



Research

## Enabling the Contextualization of Legal Rules in Responsive Strategies to Climate Change

*Marleen van Rijswick and Willem Salet*

---

**ABSTRACT.** The paradigm of adaptive governance is paramount in policy discourses on the mitigation and adaptation strategies of climate change. Adaptability, resilience, and cooperative approaches are promoted as the appropriate vehicles to meet the contemporary conditions of uncertainty and complexity. We claim that the legitimacy and effectiveness of these responsive strategies might be augmented via the use of legal perspectives. Rather than the instrumental use of command and control type of regulation, the legal perspectives should focus on establishing principal norms that enable the search for different solutions in different contexts. From these assumptions, the concept of legal obligation is explored as embodying the meaning of legality, and at the same time conditioning and committing the probing of different ways of purposeful action in different local circumstances. We explore the innovative potential of legal norms and demonstrate how responsive strategies to climate change can be guided by the contextualization of legal norms.

**Key Words:** *adaptive governance, climate change, contextualization of legal norms, planning and law, resilience*

---

**INTRODUCTION: THE ASSUMPTIONS OF ADAPTIVE GOVERNANCE AND ITS CHALLENGES**  
In current policy strategies on climate change, the potential of the adaptive governance discourse is of paramount importance (Olsson et al. 2004, Folke et al. 2005, Gunderson and Light 2006). Folke and colleagues consider adaptive governance in its coordinative function as “creating the conditions for ordered rule and collective action,” and characterize this governance as containing both “the structure and the processes by which people in societies make decisions and share power” (Folke et al. 2005). Thus, governance is perceived in its active sense of enabling the coalescence of different sources of energy in society. The emblem adaptive is crucial to understanding the dynamic nature of the approach: it enables responsiveness of social-ecological systems to changing conditions and disturbances. The adaptability of coordinative action is a crucial feature and builds on learning in practice (Folke et al. 2005). A lot of attention goes to auxiliary strategies of adaptive management (Olsson et al. 2004, Gunderson and Light 2006). Adaptive management differs radically from top-down strategies of policy implementation. It criticizes the focus of the bureaucratized models of policy management on the implementation of given goals, which perseveres even under a wide range of shocks and perturbations (Gunderson and Light 2006). Approaches that “stabilize a set of desirable goods and services” ultimately increase the vulnerability of the system toward unexpected change (Olsson et al. 2004). Adaptive management makes a crucial difference by systematically anticipating the occurrence of policy failures and therefore gives a central role to learning processes (Gunderson and Light 2006). The conventional bureaucratic policies are not suitable for accomplishing a highly complex mission, such as was demonstrated, for instance, in Everglades management

systems (Gunderson and Light 2006). Strategies of resilience, adaptability, and transformability are considered to be the best ways of meeting the conditions of uncertainty and complexity in social-ecological systems (Folke et al. 2005, Gunderson et al. 2006, Walker et al. 2006, 2009).

The adaptive management approach invests in social capacity to improve the responsiveness of social-ecological systems (Folke et al. 2005). Community-based knowledge systems evolved by learning by doing in response to successive perturbations of the ecosystem. Social capital is identified as the glue for adaptive capacity and collaboration (Olsson et al. 2004, Folke et al. 2005). It appears important to create the opportunity for self-organization and informal networks, shadow networks, or epistemic groups beyond the formal systems of policy-making (Olsson et al. 2004). A number of informal responsive strategies are identified to strengthen the social capabilities of adaptive management. Also, trust and leadership are recognized as crucial factors in the empowering of social network relations (Olsson et al. 2004, 2006). In the modern context of multi-actor and multi-level governance, processes of decision-making are generally organized as networks of policy co-production (Lebel et al. 2006, Raadgever et al. 2008). Adaptive management, however, does not favor the juridification of networks: there is more adaptability, learning capacity, and resilience when cooperation is supported by informal systems of community knowledge. In some contributions to the adaptive governance paradigm, the legal and administrative hierarchy has shifted almost completely to the background (Gunderson and Light 2006, Langridge et al. 2006, Janssen 2007, Carpenter and Brock 2008, Walker et al. 2009). In other contributions, a role is still seen for cross-scalar networks and for enabling legislation that creates space for ecosystem management by transferring power to local decision-makers or by widening

the scope of local stakeholders (Olsson et al. 2004, Ebbeson 2010). In all cases, it is fair to state that the focus of the adaptive governance paradigm is on the flexibility and adaptability rather than on the binding aspects of human interaction, and its logic of discovery is on the informal rather than the formal trajectories.

We take a different position. This is not to disagree with the assumptions of adaptive governance as such. Actually, we share most of them, in particular the principal adherence to the self-regulating potential of communities of practice, the principles of adaptability and resilience, the contextualized nature of knowledge, and the need to internalize norms instead of subjecting them to citizens from outside positions. More in general, the assumptions of adaptive governance promise a more intelligent response to policy challenges under the conditions of uncertainty and complexity of climate change than the rationalized patterns of command and control types of regulation. However, even under these assumptions there are still many obstacles to effective collective action caused by individual interests and behaviors of citizens and organizations, which results in stalemates and conflicting forms of social action. Cooperation and joint commitment of different actors in response to issues of climate change are all but evident. The arenas of direct interaction and also trans-local communities of practice may find it difficult to exceed the boundaries of their configuration. This may certainly become a risk if problems manifest at levels beyond the scope of local actors and even more if effective strategies would require restrictions and change of attitude of the same actors. Also, the asymmetric distribution of power in society is not always helpful in forging effective strategies of collective action and needs correction by countervailing legal power. We see some severe shortcomings when the emphasis is too much on adaptability, flexibility, and informal relationships. It is only one side of the coin: the other side requires respect for legal certainty and the rule of law. Too informal an approach may exclude several interested parties. Adaptive governance may increase flexibility and the achievement of goals, but it risks—if resting on its own shoulders—leading to a lower protection level of social-ecological systems. One of the largest challenges, in our view, is that the approach hardly provides a possibility for private or public enforcement when an agreed protection level is not met.

So, the assumptions of the adaptive governance paradigm are not unchallenged. We do not return to command and control, but we claim explicit attention to a legal perspective, which is not reduced to a pattern of one-sided hierarchy. Rather than being a linear process producing optimal results, the effort of policy and legislation is considered as an iterative process that requires constant monitoring and recalibration of the parameters driving the policy formulation (Garmestani et al. 2009). Our question is not whether the legal perspective should be included, but how the perspective on legality and effective

responsiveness might be combined. We search for a recombination of legal certainty, a guaranteed level of protection, flexibility, and possibilities for (private) enforcement, just because of the necessary involvement of all interested parties. Active processes of legal obligation may be supportive to real commitment and to the creation of a level playing field, and this institutional view on the potential of law and legislation may strengthen, in the end, both the legitimacy and the effectiveness of responsive strategies. Legislation has to set the standards for emissions and for ecological viability. We share the critical comments on instrumental uses of legislation and policies, such as indicated above—the comments on approaches that “stabilize a set of desirable goods and services”—and for this reason lack the needed adaptability (Olsson et al. 2004). Indeed, instrumental uses of legislation tend to focus too narrowly and too specifically on the achievement of given goals and fulfillment of specific requirements, and may become an obstacle rather than an asset in changeable trajectories of collective action (Bardach and Kagan 1982, Coglianesi and Kagan 2007). For this reason, we take an institutional instead of instrumental perspective in our exploration of the legal potential in responsive strategies. This institutional reflection induces deliberation of principal norms at the rule level of social interaction rather than the instrumental steering of specific purposes, means, and requirements of action (Fuller 1964, Witteveen and van der Burg 1999, Brunnée and Toope 2010). This deliberation is more principled but also more abstract than specific purposeful action: it conditions social action rather than prescribes the ways to proceed. From this perspective, the statement of the article is that in order to strengthen responsive strategies towards challenges of climate change, we are in search of a strategy of legal obligation (Brunnée and Toope 2010), which embodies the principle of legality and at the same time conditions and commits the probing of different purposive response in different contexts. This institutional perspective on law and legislation is explained in more detail hereafter, and is followed by an exploration of the challenges of the legal perspective. We then identify the gap between specific situations and generic legislation as one of the basic challenges and discuss some of the mechanisms that might be helpful to bridge this gap.

## **INSTRUMENTAL AND INSTITUTIONAL USES OF LAW AND LEGISLATION**

Critical observations of top-down bureaucracies and the command and control styles of legislation go back to the instrumental uses of legislation and policy-making. The comments date from the early 1970s. Since then, many administrations have adapted their styles of policy-making in various, often more participatory and network- or market-type arrangements. The practices of national administrations have become differentiated. Instrumentalism, however, has not disappeared. We do not want to focus on the widely

differentiated empirical appearances of instrumentalism and its problems: it is well documented (Majone 1994, Coglianese and Kagan 2007). Instead, we discuss just one, more abstract issue that generally underlies the problem of legal instrumentalism as it helps to outline our approach. It is the problem of a too narrow focus on goal-rationality in policy-making and legislation. The goal-rationality concept was introduced by Max Weber in the beginning of the previous century (Weber 1976). Weber made an analytical distinction between different types of meaningful social interrelationships. One of the analytical types was labeled as goal-rationality, which is the search for efficient relationships between specified given goals, means, and outcomes. Weber also distinguished other types of meaningful interaction, such as rationality legitimized by principles and values. The analytical difference between interaction driven by a detailed goal-rationality and interaction driven by principles and values has raised returning clashes in the history of debates on policy-making and law. The crucial point is that the role and position of public law have changed during the century. Law became more and more a policy instrument, just like other policy instruments. While public law used to have the autonomous role of preventing the misuse of state power via principles of state and law, it gradually became stronger in its other role of being politically responsive to social problems and political objectives. This transition is analyzed as the transition of autonomous to responsive law (Nonet and Selznick 1978, Kagan 2001). The rise of the intervention state required an active role of the government to fulfill the aspirations of purposive action via legislation. Legislation gradually became specific purpose driven rather than principle or value driven.

The most thorough critique on this tendency probably came from Hayek in three volumes on *Law, Legislation and Liberty* (Hayek 1973, 1976, 1979). Hayek fulminated against this new "utilitarianism." His problem was that the almost unlimited opportunity for the government to embark on the specific goal-rationality of political aspirations neglected the lack of knowledge and the uncertainty of policy-makers of the complex society (Hayek 1973). The exclusive and tightened focus on specific goals, detailed means and requirements, and their outcomes becomes a problem instead of a solution. Hayek made a severe distinction between rules and objectives. While responsive policies exclusively and in detail focus on the specification of objectives and means, it is the function of normative rules or norms to enable action in situations of uncertainty (Hayek 1976). Normative rules do not specify the aimed outcomes on a certain place and time. They establish the conditions (codes of behavior) that give people reliable expectations of each other: they inform what is appropriate to do and what not to do (March and Olsen 1989).

Also, Fuller criticized the unconditioned responsiveness of administrations in the making of legislation (Fuller 1964). After a long career as a judge, he wrote a book on the impact

of the most obvious mistakes of legislation and developed a set of eight corresponding criteria of legality which might avoid these faults. His criteria of legality are the following: generality, promulgation, non-retro-activity, clarity, non-contradiction, not asking the impossible, durability, and congruence between rules and official action (Fuller 1964). Fuller defined these criteria as conditions of legality that enabled a reliable use of legislation. Generality means that you cannot make a law for every problem, so the legislator has to define norms at a generic level, which is more abstract than the problem at stake. Promulgation means that legal norms must be known in order to enable internalization in the mind of citizens. All criteria are needed to underpin the plausibility and reliability of the legal system as such, and in doing so, to enlarge its legitimacy and effectiveness because citizens have to effectuate legal norms by respecting them in their actual behavior. That means that norms should not only serve flexibility but also legality. Fuller explained this as a tacit reciprocity between citizen and state: Why would citizens in their interaction respect legal norms if these norms are tailored for very specific situations (thus, not specific to different situations), if the legal norms are not promulgated, if they retroactively sanction behavior that was legal at the time, if they are not clear or are contradictory, if they ask the impossible, if they change so often that citizens would not be able to know what to respect, if even the official action is not congruent to the rules? The questions seem almost rhetorical, but Fuller had defined the criteria as a response to the most frequent failures in practice of legislation. In other words, it is a complex task to meet the basic requirements of legality, and this task appeared to become more challenging inasmuch as the practices of legislation became more directly responsive to the increasing political aspirations of goal-rationality (Fuller 1964). Unlike Hayek, Fuller turned not against the active responsiveness of the government and political aspirations as such, but he defined the criteria to enable investment in the conditions of legality of legislation and policy-making. We follow this line of reasoning in the exploration of the potential of law in adaptive governance strategies, being fully aware of the Catch-22 situation of balancing between flexibility and legal certainty.

### **THE POTENTIAL OF LAW IN ADAPTIVE GOVERNANCE**

Following Hayek, we suggest thinking of law and legislation first of all in its conditioning role rather than immediately using law as an instrumental vehicle to specified purposes. Specific purposes of action are crucial: they will be fulfilled both in the private sector and via public sector policies. This specific purposive action, however, should not be fully or only orchestrated by legislation. The law must set conditions: it organizes the principal commitment of actors via the protection of important principles and via demarcation of protection levels, and it must arrange the rules of the action

processes. Thus, it offers substantive and procedural fairness and therefore a legitimate policy. By defining the principal norms, the spaces of action, and the rules of the game (Ostrom 1986), legal rules commit and enable social actors to endeavor purposive action in their own way, but the institution of law and legislation is not equipped and not meant to organize all sorts of specific purposeful action itself. It should at least be very selective in taking this role. Purposive action needs flexibility, it needs differentiation in different context, it needs adaptability to changing conditions, it needs inventive attitudes of public entrepreneurial minds, and it needs the changeability of learning by experiment, all this without losing its legitimacy. Arranging this field of aspirations in a legalistic way, however, is asking for problems. Following Fuller, we suggest that his criteria of legality be respected as much as possible. We focus on two of his criteria: generality and durability. Both criteria are evident requirements to guarantee plausibility and reliability of legislation.

Here, we come to one of the most delicate challenges of the law-making process. Why is it so difficult to abstract from direct involvement in purposive action? How do we explain the rise of a new generation of specific regulation, even in an epoch of liberalism (Majone 1994, Vogel 2003)? Why does legislation not focus on the permanent and the general but rather on the particular and the temporary (Hayek 1973)? Why is the field of aspirations so entangled in a detailed and specified web of legal duties? The questions are too large to be answered completely, but legal practices are familiar with at least one of the structural causes: problems usually do not arise as general, principal, or durable; they become manifest in specific spatial-temporal contexts of the here and now. Even ecological problems of climate change—so complex that they cannot even be completely identified—become manifest in manifold and very specific ways, at all levels of scale (Gunderson et al. 2009). Problems are not only perceived as specific and context bounded, they are usually also perceived as urgent, requiring immediate action. The act of abstraction from the specific to the general is not evident; rather it is perceived as artificial and not efficient in a progressively responsive society. This may explain why national legislation often is not very manifest on the principal nature and quantified margins of legal norms but rather embarks on numerous specifications that stabilize purposeful pathways of action in detail. Abstraction of missions is not evident—not in politics, not in legislation, and not in society. This challenge of legislation is twofold: once being established in a general and durable way, it should enable citizens to appeal to it in new, completely different specific situations. The real sense of legal norms has to be contextualized in new specific practices which are unknown to the legislator. Then, the relevant question is why should citizens address the norm, which is general, while their problems are specific? How can the generic norm make sense in specific situations?

The need for double conversion (from the specific to the general and from the general to new specific situations) is well known in practices of legislation. The challenge is labeled as the requirement of legal transformation (Bardach and Kagan 1982, Salet 2002). It is a fundamental and permanent challenge, inherent to the art of legislation, requiring new solutions at every turn under changing conditions of society. There are no easy solutions: it requires a great deal of creativity to establish suitable general legal principles under paradoxical requirements. Norms that are formulated in a more general way may lead to different application by several actors (Keessen et al. 2010), to uncertainties in what to do, and to unequal treatment, and—in the end—they have to be contextualized by judges in their jurisprudence. This raises a typical common law problem: if the law can be understood only by specialist lawyers who know all the case law, it also lacks the clarity for citizens which Fuller asks for. Then, we arrive at the same situation as too detailed instrumental legislation. The question is therefore not whether but how legal norms can guide responsive strategies. One of the oldest solutions to the paradox of the specific and the generic is the principle of liability. The norm of liability is established in a generic way, defining that those who induct negative effects of their action on other people may be held accountable. The fascinating thing about this often used principle is that the normative meaning is defined at abstract and general levels, while at the same time it gives a precise normative hold in numerous unknown specific situations. Nowadays, the principle is used in various ways in the field of environmental legislation, including adaptation to climate change (Faure and Peeters 2010, Schueler 2010). In the same way, procedural solutions are sought to make certain actors responsible or to legitimize their actions when principal and more general norms are at stake.

### **THE MECHANISMS OF LEGAL CONTEXTUALIZATION**

Innovative examples of legal contextualization are not abundant in the national legislations, but we found convincing examples in international law and in European legislation (Craig 2009). Typical for international law is that national states usually are hesitant to give up sovereignty. Every state is aware that the problems at stake exceed the national level; however, giving up sovereignty is of a different order. The recognition of this paradoxical situation appears to be a strong incentive for innovation. Surprisingly, international law has produced creative methods to deal with this paradox by defining norms and simultaneously organizing the process for differentiated solution within national contexts. The weakness of international law has turned into a striking strength of creative recombination. A recognized problem of international law, however, is the limited potential of enforcement as well as the fact that states enter into arrangements on a voluntary basis and limit treaties to their own interests. This is why



sometimes voices are heard that binding legislation might be needed for successful adaptation to climate change. Still, there are positive models that might be used more widely. In international law, joint responsibilities are established for the protection of public values. Good examples are the elaboration of the United Nations Framework Convention on Climate Change and the Kyoto Protocol (Gupta et al. 2009, Brunnée and Toope 2010). International law is agenda setting and it prepares national states and citizens to undertake action within general frameworks (Sabel and Zeitlin 2010). Concepts such as sustainability, good neighborliness, equity, and the precautionary principle result from international law and are crystallized in national and European legislation, and there obtain a more binding status. With respect to climate change, clear examples follow from international law but also from European and national law, such as the European Water Framework Directive (2000/60), the Directive on flood risk management (EC 2007/60), and the directives for a reduction of CO<sub>2</sub>. The Dutch project Space for the River is a positive model for applying general principles, such as the precautionary principle and the non-shift principle (van Rijswick and Havekes 2012). The project aims to give more space for water to contribute to climate change adaptation by enlarging safety against flooding. The Dutch water legislation has clear normative legally binding goals to ensure the prevention of water inconvenience and flooding. Legal safety norms are established, and responsibilities for decision-making are transparently divided. To enable contextualization within the margins of safety norms, room is left for regionally different solutions under the hard conditions that the level of safety is attained at the right time and that the authorities make the needed decisions on time. Thus, it is guaranteed that problems will not be passed on to other regions or to future generations. It is a striking example of a right balance between legal certainty, a guaranteed level of protection, and flexibility and maneuverability for regional and local solutions.

The contextualization of general norms in specific contexts requires creative solutions. Principles of a typically open and flexible nature combined with agreed levels of protection and the possibility for public and private enforcement are well suited to respond to climate change because they are based on common sense and therefore are broadly accepted in society. Climate issues are characterized by ethical and normative aspects and conditions of uncertainty that require considerable flexibility in guidance and control (Cook and Tauschinski 2008, Gupta et al. 2009, Driessen and van Rijswick 2011). The principle of sustainable development combines principles of general international law, principles following international environmental law, and principles following the international climate regime with the need for economic development. The following environmental principles are institutionalized, for instance in water and environmental treaties but also in the Treaty on the European Union:

- the principle of equity;
- the precautionary principle;
- the principle of preventive action;
- the principle that the degradation of the environment preferably has to be tackled at source;
- the “polluter and user pays” principle, as part of the principle of the recovery of costs for water services (such as laid down in Article 9 of the Water Framework Directive);
- the principle of good neighborliness (combining the need for cooperation and to do no harm); and
- the non-shift principle as part of the sustainability principle.

It is crucial to note that all principles, being either legal or policy principles, are of a general nature; all give an explicit normative sense of direction, and all are guiding principles—without detailing a target group or context—and can be contextualized by public and private actors by the further development of climate law and policies, by judges, and by public and private actors in enforcement strategies. They fulfill their role in different temporal and spatial practices. The prevention principle, for instance, combines the general and principal protection of a certain value (such as good water status) as a reason for prevention with the social actors’ own responsibility. At the same time, the precautionary principle assures that action will be taken even in case there is no full scientific evidence on causes or effects. The precautionary principle is often debated in the legal and policy literature (Trouwborst 2002) because if it is defined in a very strict way, it would restrain innovative developments and subjects’ own responsibility. However, if elaborated in a more general way, it may serve as a normative guide for subjects who at the same time choose their own action strategies and take the full responsibility for negative effects. The added value of this type of principle is not the restricting, as such, but the organization of normative arguing and acting because of the reversal of the burden of proof: actors are responsible for their own selection of innovative actions but have to justify such actions in line with the normative principle; accountability and liability should be assured.

Legal rules, principles, and substantive and procedural norms and standards are not necessarily a hindrance to flexible action processes by the public and the private sector, but—if generally defined—they allow differentiated and adaptive processes of action to be organized in a normative way (Salet 2002). Their function is to serve as mechanisms of normative feedback in changing practices under conditions of uncertainty and complexity. The space of action is, in the ideal case, conditioned by legal certainty, the rule of law, and clear general norms and rules of the game, while the effectiveness of action

should be monitored, if necessary enforced, and compared with best practices (Ebbeson 2010, Sabel and Zeitlin 2010). The general normative rules can be crystallized in quantitative norms and standards defining the needed and offered levels of safety, water inconvenience, air quality, and water quality without overtaking the autonomous role of the purposive actors (van Rijswick 2008).

## CONCLUSION

In dealing with issues of complexity and uncertainty of social-ecological systems we tried to match the principals of a legal approach and adaptive governance. We emphasized the need for abstraction to principally guide the direct processes of policy-making and to establish a principal and normative feedback in adaptive practices. It is further argued that this principal approach is not a hindrance to adaptive policies but rather enables a productive recombination of policy-making and legislation by defining both the principal norm which is to be protected and at the same time enables public agencies and citizens to take their responsibilities for action while referring to the defined main value. It is principally contextualized because in different contexts different responses will be given. Via monitoring and learning from best experiences and in the end enforcing rights and protecting values, the process of guidance may pragmatically evolve and improve.

Crucial in our attempt to recombine legislation and policy-making strategies is the role of civic responsibility. Social norms underlie social interaction and they are also needed to underpin the plausibility and effective use of legal norms. Taking this institutional approach to social and legal rules implies that not all legislation practices can serve as a guide for normative practices. In order to make productive use of legal norms, basic requirements of legality are needed (Fuller 1964). Bridging the generic nature of legal norms and the specificity of problems is identified as a major challenge. Interesting models of principal use of legal norms can be found in international, European, and private law. We illustrated seven principles of international law, characterized by their general and guiding nature and simultaneously giving a normative sense of direction in very different local contexts. We also observed notions of adaptive learning from experiences in different contexts and comparing best practices. The innovative potential of legal rules and principal norms is not to be found in the format of hierarchical instruction; the potential is in the combination of principal norms and the learning practices of policy innovation. Thus, environmental law may co-evolve with changing and emergent problems in complex systems, performing via cross-scale adaptations (Garmestani et al. 2009). Although there are no easy solutions, the protection of vulnerable and public values asks for a constant balancing between flexibility and legal certainty.

Responses to this article can be read online at:

<http://www.ecologyandsociety.org/vol17/iss2/art18/responses/>

---

## LITERATURE CITED

- Bardach, E., and R. A. Kagan. 1982. *Going by the book: the problem of regulatory unreasonableness*. Temple University Press, Philadelphia, Pennsylvania, USA.
- Brunnée, J., and S. T. Toope. 2010. *Legitimacy and legality in international law: an interactional account*. Cambridge University Press, Cambridge, Massachusetts, USA.
- Carpenter, S. R., and W. A. Brock. 2008. Adaptive capacity and traps. *Ecology and Society* 13(2):40. [online] URL: <http://www.ecologyandsociety.org/vol13/iss2/art40/>
- Coglianesi, C., and R. A. Kagan. 2007. *Regulation and regulatory processes*. Ashgate, Aldershot, UK.
- Cook, R., and E. Tauschinski. 2008. Accommodating human values in the climate regime. *Utrecht Law Review* 3:18–34.
- Craig, R. 2009. “Stationary is dead”—long live transformation: five principles for climate change adaptation law. *ExpressO*. [online] URL: [http://works.bepress.com/robin\\_craig/4/](http://works.bepress.com/robin_craig/4/)
- Driessen, P. P. J., and H. F. M. W. van Rijswick. 2011. Normative aspects of climate adaptation policy. *Climate Law* 2(4):1–23.
- Ebbeson, J. 2010. The rule of law in the governance of complex socio-ecological changes. *Global Environmental Change* 20:414–422. <http://dx.doi.org/10.1016/j.gloenvcha.2009.10.009>
- Faure, M., and M. Peeters. 2010. *Climate change liability*. Proceedings Ius Commune Congress Maastricht 2009. Edward Elgar Publishers, Cheltenham/Northampton, UK.
- Folke, C., T. Hahn, P. Olsson, and J. Norberg. 2005. Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources* 30:441–473. <http://dx.doi.org/10.1146/annurev.energy.30.050504.144511>
- Fuller, L. L. 1964. *The morality of law*. Yale University Press, New Haven, Connecticut, USA.
- Garmestani, A. S., C. R. Allen, and H. Cabezas. 2009. Panarchy, adaptive management and governance: policy options for building resilience. *Nebraska Law Review* 87:1036–1054.
- Gunderson, L. H., C. R. Allen, and C. S. Holling. 2009. *Foundations of ecological resilience*. Island Press, Washington, D.C., USA.

- Gunderson, L. H., S. R. Carpenter, C. Folke, P. Olsson, and G. Peterson. 2006. Water RATs (resilience, adaptability, and transformability) in lake and wetland social-ecological systems. *Ecology and Society* 11(1):16. [online] URL: <http://www.ecologyandsociety.org/vol11/iss1/art16/>
- Gunderson, L. H., and S. S. Light. 2006. Adaptive management and adaptive governance in the Everglades ecosystem. *Policy Sciences* 39:323–334. <http://dx.doi.org/10.1007/s11077-006-9027-2>
- Gupta, J., A. de Gier, and M. van Rijswijk. 2009. *State of the art on the legal and policy literature on adaptation to climate change*. Kennis voor Klimaat KfC001/09, Utrecht, The Netherlands.
- Hayek, F. A. 1973. *Law, legislation and liberty: a new statement of the liberal principles of justice and political economy, Vol. 1 Rules and Order*. Routledge and Kegan Paul, London, UK.
- Hayek, F. A. 1976. *Law, legislation and liberty: a new statement of the liberal principles of justice and political economy, Vol. 2 The mirage of social justice*. Routledge and Kegan Paul, London, UK.
- Hayek, F. A. 1979. *Law, legislation and liberty: a new statement of the liberal principles of justice and political economy, Vol. 3 The political order of a free people*. Routledge and Kegan Paul, London, UK.
- Janssen, M. A. 2007. An update on the scholarly networks on resilience, vulnerability, and adaptation within the human dimensions of global environmental change. *Ecology and Society* 12(2):9. [online] URL: <http://www.ecologyandsociety.org/vol12/iss2/art9/>
- Kagan, R. A. 2001. On responsive law. Pages 85–88 in R. A. Kagan, M. Krygier, and K. Winston. *Legality and community: on the intellectual legacy of Philip Selznick*. Institute of Governmental Studies Press/Rowman & Littlefield, Berkeley, California, USA.
- Keessen, A. M., J. J. H. van Kempen, H. F. M. W. van Rijswijk, J. Robbe, and C. W. Backes. 2010. European river basin districts: are they swimming in the same implementation pool? *Journal of Environmental Law* 22(2):197–222. <http://dx.doi.org/http://dx.doi.org/10.1093/jel/eqq003>
- Langridge, R., J. Christian-Smith, and K. A. Lohse. 2006. Access and resilience: analyzing the construction of social resilience to the threat of water scarcity. *Ecology and Society* 11(2):18. [online] URL: <http://www.ecologyandsociety.org/vol11/iss2/art18/>
- Lebel, L., J. M. Anderies, B. Campbell, C. Folke, S. Hatfield-Dodds, T. P. Hughes, and J. Wilson. 2006. Governance and the capacity to manage resilience in regional social-ecological systems. *Ecology and Society* 11(1):19. [online] URL: <http://www.ecologyandsociety.org/vol11/iss1/art19/>
- Majone, D. 1994. The rise of the regulatory state in Europe. *West European Politics* 17(3):77–101. <http://dx.doi.org/10.1080/01402389408425031>
- March, J. G., and J. P. Olsen. 1989. *Rediscovering institutions*. The Free Press, New York, New York, USA.
- Nonet, P., and P. Selznick. 1978. *Law and society in transition*. Harper & Row, New York, New York, USA.
- Olsson, P., C. Folke, and F. Berkes. 2004. Adaptive comanagement for building resilience in social-ecological systems. *Environmental Management* 34(1):75–90. <http://dx.doi.org/10.1007/s00267-003-0101-7>
- Olsson, P., L. H. Gunderson, S. R. Carpenter, P. Ryan, L. Lebel, C. Folke, and C. S. Holling. 2006. Shooting the rapids: navigating transitions to adaptive governance of social-ecological systems. *Ecology and Society* 11(1):18. [online] URL: <http://www.ecologyandsociety.org/vol11/iss1/art18/>
- Ostrom, E. 1986. A method of institutional analysis. Pages 459–475 in F. X. Kaufman, D. Majone, and V. Ostrom, editors. *Guidance, control, and evaluation in the public sector*. Walter de Gruyter, New York, New York, USA.
- Raadgever, G. T., E. Mostert, N. Kranz, E. Interwies, and J. G. Timmerman. 2008. Assessing management regimes in trans-boundary river basins: do they support adaptive management? *Ecology and Society* 13(1):14. [online] URL: <http://www.ecologyandsociety.org/vol13/iss1/art14/>
- Sabel, C., and J. Zeitlin. 2010. *Experimentalist governance in the European Union: towards a new architecture*. Oxford University Press, Oxford, UK.
- Salet, W. G. M. 2002. Evolving institutions: an international exploration into planning and law. *Journal of Planning Education and Research* 22:26–35. <http://dx.doi.org/10.1177/0739456X0202200103>
- Schueler, B. J. 2010. Governmental liability: an incentive for appropriate adaptation? Chapter 11 in M. Faure and M. Peeters. *Climate change liability*. Proceedings Ius Commune Congress Maastricht 2009. Edward Elgar Publishers, Cheltenham/Northampton, UK.
- Trouwborst, A. 2002. *Evolution and status and the precautionary principle in international law*. International Environmental Law and Policy Series, nr. 62, Kluwer Law International, Dordrecht, The Netherlands.
- van Rijswijk, H. F. M. W. 2008. *Moving water and the law: on the distribution of water rights and water duties within river basins in European and Dutch water law*. Europa Law Publishing, Groningen, The Netherlands.

van Rijswick, H. F. M. W., and H. J. M. Havekes. 2012. *European and Dutch water law*. Europa Law Publishing, Groningen, The Netherlands: 262–263.

Vogel, D. 2003. The hare and the tortoise revisited: the new policies of consumer and environmental regulation in Europe. *British Journal of Political Science* 33:557–580. <http://dx.doi.org/10.1017/S0007123403000255>

Walker, B., N. Abel, J. M. Anderies, and P. Ryan. 2009. Resilience, adaptability, and transformability in the Goulburn-Broken catchment, Australia. *Ecology and Society* 14(1):12. [online] URL: <http://www.ecologyandsociety.org/vol14/iss1/art12/>

Walker, B. H., J. M. Anderies, A. P. Kinzig, and P. Ryan. 2006. Exploring resilience in social-ecological systems through comparative studies and theory development: introduction to the special issue. *Ecology and Society* 11(1):12. [online] URL: <http://www.ecologyandsociety.org/vol11/iss1/art12/>

Weber, M. 1976 [1921]. *Wirtschaft und Gesellschaft*. Mohr, Tübingen, Germany.

Witteveen, W. J., and W. van der Burg, editors. 1999. *Rediscovering Fuller: essays on implicit law and institutional design*. Amsterdam University Press, Amsterdam, The Netherlands.