1 Introduction: Hydra and Chloris Worldviews

> *When someone says that he or she adopts a governance perspective, this is the beginning, rather than the end, of the discussion*. (Pierre and Peters, 2000, p. 37)

Ideally, this Element gives you answers to all your questions about forest governance. But, as the quote above indicates, governance is an elusive and contested concept, so any conclusion arrived at will subsequently result in new discussions. Moreover, guided by philosophical pragmatism, this Element tries to find a synthesis of mainstream and critical perspectives on forest governance, a quest that some of my colleagues will definitely challenge. While trying to arrive at this middle ground, the Element sketches various discourses, institutions and practices of forest governance at national and international levels. The following cases will be dealt with: Forest Sector Governance (FSG), Forest Law Enforcement, Governance and Trade (FLEGT), Reducing Emissions from Deforestation and Forest Degradation (REDD+), Forest Certification (FC) and Participatory Forest Management (PFM). As such, besides its theoretical ambitions, the Element also offers an empirical overview of the field, albeit with an inevitable European bias, given my personal background, research experience and academic perspective.

First though, what is so special about *forest* governance? Do we need a small handbook in addition to those on resource governance, environmental governance and governance in general? Well, forests differ from many other natural resources (like those of the open seas) and many other environmental issues (like those of the atmosphere) in that they belong to national territories of nation states. Although many would consider forests and their problems (such as deforestation and degradation) global issues and concerns, others strongly disagree, and oppose any global governance response by the international community (for an overview of this debate see Fernández-Blanco et al., 2019; Giessen, 2013; Humphreys, 1996; Kolk, 1996; Sotirov et al., 2020). Yet, many global governance initiatives have been launched – from declarations, programmes, strategies and labelling schemes to codes of conduct – albeit mostly voluntary and non-legally binding in nature. Dimitrov and colleagues (2007) therefore speak of a 'non-regime' on forests; that there is a need for a strong global regime to effectively address forest-related problems, but according to these authors, what we observe are voluntary, mainly symbolic rules. This makes the topic of forest governance extremely interesting to study: on the one hand, a 'non-regime', while on the other many things are happening on the ground (as this Element will show). The topic is also

a laboratory of governance experimentation, given initiatives like PFM, FLEGT and REDD+.

The subtitle of the Element requires some explanation. Hydra and Chloris are figures from Greek mythology and are used in this Element as two overarching worldviews on forest governance in the scholarly literature; one overall *critical* about governance theory and *pessimistic* about the potential of governance performance, and one overall *supportive* and *optimistic*. Hydra is the multi-headed, serpent-like beast that 'half god – half human' Heracles (a son of Zeus) has to fight to complete his twelve labours (see Figure 1). Every time Heracles chops off one of the heads, it immediately regrows double, and continues attacking him. Eventually, Heracles is able to defeat the monster with the help of his cousin Lalaos, who uses fire (instead of a sword) to avoid the regrowth of heads (which is, by the way, a classic example of 'thinking outside the box'). Chloris, from the ancient Greek word *khloris* or 'green', is the goddess of flowers (see Figure 2). Originally, she is a nymph but after being abducted by Zephyrus, the god of the Western Wind, she marries him. Because she is so beautiful, colourful and fond of flowers and nature, Zephyrus builds her a beautiful garden and turns her into the immortal goddess of flowers. Later, the Romans renamed her Flora (which sounds much more familiar to us).

Hydra is sometimes used as a metaphor in conflict studies and crisis management literature (Held et al., 2010). It refers to situations where the solution of one conflict or crisis is the foundation for a new one, or multiple ones – just like

Figure 1 Heracles fights the Hydra (source: iStock, reprint permitted)

Figure 2 Chloris, the goddess of flowers (source: iStock, reprint permitted)

the reappearing head being chopped off. In the forest governance literature, only one reference to the multi-headed beast was identified: 'The emergence of the REDD+ Hydra' (Martone, 2010). Since REDD+ is dealt with in Section 5 of this Element, it suffices to state here that it covers reducing greenhouse gas emissions from deforestation and forest degradation in order to contribute to the mitigation of human-induced climate change. In this instance, Martone refers to the situation around 2010 where seven initiatives on REDD+ quickly emerged in parallel at Conferences of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC), each expressing different preferences for a REDD+ mechanism and thus speaking with different voices –

a modern Hydra. However, since REDD+ became part of the Paris Agreement in 2015 these divergent views have largely converged.

This usage of the metaphor is close to the one in this Element. The point is as follows: the field of forest governance shows increasing numbers of initiatives at all levels (local, national, global) to reform, innovate or transform classical forest policy, programmes and projects in order to enhance the sustainable use and conservation of forests (Fernández-Blanco et al., 2019; McDermott et al., 2010; Pülzl et al., 2013). In metaphorical terms: old heads need to be chopped off, but they quickly reappear. So, reforms and innovations have a hard time to truly change established practices, let alone reaching a point that real transformation can actually take off (Humphreys, 2006). Alternatively, it can be concluded that many reforms and innovations are not really *meant* to change established practices. These are just 'paper initiatives' of governors who want to maintain the status quo, but design symbolic policies to please and co-opt a certain constituency (Dimitrov, 2005). Part of the metaphor too is the violent scenery and associated negative connotation Hydra expresses. In a similar vein, several scholars sketch an unfavourable image of the many forest governance initiatives that emerge; these lead to messiness in, and fragmentation of, the domain (Giessen, 2013; Soto Golcher, 2020). And according to some scholars, the many initiatives even imply a *decrease* of governance capacity, since they are an expression of neo-liberalism, of outsourcing public duties to private entities, and hence reduced government control and greater business and market powers (Fletcher, 2010). No surprise that these scholars deem such a development a negative one – 'It smells' (like the poisoning breath of the Hydra).

As far as I know, Chloris is not used as a metaphor in governance or management studies, let alone in the forest governance literature. The only hit I found concerning 'Chloris' AND 'forest governance' was a reference to the bird *Chloris Chloris* – the European greenfinch – that lives at forest edges or in parks with trees. In this Element, the metaphor is used to sketch the opposite picture of forest governance compared to that of the Hydra. The many forest governance initiatives now take the shape of a beautiful bouquet of flowers that smells wonderful. 'Let a thousand flowers bloom' is the message, some of which will perform better than others, of course, but at least results are to be expected from the bouquet as a whole (Arts and Babili, 2013; Rayner et al., 2010). In addition, new flowers will grow and be added to the bouquet, that is, new pathways will be explored, which might show more or less performance of initiatives through processes of trial and error and learning (Overdedest and Zeitling, 2014). Overall, the picture carries a much more positive connotation: the world becomes a better place due to these forest governance initiatives.

To further deepen our understanding of the Chloris and Hydra worldviews, they can be considered *multi-layered* (see Table 1). First of all, there are *core beliefs* (Sabatier, 2007) about the potential for progress through governance reform and technical solutions. For example, Charles Mann (2018) distinguishes the *wizard* from the *prophet* in his book on two duelling visions of the world's future, whereby the wizard is the optimistic believer in progress, while the prophet expects doom for our overpopulated and overexploited planet. To view the world as a wizard or as a prophet is a core belief in the sense that it generally circumvents consciousness, rationality and deliberation; it is just there, deeply rooted in our state of mind (although people can change their beliefs, but over the course of a lifetime, not simply overnight).

The *second layer* comes close to what Cox (1981) calls *problem-solving theories* versus *critical theories*. The first group takes the social order and its institutions for granted and tries to find solutions for given problems within that order, such as poverty, inequality and environmental issues. There is a strong belief that this social order can be reformed in such a way that these problems are addressed effectively, and often in mutual coherence (*win-wins*), so that the public good, at least for most people, is finally attained. The second ensemble of critical theories is sceptical of such reformism, because the structural root cause of these problems is not addressed, that of the capitalist political economy. This order thrives on economic growth and expansion, which while benefiting so many people, also comes with many problems, such as inequality, poverty and overexploitation (*trade-offs*). Mitigating these will not work by addressing sectoral issues within the given social order, as the critical theorists argue, but only by fundamentally transforming the system as a whole.

Table 1 Chloris and Hydra as multi-layered worldviews

Multi-layered worldviews	**Chloris**	**Hydra**
Beliefs	Wizard ('progress scenario')	Prophet ('doom scenario')
Theories	Problem-solving (sectoral solutions; win-win situations)	Critical (trade-offs; system change is needed)
Facts	Confirmation bias (e.g. less deforestation over time; more forest protection; SFM progresses)	Confirmation bias (e.g. biodiversity loss aggravates; marginalisation of forest-dependent people)

The *third layer* is about how one relates to the *factual world*. Indeed, different facts may be mobilised to confirm one's own worldview, or to undermine the other, but on top of that, similar facts may be interpreted distinctly. For example, the Food and Agriculture Organization's (FAO) (2020) latest Global Forest Assessment (GFA) reports that the rate of global deforestation has reduced over the last decades – from a net annual loss of 7.8 million hectares (ha) of forests in the 1990s to minus 5.2 million ha in the 2000s and to minus 4.7 million ha in the 2010s – while the number of countries that have adopted forest laws, Sustainable Forest Management (SFM) principles and National Forest Programmes (NFP) has increased over time. A Chloris interpretation would probably welcome these figures and conclude that forest governance initiatives do obviously make a difference. A Hydra interpretation would probably critique FAO's 'aggregated net deforestation data', because these – by including loss and expansion of *all* forests worldwide, primary, secondary and plantations – hide the ongoing *increase* of tropical deforestation in many regions and the ongoing *loss* of primary forests and of forest biodiversity. Also, net or gross forest area data *themselves* could be critiqued, because these do not address the root causes and drivers of deforestation, like poverty, agricultural expansion, road infrastructures, urbanisation, hydropower and mining projects. Of course, scholars are generally able to look beyond the beliefs, theories and facts they adhere to, and deal with contra-points that challenge their worldviews, but often we tend to collect and cherish those data and insights that confirm what we already believe. This is called *confirmation bias* in the psychological literature (Nickerson, 1998).

The above analysis raises the philosophical question of how these layers – beliefs, theories and facts – relate to one another (Crotty, 1998). Postmodernists and constructivists would argue that what we call 'facts' are strongly, if not fully, determined by our beliefs, theories and discourses. Hence, 'given' facts, independent of our social and scientific worldviews, do not exist; or at least, we do not have direct access to them. Positivists and empiricists argue the opposite; they claim that objective facts exist in the real world 'out there', independent from our beliefs and theories, and that we should allow objective facts to speak for themselves (through the scientific method as positivists and empiricists define it). However, this Element tries to find a middle road, inspired by philosophical pragmatism. This philosophy of science accepts various sources of knowledge: intelligence, culture *and* reality 'out there' (Bernstein, 2010). Hence, factual worlds as such do exist, but knowledge about them is strongly interwoven with our social and scientific worldviews. One cannot separate them, nor dissolve one into the other. So when this Element argues that the (implicit) worldviews of scholars, like Hydra and Chloris, play roles in

assessing the performance of forest governance, this should not be misunderstood as the radical postmodernist claim that scientific knowledge lacks any reference point to distinguish fact from fiction, evidence from non-evidence and truth from falseness (although the pragmatist 'theory of truth' differs from the one of positivism; see Section 3). Hence, one can definitely believe in evidence-based policy and governance, like I do, but at the same time consider them in the context of scientific and societal worldviews. In Section 3 of this Element, these philosophical questions will be further elaborated.

All in all, this text aims to provide an academic, concise and accessible 'state-of-the-art' overview of forest governance and its performance (again, naturally from my own perspective). The following questions are addressed: How is forest governance defined (differently)? How has it responded to forest-related problems and opportunities? How has it evolved over time? What diverse policy ideas and institutional arrangements have emerged at national and international levels? Do these perform? And how will these ideas, arrangements and performances be interpreted from Chloris and Hydra worldviews?

To assess the performance of the various forest governance initiatives, I adopt the UN's Global Forest Goals (GFGs) as reference points (ECOSOC, 2017). The reason for doing so is that these goals have been adopted by the UN in New York in 2017, and hence, can be considered to be widely supported, policy relevant and socially legitimate. Six GFGs were agreed upon: (1) to reverse the loss of forest cover worldwide through SFM; (2) to enhance the socio-economic and environmental benefits from forests; (3) to significantly increase the area of protected forests; (4) to increase funding for SFM and research; (5) to promote forest governance frameworks that contribute to the Sustainable Development Goals (SDGs); and (6) to enhance cooperation, coordination and coherence among governments and with stakeholders. Now, for whether the forest governance initiatives that are dealt with in this Element, like FLEGT, REDD+, FC and PFM, contribute to achieving (parts of) one or more of these GFGs, these are assessed as 'performing' (how this performance will be measured and interpreted will be explained later).

2 Forest Governance: Setting the Scene

It seems trivial to formally define what a forest is, because everybody simply knows, right? A forest is a bunch of trees on a sufficiently large piece of land. Yet, it is not that simple. Compare for example tropical rainforests in Brazil with arid dry forests in the southern part of Ethiopia. Both are forests for locals, but Brazilians would hardly recognise a forest if they were dropped in Southern Ethiopia. On top of that, land with (rather) dense canopies can be very different

things: a primary natural forest, a secondary managed forest, a restored forest, a reforested area, an afforested area, a multi-species or single-species plantation, a forested mosaic landscape and many more. No wonder that the FAO struggled to reach consensus over the last couple of decades. Currently, the following definition is used, which was agreed upon in the late 1990s:

> Forest includes natural forests and forest plantations. It is used to refer to land with a tree canopy cover of more than 10 percent and area of more than 0.5 ha. Forests are determined both by the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of 5 m. Young stands that have not yet but are expected to reach a crown density of 10 percent and tree height of 5 m are included under forest, as are temporarily unstocked areas. The term includes forests used for purposes of production, protection, multiple-use or conservation (i.e. forest in national parks, nature reserves and other protected areas), as well as forest stands on agricultural lands (e.g. windbreaks and shelterbelts of trees with a width of more than 20 m), and rubberwood plantations and cork oak stands. The term specifically excludes stands of trees established primarily for agricultural production, for example fruit tree plantations. It also excludes trees planted in agroforestry systems. (FAO, 2000, Appendix 2)

The fact that this consensus definition was agreed upon in the late 1990s implies that the FAO operated with another one *before*. Then, a canopy cover of 20 per cent, a height of seven metres, and an area of 1.0 ha, was the minimum requirement to be labelled 'a forest', but this definition excluded forests like those in Southern Ethiopia, as well as forested mosaic landscapes. However, a change of definition obviously has consequences. Chazdon and colleagues (2016) note:

> For example, the estimate of global forest area increased by 300 million ha (approximately 10 %) between 1990 and 2000 simply because the FRA changed its global definition of forest, reducing the minimum height from 7 to 5 m, reducing the minimum area from 1.0 to 0.5 ha. and reducing minimum crown cover from 20 to 10 %. In Australia, where trees often occur in open vegetation formations, this reclassification led to the acquisition of an additional 118 million ha of forest.

Hence, definitions are not so trivial. In addition, by summing up all forest-like vegetation on a global scale, one does not distinguish between primary forests and plantations, for example. So, a recorded net increase of forests in a country can still parallel a decrease in natural forests, simply because the expansion of plantations overcompensates for the loss of primary forests. Nonetheless, with current GIS technologies and improved inventory methods on the ground, global forest assessments and national forest inventories have also gradually

become more precise in categorisation and more accurate in spatial estimates (Chazdon et al., 2016).

Currently, the world's forest cover is recorded at just over 4 billion ha, which amounts to 31.1 per cent of global land area (FAO, 2020). Most is still designated as natural forest, whereas about one-third is production forest, which can be primary, secondary or plantation forests. About 18 per cent of the world's forests are located in legally established protected areas.

2.1 Forest Values

For scientists, definitions and data are crucially important; lay people, however, are generally more interested in values. For most people, the question is not so much what *is* a forest, but what it does *mean* for them in daily life? Environmental philosophers and ethicists generally distinguish three values that people hold for nature (and forests): (1) instrumental values; (2) intrinsic values; and (3) relational values (Himes and Muraca, 2018). Instrumental values are those that serve human interests and preferences, or more broadly, that enable people to survive or to live a good life (in a material sense). Examples from forests are timber, fruits, nuts, mushrooms, fuel wood, bush meat, fodder, water regulation, soil stability, micro climate, etc. What these different products and ecosystem services conceptually share is that they are all based on an *anthropocentric* perspective. The fundamental question is: What benefits does nature – or do forests – bring to people?

Intrinsic values are positioned at the other end of the continuum, hence, they are *ecocentric* in character. Forests, trees and forest biodiversity do have a value for *themselves*, independent of humans or human interests and benefits. If so, then they also have *a right to exist* for themselves, and cannot 'just' be appropriated by people for whatever reason. Philosophically, this is however a complex position, because it is still people that assign intrinsic values and non-human rights to nature and forests, so some scholars claim that such values and rights are difficult to formulate or grant (Justus et al., 2009). Others believe that people can still empathise with non-human species – cognitively, ethically and empathically – and thus identify values from nature's perspective.

Relational values, finally, are neither about humans or nature-in-itself, but about their *relationships* (Himes and Muraca, 2018). People can value these relationships very differently. Some go as far as claiming that they can literally communicate with nature; speaking with trees is, for example, a common practice for many. Others feel spiritual connections, informally and individually, or institutionally through religions. Again, others see these relationships more in rational and material terms, like attachment to specific places (respect

for the place where they were born and for the landscape they live in) or in landscape art (so picturing nature's beauty, that brings value to both the art and the landscape).

2.2 Forest Issues

'Issues' are topics that generate substantial societal, political and/or media concern and, consequently, might be included in national and international policy agendas (Downs, 1972). Concerning forests, *the* current issue is deforestation (or in more 'neutral terms': the conversion of forest lands into other land use types). While writing this section, the human-induced, mostly illegal Amazon fires are again hot topics in worldwide social and traditional media, in relation to the weakening of Brazilian environmental policy by the Bolsonaro administration (October 2019).

Deforestation figures, however, differ. The most cited sources are the Global Forest Resources Assessments of the FAO, the latest being published in 2020. According to this report, there was an annual loss of about 11 million ha of forest area in the last decade – through forest clearing for other land uses, logging and natural disasters – and an annual gain of about 6 million ha – through afforestation, reforestation and natural regeneration – resulting in a net annual decrease in forest area of 4.7 million ha in the period 2010–20 (nearly the size of Costa Rica). Over the latest decades, this figure of net annual decrease has reduced significantly, from 7.8 million ha in the 1990s, to 5.2 million ha in the 2000s, to 4.7 million ha in the 2010s (FAO, 2020). However, this trend currently seems to be under pressure due to, for example, increasing rates of deforestation in the Amazon region (Butler, 2019).

These figures should be put into perspective though. The FAO's data and methods are criticised because these are dependent on voluntary country reporting and built upon the concept of 'forest area net change', which allows natural forest loss to be compensated for by forest plantations, for example, and which considers clear-cut areas that are supposed to be replanted as 'forest areas' too. Other scholars therefore use global data sets from satellite images and assess the change in forest *canopy* (not area). As a result, much higher deforestation rates are found, for example ~20 million ha annual global gross forest cover loss in 2000–5 (Hansen et al., 2010), compared to a gross annual decrease in forest area of ~12.9 million ha found by the FAO (2005). Greater still, Global Forest Watch, based on global satellite images analysis, estimates deforestation rates nine times that of the FAO in the 2010s, but these figures are also contested (Pearce, 2018). In contrast, others determined a net *increase* in tree cover in the period 1982–2016, resulting in a net annual gain of 6.6 million ha (Xiao-Peng