resources and their functions through knowledge and innovation (emphasising new materials, biofuels, etc.), seeing economic growth as a prerequisite for solving environmental problems, and in this discourse scenarios of 'more-of-everything' (win-win) prevail (Holmgren et al., 2020; Kröger, 2016; Kröger and Raitio, 2017; Pülzl et al., 2014). Within this pro-growth discourse, there is an increasing emphasis on behavioural nudging (= influencing one's choice in a specific way) and Nature-based Solutions. The neoclassical and neo-institutional foundations of the old pro-growth discourses have expanded to cover the environmentalism of behavioural economists (Obeng-Odoom, 2022a, 2022b). As such, pro-growth orthodoxy has also been described as an outgrowth of neoliberal economic motives and practices (Ramcilovic-Suominen et al., 2022) focusing only on the outputs of forest ecosystems with monetary or market value (Hanzu, 2018).

As the awareness increases that planetary boundaries (Rockström et al., 2009) are interactive, and that the combination of crossing several boundaries at once will cause rapid and non-linear change (Reischl, 2012), the term "sustainability" and (competing) pathways on how to achieve it, will become increasingly contested and lead to tensions and struggles. Sustainability, practiced through regenerative development, aligns human consciousness and actions with living systems principles (Gibbons, 2020). Two approaches to sustainability are discernible: on the one hand, a 'sustainability branding' with a narrow, utilitarian, and instrumental understanding of sustainability to legitimise 'business as usual'; on the other hand, a 'deep sustainability' approach advocating radical, social change, such as de-growth (Leipold et al., 2019; Pülzl et al., 2014; Ramcilovic-Suominen et al., 2022). The first approach conforms to a pro-growth discourse. But newer studies doubt the possibility of a 'green' growth (Hickel and Kallis, 2020) that is linked to a green economy, or deny the compatibility of 'green growth' with 'social equity' (D'Alessandro et al., 2020; King et al., 2023). Here, current political power relations become contested (Bidone, 2023), and the need to balance social, ecological, and economic dimensions is stressed (Holmgren et al., 2020). Growing out from the 'limits to growth' literature is a more radical **'de-growth'** discourse, which is no longer content with notions of a "steady state" or no-growth (Frame, 2022; Obeng-Odoom, 2021). This sets a (renewed) focus on planetary boundaries and consequently rejects the neoliberal and utilitarian form of sustainability as put forward by pro-growth advocates.

Although multifaceted, the radical de-growth discourse seeks to define human well-being as decoupled from economic growth, that aims to reduce environmental impacts to a sustainable level allowing for ecological regeneration, while at the same time creating socially just societies within 'safe operating spaces', as defined by the planetary boundaries (Cosme et al., 2017; Martínez-Alier et al., 2010). In other words, current social-economic systems and nature-society relations should not be simply adapted to current capitalistic or neoliberal ideas, but completely transformed.

Interestingly, the increasingly prominent **'bioeconomy'** discourse includes elements of the 'limits to growth' discourse, such as resource scarcity, limits to fossil-based resources, depletion of natural resources, and expected population growth (Pülzl et al., 2014), and regards a 'sustainable economy' as an overarching goal (Kleinschmit et al., 2017), but also merges and reframes the content of other previously identified meta-discourses as it relies on market mechanisms and 'eco-services' to achieve sustainable and climate-friendly development (Beland Lindahl et al., 2017; Pülzl et al., 2014).

Some scholars (Goven and Pavone, 2015; Staffas et al., 2013) call it a political project to find solutions to global challenges building on biotechnological knowledge, renewable biomass, and particular political-institutional configurations to facilitate the development of profitable technological solutions. It is also particularly relevant in light of the climate change debate (Edwards et al., 2022).

Holmgren et al. (2022) identified three main strands of this bioeconomy discourse in the literature: i) a vision focusing on new science and technologies (Organisation for Economic Co-operation and Development – OECD, USA); ii) a vision centred on biomass, developing industries, and value chains based on renewable resources (European Union) (for forest-based circular economy see e.g., Hetemäki et al., 2017; Toppinen et al., 2020); and iii) a vision highlighting the limits of natural resource extraction, and questioning the unequal distribution of wealth between populations and generations (no geographical focus). The first two strands show that bioeconomy cannot be considered "self-evidently sustainable" (Kleinschmit et al., 2017, p. 42). The discourse resembles the ecological modernisation discourse (Beland Lindahl et al., 2017). It is thus amenable to actors previously promoting the concepts of green growth and sustainable development (Ramcilovic-Suominen et al., 2022), although sustainability is often reduced to renewable bio-based products and sustained yields of biomass (Holmgren et al., 2020).

An additional variant presents the **'pro-planetary boundaries'** bioeconomy discourse, which ascribes key importance to circularity and sufficiency relating to the work of de-growth scholars (Ramcilovic-Suominen et al., 2022). It advocates a more radical re-orientation beyond capitalist and growth-oriented societies (Holmgren et al., 2020). By building on feminist and decolonial schools of thought, the importance of 'planetary justice' is stressed, as is the importance of power relations (Ramcilovic-Suominen et al., 2022).

4.2.2.4 Transition discourses: Civic and justice environmentalism

The **'civic environmentalism'** discourse remains a critical counter-discourse to ecological modernization, and stresses the non-marketable values of nature and forests (Nielsen, 2014; Reinecke and Blum, 2018). It argues against ecological modernization's technocratic and de-politicizing tendencies by stressing the 'political' of citizen participation, transparent governance, and demands for social justice and fairness (Bidone, 2023; Delabre et al., 2020; Mustalahti, 2018), also recognising the 'ecological debt' owed by the Global North to the Global South (Newell et al., 2021).

This is particularly important as the discourse on **'environmental justice'** has also gained new momentum with the problematization of climate justice and just transition, stressing the differences in the impact of climate change, not only in a North-South perspective, but also among different social groups and communities, taking into account the multitude of human dimensions of climate change (Bolin and Tassa, 2012).

This discourse rejects an understanding of nature as "wilderness" (as a conservation discourse separating people from nature), but as a place where "people live, work, and play" (Schlosberg and Collins, 2014), thus challenging the colonial legacies and Western approaches not only to resource governance (Bidone, 2022; Brockhaus et al., 2021), but also to nature protection. Here, forests are understood as political-ecological entities shaping every-day practices of power, access to resources, and claims to territory, and highlights the co-production of these practices by Western environmentalist actors (Leipold, 2014), but also by local forest residents, state bureaucrats, and conservation organisations (Devine and Baca, 2020). It is criticised that while the language of justice is routinely made use of in political and legal documents, practices of justice preserve dominant concentrations of elite power and are often based on universalistic assumptions about global (distributive) justice emanating from the Global North (Newell et al., 2021).

Market-oriented approaches to environmental and social problems are discerned as privileging economic efficiency and development, while perpetuating histories of colonial conservation and extractivism, assuming the universality of European science and knowledge (Ramcilovic-Suominen et al., 2022) while alternative values and experiences, as well as alternative dimensions of justice, are neglected and excluded (Dawson et al., 2018; Martin et al., 2013).

An environmental justice discourse emerged from the realisation of the disproportionate effect of pollution, climate change, and environmental damage on the poor. This raised concerns about a liberal and individualist concept of justice, and instead introduced a relational idea of justice focusing on the relation between individual action (consumption) and its effects, not only on other (poorer) human beings, but also on other species and nature (the planet) more generally (Winter and Schlosberg, 2023). Emerging from an **'environmentalism of the poor'** literature (Guha, 2002; Martínez-Alier, 2014, 2003), it has spiralled and morphed into de-growth literature (see above), albeit with a stronger focus on the Global South.

But these radical discourses are more environmental than socio-environmental. Thus, they tend to approach racialised inequalities and global social stratification as secondary, or as subordinate concerns. Many critics, drawing among others on stratification economics (Goubert, 2022), traditional and Indigenous knowledge (Kim et al., 2017; Sinthumule and Mashau, 2020), and matter-centred approaches (Winter and Schlosberg, 2023) put the case for developing an alternative approach to environmental justice. The **'just sustainability'** discourse tries to address such gaps. Agyeman and Evans (2004) argued that concepts of sustainability have to be extended beyond 'environmental sustainability', and 'environmental justice' should transcend social sustainability and its structural root causes of injustice (Agyeman and Evans, 2004). It highlights inequality and imperialism as core problem, and inclusion, along with autonomy, as a central lever in the process of strengthening sustainability (Agyeman, 2013). While it has been recognised that the burden of climate change is unequally distributed (those who have least contributed, often face the biggest climate change risks), there is still less attention paid to the inequalities of transition towards a more ecologically sustainable and less carbon-intensive economy, and, for example, a reliance on renewable energy could enforce existing exploitative mechanisms (Kojola and Agyeman, 2021).

By now, the just sustainability discourse has become more visible, stressing inequality and social stratification at local and global levels as deleterious, not only to climate change, but also to biodiversity loss, dispossession, and displacement (Agyeman, 2013; Obeng-Odoom, 2022a, 2022b, 2021). Compared to earlier forms of environmental justice discourses, this one has also moved more strongly into the realm of ecological imperialism with radically different demands for truly transformative ecological and economic approaches. Classical and conventional mechanisms of restoration or redistribution are criticised as veiling continued practices of dominance, unsustainability, and inequality (Chen, 2022; Frame, 2023; Obeng-Odoom, 2022a).

Overall, these discourses are truly global, in terms of theorising, historicising, and analysing the ramifications of ecological problems. Within this sphere is ecological imperialism and its radically different focus, seeking to challenge not only existing global political-economic structures of production and distribution, but also the science of climate change itself. A radical demand is usually ecological reparations (Obeng-Odoom, 2023a, 2023b; Táíwò, 2022), rarely the focus of other discourses.

4.2.3 Existing regulatory discourses with new twists

In the historical overview of the development of regulatory discourses, Arts et al. (2010) showed the move from state regulation and hard law (defining states as the main responsible actors) in the 1960s and 1970s towards a more 'neoliberal' way of governing based on self-regulation (with reference to corporate and social responsibility), de-regulation (relying on voluntary mechanisms, criteria, and indicators), and finally ending up with a 'mix' of top-down regulation and bottom-up coordination in the sense of 'smart' regulation. This shift in regulatory dynamics can be related to a move from government towards 'governance' and 'governmentality' (for a more detailed analysis on forest governance see Arts, 2014; Arts and Visseren-Hamdkers, 2012; Sergent et al., 2018), which can also be related to the dominant meta-discourses over time (see Table 4.2).

The move towards more 'governance' (in line with the discourse on de-regulation, self-regulation, and voluntary instruments) ushers in a stronger reliance on markets, but also civil society initiatives and voluntary partnerships among various actors. Payments for ecosystems services, emission trading, and certification schemes (e.g., for forest-related products and services) rely not only on mechanisms of commodification, but also on market mechanisms of supply and demand, with prices attached to "forest commodities and services" other than timber. This is informed by a neoliberal discourse on self-regulating markets (Osborne, 2015, p. 67), which are assumed to be more efficient in resource allocation and benefit provision and provide new opportunities to private actors. Given that the state, but also Non-Governmental Organisations (NGOs) and

Table 4.2

Regulatory discourses (1960s-2010)	
State regulation and hard law	States are the main actors in decision-making.
De-regulation, self-regulation, and soft law	Rolling back the state including corporations regulating own matters, as well as new self-steering governance modes such as certification and labelling appear.
Smart regulation	A policy instrument mix with top-down and bottom-up regulation.

Source: Arts et al. (2010)

large corporations, develop new forms of (self/co-) governance, different arenas of governance and actors emerge. In this regard, new forms of 'orchestration' in political processes become more prominent (Kleinschmit et al., 2018). This new plurality gives rise to opportunities of co-optation of various demands and the accommodation of difference (Howarth, 2010) in issue coalitions as demands overlap, at least partly. In combination with practices of 'anti-politics' (rendering issues technical, and thus, a matter for experts), it can additionally contribute to the silencing of more radical (e.g., justice) demands (Lewis and Bulkan, 2022). A consensus on climate governance is constructed as politics is replaced by social administration and technological fixes (Swyngedouw, 2011), and issues of contestation are silenced and framed as irrationally ideological.

Fragmentation presents one key-framing used in forest governance and regime analysis (Rodríguez Fernández-Blanco et al., 2019) in relation to the non-integration of international regimes (e.g., forest issues that are dealt with by the Convention on Biological Diversity – CBD, the United Nations Framework Convention on Climate Change – UNFCCC, and the United Nations Forum on Forests – UNFF). The UNFF is defined as a "set of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge" (Krasner, 1982, p. 186). In this regard, the lens of regime complexity or understanding a regime as experimentalist is also used. According to Overdevest and Zeitlin (2014. p. 23), regime complexity is defined as "a situation in which there is no single, unified body of hierarchically imposed rules governing a transnational issue area or policy domain, but instead a set of parallel or overlapping regulatory institutions". This can result in productive experimentation, and stipulates cross-fertilization and horizontal learning. Loosely coupled regime complexes may also be more flexible across issues and adaptable over time. This seems particularly well-suited to transnational domains, where the diversity of local conditions and practices makes adoption and enforcement of uniform fixed rules unfeasible (Overdevest and Zeitlin, 2014). Harini Nagendra and Eleanor Ostrom regarded **'polycentricity'** as an important concept to analyse the governance of forest ecosystems, as most collective problems involve "finding ways of providing diverse goods and services at multiple scales", in particular for "complex resources", as it enables resource users and managers to relate to the multiple scales of ecological functioning (Nagendra and Ostrom, 2012, p. 115).

The Foucauldian term of **'governmentality'** is crucial for apprehending the hybridity of forest governance (Arts, 2014), drawing on an understanding "of decentralized and omnipresent power, combining numerous technologies and practices" (Winkel, 2012, p. 84). Therefore, **'green governmentality'** engages with a form of power "tied to the modern administrative state, mega science, and big business, linking knowledge (eco-knowledge) and expertise to a bio-political management of life", but also marginalizing (silencing) alternative understandings of the natural world (Bäckstrand and Lövbrand, 2006, p. 54). Agrawal (2005) had earlier coined the term **'environmentality'**, combing governmentality with the environment. From his point of view, environmentality focuses on the production of 'environmental subjects' (concerned about the environment) through technologies of self- and social practices. Conceptualizing the Reducing Emis-

sions from Deforestation and Forest Degradation (REDD+) mechanism through the lens of multiple environmentalities, Collins (2020, p. 341) showed how forest communities are "whipped into shape to make them suitable for REDD+'s payments for forest conservation mandate".

Summing up, the originally identified regulatory discourses are still valid, but further nuances appear in the literature as regulatory governance tends to become more complex globally.

4.2.4 Forest-related discourses: Refurbished 'old' and new ones

Arts et al. (2010) identified ten forest-related discourses, which are summarized in table 4.3 below.

Table 4.3

Forest-related discourses	
Industrial forestry	Links up with the modernisation discourse and connects forests to economic development. It is supported by scientific forestry with the aim to maximise long-term economic return.
Woodfuel crisis	As an increasing number of people in developing countries were becoming dependent on wood fuel for energy needs during the 1970s, the depletion of forest resources was anticipated.
Deforestation	Emerged during the 1980s mainly in relation to tropical rainforests, and later including boreal forests. It was linked to issues of biodiversity loss, poverty reduction, and climate change.
Conservation in protected areas	Emerged in the 1980s, first being dominated by the idea of "people-free-parks" and later shaped by narratives on sustainable forest management.
Forest decline	Emerged as part of the "acid rain debate" and focused on factors negatively affecting forests.
Forest biodiversity	Addresses not only conservation issues and problems of social justice, but is also linked to access to resources and technology. Thus, also framed as ecological neoliberalism.
Forests and climate change	Gained prominence with the Clean Development Mechanism (CDM) and Reduced Emissions from Deforestation and Forest Degradation (REDD), and it is strongly influenced by neoliberal discourse.
Sustainable forest management	Congruent with the meta-discourse on sustainable development, it raised issues of participation, distribution, and (over-)consumption. A discourse on ecosystem management rejects a purely utilitarian perspective on nature.

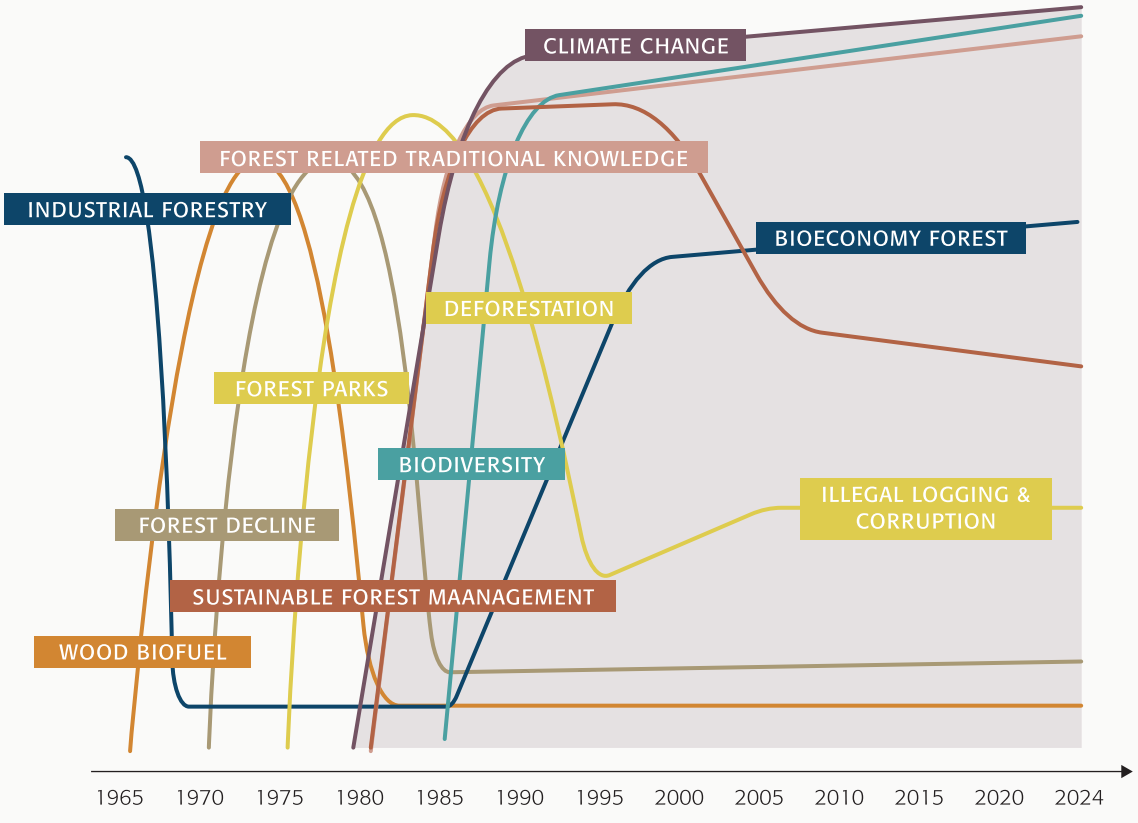
Forest-related traditional knowledge	Focuses on low- and middle-income countries and local forest-communities, sustainable use, and Indigenous Peoples as conservationists, and frames forests as "cultured spaces".
Illegal logging	Centres around a process of Forest Law Enforcement and Governance (FLEG) and the European Union Forest Law Enforcement, Governance, and Trade (FLEGT) action plan to combat negative effects of illegal logging.

Source: Arts et al. (2010); the last four discourses are the forest-related discourses that have changed from 2010 onwards in the scientific literature, others remained the same.

Since 2010, most of these forest-related discourses have been influenced by the new focus on climate change, thus stressing the role of trees and green areas for climate change mitigation, highlighting the role of forests as carbon sinks, as a source of renewable energy, and as vulnerable objects themselves (Edwards et al., 2022; Nielsen, 2014). The text below only deals with the new developments (last four discourses in Table 4.3) and therefore does not provide summaries of others that have not changed or were discontinued. Throughout the text, various boxes are included to exemplify how discourses matter in countries and regions throughout the world.

Figure 4.2

Forest discourses in the global governance literature updated



4.2.4.1 Forests and climate change

The so-called 'climatization' of forests is also found in forest specific discourses as forests are "at the core of climate change problems and solutions" (Paim, 2021, p. 229). They are embedded in a managerial discourse which links forests discursively to climate change at all levels (de Koning et al., 2014), stressing the soil and water protection function of forests and trees (Melo et al., 2021; Miura et al., 2015). The nexus between forests and climate change is constructed through three different narratives: i) problematizing the contribution of *deforestation and forest degradation* to climate change (Bidone, 2022); ii) seeing the potential of forests to mitigate climate change; while iii) acknowledging also the effects of climate change on global forests (Buizer et al., 2014).

Climate change is expected to exacerbate social, economic, and political problems that drive deforestation and degradation (Long, 2013), thus increasing the salience of the concept of resilience (Sakschewski et al., 2016; Stevens-Rumann et al., 2018). An increase in global temperature will exacerbate the risk of forest fires, and consequently release additional atmospheric carbon (Buizer et al., 2014) and decrease the resilience of *forest-dependent* communities (Akamani, 2012; Lyon and Parkins, 2013).

REDD+ is regarded as providing the most prominent intersection of governance of climate change, biodiversity, forestry, and development (Singer and Giessen, 2017; Zelli et al., 2019), and Article 5 (para. 2) of the Paris Agreement specifically encourages "results-based payments" for the reduction of greenhouse gas emissions, as deforestation is framed as one of the main sources of greenhouse gas emissions (Holmgren, 2013; Park et al., 2023), but also a cause of habitat and biodiversity loss (Pendrill et al., 2019). It emphasizes the "responsibility of local forest-dependent communities" by working through market incentives (Holmgren, 2013, p. 375). Therefore, it can be seen as a typical example of a market-reliant instrument that uses economic incentives (payments for ecosystem services schemes, carbon market finance options) and relies on science, technology, and expert-led processes (Bayrak and Marafa, 2016; Bidone, 2022; Martin et al., 2013; Nielsen, 2014). This clearly demonstrates the way the neoliberal meta-discourse, with its emphasis on marketization, gives an enhanced role to the private sector, deregulation, and voluntarism (Humphreys, 2009), which influences and defines the limits of international forest policy (Hogl et al., 2016; Leipold et al., 2019).

Ample criticism is found in the scientific literature on REDD+'s seemingly narrow focus on tradable forest values (Buizer et al., 2014), its failure to take socio-cultural and ideological values of ecosystems into account (Bayrak and Marafa, 2016), and its reduction of forest policies to questions of finance (Delabre et al., 2020) and investment protection (McDermott, 2014). By providing 'services to the global green economy', it enables the global economy to 'continue in its current inequitable structure' (Godden and Tehan, 2016).

Two further critical takes about REDD+ appear. From the perspective of climate justice, REDD+ is seen as globalizing Western and modernistic notions of forests (González and Kröger, 2020), establishing a type of 'carbon colonialism' by promising 'win-win' outcomes instead of problematizing trade-offs between spheres of economic, social, and environmental sustainability (Osborne, 2015). The 'beyond markets' narrative (Nielsen, 2014) is critical of the idea of carbon markets as means for equitable distribution. REDD+ is seen as ignoring the exacerbation of social and environmental problems in local communities. Its value attribution to land for environmental services including carbon is regarded as further contributing to the marginalization of economically less powerful groups (Bolin and Tassa, 2012; McCall, 2016). Additionally, local communities are often framed as victims of climate change (turning them into objects), while neglecting their potential to substantially not only contribute, but initiate actions to mitigate climate change (Ramos-Castillo et al., 2017).

4.2.4.2 Sustainable forest management discourse continues

The **sustainable forest management** discourse, becoming dominant during the 1990s (Edwards et al., 2022), continues to promote responsible forest resource use and recognises the multiple contributions of forests (Kadam et al., 2021), including climate adaptation and biodiversity conservation (Wolfslehner et al., 2020), while being closely related to a 'multi-functional forestry' frame (Hogl et al., 2016). Synergies have been identified with REDD+ (Long, 2013) to reduce pressures on ecosystem services caused by deforestation (Cadman et al., 2017). It also touches upon the question of resilience as a 'capacity' of ecological and forest production systems to recover from climate shocks (Keenan, 2015).

Sustainable forest management has been criticized in several ways: Firstly, for being mostly Western (Pülzl et al., 2014); secondly, for its vagueness

Box 4.2

Forest discourses in Australia and New Zealand

While Australia and New Zealand have some widely shared commonalities, they have been influenced by different forest discourses over time. New Zealand has embraced an *afforestation/reforestation* discourse since the early 20th century, when it realized that timber supplies would likely run out. Since then, additional rationales such as erosion control, regional development, biodiversity, and carbon sequestration have underpinned this discourse (Bayne et al., 2020). In the 1980s, New Zealand began to subscribe to a form of ecological modernization, where there has been a complete separation of conservation and production forests (Roche, 2017). The analogous ecological modernization discourse in Australia saw widescale harvesting and conversion of native forests (Kanowski, 2017). The climate change and forests discourse has recently been gaining prominence in both countries. Carbon sequestration (tradeable in New Zealand) is the only ecosystem service recognized from plantation forests in New Zealand and Australia (Kanowski and Edwards, 2021). In addition to the climate discourse, Australia has embraced discourses of landscape restoration through Landcare, which was a response to loss of ecosystem function, productivity value, and land clearing (Kanowski, 2017).

allowing an increase in prominence of "sustaining carbon stocks over time"; and thirdly, for sidelining a broader definition including local communities, sustainable forest utilisation, and conservation (Reischl, 2012, p. 37). Despite its transition to multiple objectives and planning at multiple spatial scales (Lazdinis et al., 2019), it is still also referred to in the debate as fulfilling a demand for 'feel good' rhetoric. This results in a symbolic forest policy and management changes to suit sectoral purposes and interests (Sotirov and Arts, 2018), and allows continued business-as-usual for the forest industry (Edwards and Kleinschmit, 2013).

Box 4.3

Forest discourses in Indonesia

During the Dutch Administration, the forest sector in Indonesia was only focused on managing teak forests on Java, regulated by the 1865 "*Boschreglement*" law. At the beginning of Indonesia's independence in 1945, forestry was still a peripheral economic sector. Forest resources began to be utilized economically in 1967 to support foreign exchange growth. In 1970, a Government Regulation concerning Forest Concessions was issued, and between 1970-1980 the forest discourse in Indonesia was dominated by timber extraction for national economic development (Nurrochmat, 2005).

In 1980, the government issued a policy to ban log exports and to support the growth of the domestic timber industries. Forestry shifted towards increasing the added value of wood processing and marketing processed wood products. Environmental awareness became stronger after the Indonesian government ratified United Nations conventions and forest certification began to enliven a different forest discourse in Indonesia.

The economic and monetary crisis at the end of 1998 drastically impacted the centralized *forest management* policy and made it become more decentralized. Social forestry, which started to emerge in the mid-1990s, became increasingly more prominent in the 2000s.
In 2007, the United Nations held its climate COP13 in Bali, and the issue of climate change rose in importance in the country. At that time, the forest discourse was still governed by sustainable forest management, including the issue of timber legality certification (Nurrochmat et al., 2016). The issue of climate change became more dominant after the publication of

the Paris Agreement in 2015. It has continued to grow after the Indonesian government established the Forest and Other Land Use Net Sink 2030 policy in 2021. Climate change in forest discourse became also widely linked to the economic growth target to achieve a "Golden Indonesia", launched by the Indonesian government (Nurrochmat et al., 2023).

4.2.4.3 Updated forest-related traditional knowledge discourse

The discourse on forest-related traditional knowledge is closely related to the two preceding discourses, first appearing in the early 1990s, and linked to the meta-discourse of civic participation (Pülzl et al., 2014). This discourse continues to frame Indigenous populations as sources of local ecological knowledge leading to higher levels of biodiversity (Carson et al., 2018). Promoted by NGOs, the inclusion of traditional knowledge of communities depending on forests is seen as leading to i) more sound management practices (De Royer et al., 2018); ii) effective solutions to climate change mitigation and adaption (Bayrak and Marafa, 2016); and iii) resilience and socio-environmentally just solutions (González and Kröger, 2020).

This refreshed discourse contributes to a 'beyond carbon' framing that emphasizes biodiversity, ecosystem services, and participation (Zelli et al., 2019), as 'forest-dependent communities might not want to see forests just as carbon containers' (Bayrak and Marafa, 2016). From a bioeconomic perspective, products deriving from traditional knowledge (like medicinal extracts from forests) are conducive to producing development gains, while at the same time, causing less direct trespassing of ecological and climate limits (Ramcilovic-Suominen et al., 2022).

But this 'romanticized' conceptualisation of local communities as resource sparing and biodiversity protecting forest dwellers are also challenged as Western myths. Global forest definitions are often at odds with Indigenous forest definitions (González and Kröger, 2020). Communities living in or near forests do not necessarily aim at sustaining forests, as conversion of forests to agroforestry and agricultural uses are part of their livelihood repertoires (De Royer et al., 2018). This perspective demands for the hearing of local voices and the allowance of a variety of values and knowledges to inform forest policy (Delabre et al., 2020; Melo et al., 2021). REDD+ has also triggered a renewed problematization of traditional knowledge and forest use practices, as the fixation on carbon sequestration and monetary benefits has intended and unintended socio-cultural consequences (Bayrak and Marafa, 2016). Furthermore, it has been criticized that only a few conservation programmes promote "different ways of knowing", including concepts of bio-cultural diversity (Martin et al., 2013, p. 128), but also the instrumentality of using 'particular' (in the sense of traditional) knowledge by making forest-dependent communities responsible for keeping forest intact (Holmgren, 2013). This problematizes specific land-use practices and ignores power imbalances (Brockhaus et al., 2021).

4.2.4.4 Illegal logging and corruption

The climatization of forests has also introduced new aspects to the discourse on **illegal logging**, and has heightened the awareness of corruption risks. Since the 1990s, illegal logging has received increased attention, and a 'timber legality regime' has emerged building on, for example, Forest Law Enforcement and Governance (FLEG), Forest Law Enforcement, Governance, and Trade (FLEGT), the US Lacey Act, and timber certification schemes with the aim to make 'land use and forest governance clearer and fairer', and create conditions conducive to sustainable forestry (Bartley, 2014; Haug and Gupta, 2013; Kraxner et al., 2013).

Nowadays, however, the academic literature highlights an increased salience of corruption risks associated with the distribution of forest carbon rights through, for example, REDD+ schemes. Funds might get pocketed by local officials (Sundström, 2016) following lacking land tenure security of local communities and the resulting potential for land and benefit grabbing (Streck, 2020). The discourse problematizes the issue of elite capture, referring to a process by which local elites take advantage of their positions to secure a large share of resources, or financial flows for their own benefit (Persha and Andersson, 2014). This also calls into question decentralisation endeavours: while on the one hand it is framed as an incentive for local communities to actively engage and participate (and contribute their knowledge), on the other hand it provides new opportunities for local elites (and thus, lo-

Box 4.4

Forest discourses in the Republic of Korea

The Republic of Korea has had three dominant forest discourses since the 1970s. The first discourse was the reforestation discourse. After the Korean War (1950-1953), forest rehabilitation for land recovery was highlighted with the First National Forest Development Plan (1973-1978) and the Second National Forest Development Plan (1979-1987). The Republic of Korea followed the state policy pathway of forest transition with the reforestation discourse against deforestation and forest degradation (Park and Youn, 2017). The second discourse was the sustainable forest management discourse of the 1990s, based on successful reforestation and the global trend of sustainable development in forestry. The sustainable forest management discourse includes shifting the focus of forest policy from economic functions to the multiple functions of forests. The forest ecosystem service approach was introduced, emphasizing multiple benefits of forests. In particular, the forest's function as a carbon sink has been highlighted within a global climate discourse, linking with the fifth National Forest Development Plan (2008-2017). The third forest discourse is now the forest welfare discourse. Following sustainable forest management, this forest welfare discourse began in the 2000s, focusing on the cultural services of forests. The forest welfare discourse highlights the functions of forest recreation, tourism, therapy, and healing (Koo et al., 2013). In particular, the COVID-19 pandemic strengthened this forest welfare discourse by highlighting the contribution of forests to human health.

cal power networks) to profit from their intimate knowledge of, and power over, local constituencies to capture financial and other benefits (for a more detailed analysis on how decentralisation provides opportunities to local leaders, see Persha and Andersson, 2014). But corruption does not arise only from government failure, but may also result from past colonial policies and practices of transnational corporations (e.g., Njoh, 2022).

Besides negative ecological effects, corruption also increases social inequalities in local contexts (Sundström, 2016). It excludes poorer and less influential community members not only from benefits, but also from participation in decision making (Forsyth and Sikor, 2013). Ongolo coins the term 'Gecko politics' highlighting a discourse (often prevalent in states with lacking administrative capacities and weak accountability mechanisms), where the rhetoric of participation and inclusion adapts to international demands as required, but remains out of sync with reality (Ehrnström-Fuentes and Kröger, 2017; Morin and Orsini, 2013; Ongolo, 2015; Sayer and Collins, 2012). Corrupt governance practices are defined as "abuse of entrusted power for private gain" (definition by Transparency International, but for a critical approach, see Doshi and Ranganathan, 2019). An alliance between the private sector and powerful bureaucratic and government allies (Larson et al., 2021) can, in this way, hamper the elimination of unsustainable forest practices, or obstruct mechanisms of verification through, for example, measurements and data collection (Buizer et al., 2014).

4.2.4.5 The 'bioeconomic' forest

While the previous sections highlighted changes and layering of older forest discourses mainly resulting from new perspectives on forests under climate change conditions, the **bioeconomic forest** discourse opens a new field of forest discourse. Holmgren et al. (2020) identified in their literature review three types of rationales evident in a forest-based bioeconomy: i) decarbonization and maintenance of economic growth; ii) fundamental societal transformation; and iii) pathways towards sustainability (Holmgren et al., 2020).

Comparative studies also highlight the different roles national strategies ascribe to forests in the shift toward bioeconomy (Kleinschmit et al., 2017). In the case of a techno-bureaucratic framing of bioeconomy, industrial perspectives and the commodification of forest services prevails (Kröger and Raitio, 2017; Mustalahti, 2018), but also ideas of intensification can be linked to a bioeconomy discourse, aiming at higher rates of carbon uptake and substitution of fossil fuels, and building with wood, clearly showing the tensions immanent in the discourse (Lazdinis et al., 2019).

As a motor for innovation and a source of renewable materials, the discourse conceptualises the forest sector as crucial for the development

Box 4.5

Forest discourse in Argentina

The implementation of neoliberal economic reforms in Argentina during the 1990s resulted in the dismantling of the national forest bureaucracy. With this action, the country followed an ecological modernization discourse with a complete separation of production (associated with industrial plantation forests), and conservation (associated with natural forests) (Burns and Giessen, 2016). Influenced by afforestation discourses, plantation forests in the country have been seen as a source of raw material, gradually incorporating elements from pro-economic growth and bioeconomy discourses (Mijailoff and Burns, 2023). Alternatively, concerned with natural forests and their conservation, other forest-related discourses emerged ranging from sustainable development to broad civic environmentalism discourses. The former expects to tackle deforestation through production with conservation, for instance through the current movement promoting forest management with integrated livestock (Peri et al., 2021). Related to traditional knowledge discourses, Indigenous Peoples and Local Communities' livelihoods are seen as an end and a means for forest conservation (Seghezzo et al., 2011). Despite the differences in natural and plantation forests, both are strongly influenced by the climate discourse, nurtured by ideas on common but differentiated responsibilities, and increasingly focused on carbon-based metrics (Bull and Aguilar-Støen, 2014).

of bioeconomy (Park et al., 2023; Pietarinen et al., 2023), thus also highlighting the tensions between a conservative model of industrial growth and long-term sustainability. The concept of bio-based economy seems to be gaining strength to the detriment of discourses on sustainability and multifunctionality (Sotirov and Arts, 2018).

4.3 Seeing the forests through different framings

The discourses presented in the text above engage forests from different perspectives. These perspectives have implications on the role forests play. This Chapter, however, aims to single out four specific frames that play a particular role in current political debates and are much discussed in the literature (forests as ecosystem service providers, as carbon sinks, as landscape managers, and as suppliers of Nature-based Solutions). Through framing forests mainly as carbon sinks or suppliers of Nature-based Solutions, other forms of forest use become excluded. This has consequences for how forests are governed. Here, frames are considered as analytical devices of discourses.

4.3.1 Forests as ecosystem services providers

The idea of ecosystem services provided by forests is firmly embedded in the market logic. It broadens the perspective to distinct components of the forest ecosystem in the form of provisioning services (e.g., food, fuel, fibres, water), regulatory services (e.g., water purification, climate regulation), supporting services (e.g., production of soil and oxygen), and cultural services (e.g., recreation) (Lazdinis et al., 2019; Pramova et al., 2012; Roessing Neto, 2015; Winkel et al., 2022). Ecosystems, thus, provide local, regional, national, and global goods.

Payments for these ecosystem services translate them into a marketable value, linking the managers of these services with the beneficiaries, and, at the same time, overcoming cooperation dilemmas by connecting global demands for ecosystem services with local providers (Alix-Garcia and Wolff, 2014). Environmental protection becomes compatible with liberal economic goals (Bernstein and Cashore, 2012) and market mechanisms. Again, a win-win scenario is constructed: the restoration and conservation of ecosystems also contributes to the reduction of vulnerabilities of populations to climate change, as it increases ecosystem resilience (Park et al., 2023).

At the same time, mechanisms of exclusion are created, as those not able to afford to pay are unable to derive benefits from forests (Adhikari and Baral, 2018). But different ecosystem services can also compete (Falk et al., 2018), confronting forest managers and owners with conflicting demands ranging from providing biodiversity to allowing the transition to renewable energy

(Beland Lindahl et al., 2017). It also contributes to a marginalisation of values not suited for conversions into payable services (Buizer et al., 2014). Tensions exist between the economic and social assessment of ecosystem services, raising the question of which voices (e.g., experts, conservationists, forest dwellers) are to be included in the assessments (Felipe-Lucia et al., 2015).

This idea of forests as ecosystem services providers is related to a multiple-use forestry, which has gained momentum with the discourse of sustainable forest management (Hoogstra-Klein et al., 2017). Winkel and Sotirov (2016) characterized this, therefore, as a 'discursive weapon', serving as a political rhetoric tool without clashing with involved stakeholder interests (Hoogstra-Klein et al., 2017). To conclude, the ecosystem service framing around forests clearly ties in different discourses that are linked to a win-win logic, while at the same time framing forests as providing different products and services and not, for instance, highlighting that they themselves are under threat.

4.3.2 Forests as tradeable carbon sinks

In line with the economic modernisation discourse, and building on neoliberal market logic, forests are converted into a forest carbon commodity (ecologic and economic), potentially fully fungible to be traded on global markets (Zelli et al., 2019). In this form, forests fully enact their role in global climate governance (Buizer et al., 2014). The Intergovernmental Panel on Climate Change (established in 1988) and the United Nations Framework Convention on Climate Change (established in 1992) initiated the framing of forests as carbon stocks (Chazdon et al., 2016). This gave way to highly technical concepts (reference levels; Monitoring, Reporting, and Verification – MRV) difficult to contest, as based on scientific claims, expert assessments, and performance-based payment schemes (Nielsen, 2014). For example, REDD+ builds on this logic of market transactions based on a single exchange value in the form of carbon credits; thus, a monetary fixation on nature (Bayrak and Marafa, 2016). REDD+ action, as part of Nationally Determined Contributions in the framework of the Paris Agreement, and improved methodologies for carbon accounting in forestry projects, should increase the mitigation potential of forests (van der Gaast et al., 2018) and provide income-generating opportunities for local communities (Senadheera et al., 2019).

Carbon storage and sequestration can be converted into a business proposition where global sustainability governance frames forests as natural capital and favours market-based solutions (payments for ecosystem services, or certification standards). In this way, climate change becomes 'governable' by relying on mechanisms of accounting (Delabre et al., 2020; Lövbrand and Stripple, 2011). However, some authors single out an opposing framing that problematizes the effect of carbon commodification on local communities, as they disregard the complexity of socio-cultural and ecological values (Bayrak and Marafa, 2016; Delabre et al., 2020). Existing social safeguards remain insufficient, and mechanisms of free, prior, informed consent remain ineffective (Suiseeya, 2017) when it comes to avoiding 'carbon colonialism' (understood as continued domination and imposition of standards on Southern and poorer countries, who did not create the problem of man-made climate change in the first place) (Forsyth and Sikor, 2013; Nielsen, 2014).

4.3.3 Forests as landscapes

While the term "landscape" has been increasingly replaced by "ecosystem" in the discourse on conservation (Sayer and Collins, 2012), it is closely related to it. It aims to reflect a more integrative approach towards natural environments with different livelihood systems and social interactions (Nielsen, 2016), connecting nature and people. The landscape approach towards forests follows the idea of "internally interactive" landscapes (Chazdon et al., 2016, p. 539), and seems to "end the debate that pits agriculture against forests" (Buizer et al., 2014; McCall, 2016, p. 68). It overcomes this sectorial approach to land management separating forestry from agriculture and other land uses by applying a more holistic approach, also presenting forests as part of "larger and fluid" ecosystems (Nielsen, 2016, p. 180). While an emphasis on conservation and forest protection largely ignored agricultural activities and requirements of forest-dependent people, a re-framing of forests as landscapes allows for the integration of economic activities within forest management and governance practices. This more holistic approach builds on multi-faceted governance and management techniques.

Forest landscapes are sometimes characterised as only vaguely defined "boundary objects" (McCall, 2016, p. 59), or a 'floating signifier' (Reinecke and Blum, 2018), and consequently are seemingly flexible enough to be used by different actors almost all-inclusively. Arts et al. (2017, p. 457) highlighted how a landscape, as a boundary concept, allows for "discursive spaces for (re)

interpretation, (re)negotiation, and consensus formation among different domains", bringing together different disciplinary concepts.

Approaching forests from a landscape perspective promises triple wins (mitigation, adaptation, and development) (Nielsen, 2016), or even quadruple wins, adding the conservation of biodiversity (Reinecke and Blum, 2018). It is regarded as helping to overcome "integrative and operational gaps encountered in the ecosystem services framework", as they emphasise human-environment interaction (Angelstam et al., 2019, p. 1445). Additionally, it is mainly linked to the discourse of sustainable development, as it builds on cross-sectoral and multi-stakeholder engagement (Arts et al., 2017; Axelsson et al., 2011). Still, there is also criticism concerning the integrated landscape approach representing the "diffusion of data-driven technocratic and neoliberal governance from […] forests onto entire landscapes, under the mantle of environmentally sustainable development" (Nielsen, 2016, p. 181). While claiming better integration of different demands, and a more holistic perspective on connected ecosystems, emphasis remains on the useability of forest products and services. Thus, the re-framing as landscape approach is suspected to be just old wine in new wineskins.

4.3.4 Forests as providers of Nature-based Solutions

Nature-based Solutions are 'inspired and supported by nature' (European Commission, 2015) to provide environmental, social, and economic benefits, to build resilience, and to maintain or enhance ecosystem services. The core idea is the use of ecosystem services to address societal challenges (e.g., climate change) (Cohen-Shacham et al., 2019) by promoting the maintenance, enhancement, and restoration of biodiversity and ecosystems as a whole to simultaneously address multiple concerns (Kabisch et al., 2016). It turns nature into a multiple service provider (Babí Almenar et al., 2021) to solve human (and human-induced) problems, as nature is seen as working for the benefit of society (Welden et al., 2021).

This multifunctionality idea is crucial here as forest ecosystems (natural, managed, or urban forests) are considered multifunctional providers of Nature-based Solutions (Salvatori and Pallante, 2021). While related practices (in the sense of working with nature to cope with impacts of natural disasters or climate variability) have always been used (e.g., planting of trees for flood protection), putting a scientific name to it is a more recent development (Seddon et al., 2021). Already a normalisation process is ongoing, evidenced by the development of related global standards developed by the International Union for Conservation of Nature (Cohen-Shacham et al., 2019). However, so far it is still underspecified what counts as Nature-based Solution (Seddon et al., 2021). For example, reforestation and 'improved' forest management modes can represent related forms of Nature-based Solutions to tackle climate change and halt biodiversity loss (Folkard-Tapp et al., 2021).

Seddon et al. (2020) highlighted several risks associated with the reliance on forests for greenhouse gas mitigation: i) if not grounded in sound ecosystem and biodiversity science, preference for monocultures vulnerable to diseases and loss of biodiversity might be the result; ii) financial incentives may compromise local land rights and lead to land grabbing; iii) tree plantations might encroach onto other ecosystems with devastating impacts on biodiversity; and iv) the strong reliance on Nature-based Solutions as technical fixes might distract from the necessity to decarbonize the economy.

Consequently, two opposing framings can be identified: on the one hand, pointing to the 'leveraging power of nature', and on the other hand, conceptualising Nature-based Solutions as a dangerous distraction, as they are "co-opted to continue with what is seen as unsustainable, unjust, status-quo" (Melanidis and Hagerman, 2022, p. 275). These two comments can probably be merged together as the growing importance of the climate change discourse having contributed to a different and innovative framing of forests (e.g., ecosystem services, Nature-based Solutions), and putting more salience on their various contributions to mitigate climate change. This has allowed for new processes of democratisation and civic engagement, but also for new approaches to Indigenous knowledge and justice. However, as discussed in the previous Sections, old problems remain and new critical developments emerge, which is accordingly emphasised in the analysed literature.

4.4 Emerging from the discourses: The intimate linkage between forest knowledge, power, and mechanisms of exclusion

Without neglecting the fact that power has a material basis, a discourse analytic approach calls upon us to take into account not only how discourses and frames shape actions and beliefs,

but also how subjects and social practices are constructed. Foucault famously described this as the Power-Knowledge Nexus, in what counts as truth and knowledge is ultimately an effect of power (Digeser, 1992). Knowledge and power are intimately connected in discourses, as the "power of definition excludes alternative realities", and discourses create and destroy "time and location-bound rationalities" (Winkel, 2012, p. 82). Different ways to know forests (traditional ecological knowledge versus statistical or numerical knowledge) give rise to different subjective relationships with forests and with different techniques of governing forests (Agrawal, 2005b). The issue of power is clearly linked to the 'art of governing', as discourse analytic approaches not only allow to bring clarity into understanding how processes of meaning-making (by producing, processing, and institutionalising knowledge) contribute to institutional stability and change (Kaufmann and Wiering, 2022), but also how governance is exercised through micro-level interactions (Edkins, 2007; McDermott, 2014) intending to create subjects internalising specific values and norms (in the sense of Foucault's governmentality) (Fletcher and Cortes-Vazquez, 2020).

Mechanisms of power are particularly pronounced in procedures of exclusion, as "in every society, the production of discourse is at once controlled, selected, organised, and redistributed" by different procedures. These operate not only though mechanisms of prohibition and rejection (of 'unreasonable' utterance), but through a "will to truth", in the sense of mechanisms and instances within societies distinguishing true from false statements, including techniques and procedures to obtain truth (Foucault, 1980, p. 53).

A Foucauldian forest policy analysis is thus also geared towards unmasking the subversive forces of discursive power, the exclusion of specific groups, and oppressive forest governance (Winkel, 2012). It also gears us towards understanding political power as a way of governing through complex bodies of knowledge (Rose and Miller, 2010). However, we aim to dive deeper into forests and discursive ways of knowing forests, what commodification of forests can do, as well as critically address silence or discursive omissions as forms of power. While it addresses some aspects that have been mentioned before, here the focus is on how knowledge and meaning making is an expression and perpetuation of power relations.

4.4.1 Knowing forests

Framing forests as carbon sinks and deploying governance modes like carbon accounting for 'green transformations' to counter climate change requires a constant production and flow of information – and the incentivisation of actors to act based on the provided knowledge (Müller, 2017). This also carries the confidence that indicators and monitoring techniques provide appropriate means to oversee forest carbon changes (Zelli et al., 2019).

Different framings of 'forest knowledge' also show the link between specific forms of knowledge and (em)power(ment). The need for 'constantly better knowledge' also allows local (traditional) knowledge to gain recognition in addition to satellite monitoring of forest cover for the effective implementation of programs such as REDD+, as low-cost, accurate, and rapid information on areas of forest degradation and regrowth (Nagendra and Ostrom, 2012). It also allows to de-construct power relations hidden in the term "resilience". Contrary to the term "vulnerability", which appeals to global solidarity, resilience relies on a set of different ideas that stretch from engineering, ecological, and social-ecological ideas that often get intermixed (Nikinmaa et al., 2020). Underlying educational ideas imply that change and potential capacity transfer are possible, and portrait autonomous populations as no longer in need of solidarity (Müller, 2017). Social-ecological resilience perfectly resonates with a neoliberal discourse, as it puts emphasis on private (market) actors and their capability (responsibility) to build their capacities.

The perpetuation of dominant ways of knowing also reinforces injustice, as it leads to the exclusion of alternative knowledge systems (Martin et al., 2013). Education replicates specific forms of knowledge. Modern forest planning can prolong colonial mechanisms through its construction of space and definition of forests, and therefore, it can have oppressive effects on different social and cultural groups (Winkel, 2012). The literature problematises how 'political forests' (as political-ecological entities) emerged in a recombination of colonial discourses, territorial governance strategies, scientific forestry, and conservation demands, always connected to a civilizing mission (Devine and Baca, 2020). Sungusia et al. (2020, p. 366) described mechanisms of exclusion as the "omission of social sciences, humanities, and Indigenous forestry knowledge from forestry curriculums". This not only perpetuates a supremacy of

scientific forestry knowledge, but also deprives students of opportunities to reflect and disrupt dominant views in forestry. It continues to reproduce 'techno-bureaucratic fixes', as neoliberal reforms further erode the conditions of de-colonizing forestry education in certain countries (Sungusia et al., 2020).

Knowing forests means also sharing knowledge and scientific results about forests more globally, and thus, mapping out forest functions and ecosystem functionalities across diversified forests, as well as providing profound insights into the social and economic roles forest and forested landscapes have. Knowing forests more in-depth also allows for being able to take better care of them.

4.4.2 Commodification

The translation of forests and their products and services into 'tradable entities' is closely related to practices of power and knowledge. All market participants and trading parties necessarily have to perceive and define an object as tradable in order to create a market for these new commodities (e.g., ecosystem services). While this is part of the 'political' (which is always an arena of contestation), over time, established markets become part of the 'social', and represent sets of sedimented practices (Laclau and Mouffe, 1991; Stephan, 2012). Verifying activities (and mechanisms of knowing forests and their services) through measuring, for example, forest carbon/biodiversity stored in forests become in this regard an additional requirement for commodification (Stephan, 2012). Commodification can also be positive, as it can create employment and social livelihood in rural areas, especially in *low- and middle-income countries*. It can create perspectives that may be well based on already established practices. But social commodification activities can also appear globally, when for instance vulnerability is turned into a commodity. It is done to serve national elites in their negotiations over climate finance (supported by indexes and vulnerability rankings as mechanisms of knowing – Olympics of Vulnerability), but often disconnected from local levels and leaving root causes of vulnerability unchallenged (Brockhaus et al., 2021).

4.4.3 Invisibility and exclusion

Power is strongest when it is invisible, and therefore, unresisted. 'The will to truth' is, according to Foucault, one of the biggest systems of exclusion. Established institutional practices, delimitations of methods and objects of knowledge, and how subjects are constructed by discourses, exclude simultaneously other possibilities of meaning-making. They also exclude other 'truths' and 'seeing and understanding' objects and actor positions (Foucault, 1980). As an example of this, Ramcilovic-Suominen et al. (2022) problematized the lack of attention to mechanisms of silencing and misrepresenting in the formation and implementation of a European Union bioeconomy, but also the lack of consideration for locally embedded ideas and knowledge. The technical fix of replacing oil with bio-sources allows to blind out power issues, questions of distribution, or related social problems (Bolin and Tassa, 2012; Newell et al., 2021; Suiseeya, 2017), and hinders the proper recognition of claims for justice.

Social safeguards, as introduced in the context of REDD+, are regarded as only weak interpretations of recognition-based norms and representing a 'do-no-harm' principle rather than a progressive realisation of human rights, failing to address injustice in practice (Dawson et al., 2018; Godden and Tehan, 2016). "Recognition is about seeking equality between different ways of knowing" (Martin et al., 2013, p. 124). Misrepresentation, and thus, misrecognition, perpetuates invisibility. Access to, and usage of land are determined through discursive mechanisms of exclusion: Bose (2023), for instance, described how Indigenous communities' resistance to mining is de-legitimised by two narratives: first, from an economic perspective mining is seen as the region's development interest, and those resisting are against development; second, Indigenous communities are reimbursed for giving up land rights for reforestation projects. Also, the depiction of forest dwellers as 'invaders and destroyers' (Beymer-Farris and Bassett, 2012; Carson et al., 2018) contributes to mechanisms of injustice, exclusion, and the manifestation of unequal power relations.

International forest governance builds on particular 'ways of knowing', understanding, and regulating forests and human-nature interactions. In line with capitalist modes of production and neoliberal discourses, it is "the market" understood as practice of commodification, which links knowledge (on forest data and values) with power (access to resources and price mechanisms). Mechanisms of exclusion perpetuate existing power and knowledge inequalities. Research shows that Western actors have more power in setting the forestry and ecological agendas (Masood, 2018). Structural issues (like English language proficiency, the dynam-

ics of scientific and expert networks, or access to funds) contribute to silencing or dismissing other forms of knowledge and other interests. Similar patterns apply to scientific publications. The top papers in the most visible outlet for climate, forest, and nature research (the scientific journal Nature) are dominated by the West and the Global North more widely (Van Noorden et al., 2014).

Box 4.6

Examples of forest-related land tenure discourses in Africa

A central discourse about forests and forestry in Africa is security of land tenure. The protection from eviction, questions about equity in ownership, and puzzles about autonomy in control of forests, land, and livelihoods are all critical themes around forest governance in large parts of sub-Saharan Africa (Obeng-Odoom and Stilwell, 2013). Tenure was an issue at the heart of the enslavement of Africans, a central question in colonialism, and a pivotal matter in the post-colonial period (Forstater, 2023). This problem persists. The question of is how best to secure tenure to enable forests to flourish and social forestry to thrive is central to African political economy. Most Western agencies, including the World Bank, NGOs, and governments champion private, individualised property in land, transforming land into a commodity. Connected to the commodification of forests is a development approach in which landed property should be mortgaged to access finance. But such marketisation has triggered widespread displacement and deforestation (Njoh, 2022).

An alternative discourse prioritises community over commodity (Sinthumule and Mashau, 2020). Strongly Afrocentric, traditional systems of land tenure, Indigenous governance, conflict-resolution mechanisms, and African notions of space, nature, and justice are prioritised. The market is not the arbiter of tensions and contradictions in forestry governance, but rather African systems and symbols guide the resolution of conflicts. Such systems prioritise autonomy and sovereignty. The Afro-barometer surveys reveal that Africans have more trust in their traditional systems of land management and governance (Honig, 2022). Econometric evidence shows that such collective African tenure systems might hold the key to the future of African forests (Djezou, 2014).

4.5 Conclusions

In 2010, Arts et al. concluded their chapter on "Discourses, actors, and instruments in international forest governance" with the following insights:

- Various meta- and regulatory discourses have influenced and changed more specific local and global forest-related discourses over time. While initiated in sequence, they continue to exist in parallel, with sustainable forest management being particularly dominant by bringing together the discourses of climate change, forest-related traditional knowledge, and biodiversity.
- With the increasing prominence of an ecological modernisation and a sustainable development discourse, the role of non-state actors such as NGOs has grown significantly.
- Soft-policy instruments on forest use, management, and conservation are established besides and in addition to legally binding instruments, creating 'smart' instrument mixes.
- Thus, policy-makers have to understand and embrace the complexity and sometimes inconsistency of global forest policy-making, and be more aware of 'discursive attachments' and linkages between forest and meta-discourses in order to allow for collective reframing in open and deliberative arenas.

These conclusions remain valid today, but our findings suggest that the stakes are higher today than in 2010. The call for a transformative change is clearly evidenced in the literature rejecting incremental adaptation that does not seem satisfactory anymore in the face of the dramatic consequences of climate change (in particular for the poorest and most vulnerable groups), and

shrinking timespans. This will require innovative policy solutions to address increasingly wicked problems (characterised by many interdependent, and hard to disentangle factors, the impossibility to know ex-ante what could constitute a good solution, and increasing pressure to find solutions more quickly) (Levin et al., 2012; Peters and Tarpey, 2019). We base this on the following main findings of this work.

4.5.1 Climate change as hegemonic meta-discourse

The 'battle against climate change' is now an all-embracing meta-discourse, and regarded as key challenge of the current century (Buizer et al., 2014; Holmgren, 2015). With the Paris Agreement, an ambitious goal was set to limit global warming to 1.5°C, and to achieve a decline of greenhouse gas emissions of 43% by 2030. The importance of forests and their capacity to store carbon and mitigate climate change has thus gained clear political prominence. Globally, it has found an expression in continuous calls to stop deforestation, as well as in the REDD+ instrument, and the call to mobilise public and private financial means to protect and restore forests (Nabuurs et al., 2022). The necessity to halt climate change frames forests as carbon sinks, but also frames them as providers of services for climate regulation and adaptation, and providers of Nature-based Solutions to cope with climate variability. This demands policy solutions and instruments to fully uncover the potential of forests as climate mitigators. This demand comes with clear urgency, as the ambitious goals of the Paris Agreement still seem within reach. At the same time, other important forest functions such as forests as livelihoods and providers of tradeable goods, including wood and non-wood products, sources of energy, enhancing biodiversity, or protecting from avalanches might be regarded as secondary to climate services, and loose overall political traction. This very likely increases the potential for conflict, and increases the fear that the understanding that forests are complex ecosystems with interconnected functions gets lost.

4.5.2 Reliance on market mechanisms

Our analysis shows a dominant reliance on market mechanisms to manage nature and climate change. In this way, climate change is constructed as a business opportunity (Gibbs, 2020; Holmgren and Arora-Jonsson, 2015), putting a market value on nature, and turning it into tradeable commodities and services. In particular, we see this tendency in a refurbished discourse on ecological modernisation, with a pronounced neoliberal frame, but also in the bioeconomy discourse, which aims at overcoming the limits to growth with biotechnological innovation in order to achieve the goal of a sustainable economy that also contributes to limiting climate change. Markets are considered as opportunity structures, and the challenge is to establish regulatory mechanisms that allow markets to fully develop their innovative capacity. With an emphasis on marketization, the enhanced role for the private sector, deregulation, and voluntarism can be framed as cost-efficient strategies to address climate change, but also carry the hope of promoting local livelihoods through business opportunities, and for new alliances between climate actors, local communities, and industries, ideally resulting in a win-win situation. Two questions remain: first, whether markets can produce the politically desired outcomes in due time (taking into account the time pressures arising from climate change), and second, whether these outcomes will be socially and economically just, as markets naturally produce winners and losers.

4.5.3 A quest for justice

Several discursive strands are identified that counteract the possibility of 'green growth', and demand a more radical re-orientation that stretches beyond capitalist and growth-oriented societies (e.g., Holmgren et al., 2020). Civic environmentalism remains a critical counter-discourse, and stresses not only the non-marketable values of nature and forests (Nielsen, 2014), but also the increasing demands for environmental justice to come forward. Market-oriented approaches are criticised for perpetuating histories of colonial conservation and extractivism, and for resting on the assumption of the universality of European science and knowledge (Ramcilovic-Suominen et al., 2022). While Arts et al. (2010, p. 69) found that "current hegemonic discourses tend to exclude specific types of actors, such as those NGOs with more radical perspectives and political critiques", this picture is likely to change as calls for justice and engagement with newer concepts of justice also increase in the academic literature. This is evidenced by the extraordinary surge of literature addressing environmental justice (from just 5 papers tagged with "environmental justice" in 1990, to nearly 3,000 papers in 2022). It also leads to activism being put forward by movements such as Fridays for Future, or the climate movement Last Generation, which have not yet been fully embraced in the literature. We can also observe that some scientists tend

more towards activism themselves (e.g., Scientists for Future, social media activities), which can play a bigger role in the future.

4.5.4 Coping with polarization

The aforementioned dynamics identified in the analysis of the scientific literature can be understood as a reflection of which discourses are governing forests in the policy world. They will most likely increase the polarization. Finding common positions and compromise could become more complex and difficult given their diverging, and sometimes opposing, nature. The plural and multi-dimensional discourses identified in the literature review speak to overlapping positions, but also promote radically different and opposing ones. While we have identified a tendency towards technical market solutions for complex environmental problems, which de-politicizes and disguises power constellations, actors who propagate the de-commodification of nature, de-growth solutions for climate change, and call for justice of vulnerable groups, are naturally politicising. Forest policy-makers will face the challenge of navigating those different poles in a contested setting.

As Rayner et al. (2010)'s complexity report highlighted, we face a complex discursiveness, and any attempt to reduce the complexity would be detrimental. The complexity of the forest regime (as analysed by Overdevest and Zeitlin, 2014) is unlikely to decrease, but might be a fertile ground for further productive experimentation and learning. From their point of view, loosely coupled regime complexes might prove to be more flexible and adaptable, which might allow them to cope with polarization.

Last but not least, most of the literature reviewed has been produced and disseminated by authors from the Global North. This inequality in the production and dissemination of forest-related discourses reflect a wider 'knowledge divide', discussed by the International Social Science Council. What this review has done, is to show that, also in forest discourses, voices of researchers in the Global South are not so prominent, as they arguably either do not engage with related social science research, or do not publish in peer-reviewed journals.

In conclusion, a word of caution. Our work is based on a literature review that provides deeper, but also indirect insights into how scientists in the field of forest policy analyse the world. This helps to reflect on which discourses govern activities, as well as how they are counteracted. However, this present work cannot provide final answers on how policy-makers view the world, and how they employ those different discourses and their framings in decision-making and implementation. To answer this, a solid discourse analysis of media files and/or political documents would have to be done in the future.

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