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**ENVIRONMENTAL REGULATION AND
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Environmental regulation and governance

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1. Introduction

The world is speeding down an unsustainable path (UNEP 2012). Biodiversity loss, water scarcity, pollution and climate change are threatening the life-support functions of our planet (UNEP 2012). These threats persist because of many factors, not least an ongoing crisis of governance (Lange et al. 2013). Since the birth of modern environmental regulation in the 1970s, designing and implementing effective, efficient and legitimate regulation and governance have remained a continuing challenge for governments and society.

Initially, governments and their agents managed environmental problems through enforcement of strict rules and standards set out in legislation and treaties (Gunningham 2009). However, with the rise of neoliberal ideals in the 1980s, governments began to shift their attention away from this Westphalian vision of state power through hierarchy. Instead, environmental degradation was, in many cases, to be curbed via market-based approaches, voluntarism and other 'light-handed' policy initiatives such as partnerships and cooperation (Gunningham

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and Holley 2010). Yet, by the end of the 1990s, continuing ecological degradation and the increasing complexity of social and environmental problems saw a new shift towards environmental governance (Driessen et al. 2012) or what is increasingly being called ‘new environmental governance’ (Holley et al. 2012). The new environmental governance (NEG) emphasised collaboration, integration, participation, deliberative styles of decision-making, adaptation and learning. As with many other issues discussed in this book, NEG may equally be described as polycentric governance, where governments, non-governmental organisations (NGOs), the private sector and civil society form many centres of decision-making and action that are formally independent of each other, but that can either function independently or constitute an interdependent system of relations (Ostrom 2010: 643). Although NEG is still an evolving concept, a growing number of scholars and policymakers believe it can substantially improve the effectiveness, efficiency and legitimacy of responses to environmental problems.

This chapter provides an overview of the recent NEG trend and maps the shifts in environmental regulation and governance that led us here. It also highlights recent debates and unresolved challenges for governing the environment. In such a short chapter, much of what will be discussed will inevitably caricature the wealth of global experience and debates. For example, this chapter primarily focuses on domestic Anglo-Saxon jurisdictions (for other contexts, see, for example, Dubash and Morgan 2012; Sofronova et al. 2014), but consideration is also given to related trends at the international level. It also does not consider a range of related fields and subfields, such as disaster governance (Djlante et al. 2013), risk governance (Renn 2008) or rights (Kotzé and Du Plessis 2010).

The chapter commences with a brief discussion of traditional environmental regulation before examining the shift to markets, light-handed approaches and early forms of partnerships. Finally, it turns to the recent NEG approach, discussing theory and examples, before highlighting recent debates, including whether NEG can deliver more effective, efficient and legitimate performance, and the relationship of NEG to more conventional regulatory approaches. As we will see, the shift between regulation, markets and NEG is ongoing and has not seen each stage entirely replaced with another. Rather, different phases very often coexist and relate to each other in a variety of ways

(see, for example, Gunningham and Sinclair, Chapter 8, this volume; Driessen et al. 2012: 157). The chapter concludes with a brief summary and key references.

2. Traditional environmental law and regulation

The development of international and national environmental laws arose against a backdrop of states exercising sovereignty over natural resources within their territorial boundaries (Gess 1964). It was only natural, then, that the early environmental protection of the 1970s relied on the nation-state or, at the international level, groups of states, acting primarily through treaty-based intergovernmental organisations (de Burca et al. 2013; Abbott and Snidal 2009: 505). A raft of issue-specific international rules (for example, on world heritage, trade in endangered species and pollution from ships) was developed and overseen by international organisations such as the United Nations Environment Programme (UNEP) (Kelemen and Vogel 2010). Under this approach, states believed they understood environmental problems clearly, that they could be defined in advance and managed through mandatory rules (de Burca et al. 2013: 730).

A similar example was the so-called command-and-control approach to environmental regulation adopted by domestic Western governments. Evoking Hobbes's *Leviathan* (1985), this involved centralised legislatures setting blanket environmental targets, such as emission standards, exposure levels or technology standards (the command). Delegated agents, such as environmental protection agencies, were then empowered to police compliance and impose penalties where standards were breached (the control) (de Burca et al. 2013; Gunningham et al. 1998).

At least in some circumstances, these state-centred approaches to law and regulation were relatively effective, achieving a number of gains in halting and reducing environmental degradation (Cole and Grossman 1999; Najam et al. 2006). However, they also suffered from a number of weaknesses that limited their effectiveness.

For example, at the international level, ‘treaty congestion’ and fragmentation led to claims that international environmental law was too unwieldy, incoherent and ineffective to confront increasingly serious global environmental challenges (Najam et al. 2006; Scott 2011). Similar claims were levelled at domestic systems, where the centralised and uniform nature of command-and-control regulation was increasingly criticised as costly, cumbersome, inefficient and insensitive to local contextualities (Stewart 2001; Karkkainen 2006; Holley et al. 2012). This insensitivity, along with the tendency of governments to administer regulation through departments that are fragmented along ecologically arbitrary, human-defined boundaries, made it increasingly difficult for traditional regulation to address more complex environmental problems, which often involved multiple polluters and required a more holistic and integrated management approach (Freeman and Farber 2005; Durant et al. 2004; Holley et al. 2012: 2). Adversarial enforcement by ‘stick’-waving agencies, particularly in the United States, also produced counterproductive resistance from regulated individuals and enterprises (Lazarus 2004).

As a result of these weaknesses, state-centred hierarchy was no longer seen as the *exclusive* response to *all* environmental problems (Durant et al. 2004). Instead, by the 1980s, new market-based instruments, partnership and light-handed approaches were being explored, particularly relating to more complex environmental issues such as resource extraction and in sectors resistant to external intervention.

3. Market-based instruments, partnerships and light-handed approaches

The unpopularity of traditional environmental regulation was fuelled in part by the rise of neoliberal economists in the public domain during the 1980s. According to those working within this governance paradigm, Adam Smith’s vision of an ‘invisible hand’ would, if allowed to materialise, lead rational, self-maximising individuals to promote ‘public interests’ without the need for forceful government interference (Smith 2007). Environmental degradation was occurring as a consequence of a failure of markets to properly value environmental resources (Cutting and Cahoon 2005: 55; Roma 2006: 534). What was needed was the creation of market signals that would place a value on and charge appositely for the use of scarce assets (Holley et al. 2012: 2).

Although public opposition prevented wholesale deregulation, a variety of government-supported, market-based instruments would eventually emerge, such as 'cap-and-trade' schemes, along with a mixture of subsidies and, to a lesser extent, pollution taxes (Gunningham and Holley 2010). Prominent market-based instruments introduced to address point sources of pollution over subsequent decades included the acid rain sulphur dioxide trading scheme developed in the United States (Stavin 1998), climate markets spurred by the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Agreement (McKibbin and Wilcoxon 2002) as well as water rights and trading (Godden 2008). Economic incentive-based schemes, subsidies and other market approaches, such as land acquisitions and payments, were also increasingly adopted to address more complex 'second-generation' issues (Farrier 1995: 399–405).

Yet, despite some successes, many market-inspired approaches have proved to be less environmentally successful than command-and-control approaches (Howes et al. 1997). In part, this is because of a variety of practical and contextual difficulties faced by governments who seek to develop and rely on market mechanisms. Although *free markets* in theory mobilise knowledge (Hayek 1945), most *market-based* instruments are similar to command-and-control instruments in their requirement for centralised planning and knowledge, which are necessary for setting the right tax level, charge or even cap. Setting these levels can often be difficult for policymakers in the absence of an existing market reference (Sabel et al. 1999; Freeman and Farber 2005). Tradable rights/pollution likewise need a level of compliance and enforcement machinery similar to traditional performance-based regulation (Holley and Sinclair 2012). Regulated businesses also historically opposed the introduction of economic initiatives such as taxes and charges, preferring the certainty of regulation to the uncertainty of novel approaches (Gunningham and Holley 2010).

An alternative to direct regulation more popular with businesses (and increasingly cashed-strapped domestic government regulators) was a variety of voluntary and light-handed initiatives that emerged during the 1980s and 1990s. These included business-led voluntary and self-regulatory approaches such as Responsible Care (Lenox and Nash 2003). While they achieved limited success, they typically failed to deliver acceptable levels of industry-wide compliance, particularly where the

gap between the private interests of business (not least, making a profit) and the public interest in environmental protection was substantial (Gunningham and Sinclair 2002: 145–55; Freeman and Farber 2005).

Stronger, but reconfigured, roles for domestic state regulation were accordingly pursued. These approaches typically maintained a state underpinning, but looked to engage with business and NGOs in ways that were considered more effective and efficient, while also maintaining the cooperation and trust of regulated actors. This was primarily achieved by accounting for, and facilitating the use of, non-state knowledge and capacities and harnessing related motivational drivers, such as profit, social licence (for example, negative business publicity by NGOs) and other informal sanctions (Gunningham and Sinclair 2002).

These reconfigured approaches varied in form, and have been thought about and analysed using a variety of theories. These included environmental partnerships and negotiated agreements in Europe (Orts and Deketelaere 2001); tripartite arrangements between regulators, communities and industry (Ayres and Braithwaite 1992), such as environmental improvement plans in Australia (Holley and Gunningham 2006); informational-based regulation, embodied most prominently in the Toxic Release Inventory in the United States (Karkkainen 2001); eco-modernisation that facilitated cooperation and the uptake of new technologies in Europe (Mol and Sonnenfeld 2000); and reflexive law approaches, where firms developed their own process and management system standards, designed to achieve regulatory goals (Orts 1995).

While each of these approaches provided greater flexibility to enterprises, including facilitating beyond compliance activities, in the absence of more coercive intervention by domestic state regulators, their impact has (for the most part) been very modest and tended to operate more or less at the margins (Gunningham and Holley 2010).

Even so, what is unique about these flexible and cooperative programs is that they signified some of the first steps towards what has become NEG thinking and practice (discussed below), where non-state actors take on a greater role in the ‘steering’ and ‘rowing’ of environmental governance (Osborne and Gaebler 1993).

This trend was mirrored by unique international changes. For instance, new transgovernmental environmental networks of state officials and private actors emerged to combat the abovementioned international

inertia and fragmentation (Slaughter 2004; de Burca et al. 2013). International organisations also sought to use their mandates and expertise to extend governance beyond the point of state agreement and deepen the application of rules. They did this through partnerships, involving other organisations and actors, and establishing and diffusing new niches of environmental governance, including the uptake of integrated water resource management and community-based biodiversity management (de Burca et al. 2013: 734; Glasbergen et al. 2007; Andonova 2010).

A different instance of non-state-led international networks and partnerships was the Forest Stewardship Council (FSC) certification scheme, established by civil society organisations (de Burca et al. 2013). Although the FSC does not necessarily have authority from, or over, states, its rules proved influential in the commercial marketplace (Overdevest and Zeitlen 2014; de Burca et al. 2013: 734).

These developments, both internationally and domestically, opened up new forms of non-state auspices and influence, in ways that arguably pioneered NEG. However, as we will see below, what makes the NEG phase distinct from these earlier developments is that it demands levels of collaboration, participation, flexibility and adaptability that would have been unimaginable some years before (de Burca et al. 2013; Holley et al. 2012).

4. New environmental governance

The NEG enterprise involves collaboration between a diversity of private, public and non-governmental stakeholders, who, acting together towards commonly agreed (or mutually negotiated) goals, hope to achieve far more collectively than individually (Holley et al. 2012: 4). It relies heavily on participatory dialogue and deliberation, flexibility (rather than uniformity), inclusiveness, knowledge generation and processes of learning, transparency and institutionalised consensus-building practices (see, generally, de Burca and Scott 2006; Trubek and Trubek 2007).

There is no firm agreement on a definitive 'model' of NEG (van der Heijden 2013). Rather, various terms and theories have been developed to describe and prescribe how NEG operates. These include 'experimentalism' (de Burca et al. 2013), 'post-sovereign environmental

governance' (Karkkainen 2004a), 'collaborative governance' (Freeman 1997), 'adaptive governance' (Chaffin et al. 2014) and 'global environmental governance' (Okereke et al. 2009).

These perspectives vary in their emphasis, encompassing different schools of thought and applying varying institutional and political approaches to a range of environmental problems. Experimentalism, for example, draws inspiration from pragmatism (Dewey 1946), while adaptive governance draws more on social-ecological systems and adaptive management (Holling 1978; Berkes and Folke 1998). However, these theories are bound by a number of common characteristics. These include a focus on the virtues of flexibility, participation, deliberation, collaboration, learning and adaptation. These common features have led a burgeoning group of scholars to collectively refer to these approaches as NEG (Karkkainen 2004b; de Burca and Scott 2006; Holley et al. 2012).

Consistent with evolving understandings of new governance, not all the above characteristics need to be present for a particular practice or program to fall within this category; indeed, there are very few single institutional forms that fully capture the idea of NEG in its entirety. However, the more characteristics that are present, the stronger is the claim that they fall within the category of NEG (de Burca and Scott 2006; Holley et al. 2012).

Domestic programs that fall within this category typically involve a variety of non-state actors assuming administrative, regulatory, managerial and mediating functions previously undertaken by the state (Gunningham 2009; Ostrom 2010: 643). Prominent examples include the establishment of 56 regional natural resource management bodies in Australia (Holley et al. 2012); collaborative approaches to water management in New Zealand (Holley and Gunningham 2011); and the endeavours of multiple agencies and stakeholders to address competing demands on water resources in the Bay Delta in the United States (Holley 2015).

NEG has also been identified internationally (and in the interaction between international and domestic levels) with the emergence of open-ended standards, multilevel networks, deliberation for the internalisation of international norms, as well as significant decisions and implementation roles being taken by non-state actors (Cottrell and Trubek 2012: 362). This has included the European Union's Water Framework Directive

(Trubek and Trubek 2007) and Forest Law Enforcement Governance and Trade initiative (Overdevest and Zeitlen 2014); the Partnership for the Development of Environmental Law in Africa (Kimani 2010); the Inter-American Tropical Tuna Commission (de Burca et al. 2013); and management of the Great Lakes in the United States/Canada (Karkkainen 2004a).

It is an open question whether NEG sufficiently accounts for the practical differences *within* these evolving environmental governance examples and theories (Karkkainen 2004b). Using a generalised rubric of ‘new governance’ to lump together different theories and practices does risk NEG becoming little more than a ‘catchall term’ (von der Porten and de Loë 2013; Karkkainen 2004b). For this reason, scholars are beginning to try to dissect different modes of environmental governance (Driessen et al. 2012). Even so, at this stage of the inquiry, there are, arguably, considerable benefits to be gained from grouping different theories and scholarship within a NEG framework. Consistent with emerging understandings within the new governance literature itself, a generalised understanding of NEG (with apposite attention to differences) can facilitate the linking and comparison of theories, as well as testing, developing and reformulating thinking (Lobel 2004; Karkkainen 2004b). Doing so can ensure a better understanding of what is occurring, and offers a constructive approach for developing a normative vision capable of influencing the direction of the sprawling governance theory in the environmental arena (Lobel 2004: 501–6; Walker 2006).

Certainly, the shift to NEG has to some extent been shaped by specific contexts and influences (de Burca 2010), but, generally speaking, it has come about because of the perceived capacity of these more collaborative and adaptive approaches to deliver benefits in circumstances where traditional approaches cannot (Holley et al. 2012: 4). For example, prescriptive regulatory standards—and even caps/taxes in some market-based instruments—depend on a degree of centralised knowledge (for example, to set suitable standards, prices or caps) that is often not available. In contrast, the sort of collaborative, participatory and deliberative approaches contemplated by NEG are said to lead to problem solving that is inclusive of local circumstances and able to capitalise on the unique local knowledge and other capacities of multiple public and private actors (Holley et al. 2012: 4). The direct involvement of these actors in deliberative styles of governance (albeit varying from local citizens to international NGOs) can also foster stakeholder ownership

and ‘buy-in’, giving a greater voice to marginalised interests (in contrast with an exclusive reliance on bureaucratic expertise in hierarchy or on price and competition in markets) (Sabel et al. 1999; Holley et al. 2012: 4).

NEG’s learning and adaptation focus, meanwhile, is thought to ensure that it copes better with the dynamism, uncertainty and complexity of environmental problems than either traditional regulation (which can easily ossify, freezing standards at a particular point in time, or by adopting a one-size-fits-all approach) or other market-based approaches (where significant post hoc program corrections to pollution levels and permits set from the centre prevent new entrants or become very difficult without undermining the security of ownership rights on which the market itself depends) (Holley et al. 2012: 5). Instead, NEG ideals—be it adaptive management, pragmatism or other forms of knowledge generation (Lobel 2004)—are said to enable governance processes that ‘learn’ more easily from changing circumstances ‘on the ground’ (and can also promote accountability via peer review) (Sabel et al. 1999: 3; Durant et al. 2004: 4; Lobel 2004: 502; Orts 1995).

Yet, despite the promise of these benefits, it is uncertain whether they can be achieved in practice (Driessen et al. 2012; van der Heijden, Chapter 41, this volume). Indeed, NEG has faced a litany of criticisms, including claims that it leads to lowest common denominator solutions, rent-seeking, dominance by self-interested economic actors, disenfranchised environmental interests and problems sustaining participation after initial bursts of enthusiasm (Holley et al. 2012).

Considerable empirical research is still required to resolve these arguments about the impacts of NEG, as the principles and practical conditions are what will enable successful NEG experiments to be replicated (Karkkainen 2006; Holley et al. 2012: 9).

One particularly fruitful area of research regarding these issues has focused on whether and how NEG interacts with earlier phases of environmental regulation—principally, command and control, which remains a bedrock of point source pollution control in most countries (Karkkainen 2004b; Lobel 2004; Gunningham 2009: 159). Scholars have tentatively identified a range of possible relationships between traditional command and control and NEG, each of which has differing implications for ‘success’. Some of the most underexplored hypotheses include: ‘gaps’, where law and collaboration conflict and potentially

inhibit mutual success; ‘NEG in the shadow of the law’, a constructive relationship akin to Ayres and Braithwaite’s (1992) regulatory pyramid, where regulation should be set precisely for the purposes of inducing otherwise reluctant people to embrace NEG; and ‘integration’, where the two approaches are merged into an integrated system (Trubek and Trubek 2007). While debates over these hypotheses continue, a range of NEG theories is increasingly recognising that NEG very often needs to operate in hybrid form within conventional approaches—to act as backstop, to prevent abuse and to incentivise actor participation (Holley and Gunningham 2011; de Burca et al. 2013).

More generally, the few studies that have attempted to grapple with NEG’s performance increasingly suggest that it is no panacea for the globe’s continuing environmental problems (as perhaps it was once thought to be) (de Burca et al. 2013; Holley et al. 2012). This may be a particularly important realisation, as we now, arguably, confront new global challenges in the era of the ‘Anthropocene’. This new classification of the modern planetary epoch signifies a new role for humankind: from a species that had to adapt to changes in its natural environment to one that has become a driving force in the planetary system (Biermann 2014: 57). Such developments may call for increased attention to not only making NEG ‘work’, but also new ways of governing global problems and systems (see, for example, Stevenson and Dryzek 2014; Biermann 2014).

5. Conclusion

Over the past 40 years, the environmental governance landscape has shifted significantly, but it also remains multifaceted, covered with both new and old policy approaches (Driessen et al. 2012). A good example of this is the current response to climate change, which involves not only market-based instruments, but also hierarchy, as well as NEG approaches (see, generally, Dryzek et al. 2011).

In the Anthropocene, where environmental problems such as climate change will likely affect generations, the journey of governing environmental problems is far from complete. In many ways, both international and domestic environmental governance remain something of a continuing experiment: keeping what works and finding new ways to do things better when they don’t work. While the recent shift to NEG

remains a work in progress, the reformation will no doubt continue, however unevenly, suggesting there is all the more reason to learn *now* from both successes and failures so we can build a more effective and democratic approach for environmental governance in the future.

Further reading

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