Conceptual Innovation in Environmental Policy

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1 Conceptual Innovation and Environmental Policy

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This book is concerned with conceptual innovation and the development of environmental policy. It explores the evolution of the categories we use to think and argue about the environment, and their relationship to change in the practices of contemporary governance.

Over the past two decades, scholars have made considerable advances in understanding the evolution of modern environmental concerns and the expanded role of government in addressing environmental problems (Cohen 2006; Eisner 2007; VanNijnatten and Boardman 2009; Vig and Kraft 2015). Political conflicts, the policy process, the choice and design of policy instruments, environmental movements, and business responses have all been subject to analysis. With respect to ideas, attention has focused on the evolution of public attitudes and values (Dunlap 1991; Paehlke 1997), establishment of new international norms (Haas 1989; Lafferty 1996; Hoffmann 2005), and emergence of contrasting environmental discourses (Hajer 1997; Fischer and Hajer 1999; Dryzek 2005; Gabrielson et al. 2016). Modern perspectives have been illuminated by historical studies of alternatively situated understandings of human/nature interactions (Dunlap 1999; Andrews 1999; Radkau 2008). And there has been significant interest in "green" or "environmental" political theory (Barry 1999; Torgerson 1999; Eckersley 2004; Paehlke 2004).

Yet the role of *conceptual innovation* in changing practices of environmental management has received comparatively little attention. Although there has been continuous debate about the meaning of specific ideas (for example, *sustainability*, the *precautionary principle,* or the *green economy*), there has been little systematic study of the range and temporal development of the conceptual categories used in environmental argument, linkages between innovative concepts and policy change, and the process of

conceptual innovation itself. This book begins to address such gaps by focusing explicitly on conceptual innovation, and examining the significance of adjustment to the categories with which we think and argue about environmental governance.

Each of the terms used in the book's title is therefore significant: *conceptual*—because concepts provide our starting point and basic unit of analysis; *environmental*—as this is the specific sphere of societal debate and action with which we are concerned; *policy*—because we are focused on concepts that play an important role in the policy realm and in the wider political interactions that shape policy making; *development*—as we track the evolution of particular concepts and the field as a whole over time; and *innovation*—as we are especially interested in novel understandings and their implications for practice.

We recognize that conceptual innovation sounds rather abstract and removed from practical concerns. And the reader may be inclined to wonder what all this has to do with solving real-life environmental problems that confront local communities or preoccupy international decision makers. As we hope to make clear in the following pages, the answer is: quite a bit. Conceptual categories are mechanisms through which we apprehend the world, vest it with meaning, reason about issues, argue over the path forward, and act. They allow us to define problems, imagine solutions, and effect change.

Since the birth of modern environmental policy in the late 1960s there has been a more or less continuous development of the categories invoked in the environmental domain (Meadowcroft 2012). Of course, conceptual change occurs in all policy fields. But in recent decades, it has been particularly marked in the environmental area as new problems have come to the fore and the perceived "reach" of environmental issues into diverse areas of social life has grown. *Biodiversity*, for example, now plays a central role in contemporary policy debates. Yet this concept was unheard of before the second half of the 1980s. New concepts have continued to emerge in the policy arena: consider the relatively recent arrival of *negative carbon emissions*, the *plastic gyre*, or *planetary boundaries*. And it should not be forgotten that concepts that we now more or less take for granted—such as *environmental impact assessment* or *the environment* itself—at one point also represented significant innovations in the policy sphere.

Most of the chapters in this volume present studies of individual concepts that have come to play a prominent role in the environmental policy domain. There are eleven case studies in all, each of which reconstructs the "career" of a particular concept. There are also three more general chapters that set out the framework of our analysis, assess broader conceptual developments in environmental policy, and draw lessons from the case studies.

This introduction offers an overview of the volume, explains how we approach concepts and conceptual innovation in the environmental sphere, outlines our theoretical and methodological assumptions, and presents the material that is to follow. The second chapter provides a more detailed discussion of how concepts are used in environmental argument and explores the overall evolution of the "conceptual field" of environmental policy. Following the individual concept studies, the final chapter returns to the big picture, offering observations about patterns of change and the practical significance of conceptual innovation in environmental policy.

Although this book is intended for an academic audience with a specialist interest in environmental governance, we believe it will appeal also to a broader constituency. In some respects, it constitutes an alternative introduction to environmental policy, focusing not so much on regulation and policy instruments, parties and elections, or business lobbying and protest group action (although all these make an appearance) but rather more on key ideas that structure argument and action in the environmental policy realm. Thus, it may supply an interesting starting point for those without an extensive background in politics and policy (for example, natural scientists) who want to make more sense of the way environmental issues are presented in the policy realm.

Concepts and Policy Argument

Concepts can be understood as "thought categories" through which we apprehend and, to some degree, constitute the world around us. They enable, but also constrain, reasoning and debate, and serve as building blocks for more elaborate arguments, theories, discourses, and ideologies. Ultimately they ground practical action in different spheres of human

endeavor. Concepts are not just words. After all, one word may denote several concepts (consider *state* as a condition or international unit); and several words may denote a single concept (for example, *freedom* and *liberty* are usually understood as such equivalents). On the other hand, words and concepts are closely linked: typically we say someone possesses a concept when they are able to use the associated word in the relevant sense. And we should be aware of the risk of anachronism when we ascribe to historical figures or cultures conceptual understandings that they lacked specific words to denote. In the literature it is well established that conceptual innovation, linguistic shifts, and political change go hand in hand (Ball et al. 1989). New ideas require novel uses of language (new words or new meanings for old terms), and these are linked to changes in political practice. But the precise way these are related differs according to circumstance.

Concepts may be approached as distinctive "unit/ideas," but they must be understood in reference to other concepts. We clarify one idea by drawing on others, establishing parallels and contrasts, and assembling diverse elements into a distinctive pattern. Concepts acquire significance through their incorporation into broader processes of reasoning, argument, and practice. They are often found in "clusters": a group of related notions that are frequently invoked together. And they are employed in particular ways in specific discourses, forms of argument, and political or ideological perspectives. Concepts also have a history: they are born, are introduced in argument, and influence particular fields of endeavor (James and Steger 2014). They may become embedded in social practices, institutional structures, and legal forms. Ultimately, concepts can fade in significance as the ideas with which they are associated no longer attract interest. To take an example from the scientific domain, *phlogiston* was of interest in the sixteenth and seventeenth centuries, but has no place in contemporary scientific reasoning. Today, *dark matter* is a focus for lively scientific exchange, but whether this category will survive or be displaced by other theoretical constructs remains to be seen.

Our use of concepts is often routine and unreflective: we reach for terms and deploy concepts to reason, construct arguments, articulate claims, communicate beliefs and desires, and influence the conduct of others. On the other hand, we also make deliberate choices—selecting one concept and setting aside another, specifying that we are using a particular concept in this way and not that way, shifting received understandings by extending

a category to cover new instances or adjusting its elements, or sometimes invoking a new term to express a novel meaning.

The investigation of concepts is sometimes understood to be the particular province of philosophical inquiry. Certainly conceptual analysis plays a central role in contemporary analytic philosophy, and perspectives on the essential character of concepts have long been intertwined with broader ontological and epistemological debates. The twentieth-century "linguistic turn" that affected not just philosophy but also the social sciences and humanities more generally brought out the importance of language for the constitution of social life (Rorty 1967). Discourse theorists emphasized linkages among language, dominant norms, and social hierarchies (Foucault 1977, 1984). Historians of political thought moved away from the idea of timeless debates with the classics to emphasize that ideas must be appreciated in their political and cultural contexts, and that encounters with historical texts should involve an effort to understand them in terms that would have been intelligible to their original authors. An explicit focus on concepts, historical context, and sociopolitical change has characterized the work of the school of "conceptual history," associated with Quentin Skinner (2009) and Reinhart Koselleck (2004), but to which many others have contributed (Williams 1982; Connolly 1983; Richter 1995; Freeden 1996). For our purposes, the key insights that can be drawn from these literatures are that language is not a neutral medium but one that reflects and reproduces particular perspectives, that conceptual categories are historical constructs that evolve over time, and that conceptual understandings and social practices are inextricably interconnected.

Since concepts are categories through which we think and communicate, it is not surprising that they have attracted interest from many disciplines, including philosophy, history, cultural studies, linguistics, psychology, mathematics, logic, neuroscience, information science, and artificial intelligence (Hjørland 2009). One strand of this work explores how individuals apprehend the world, acquire language, and manipulate concepts. It suggests that we do not grasp concepts by either compiling an exhaustive mental list of items that fall into a particular class or memorizing some formal rule against which future instances can be compared. Rather, it is more about appreciating patterns of similarity and difference. So we can understand that a rock could also be a table even though it lacks all the key features of a dictionary definition of a table as "a piece of furniture with a flat

top and legs" (LoveToKnow Corporation 2015). In this book, however, we are concerned less with individual cognition than with concepts as socially shared thought objects—with the way they are taken up by multiple users and come to assume a particular place in the policy sphere.

All concepts are abstractions, but those that assume an important place in the political or policy sphere often have considerable internal complexity. Think of the idea of "public participation" that involves assumptions about who is participating, in what process, in what manner, and to what end, and that links to various empirical and evaluative dimensions of governance, including representation, responsibility, effectiveness, and so on. Some thinkers have invoked a special category of "essentially contested concepts" (Gallie 1964), yet for our purposes it is enough to note that political and policy concepts are subject to continuing contestation and reinterpretation. This is most obvious for high-level ideas with strong normative associations such as democracy, freedom, or justice, but it applies much more widely across the policy realm. Yet because they are complex and contested, it does not follow that these concepts are without meaning: typically the core range of uses is clear, and it is possible to rule out many potential understandings as implausible. And of course, the flexibility of these concepts is part of what makes them essential to political and policy discourse.

The concepts with which this book is concerned are those employed in the particular sphere of environmental governance. These are ideas such as *acid rain, adaptive management, biodiversity, carbon budget, common but differentiated responsibilities, dangerous climate change, environmental assessment, ecological footprint, the polluter pays principle, the precautionary principle, hazardous waste,* and so on. Like other issue domains, environmental policy relies on categories drawn from the general political arena, relating to basic values, institutions, and processes (democracy, parliament, government, the supreme court, the public interest, rights, and so on). But it is the *subject-specific conceptual repertoire*, delineating environmental problems and solutions, that is of primary concern in this volume. These are the ideas that establish the parameters and modalities of this particular field of governance activity, and that help frame the specific ways it is conducted.

The subject-specific repertoire of environmental policy/politics is linked to related areas such as law, economics, philosophy, and the natural sciences. The idea of sustainability, for example, could be invoked in any of

these domains, although this might be done in somewhat-different ways. Although usage in these cognate domains will be considered in the discussion of the career of individual concepts, our core focus is politics and policy (rather than, say, legal or scientific discourse).

While concepts provide the starting point for this inquiry, our goal has not been to produce a conceptual dictionary of environmental thought. Instead, it is to explore the role innovation in these conceptual categories plays in reasoning and argument, and their significance for practical efforts to manage environmental problems.

Conceptual Innovation

Those who study processes of technological innovation examine the emergence and uptake of new technologies, from pioneering research efforts through prototype development, and scale up to the launch of marketable products and their subsequent societal adoption (Freeman 1974; Lundvall 2010). In an analogous way, we apply the expression *conceptual innovation in environmental policy* to refer to the broad process through which novel understandings win acceptance within the environmental policy realm. It involves more than the invention of a novel thought-construct (making the requisite ideational connections and perhaps coining an appropriate term) to include the way the new understanding is introduced into policy argument, gains adherents, and becomes linked in to policy design and implementation.

Our basic understanding of how this process operates runs as follows. Novel ideas are constantly being generated as individuals and groups struggle to apprehend and influence the world around them. Yet to enter the policy domain, some actor or set of actors must shape a new understanding into a *policy relevant construct* and explicitly introduce it into policy argument. If this move fails to resonate more broadly, matters may go no further. But if it finds a wider audience, the new conceptualization can become integrated into larger patterns of use and begin to shift the terms of debate.

Critical to extending the influence of a novel conceptualization is its institutional embedding within the environmental policy sphere. This can take a variety of forms: substantive uptake by prominent players within the policy community (environmental groups, business organizations, and

expert advisory bodies); incorporation into the priorities of research councils and funding bodies; integration into political platforms or manifestos; adoption in government white papers, policy statements, plans, and programs; inclusion in the official remit of government agencies or ministries; and integration into legislation and perhaps even constitutional documents. To the extent that a concept is embodied in texts with legal force, its meanings and implications may ultimately be subject to judicial interpretation. Such institutional embedding, from "softer" manifestations (say, in the list of campaign priorities for an environmental nongovernmental organization) to "harder" forms (for example, in the legal responsibilities of a ministry), provide points of reference that can encourage further uptake and reinforce particular patterns of understanding. As a conceptual shift becomes more widely accepted, efforts may be made to specify its implications in particular and varied contexts, and it can be linked to the redesign of practical management activities. Throughout the process there will be continued argument over what the new idea actually signifies. Multiple interpretations may persist over the long term. And the forms that come to predominate may be somewhat different from those originally introduced into the policy realm. For a simple graphic representation, see figure 1.1.

Although this has been presented in relatively linear terms—from the launching of a policy-relevant conceptual shift, through diffusion and institutionalization, to practical impacts—in fact this process is more complex: the steps can be intertwined, practical impacts may flow from early diffusion, and differential institutional embedding can revise dominant understandings. Nevertheless, it is helpful to consider each of these interrelated elements of the innovation process.

From a policy perspective, the starting place is the articulation of the conceptual reconfiguration in policy-relevant arguments. Ideas may be drawn from diverse sources, within or without the policy sphere, broader social and political debate, and developments in the natural and social sciences and the humanities. Whatever the preceding genealogy, the idea must be articulated as part of an argument addressed to the public sphere, engaging with issues of societal interest and the realm of government. The "pitch" of a novel conceptualization can occur through general public argument (books, articles, or the press), via expert reports to policy makers (formal advisory bodies, consultants, or academics), in the findings of

Schematic representation of conceptual innovation process

1. Novel conceptualization launched into policy sphere
2. Rival understanding of novel conceptualizations contend
3. Dominant understanding is institutionally embedded
4. Subordinate understanding continues to evolve distinct from dominant understanding
5. Novel conceptualizations fail to win long-term audience and secure institutional embedding

Figure 1.1
Schematic representation of conceptual innovation process.

public inquiries or commissions, or through communication from government agencies. Sometimes the conceptual shift will be explicitly flagged; on other occasions it may be introduced tangentially as the (new) normal way of approaching the subject matter. But in either case it must be sufficiently attractive to be taken up more widely. Sometimes such an innovation will spread rapidly; alternatively it may lie latent for many years, or may sink with barely a trace.

With respect to institutional embedding, a distinction should be made between uptake by organizations involved in policy argument and uptake by official bodies with formal responsibility for making and implementing policy (government agencies, ministries, and the legislature and executive). The latter groupings lie at the heart of the formal policy system. Similarly the solidity of the embedding matters: politicians (and their white papers) come and go, but legislation and regulatory procedures are more resistant to change. And there are issues of vertical and horizontal governance: embedding up and down the hierarchy (from local and regional institutions to central government), and across the breadth of government, not just in the environment ministry, but also in the ministries of energy, natural resources, economics, transport, and so on. Embedding at multiple levels or across ministries may be more resilient than embedding in one level or bureau only. International organizations can also provide a powerful mechanism for diffusion and continuity, although ideas lodged at an international level do not necessarily filter down to diverse domestic circumstances.

Sustainable development provides an illustration of the process sketched out above. Although by the early 1980s arguments about sustainability had been going on for more than a decade (and political and philosophical antecedents could be traced much further back), it is generally accepted that the report of the World Commission on Environment and Development (1987), *Our Common Future*, propelled the idea of sustainable development on to the international stage. The commission deliberately crafted the concept to advance the environment and development debate, and carefully defined the term in its report. So here was a concept that was "pitched" at the highest-possible level by a blue-ribbon UN panel. Even such a high-profile launch did not guarantee take-up: there were other UN commissions whose intellectual contributions are now barely remembered. But sustainable development did catch on. It was relatively rapidly institutionalized within the UN system during preparations for the 1992 Rio Earth Summit, and progressively adopted into national policy frameworks. Governments and international organizations devoted significant efforts to preparing sustainable development plans, strategies, and indicators. And today the idea remains very much alive in international discussion around implementation of the UN "sustainable development goals" for 2030. Over time, the dominant understanding of sustainable development

has evolved; for example, neither the "three pillars" image (balancing economy, society, and environment) nor the emphasis on "participation" in environment and development decision making were explicit in the original World Commission on Environment and Development formulation, but both subsequently became prominent. And of course multiple and partially conflicting understandings of what sustainable development actually entails remain. This example also illustrates that conceptual innovation can occur at different scales: large shifts can give rise to an entirely new thought category (in this case, the invention of sustainable development), but smaller more incremental innovations (here, the three pillars image or emphasis on participation) can shift the bearing of an existing category.

So why do some conceptual innovations catch on while others fail? Why do some become integrated into the idiom of governance while others gain popularity among particular policy constituencies but remain locked out of the official sphere? This is an issue to which we will return throughout the volume. At the outset, though, we can suggest three elements that seem to characterize ideas that ultimately penetrate the core of the policy domain. First, the conceptual reconfiguration must address a perceived need: it identifies a new problem, diagnosis, or solution, or productively reorders established understandings. In functional terms we could say that it fills an ideational niche. Second, if a concept is to be taken up broadly and entrenched officially, it needs to be able to speak to multiple constituencies. Interestingly, this suggests that ambiguity can be an asset in the policy sphere. That a concept is open to varied interpretations widens its potential clientele and sphere of operations. It suggests its features can be rearranged into multiple configurations that generate diverse insights that appear significant to varied actors. Third, the reconceptualization should not be too alien to existing discursive patterns and dominant understandings of the way "the world works." In other words, the conceptual shift is more likely to find its way into the core of the policy system if it does not too directly and obviously challenge existing socioeconomic as well as political institutions and relationships. This is not to say that truly radical realignments are impossible; rather, these will then be accompanied with political/institutional changes of a comparable scale, and will still trade on existing understandings (resonating with some established categories to leverage significant change in others).

The Orientation of This Volume

The book deploys a distinctive analytic strategy to understand the evolution of environmental governance. The goal is to allow a fuller understanding of the development of key concepts invoked in the environmental policy domain; provide a deeper appreciation of the temporal evolution of the overall conceptual field of environmental policy; shed new light on established discourses, arguments, and problems (by illuminating them "from below," as it were, by approaching them from constitutive conceptual elements); and explore the linkages between conceptual and policy change.

At this point it is worth considering how our approach relates to complementary strands of scholarship. Reference has already been made to conceptual history. In a general sense, the work presented here could be considered a contribution to this field, but it is informed more by political science than historiography and has a more explicit focus on policy than most scholarship classed under this heading. Another obvious point of contact is with discourse analysis, which in the environmental policy field is often associated with the scholarship of Martin Hajer and John Dryzek (but consider also Karen Litfin). Hajer's (1997) best-known work examines acid rain policy in the United Kingdom and Netherlands, and chronicles the rise of the discourse of "ecological modernization." For his part, Dryzek (2005) has surveyed the whole field of environmental politics, identifying nine competing discourses. Despite their differences, both approaches take discourse as their fundamental analytic category. This volume, in contrast, starts from specific concepts, which may play different roles in varied discursive constructs. Thus, while Hajer discusses sustainable development as a characteristic "story line" of the dominant ecomodernist "discourse coalition," and Dryzek sees sustainable development as one among many competing environmental discourses, we approach it here as a specific concept and illustration of conceptual innovation deployed to structure thinking and argument in the environmental policy sphere. In other words, the point of departure and questions on which we focus are slightly different.

The literature on framing, particularly as used in media, communication, and policy studies, provides another point of reference (Rein and Schön 1993; Stone 2001). Framing studies typically examine a particular episode (perhaps a war, policy conflict, or electoral context), with the goal

of discovering how issues are constructed in the public sphere by the media, political leaders, and other contending parties. Of course, one can also talk of how a concept is being framed, and one can consider the deployment of a particular concept (and/or a particular interpretation of that concept) as an exercise in framing. Finally, we should point to scholarship that has looked at the emergence and propagation of norms guiding expectations in the international environmental sphere. Steven Bernstein (2001), for example, has explored the rise of the "norm complex" of "liberal environmentalism" that reconciles environmental concerns with the liberal international economic order, and he considers sustainable development as a concept that has both legitimized this norm complex and masked the compromises that characterized its institutionalization. Again, we approach the issue from the bottom up, starting with individual concepts, rather than from the perspective of higher-level constructs such as norm complexes and discourses.

The chapters in the volume deal with the material in two basic ways. The case study chapters follow the career of individual concepts that are important in the environmental policy domain. Although the authors adopt slightly different narrative strategies, these chapters address a common set of questions that relate to the basic understanding of the target concept (what it implies, and how it is linked to adjacent or contrasting concepts), its origin (where it came from, who developed it, and in what context and when), the character of the associated ideational shift (what was new, and what problem was it intended to address), the way the novel understanding passed into political and policy argument (routes of transmission and institutional adoption), problems and internal tensions (varying perceptions, disputes, and controversies), and practical impacts (what difference it made).

Each case study chapter then concludes with an evaluative discussion that considers the significance of the concept and associated innovation for environmental policy. This revolves around answering two basic questions. First, *to what extent has the concept been important for argument and practice in the environmental policy domain*? This question is about spread and embedding. How popular has it been? How widely is it used? Has it been entrenched in regulation, legislation, treaties, and constitutions? This covers political/policy argument and practical deployment. Second, *to what degree has the concept proven productive or fruitful?* This question is about the

extent to which it has contributed to clarifying thinking, introducing productive insights, resolving problems, and so on. The first question is more empirical, and the second is more normative. They link directly to the discussion of the future of the concept as well as its difficulties, internal contradictions, and so on.

The general chapters (1, 2, and 14) approach the issue in a more synthetic manner, exploring patterns of conceptual innovation across the environmental field. This involves an initial attempt to elucidate processes of conceptual innovation in environmental governance and map the evolution of the conceptual field. These general chapters draw on a variety of sources as well as seek to build on insights from the individual concept studies.

Selection of the concepts for the case studies began from a long list of about sixty, culled from the policy literature. Although hundreds of entries appear in environmental reference works (such as the US Environmental Protection Agency's (1997) *Terms of Environment: Glossary, Abbreviations, and Acronyms*), the overwhelming majority of these are scientific or technical terms (e.g., phenol, radioisotope, or osmosis), or relate to the text of particular laws and ordinances (exempted aquifer, CAS registration number, etc.). The long list was later narrowed to about twenty-five of the most widely used terms, and a group of environmental experts was consulted about their perspectives on the relative importance of these concepts for environmental policy past and future. In selecting the final group of concepts for detailed examination we considered a number of factors, including their *general importance* (that the concept was in fairly widespread use and appeared to play a prominent role in environmental argument); their *practical policy bearing* (that there was a link to politics, policy, and practice) so the idea was not *just* the province of environmental philosophers, natural or social scientists, or a particular activist group; *innovation/evolution*, that the concept emerged or underwent some significant change in the 1960–2014 period that covers the development of modern environmental policy; and their contribution to a good *overall mix* of concepts, to ensure a balance among established and emerging concepts, those with broad or narrow application, and those that relate to various areas of environmental policy.

As the chapter titles indicate, the final list was composed of environment, sustainable development, biodiversity, environmental assessment, critical

loads, adaptive management, green economy, environmental risk, environmental security, environmental justice, and sustainable consumption.

The list includes two "macro" concepts that attempt to capture the whole domain with which we are concerned: environment and sustainable development. There are four environment-denominated concepts—that is to say, concepts that apply environment to modify a more general or established idea: environmental assessment, environmental risk, environmental justice, and environmental security. In each case the expression has come to constitute a distinct unit idea that signals more than a combination of two words. Some of these concepts came into use at the beginning of the period with which we are concerned (environment or environmental assessment), while others are newer arrivals (biodiversity or environmental justice). Some are used widely, notably environment, which also has the distinction of defining the policy sphere with which we are here concerned: environmental policy. Others such as critical loads or adaptive management have more restricted spheres of application, and are most often deployed by particular policy communities and in specific contexts.

There are many points of contact among the members of this group of concepts. For example, environment is frequently presented as one of the three pillars of sustainable development; environmental security is concerned with certain kinds of environmental risks; sustainable consumption is part of the green economy, and both these ideas are linked to sustainable development; and so on. And of course, these concepts link closely to many other environmental concepts that are not included on this short list: environmental assessment is one appraisal technique, but another is environmental cost-benefit analysis, biodiversity protection is often connected to resilience, and so forth.

There is no suggestion that the concepts on this list are in some sense exceptional or intrinsically more important than others that were not included. A somewhat-different group of concepts could reasonably have been selected. On the other hand, most researchers would probably agree that these are interesting and important ideas within the general field of environmental policy. A few absences require explanation. We did not include pollution or conservation because their usage was well established before the era of modern environmental policy on which this study focused. Certainly, they were critical in defining the emerging policy field—for environmental policy brought the two previously distinct areas

of nature conservation and industrial pollution control into closer contact. And both ideas have continued to develop over intervening decades as, for instance, we have seen the progressive extension of the phenomena classed as environmental pollution. Some readers will feel the most obvious omission is climate change. Here we defer to the enormous scholarly effort that has already centered on clarifying this idea (Cowie 2007; Hulme 2009), and chose instead to highlight biodiversity—the second truly global environmental megaproblem that was addressed with a framework convention at the 1992 Rio Earth Summit. Other established concepts high on our priority list, but that in the end we were not able to cover, include environmental policy integration, decoupling, resilience, and the precautionary principle. There are also a number of ideas that are now beginning to make their mark, including planetary boundaries, the Anthropocene, sustainability science, and ecosystem services. Each of these ideas makes some appearance in this volume, but they are not subject to chapter-length treatment.

At this point it is worth considering some of the difficulties and limitations of the present study. In the first place, we set a challenging task for the authors of the concept studies. The selected concepts have been applied widely, in varying contexts, often over multiple decades. They have been invoked in political argument, linked to policy practice, and subjected to academic analysis. Some—like environment or sustainable development—are ubiquitous. Yet we aspire to tell their story in a comparatively brief chapter. So these discussions necessarily offer fairly high-level narratives that concentrate on key features and fault lines. Such broad-scale analysis is not the only possible way to approach the study of conceptual innovation in the environmental sphere. Instead, one could focus on a much narrower time period or institutional context (for example, how a concept was introduced in one government department, or how a group of concepts figured in a particular policy argument), but here we decided to explore the larger picture.

Second, we are interested in practical implications: with understanding whether, to what extent, and in what circumstances conceptual innovation really matters. Or are these changes in conceptual categories really more about fashionable buzzwords, rhetorical tricks, and symbolic politics, where the idiom of policy making and political argument shift, but the underlying relationships and outcomes remain largely unchanged? Clearly we think

that changing the terms of discourse does matter, yet to what degree, and in what circumstances, remain issues for investigation. Certainly the kind of study undertaken here does not typically allow us to say in a simple and deterministic sense that change in the understanding of concept X led directly to specific policy outcome Y. We are simply not working with this form of linear causality. The relationship between ideational and policy change is more complex than that.

In the case of problem-identifying concepts (such as acid rain, climate change, and ozone disruption), there is an obvious link between problem definition and subsequent policy action to address the designated issue. But all sorts of ideas, interests, and institutions influence whether, when, and how the problem is actually handled. With management-oriented concepts, which denote a particular approach to dealing with environmental challenges (ecosystem management, the precautionary principle, and so on), there is sufficient interpretative flexibility to justify multiple policy outputs. Applying the approach in a particular case structures argument, but does not determine an exact policy prescription. The EU policy on genetically modified organisms and food is linked to an application of the precautionary principle. Yet there was a choice to apply this principle here, and in this particular way, when it is not applied, or is applied in different ways, in other areas of EU regulation. So exploring the practical linkages of conceptual innovation is not without pitfalls. Typically what we can state with confidence is that a shift in conceptual category X was associated with a particular (and often-diverse) set of policy experiences. And depending on the circumstances, one might want to say that the new understanding accompanied altered practices, that it facilitated the introduction of these practices (and the outcomes that ultimately flowed from them), or perhaps that it helped constitute the altered practice, because it only makes sense to those engaged in it in light of the conceptual shift.

Third, we approach the development of a more general picture of the evolution of the conceptual field of environmental politics in various ways. The case studies provide analysis of a number of important concepts, discuss some of the connections among them, and reference a number of additional concepts to which they are linked. The general chapters (especially chapter 2) try to point toward a more synthetic account by looking at families of concepts and tracing elements of the evolution over time. Yet we are far from being able to offer a full picture of the evolution of the

conceptual field of environmental policy. For this a broader research effort will be required. The concluding chapter suggests some elements of that research agenda.

In other words, we understand the work presented here to be of an exploratory character, focused on an area that has not received much prior attention. Throughout, our goal has been to develop a broad initial investigation that can map out the terrain, develop interesting insights, suggest plausible interpretations, and point to areas for further work.

In the next chapter, we characterize the broad conceptual field of environmental policy and describe its evolution since its emergence as a distinct policy domain in the late 1960s.

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2 The Conceptual Repertoire of Environmental Policy

James Meadowcroft and Daniel J. Fiorino

This chapter offers an overview of concepts employed in the environmental policy domain and reflects on the evolution of this conceptual repertoire. Its purpose is to provide a broad-brush portrait of the development of the conceptual field to complement the more focused and detailed examination of individual concepts presented in the chapters that follow. We use the expression *conceptual field* to denote the set of interconnected concepts that help establish the character of the environmental policy domain at a given point in time. The image of a field captures the idea of a plenitude of concepts related across multiple dimensions in argument and practice. Thinking about the general development of environmental concepts can help ground discussions of innovation in the environmental sphere. After all, the concepts in use at a specific conjuncture represent the product of previous rounds of innovation while also supplying the context within which further development takes place.

The discussion is organized into three parts. First comes a general look at environmental concepts. This is followed by an examination of concepts that play a particularly important role in structuring the policy realm. Finally, the chapter explores the temporal evolution of the field.

Contrasts and Connections

When one considers the contemporary environmental policy domain—including the full range of problems and responses linked to diverse economic and social activities—one is confronted with a bewildering array of concepts. Policy documents from national environmental ministries and the websites of international bodies such as the UN Environmental Program (UNEP), Organisation for Economic Co-operation and Development

(OECD), or European Environment Agency employ hundreds of distinct environment-related concepts. And many other ideas are invoked in broader societal debate. To make sense of this diversity, it is helpful to examine patterns of contrast and affinity among environmental concepts, and consider the varied roles they play.

To anchor the discussion, a sample of concepts employed in environmental argument is presented in table 2.1. The group has been selected to illustrate concepts of a quite-different character, with varied spheres of application.

One thing that emerges from a list of this type is the extent to which new environmental concepts are articulated by drawing together existing terms. A new thought category can, of course, be specified by repurposing an existing word; thus, *resilience* in the environmental domain draws on the long-established understanding of resilience as a capacity to recover from stress and endure. But more often, the conceptual lexicon is extended by way of conjoining terms. Sometime terms are fused into a single new word, as in *biodiversity* or *geoengineering*. Sometimes a longer phrase is required to capture the novel meaning, as with *extended producer responsibility* or the *polluter pays principle*. But most common is a simple coupling of terms, as in *sustainable tourism*, *planetary boundaries*, *nuclear waste*, or *emissions trading*. Indeed, by linking varied terms to a common partner, whole families of environmental concepts have been generated.

The largest such groupings are associated with the modifiers *environmental*, *ecological* (or simply *eco*), *sustainable*, and *green*. Table 2.2 lists examples of expressions in these groups. The root ideas of environment, ecology, sustainable, and green have quite-different histories and connotations. The

Table 2.1

A Selection of Environment-Related Concepts Used in Policy/Political Argument

Adaptive management	Ecotourism	Net zero housing
Biodegradable	Emissions trading	Nuclear waste
Biodiversity	Environmental audit	Organic farming
Carbon capture and storage	Environmental integration	Planetary boundaries
Carbon offset	Extended producer responsibility	Polluter pays principle
Circular economy	Flue gas desulphurization	Rewilding
Decoupling	Geoengineering	Sustainable tourism
Ecological footprint	Green growth	

Table 2.2
Groupings of Concepts Related to Four Core Environmental Terms

Environment	Ecology	
		Sustainable growth
Environmental assessment	Ecological fiscal reform	Sustainable livelihoods
Environmental audit	Ecological footprint	Sustainable production
Environmental crisis	Ecological interdependence	Sustainable use
Environmental education	Ecological justice	Sustainable waste management
Environmental ethics	Ecological rationality	Sustainable yields
Environmental fiscal reform		Sustainability
Environmental footprint	*Eco-*	Unsustainable
Environmental governance	Ecoaudit	
Environmental indicator	Ecoconscious	**Green**
Environmental justice	Ecoefficiency	Green buildings
Environmental law	Ecofriendly	Green business
Environmental liability	Ecojustice	Green consumer
Environmental management	Ecolabels	Green design
Environmental planning	Ecotaxes	Green economy
Environmental policy integration	Ecotourism	Green energy
Environmental protection		Green growth
Environmental restoration	**Sustainable**	Green infrastructure
Environmental risk	Sustainable business	Green investment
Environmental security	Sustainable cities	Green jobs
Environmental services	Sustainable communities	Green parties
Environmental space	Sustainable consumption	Green plan
Environmental taxes	Sustainable development	Green shift
Environmental valuation	Sustainable enterprise	Green taxes
	Sustainable fisheries	Green wash

environment refers to surroundings, and particularly natural surround-
ings threatened by human activities (for a more detailed discussion, see
chapter 3). Ecology has been used to denote a particular branch of scien-
tific inquiry, and later a philosophical or political perspective (McIntosh
1985). But in this context, it points more generally to the interdependence
of organisms and broader natural systems. Sustainable literally means "can
be continued," yet it has acquired an environmental resonance: environ-
mental degradation may make certain practices unsustainable, and hence

the importance of *sustainability* or *sustainable development*. Green has come to be used as a broad descriptor of things held to be more in harmony with nature or the environment.

Expressions within each broad family share a certain general resonance. But they embody distinct ideas, are invoked in alternative contexts, and are associated with varied controversies. *Environmental indicators* are measurements of an environment-related phenomenon that offer insight into broader conditions. The concept invites argument about what to measure and how it should be measured, and about the significance and interpretation of the results. *Environmental restoration* refers to the rehabilitation of areas or habitats that have been degraded or destroyed, particularly by human intervention (pollution, inappropriate development, invasive species, etc.). It implies discussion about what should or should not be restored, what such restoration actually entails (the desired environmental outcome), and the techniques employed to bring this about. *Environmental education* denotes the transfer of knowledge and understanding about the environment, and immediately raises issues concerning who is to be educated, who is to do the educating, and the character and content of the information and perspectives that are transmitted.

Sometimes users will employ expressions containing environmental, ecological/eco, sustainable, or green more or less interchangeably, thereby communicating an underlying concept in different terms. Alternatively, they may exploit the contrasting resonances to establish distinctions. *Environmental justice* and *ecojustice* can be taken as largely synonymous. But one can construe them so that ecojustice places more emphasis on justice toward the nonhuman natural world (animals, species, or ecosystems), while environmental justice stresses human inequities. *Ecolabeling*, *environmental labeling*, and *green labeling* appear as virtual synonyms. *Environmental footprint* and *ecological footprint* differ largely because the first term can be used relatively loosely to denote the aggregate impact of a particular product, practice, or community, while the second is linked to a specific methodology that assesses ecological burdens in relation to the land area required to support a particular way of life (Wackernagel and Rees 1996). *Green growth* has a clearer environmental resonance than *sustainable growth*, since the latter can be understood as "growth compatible with environmental sustainability" or simply "growth that goes on indefinitely." But both concepts are criticized by those who argue that growth is itself the

core driver of expanding environmental destruction (Martinez-Alier et al. 2010).

Other environment-related concepts have also been used to spin out families of related ideas. Consider expressions that invoke either the older *pollution*, or relative newcomer *carbon*, listed in table 2.3 below.

These are somewhat more focused than the broad groups described above. Again we see that related expressions do quite different things. Pollution, and the various kinds of pollution (like air or water pollution), point to the release of damaging substances into the environment. The polluter pays principle is supposed to guide policy makers by indicating which societal groups should bear the cost of pollution control. *Pollution prevention pays* links pollution control with potential economic returns (inverting the more obvious claim that pollution prevention *costs*), and can be intended as an analytic statement about efficiency or as an injunction to motivate better environmental stewardship. A *pollution tax* is a particular policy instrument, which can be interpreted as a regulatory application of the polluter pays principle.

The carbon-related concepts are comparatively new, with the grouping only emerging strongly in the later 1990s as climate change became an internationally recognized policy problem. In this context, carbon serves as shorthand for *carbon dioxide*, or more specifically, *anthropogenic*

Table 2.3
Expressions Related to Pollution and Carbon

Pollution	Carbon
Air pollution	Carbon accounting
Carbon pollution	Carbon budget
Noise pollution	Carbon emissions
Polluted site	Carbon footprint
Polluter	Carbon neutral
Polluter pays principle	Carbon offset
Pollution control	Carbon pollution
Pollution index	Carbon tax
Pollution prevention	Carbon trading
Pollution prevention pays	Low-carbon economy
Pollution tax	Low-carbon society
Water pollution	Negative carbon emissions

carbon dioxide emissions driving climate change, but is frequently intended to embrace greenhouse gases (GHGs) more generally. So the carbon moniker opened space for a variety of new concepts and ways of thinking about the implications of the human release of GHGs along with potential management approaches.

A term that joins both the carbon and pollution lists—*carbon pollution*—provides a good example of how conceptual categories are adjusted and reframed. The novel use of carbon (to mean anthropogenic carbon dioxide emissions) has been coupled with the established idea of pollution (a harmful release to the environment) to denote a particular kind of pollution: GHG emissions that are driving climate change. Until comparatively recently, international policy debate generally presented climate change as a new and distinct environmental problem, rather than as an additional manifestation of the established issue of *air pollution*. Thus, carbon pollution does not appear in the UN Framework Convention on Climate Change. But the carbon pollution innovation has been especially salient in the United States, where it has opened up the possibility of invoking existing legal frameworks that deal with air pollution (for example, the Clean Air Act) to address GHG emissions, despite continuing opposition in Congress to dedicated climate change legislation.

The sample of environmental concepts presented in table 2.1 (as well as the family groupings in tables 2.2 and 2.3) displays the wide variation among different sorts of environmental concepts and their use in policy argument. In the first place, environmental *concepts do different types of things*: they denote particular physical phenomena, technological options, or societal practices; they identify problems and solutions and frame debate; and they articulate social critiques, management principles, or policy instruments. *Flue gas desulphurization* refers to a particular remedial technology for managing industrial emissions (for example, from coal burning power plants). *Ecotourism* points to a more responsible and environmentally sensitive recreational activity or business sector. *Extended producer responsibility* is an approach that assigns management duties for product impacts and disposal to those manufacturing and marketing goods. And of course, concepts can do more than one thing; thus, *acid rain* refers to a physical phenomenon that can be measured and its consequences assessed. But it is also a problem-framing concept that dramatized a complex issue and helped to mobilize social support for political action.

Second, *concepts vary with respect to their inherent complexity and the density of their external linkages* (connections to other ideas within and outside the environmental sphere). Internal complexity and external linkages may open the way to richer conversations, but they also entail multiple understandings and contestation. Compare an idea like *adaptive management* that has substantial internal complexity (integrating notions of resource management, experimental learning, adaptation, and stakeholder participation) and dense external linkages (to ideas such as conservation, sustainability, and ecosystems) with relatively straightforward concepts such as *mine waste* or *environmental audit*. Of course, these concepts can also open the door to certain kinds of complexity. There are different kinds of mine waste, associated environmental or social impacts, and remediation strategies. And environmental audits can be understood, designed, and implemented in many ways. Yet such concepts operate at a more bounded level of abstraction than more sweeping ideas such as adaptive management, ecosystem services, or sustainable development.

Third, *environmental concepts differ in the way they relate to normative commitments*. The vast majority of concepts in the tables above could be defined in relatively neutral terms that betray no explicit value judgment. As they are invoked in political and policy argument, however, they may acquire normative resonance. Policy is about the establishment of priorities for government action and is suffused with value choice. So in the policy domain, virtually any concept can become normatively charged. *Biodegradable* can be given a formal definition so that objective tests can determine whether the term can be applied legitimately to a given packaging material. But the concept only makes sense in the context of concern over environmental pollution (from plastics, for example), and in environmental policy argument it has an overwhelmingly positive connotation. Much the same is true of *renewable energy*. Of course, some environmental policy concepts are much more explicitly normative in orientation; the *precautionary principle* is formulated as a management rule that tells us how we *should* handle certain kinds of environmental issue. Other ideas are more ambiguous: thus, resilience sometimes appears as an objective, measurable property of ecosystems (or coupled socioecological systems), but in policy discourse it typically embodies a variety of normative assumptions (Olsson et al. 2015).

Environmental concepts also vary in their range of application. Some concepts are confined to a single policy subsphere (a fragment of the whole environmental policy terrain), while others have broad applicability. Thus, *carbon offset* denotes a compensatory GHG emissions reduction, and while offsets can be achieved in different ways (forestry, renewable energy projects, etc.), the idea is essentially part of the climate change policy subfield. On the other hand, the precautionary principle can be applied across a range of issue areas including chemicals management, resource-harvesting quotas, and climate change. There are also differences with respect to *the forms of social communication* in which different concepts are invoked. Pollution appears in all sorts of contexts from newspaper articles to expert reports, from cabinet memorandums to stakeholder consultations. But *decoupling* (of environmental impacts from economic growth) is largely confined to specialized policy documents and expert interactions.

Finally, these concepts differ in *the extent to which they are integrated into official policy argument and practice*. And this is closely related to the forms of institutional embedding discussed in chapter 1. So while an idea like *critical loads* is deeply intertwined with the scientific and policy decision processes in the Long-range Transboundary Air Pollution regime, the notion of *rewilding* (roughly, returning natural landscapes toward a wider state, often with the reintroduction of large, carnivorous species) currently has only a marginal purchase on conservation practices.

One way to illustrate these distinctions is to consider some of the issue areas into which the environmental policy field is typically divided. The waste area provides a good example, and a selection of the concepts related to this theme is presented in table 2.4. Some of these describe types of waste, which can be classed by origin (*construction waste*, *domestic waste*, and *municipal waste*) or particular characteristics (*toxic waste* and *radioactive waste*). Others relate to the handling or disposal of that waste: *composting*, *gasification*, and *landfill*. There are more general approaches or strategies for waste management: *recycle*, *reuse*, and *waste minimization*. There are analytic concepts that can be deployed to assess management options: *waste streams* and *life cycle analysis*. There are visions that suggest a comprehensive solution to waste issues: *cradle to cradle*, *circular economy*, and *zero-waste society*. And there are broad principles for dealing with environmental problems that find specific application in the waste area, such as the precautionary principle, polluter pays principle, or resource efficiency.

Table 2.4

Selected Concepts Associated with the Waste Issue Area

Anaerobic digestion	Industrial waste	Recycling society
Biodegradable	Landfill	Resource efficiency
Circular economy	Life cycle analysis	Resource recovery
Composting	Medical waste	Reuse
Construction waste	Mine waste	Sewage
Cradle to cradle	Municipal waste	Solid waste
Deposit return	Nuclear waste	Take-Back Scheme
Domestic waste	Packaging waste	Throwaway society
Ecoefficiency	Plastic waste	Toxic waste
Electronic waste	Polluter pays principle	Waste hierarchy
Energy from waste	Postconsumer waste	Waste management
Extended producer responsibility	Precautionary principle	Waste minimization
Hazardous waste	Product stewardship	Waste repository
Incineration	Radioactive waste	Waste streams
Industrial ecology	Recycling	Zero-waste society

An important organizing principle within the waste policy area is provided by the idea of a *waste hierarchy* that *ties together a series of other concepts* and suggests an appropriate lexical ordering of waste management approaches. When dealing with waste, the preferred option is to reduce, followed by reuse and recycle, then recovery (of materials or energy), and finally disposal. Underlying the approach is a notion of efficiency along with minimizing the waste of energy and raw materials. Thus, the waste hierarchy also links upward to wider ideas of environmental or resource efficiency.

If one takes *energy* as an environmental issue area, a similarly large array of concepts could be enumerated, relating to energy technologies and their use, environmental problems associated with energy production and consumption, and management approaches and policy measures. The energy and waste areas overlap: thus, energy is a consideration in the waste hierarchy, and waste management is of critical concern in the energy economy (consider radioactive waste associated with nuclear power or bottom ash from coal-fired power generation). On the other hand, the waste policy area is not reducible to energy and the energy/environment nexus is much broader than waste, so there are many distinct ideas in each field.

The energy/environment issue area provides an illustration of how alternative concepts can be used to influence problem framing. Consider the six different solution concepts presented in table 2.5, highlighting varied ways of understanding problems and solutions in the energy/environment domain. Each of these terms—alternative, clean, green, low carbon, renewable, and sustainable—is intended to evoke a positive resonance, but their implications may be quite different.

The widest and most rapidly expanding issue area in contemporary environmental policy is the climate change domain. The global and long-term nature of the problem, the centrality of fossil-fuel combustion and land use change to economic development, linkages to key sectors (such as industry,

Table 2.5
Six Ways of Characterizing Solutions to Energy/Environment Problems

Alternative energy	Alternative to dominant or mainstream energy. It can have the connotation of small scale and decentralized energy, but what is an "alternative" in a given context depends on what is incumbent.
Clean energy	A contrast to "dirty" energy. Coal is the principal target here, and the expression has been used by proponents of natural gas or nuclear. Of course, for some nuclear is also dirty, and gas releases carbon dioxide. Wind and solar can certainly claim to be clean, but their advocates usually emphasize their renewable character. There is also "clean coal," although it is not clear which technologies could actually deliver it.
Green energy	Energy that is kind to the environment. It is most obviously applied to new renewables (wind, solar, wave, etc.), but because of the ambiguity of "green," can be applied more broadly.
Low-carbon energy	Energy that does not release carbon dioxide (or GHGs more generally), and hence, it can include nuclear and carbon capture and storage–equipped fossil energy.
Renewable energy	Energy that is derived from natural flows that are continuously replenished, such as hydro, wind, wave, tidal, solar, and biomass.
Sustainable energy	Energy that contributes to sustainable development. Many sources can be justified, provided production and consumption furthers a sustainable societal development trajectory. Alternatively, energy produced from sources that can be sustained indefinitely, in which case it approaches renewable energy.

transport, and agriculture), and potential impacts on an array of other environmental and social problems contribute to the expansive nature of this field. A small selection of concepts from this issue area is presented in table 2.6 below.

This suggests some of the ways concepts link into political controversy. Most concepts appear as relatively neutral descriptors; consider, for example, *sea level rise*. The concept is anchored in a scientific understanding of natural processes (involving the thermal expansion of the oceans and locking up of less of the earth's water in the cryosphere), and its core meaning is relatively straightforward. Scientists may argue about how fast and how far the sea level will rise, given a particular atmospheric concentration of GHGs. In the policy world, this gives rise to disputes about how concerned societies should be about sea level rise and what should be done. For those unwilling to confront the risks of human-induced climate change, the answer may be to avoid talking about it at all—witness the North Carolina legislature's 2012 law forbidding state agencies from including anticipated (climate change–induced) sea level rise in state maps used for coastal planning. The idea of a *carbon tax* (a policy instrument involving a charge on GHG emissions) is also relatively straightforward. This time the meaning can be anchored in economics (or law, when legislation is adopted). But there is endless potential for argument about whether such a tax is desirable

Table 2.6
Selected Concepts Related to the Issue Area of Climate Change

Adaptation	Common but differentiated responsibilities	Greenhouse gas
Carbon budget	Consumption emissions	Intergenerational justice
Carbon capture and storage	Contract and converge	Land use change
Carbon dioxide equivalent	Dangerous climate change	National GHG inventories
Carbon divestment	Deforestation	Negative carbon emissions
Carbon emissions	Emissions scenarios	Offsets
Carbon leakage	Emissions trading	Production emissions
Carbon sinks	Energy efficiency	Reforestation
Carbon tax	Extreme weather events	Renewable energy
Climate emergency	Fossil energy	Sea level rise
Climate equity	Fugitive emissions	Sufficiency
Climate mitigation	Geoengineering	Two-degree climate target
Climate refugees	Global warming	

or undesirable, whether it should be imposed upstream or downstream, what should be done with the revenues, and so on. The *2-degree climate target* has a basis in scientific assessments. But it is an explicitly political goal, which commanded formal international agreement, although the 2015 Paris climate summit has now floated a still more ambitious 1.5-degree target (while sidestepping the tortuous nature of the emissions trajectories that could actually deliver such an outcome). *Geoengineering* gives rise to disputes over what the concept actually covers (have we already been conducting geoengineering since the dawn of the fossil-fueled era, or at least since we understood the implications of GHG emissions?), whether societies should contemplate *solar radiation management* or *carbon removal* projects, or even pursue research into these alternatives.

To this point the discussion has stressed the variety of environmental concepts, while pointing simultaneously to certain patterns of affinity. There are the broad families of concepts defined by conjoined terms that employ the same core term (environmental, sustainable, carbon, etc.). As we saw with the waste and energy examples discussed above, there are also clusters of concepts defined by relevance to a particular subfield or issue that contain both topic-specific concepts as well as particular applications of more general concepts. Another form of linkage involves logical ties among concepts. In some cases, one concept is logically entwined with another. Thus, when resilience is invoked as a property of *ecological systems* or *socioecological systems*, the understanding of such systems becomes critical to making the idea of resilience intelligible. Or consider the waste hierarchy mentioned above: the idea only makes sense in relation to the series of approaches to handling waste that it orders. In other instances, concepts can be understood as related to some underlying integrative idea. The notion of *environmental limits* provides a good illustration here, as concepts such as limits to growth, maximum sustainable yield, ecological footprint, critical loads, or planetary boundaries can all be presented as embodying the idea that there is a limit to the burdens humans can place on natural systems without causing damage with significant repercussions.

Critical Organizing Concepts

So far we have explored the variety of environmental policy concepts, identified particular patterns of affinity, and noted some of the ways new

expressions are generated. At this point it is important to emphasize that certain environmental policy concepts play a particularly important role in structuring discourse and practice, in shaping the policy field and serving as a focus for reflection, analysis, controversy, and action. Such ideas form critical interconnections, assuming an influential role in specific patterns of discursive and practical intervention, and tying together various areas, themes, and actors. These may be concepts that identify critical problems or solutions, explicitly or implicitly linking the two, and marking out a sphere of influence over other ideas and practices. Such concepts often have clear normative content (like sustainable development or the precautionary principle); they may bridge science and policy (consider adaptive management or critical loads), and/or operate at a higher aggregative level (pollution or the green economy). Frequently they are among the most internally complex and externally interlinked ideas. These concepts typically serve as focal points for explicit contestation. Such contestation may involve open argument about the meaning of the concept, its value as an analytic category, and its biases and blind spots. But concepts that have achieved substantial institutional embedding may ultimately become so integrated into the everyday landscape of policy argument that they are more or less taken for granted, even if they continue to structure and focus controversy over policy implications.

There is no closed list of such critical concepts. And to some extent it is a question of degree rather than of absolutes. Different concepts may come to the fore in relation to specific issue areas, discursive contexts, and moments in time. Basic properties of a concept (its bearing, scope, internal complexity, and external linkages) influence its potential to play such a role. But whether or not it actually comes to do so depends on ideational and practical developments as well as the political and policy interactions among actors pursing diverse goals. In other words, such concepts do not acquire such a role merely because they are logically satisfying, but because they serve an important purpose in discursive interactions.

When considering the environmental domain, it is convenient to distinguish several categories of such organizing concepts. First, there are what can be described as *meta-concepts*: these are the overarching ideas that offer structure to the entire environmental domain. So far two concepts unambiguously play such a role. On the one hand, there is the environment, which defines this policy domain and distinguishes it from other areas

of policy concern. On the other hand, there is sustainable development or sustainability, which provide an image of a social development trajectory where key environmental problems threatening continued human flourishing (even existence) can be addressed. Sustainability looks beyond environmental policy narrowly conceived to link up with broader issues of economic and social welfare. Each of these metaconcepts is given more detailed treatment later in this volume (chapters 3 and 4).

Second, there are *problem or issue concepts* that identify key topics for policy attention. In the early decades of the modern environmental era, pollution was the most important such concept, and the "war on pollution" legitimized the institutionalization of environmental policy as a distinct realm. Acid rain and ozone depletion were later important in articulating the international dimensions of environmental threats, while today climate change and biodiversity (loss) are the most sweeping environmental problem concepts.

Third, there are *mesolevel analytic or management concepts* that deal with particular dimensions of policy, offer alternative lens to structure understanding, or indicate principles that should be applied when dealing with environmental problems. This is where ideas such as environmental policy integration, environmental security, ecosystem services, or the precautionary principle fit in. Many of these concepts are less well known outside expert circles and policy communities. Thus, the concept of common but differentiated responsibilities is rarely found in the mass media, even when the press covers debates about the burdens that richer and poorer states should be willing to assume to abate GHG emissions. Yet the concept plays a crucial part in structuring argument in international forums attempting to address climate change. Concepts in this group tend to be somewhat more abstract than the problem concepts referred to above or the more instrumental concepts considered next. Box 2.1 illustrates a selection of mesolevel analytic or management concepts. A number of others are subject to analysis in the chapters in this volume.

Finally, there are concepts denoting core *policy approaches and instruments* that are expected to bear the burden of managing environmental problems. Examples here include environmental regulation, environmental assessment, emission and effluent trading, or feed-in tariffs. These can become the focus of ongoing political and policy battles. Consider the continuing arguments about the effectiveness and design of carbon pricing

Box 2.1
Selected Mesolevel Analytic or Management Concepts

Polluter Pays Principle

The costs of preventing pollution should be borne by the polluter, although there may be exceptions or special circumstances, especially during a transitional period. Championed by the OECD, in part to discourage national subsidies that would interfere with trade, it remains a staple of major environmental declarations. It is consistent with encouraging the "internalization of externalities." It is often interpreted to mean that the consumer pays (as the ultimate polluter). In practice, governments may support polluting industries (to keep them competitive) by subsidizing the acquisition of remediation technology or assuming ultimate liability (for example, cleaning up toxic sites once underregulated companies have ceased operations). So the taxpayer pays (O'Connor 1997).

Balancing Economy, Environment, and Society: The Three Pillars of Sustainability

Decision makers should balance economic, environmental, and social considerations when developing policies, plans, programs, and projects. What this balancing actually entails, and how much one element can be sacrificed if gains are made on the others, remains an issue of debate. According to critics, environmental goals are typically sacrificed to economic and social objectives. Some contend sustainable development is about solutions that advance all these objectives simultaneously and not trading one off against the others (Robinson 2004; Meadowcroft 2013).

Environmental Policy Integration

Environmental protection is a task of the whole government. It should be integrated into key sector ministries (transport, agriculture, energy production, manufacturing, etc.) and considered at all levels (local, regional, and national). By integrating environmental consideration early in the decision cycle, a more sustainable development trajectory can be secured. Such integration is compatible with a sector-based environmental policy and emphasizes engagement with relevant stakeholders. Yet academic studies suggest that environmental policy integration is often more symbolic than real and sometimes results in the recapture of environmental policy by sectoral interests (Jordan and Lenschow 2010).

Box 2.1 (continued)
Precautionary Approach/Principle

When confronted with potential threats of serious or irreversible damage to
the environment, appropriate measures should be taken to mitigate risks even
in the absence of definitive scientific evidence of harm. The precautionary
approach or principle has been invoked in various international environ-
mental agreements, including the 1992 Rio Declaration on Environment and
Development. It has been applied to areas such as chemical release, species
extinction, the release of genetically modified organisms, and climate change.
There are continuing arguments over the evidence of potential harm required
for its invocation, the extent to which the "burden of proof" should be shifted
to those proposing a novel activity, and the degree to which cost-benefit cal-
culus should be applied. Environmentalists sometimes talk about inadequate
or inconsistent application, while critics contend it can slow technologi-
cal innovation that can provide societal benefits, including environmental
benefits (O'Riordan and Cameron 1994).

Common but Differentiated Responsibilities

States share a responsibility to address global environmental issues, but
contributions should take account of different responsibilities for generating
environmental pressures and capacities to address them. This norm has been
incorporated into international agreements including the 1992 Rio Decla-
ration and UN Framework Convention on Climate Change where the rich,
developed parties accepted greater responsibility for historic GHG emissions
and the capacity to take action (including to assist developing countries).
While generally accepted as an equity principle of international law, in prac-
tice arguments revolve around the degree of action and assistance required by
different parties in particular contexts.

Ecosystem Services

The concept tracks essential contributions that natural systems make to
human welfare. These contributions are often understood to comprise *support-
ing services*, *provisioning services*, *regulating services*, and *cultural services*. An eco-
nomic value of such services can be established by a variety of techniques, and
incorporated in the system of national accounts or used to underpin *payment
for ecosystem services*. Critics contend that the approach neglects noninstru-
mental reasons for appreciating nature, and suggest that such schemes may
have negative consequences for social equity and undermine nonmonetary
motivations for environmentally friendly behavior (Primmer et al. 2015; Kull
et al. 2015).

mechanisms such as the EU Emissions Trading System. But even when such approaches become settled routines and attract less attention in high-level debate (consider environmental assessment), their continued implementation structures the policy landscape and impacts future policy choice.

Needless to say, these categories are not mutually exclusive. Biodiversity, for example, can be understood as an analytic and management construct as well as a problem-defining concept. And there is plenty of room for debate about whether a specific concept actually assumes the roles identified here. There is variation among national contexts and international forums, so that a concept may have salience in one venue that it lacks elsewhere. And the situation is dynamic. Resilience is an idea that has come into policy prominence on both sides of the Atlantic over the past decade. It has strong champions (Folke 2006), yet also critics (Olsson et al. 2015). But just how important has it become for contemporary policy argument? Clearly there are many concepts that have the potential to assume an important role, but have yet to acquire adequate institutional support. Thus, the notion of a circular economy has elicited discussion among specialists and activists, and is now being pursed in EU structures. Yet one would hesitate to class it among the most established mesolevel -analytic and management concepts.

In this regard, it is important to underscore again the extent to which the relative penetration and dominant interpretation of these organizing concepts results from political struggle. Conceptual entrepreneurs—individuals (politicians, scientists, and public figures) or organizations (research institutes, blue-ribbon panels, national environment agencies, and international organizations such as the UNEP or OECD)—actively promote innovative ideas that articulate specific values, interpretations, and interests. And to the extent that these take root in particular manifestations, they shape subsequent rounds of interaction. Just as physical infrastructure shapes future policy debate, so too does conceptual "infrastructure" (particular understandings of concepts embedded in institutions, programs, foundational documents, laws, etc.). As we will see in chapter 4, for example, the idea of sustainable development articulated by northern governments often strips the concept of its intragenerational equity dimension, collapsing it back to something like "improved quality of life." And in chapter 5, we will learn that it was a tamer and more circumscribed conception of environmental assessment that ultimately became established in the policy world.

The notion of planetary boundaries provides an instance of such a struggle unfolding in the 2010s. The concept posits critical thresholds related to nine key environmental pressures that human societies must not cross if they are to continue to enjoy the relatively benign circumstances in which human civilization flourished over the past ten thousand years. For some, the idea (and related notions such as *safe operating space*) supplies a scientific foundation for political judgments about the management of global environmental issues (Rockström et al. 2009). For others, the idea is conceptually muddled (confusing different forms of boundary) or even represents a misguided attempt to introduce neo-Malthusian biases into policy process (Nordhaus et al. 2012). It achieved some recognition in *Living Well, within the Limits of Our Planet* (European Commission 2013), but failed to win a place in the UN's *Sustainable Development Goals* (UN Department of Economic and Social Affairs 2015).

Evolution of the Conceptual Field

Reference has already been made to the emergence or eclipse of individual concepts as well as the changing conceptual repertoire of environmental policy. The final section of this chapter will examine broad developments over the decades since modern environmental policy emerged at the end of the 1960s.

One way to introduce movement over time is to consider the relative uptake of individual concepts. Figures 2.1a–b and 2.2a–b present data on the frequency with which eight selected concepts appeared in two printed sources: the *OECD Observer* and the EU Environmental Action Programs (EAPs). Issued by the OECD, the *Observer* provides news of the organization's activities and has a continuous publication record over the period with which we are concerned. The EAPs are official documents establishing the European Union's environmental priorities and have been issued since 1973.

Pollution, sustainable development, biodiversity, and climate change are tracked in figures 2.1a–b. The OECD data show the proportion of articles in the environment-related coverage where the specified concept appeared, while the EAP data show frequency of usage in each of the seven EAPs. Thus, between 1963 and 1995, pollution typically appeared in more than half the environment-related articles in the *OECD Observer* (tabulated in multiyear
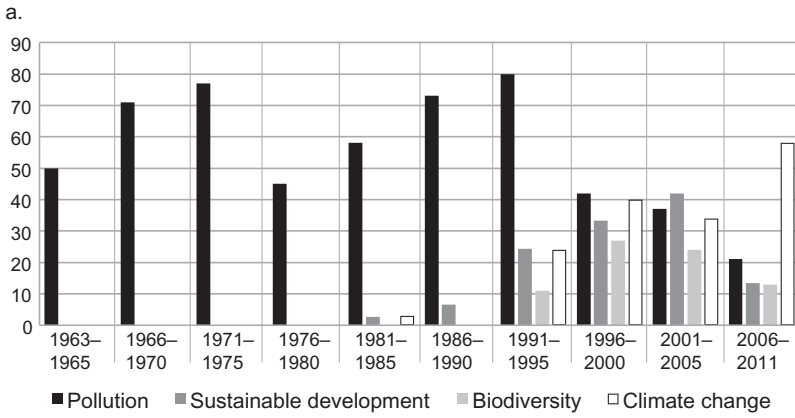
a.

Figure 2.1a
Proportion of articles dealing with environmental themes in the *OECD Observer* in which pollution, sustainable development, biodiversity, and climate change appeared at least once.
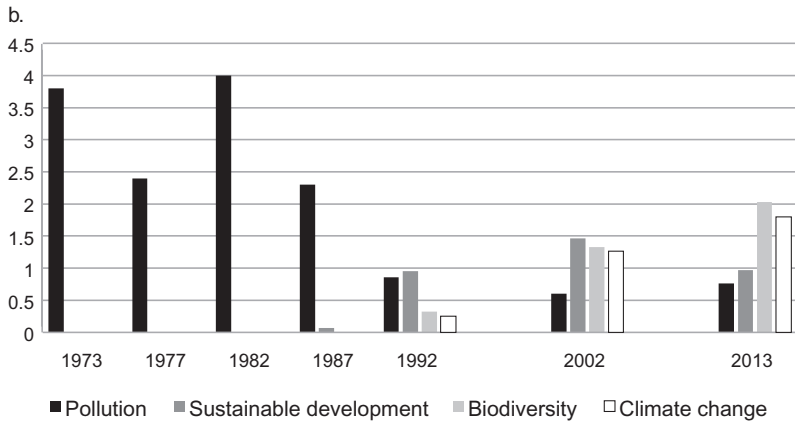
b.

Figure 2.1b
Appearance (per page) of the concepts pollution, sustainable development, biodiversity, and climate change in the seven EU Environmental Action Programs.
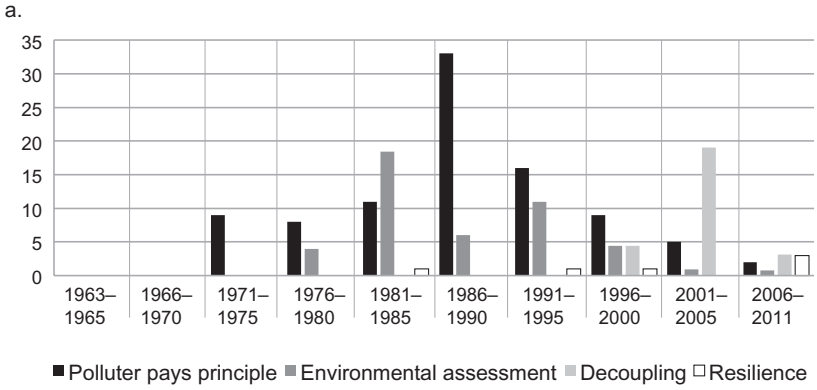
a.

Figure 2.2a

Proportion of articles dealing with environmental themes in the *OECD Observer* in which polluter pays principle, environmental assessment, decoupling, and resilience appeared at least once.
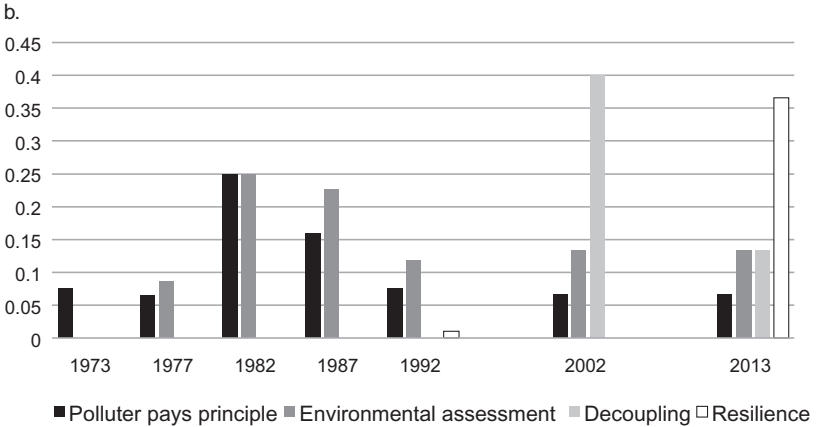
b.

Figure 2.2b

Appearance (per page) of the concepts polluter pays principle, environmental assessment, decoupling, and resilience in the seven EU Environmental Action Programs.

periods) with rates of 75 percent in the early 1970s and early 1990s. This concept was similarly prominent in the EAPS in the 1970s and 1980s, averaging 2.5 to 4 appearances a page. In both sets of documents, the relative prominence of pollution declined over the course of the 1990s and beyond (down to just 20 percent of *OECD Observer* articles in the late 2000s, and less than one reference per page in the seventh EAP). In both sets of documents, sustainable development gained prominence after the late 1980s, with a peak in the early 2000s. Biodiversity received attention from the early 1990s on; although this continued to rise in the EAPs, it seemed to decline in the *Observer*. Climate change first appeared in the *OECD Observer* in the early 1980s, but grew in prominence in both publications from the early 1990s on. Similar data for the concepts of the polluter pays principle, environmental assessment (or impact assessment), decoupling (of economic growth from environmental impacts), and resilience are presented in figures 2.2a–b. They show interest in the polluter pays principle and environmental assessment rose and then fell over time. Decoupling peaked in the early 2000s, while resilience seemed to be receiving more attention at the end of the period.

One must take care when interpreting these sorts of data. Inevitably, the counts reflect institutional biases associated with the OECD and the European Union, as well as the character of these specific publications. Moreover, the nature of the *Observer* and EAPs changed over time. It is most convincing with respect to the first arrival of concepts within OECD- or EU-level debate. Pollution was already established as a policy problem before the modern environmental era; environmental assessment enters the intergovernmental world from the late 1970s (though it originated in the United States almost decade earlier); biodiversity takes off in the early 1990s; and so on. The changing frequencies may also say something about the ideas and problem areas that are viewed as most salient at a given point in time. A decline in reference to the concept could indicate that the idea has fallen out of favor. But it might simply be a consequence of the increased attention given to other issues and concepts. And it may signal that an idea has been incorporated into policy routines and no longer garners the attention of intergovernmental bodies. Environmental assessment is probably an example of this last phenomenon. The proportion of articles in which it appeared dropped off from the mid-1990s, yet we know that in practice, such assessments continue to be performed in huge

numbers around the world. Thus, the concept remains important in the environmental policy domain, even if it no longer occupies much attention in high-level discussions at the OECD or European Union. Decoupling, in contrast, is probably an illustration of the first process: the OECD actively promoted decoupling at the turn of the millennium, featuring it in the *OECD Environmental Strategy for the First Decade of the 21st Century* (OECD 2001). But the idea did not catch on readily in national and international policy circles, and its appearance dropped off as the new century advanced. Although the polluter pays principle continues to be cited in major environmental declarations, it seems to be playing a diminishing role in practical policy discussion.

Finally, let us consider the evolution of the field as a whole. Prior to the 1960s, *environmental policy* did not exist as a distinct domain. Only with the emergence of the modern concept of the environment (discussed in more detail in chapter 3) did the constitution of such a sphere of government activity make sense. Figure 2.3 offers a graphic representation of the way in which environmental policy emerged through a reconceptualization of the policy world, partially absorbing areas that previously had been defined in different terms.

To capture key developments over the following decades, we will offer three idealized portraits of the conceptual architecture of environment policy spaced at twenty-year intervals. These are not intended to be exhaustive but rather to capture important elements of relatively high-level policy argument, particularly as manifest in leading industrial states and international policy institutions such as the OECD and European Union.

By the early 1970s, environmental policy had emerged as a distinct area of national government activity with dedicated ministries or agencies, framework laws and regulations, and an increasing level of international coordination. Environment was the key metacategory that anchored the field. The reference was often to "man's environment" or "the human environment." The explicit goal was the "protection and improvement of the environment," which included both "natural" and "man-made" dimensions. Pollution, understood as the release of noxious substances harmful to humans and the environment, appeared as the main problem category. Pollution was already an established concept, with existing regulatory and institutional anchors in leading jurisdictions. But its control and prevention were catapulted to national political attention, to be monitored and
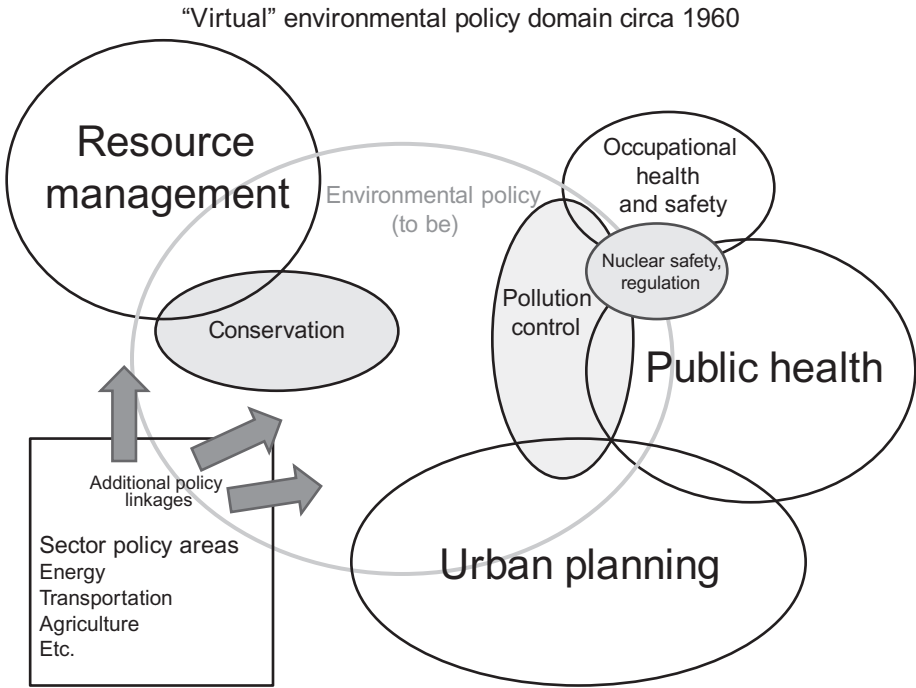
"Virtual" environmental policy domain circa 1960

Figure 2.3
The emergence of the environmental policy domain.

controlled by central bureaucracies (Enloe 1975). There were four main pollution-related issue areas: air pollution, water pollution, chemicals, and waste. The concern was with risks to human health, living conditions, quality of life, and property as well as to wildlife and ecological systems. Other problems were defined by the urban environment, threats to the country-side, wildlife and endangered species, and the overexploitation of resources. *Conservation* was an established management concept. Ideas imported from general policy debates included planning and rational policy design as well as the careful estimate of costs and benefits. The polluter pays principle was an early mesolevel management concept promoted by the OECD. (For a summary of the conceptual field in the early 1970s, see table 2.7.)

At this point, pollution and other environmental damage was understood as an undesirable side effect of industrialization, economic growth, human expansion, urbanization, and growing technological capacities (Jänicke and Weidner 1997; Hanf and Jansen 1998). There was also some

Table 2.7
Developments in the Conceptual Field of Environmental Policy by the Early 1970s

Metaconcepts	*Mesolevel analytic and management concepts*
Environment	Polluter pays principle
Core problem or issue concepts	*Policy approaches and instruments*
Pollution	Environmental regulations, standards
Air pollution	Environmental planning
Water pollution	Environmental cost and benefit assessment
Chemicals	
Waste	*Concepts invoked in wider policy argument*
Urban environment	Limits to growth, environmental crisis, ecology,
Nature protection, conservation	ecological balance, overpopulation, resource scarcity, environmentalism

concern with *resource scarcity*, especially in relation to water, energy, and minerals. And there were worries about the costs of pollution control and, particularly from international bodies such as the OECD, the potential adverse impacts of regulation on international trade. More critical or challenging ideas such as "limits to growth," "ecological crisis," and "population control" were often invoked by societal actors in broader public debate.

Two decades later, by the early 1990s, the environmental policy domain was firmly established in developed countries. There was a general appreciation in government that environmental problems, and continuing argument over what to do about them, had become a permanent fixture of political life (Durant et al. 2004). Despite regulatory progress, the range of problems continued to expand, and the existing suite of policy measures was often perceived to be ineffective and/or was the object of increased resistance from business. Following the publication of the Brundtland Report in 1987, sustainable development emerged as a second overarching metaconcept. Pressing environmental issues had come to include acid rain, ozone depletion, *tropical deforestation*, and *nonpoint source water pollution*. And climate change and biodiversity marked out two new domains of truly global significance. From the mid-1980s, increased emphasis had been paid to anticipating and preventing environmental problems. It was argued that "pollution prevention pays," and tighter regulation could encourage innovation and competitive advantage. By the early 1990s, a series of innovative

mesolevel analytic and managements concepts had been brought forward, including the precautionary approach, environmental policy integration, three pillars of sustainable development (balancing environmental, economic, and social goals), and common but differentiated responsibilities. The notion of critical loads had helped unblock negotiations over the regulation of long-range, transboundary air pollution. Attention was also focused on diversifying the portfolio of policy instruments, and *negotiated instruments*, *market-based instruments* or *economic instruments*, and *environmental information* rose in prominence (Jordan et al. 2003; Fiorino 2006).

Environmental assessment was increasingly integrated into planning and decision routines across the developed world. And more emphasis was placed on involving societal stakeholders in environmental policy making and implementation processes. (See table 2.8.)

By the early 2010s, twenty years after the Rio Earth Summit, and following a deep recession, global environmental problems appeared more persistent than ever. The *green economy* was launched by several international organizations as an additional overall framing concept, although its ability to maintain this status over the long haul remains to be established. Climate change emerged strongly as *the overarching environmental policy problem*—understood as the issue with the largest potential to provoke long-term socioeconomic and political disruption, and exacerbate other environmental problems (such as biodiversity loss). *Adaptation* was attracting more attention as the impacts of climate change became increasingly evident. Energy had returned as an important environmental issue area with discussion of renewable energy, energy efficiency, and low-carbon energy. Mesolevel analytic and management ideas broadened further with more attention given to concepts such as resilience, ecosystem services, natural capital, low-carbon development, and enhanced resource efficiency.

The increasing significance of the climate change problem area and its reframing in more transformative terms became evident as the 2010s advanced. As the discussion of solutions began to move from incremental emission reductions to the elimination of GHG emissions and phase out of fossil energy dependence, innovative concepts such as *carbon budgets*, *unburnable carbon*, and *carbon divestment* started to acquire political salience. The underlying idea of limits implicit in much environmental policy debate was made increasing explicit with the two-degree climate target, along with the emergence of novel concepts such as planetary boundaries or *the*

Table 2.8

Developments in the Conceptual Field of Environmental Policy by the Early 1990s

Metaconcepts	*Mesolevel analytic and management concepts*
Environment	Environmental risk
Sustainable development, sustainability	Precautionary approach/principle
	Three pillars of sustainability: balancing economy, environment, society
Core problem or issue concepts	
Acid rain	Common but differentiated responsibilities
Ozone depletion	Critical loads
Pollution	Environmental policy integration
Climate change	Integrated pollution control
Biodiversity	Adaptive management
	Intergenerational equity
	Policy approaches and instruments
	Environmental assessment
	Market-based environmental policy instruments
	Environmental management systems
	Environmental audit
	Environmental indicators, sustainability indicators
	State of the environment reporting
	Sustainable development plans and strategies
	Ecolabeling
	Concepts invoked in wider policy debate
	Ecoefficiency, triple bottom line

Anthropocene (which posits a fundamentally altered relationship between human kind and planetary processes). Another consequence has been to strengthen the link between environmental issues and core governmental concerns with economic development welfare and security (Meadowcroft 2012; Duit et al. 2016). (See table 2.9.)

What do these idealized snapshots suggest about the overall evolution of the conceptual landscape of environmental policy? First and most obviously, the field has become broader and more complex: as decades pass, there are more concepts relating to more issues and a wider portfolio of policy response. For the most part, new ideas have simply been added on

Table 2.9
Elements of the Conceptual Field of Environmental Policy by the Early 2010s

Metaconcepts	*Mesolevel analytic and management concepts*
Environment	Resilience
Sustainable development, sustainability	Ecosystem services
(Green economy?)	Natural capital
	Low-carbon society, economy, transition, development
Core problem or issue concepts	Environmental security
Climate change	Environmental equity, environmental justice
Biodiversity and nature conservation	Sustainable production and/or consumption
Renewable energy, energy efficiency	
Pollution	*Policy approaches and instruments*
	Environmental information
	Life cycle analysis
	Carbon pricing
	Emissions trading
	Green procurement, sustainable procurement
	Feed-in tariffs, renewable portfolio standards
	Carbon budgets
	Concepts invoked in wider policy debate
	Decoupling, the Anthropocene, planetary boundaries, circular economy, climate crisis, climate justice, climate refugees, degrowth

top of older concepts, with older ideas continuing to play a role in everyday argument and policy implementation even if newer ideas often predominate in higher-level discussion.

Second, the field appears to reflect the increasing societal entanglement of environmental problems: concepts increasingly relate to issues at multiple scales (local, regional, national, international, and global) and implicate diverse economic sectors (resource extraction, agriculture, manufacturing, transport, retail, finance, and trade). Environmental concepts bridge into a wider range of societal domains (economy, employment, welfare policy, security, households, and so on), reflecting an understanding that problems and solutions are both interlocked with broader societal practices. For example, sustainable development and green economy link

environment, economy, and equity; *integration* explicitly posits a drawing together of environment and sector decision making; resilience is about socioecological interdependence (embracing economic and social structures as well as environmental performance); and *sustainable consumption* potentially challenges existing ways of living, not just existing techniques of production.

Third and in a related sense, the conceptual field seems to reflect a widening appreciation of the scale of social adjustment (and associated policy interventions) required to come to terms with environmental problems. This is most clear with respect to climate change, where *mitigation* and *GHG emissions reductions* are increasingly accompanied by discussion of a *low-carbon society*, the *transition to a low-carbon economy*, *energy transitions*, and *climate adaptation*. But it is also evident in concepts such the green economy (offering an image of a revamped economic system that respects ecological limits) or ecosystem services (which provides a framework to conceptualize the overall dependence of human societies on environmental systems). And yet each of these concepts is contested, and one of the main areas of contention is precisely what the idea really implies about the depth and direction of the requisite transformation of existing institutions. Needless to say, the increasing prominence of concepts that point toward a more profound transformation of existing institutions and practices does *not* imply that policies have actually been put in place to realize such a transformation, or even that ideas that acquire increased salience in the environmental policy field hold sway across the governmental apparatus as a whole.

Fourth, environmental policy concepts have been marked by the broader political and economic contexts in which they have emerged. Interest in *voluntary instruments* as well as market-based ones since the early 1990s reflected the general mood of increased skepticism toward the state and a renewed faith in markets, although of course measures such as emissions trading were in fact predicated on a critique of *market failure* (i.e., a failure to internalize environmental externalities) and could only be implemented through government action. And the turn toward a wider portfolio of instruments also followed from an appreciation within the environmental policy realm that the growing complexity of environmental issues required more diversified instruments and greater engagement with social actors, rather than simply an endless expansion of the regulatory rule book. *Globalization*

was another major feature shaping conceptual development, particularly from the later 1990s. Moreover, in this discussion we have concentrated on environmental concepts, but in policy argument such concepts are always interwoven with other, more general political and policy ideas (for example, *new public management*, *evidence-based policy making*, *value for money*, *austerity*, and so on). This more general climate influences which environmental concepts gain traction and how they are interpreted.

Finally, although the conceptual field has seen truly remarkable change, there has also been substantial continuity. With institutional embedding—especially in organizational and legal form—important environmental policy concepts endure over decades. Furthermore, many ideas that later came to acquire great salience (for instance, *integrating policy* or applying economic instruments) were already present in embryo in the earliest international policy discussions of the late 1960s and 1970s. And yet other ideas with equally deep roots (such as the problematization of *population*, *consumption*, and *growth*) have consistently remained at the margin of official environmental policy discourse.

This chapter has offered an overview of concepts invoked in environmental policy argument and analyzed key developments in the evolution of the general conceptual field. The discussion has illustrated how new ideas have captured attention in the environmental policy arena, and has provided examples of the ways in which innovative concepts have identified new issues and reframed arguments. So far, however, not much has been said about how new ideas actually come to the fore, achieve institutional embedding, and evolve over time as different understandings compete. We have not focused on the struggles among and implications of different understandings of these concepts. Nor has their practical impact on policy outputs and outcomes been closely examined. Tracing these dimensions requires a much more detailed examination of the career of individual concepts. And this is the challenge that will be taken up in the following chapters.

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