9

Policy Integration

HENS RUNHAAR, BETTINA WILK, PETER DRIESSEN, NIALL DUNPHY, ÅSA PERSSON, JAMES MEADOWCROFT AND GERARD MULLALLY

Environmental policy integration is the incorporation of environmental concerns and objectives into non-environmental policy areas, such as energy, transport and agriculture, as opposed to pursuing such objectives through purely environmental policy practices (Persson et al. 2018). Environmental policy integration has been firmly embedded in policy practice. Since 1997, for example, environmental policy integration is a requirement under the Treaty of the European Union, in which Article 6 states that 'environmental protection requirements must be integrated into the definition and implementation of the Community policies . . . in particular with a view to promoting sustainable development' (European Commission 2016). From a more instrumental perspective, environmental policy integration is promoted to overcome policy incoherence and institutional fragmentation (Chapter 8), address driving forces of environmental degradation and promote innovation and synergy (Runhaar, Driessen and Soer 2009).

In the last three decades, environmental policy integration has attracted much scholarly interest (Persson et al. 2018). This has led to a better conceptualization of environmental policy integration (e.g., Persson 2004), a better understanding of its normative foundations (e.g., Lafferty and Hovden 2003) and empirical studies of processes of environmental policy integration, instruments to promote it, barriers and enablers and the outcomes of environmental policy integration (e.g., Runhaar 2016). In this chapter we analyze recent research on environmental policy integration and assess how environmental policy integration has contributed to environmental protection in earth system governance. We first conceptualize environmental policy integration and then provide a meta-analysis of research findings.

Conceptualization

One of the first scientific publications about environmental policy integration is from Lafferty and Hovden (2003). They succinctly define it as the 'integration of

environmental concerns into other policy areas' (Lafferty and Hovden 2003: 1). However, Persson and colleagues (2018) observe that both practitioners and scholars have differently interpreted environmental policy integration, what it comprises and what it represents. For many, environmental policy integration is a principle, standard or norm to which the policy process should adhere. This is illustrated, for example, by Lafferty and Hovden's (2003) normative interpretation, in which environmental objectives have a 'principled priority' over other societal objectives. For others, environmental policy integration has a more positivist meaning and relates to the practice of integration in discourse and in everyday political and policy settings (Mullally and Dunphy 2015).

A distinction is often drawn between *weak* environmental policy integration as a procedural input and *strong* environmental policy integration, as it is reflected in policy outputs. Runhaar (2016) refers to these as reflecting 'procedural' and 'substantive' purposes of integration. Following Oberthür (2009), weak environmental policy integration implies that environmental objectives must be considered and weighed against other objectives in decision-making, but not necessarily that decisions reflect environmental objectives. On the other hand, strong environmental policy integration insists on 'principled priority' for environmental objectives in decision-making, which must be reflected in policy outputs. However, Knudsen and Lafferty (2016) clarify that the concept of principled priority, in the context of democratic structures, cannot imply absolute priority for environmental objectives. They argue that it implies a guarantee that 'every effort is made to assess the impacts of policies' and to minimize impacts that represent unacceptable risks.

Lafferty has advanced in several studies (e.g., Lafferty 2004) to look at the horizontal and vertical dimensions of integration to characterize environmental policy integration. Horizontal environmental policy integration involves the question of integrating environmental concerns across sectoral areas of responsibility within governments. Vertical environmental policy integration refers to the extent to which governmental sectors have taken on board and implemented environmental objectives in sectoral objectives.

Often environmental policy integration is also characterized by the *degree* of integration, ranging from small adjustments in sectoral policies to significant changes in policies and approaches to policymaking. Storbjörk and Isaksson (2014) and Persson and colleagues (2018), drawing on Lafferty and Hovden (2003), identify three levels of integration: (a) mere coordination of policies to prevent contradictions; (b) harmonization, which involves a larger degree of integration that gives environmental objectives equal consideration to sectoral objectives to promote synergies; and (c) prioritization, whereby sustainability is considered the overarching guiding principle and environmental objectives take precedence over others and are integrated in all stages of sectoral policymaking.

Furthermore, environmental policy integration is viewed by many as a process of governing, following Meadowcroft, Langhelle and Ruud (2012: 8), who suggest that 'sustainable development is above all about governance'. This perspective sees environmental policy integration as a process 'anchored in the political system' (Jordan and Lenschow 2010: 150). The process-centric perspective considers how the policy process is reorganized to integrate environmental objectives into sectoral policies. Mullally and Dunphy (2015) note that structural societal change emerges from the interplay of many socio-political and socio-technical factors, with many actors and resources all involved in shaping societal transformations. They note the need to coordinate the strategies of actors but also the importance of the concept of interlinkages to explain the relationship between autonomous international institutions (e.g., Oberthür 2009; see also Chapter 6) and that between functional domains or sectors (e.g., Hogl et al. 2012).

Other scholars, however, emphasize not the process but rather the *output* of integration. As Jordan and Lenschow (2010: 154) note, many environmentalists would 'argue that principles are only principles and process is only process; policy outcomes (that is, the influence of any environmental policy integration-related activity on the state of the environment) are what really matter'. This output-centric view is concerned with the degree to which the formal products of the policy process reflect environmental objectives, and how successful policy instruments are in improving the environment. As Adelle and Russel (2013) point out, however, measuring the effectiveness of environmental policy integration processes in terms of outcomes is no easy task.

As for the history of the concept, the 1992 United Nations Conference on Environment and Development (also known as the Rio 'Earth Summit') is often seen as the origin of environmental policy integration. Yet attempts at policy integration have a much longer history. Integration has been a core concern of national and urban planners for over a century. When the environment became a policy focus in the 1960s, the idea of integrating environmental considerations into mainstream decision-making was expressed in varied ways and in different institutional contexts. One of the first formal mechanisms to promote environmental policy integration was the adoption of 'environmental impact assessments', first in the US National Environmental Policy Act in 1969, which was followed by many other countries (Ortolano and Shepherd 1995). The 1987 Report of the Brundtland Commission, *Our Common Future*, not only elaborated the concept of 'sustainable development' – a high-level integrative norm that binds concerns of human welfare, environmental protection and equity between and within generations – but also focused on the concrete 'institutional challenge' that the major central economic and sectoral agencies of governments should be made directly responsible and fully accountable for ensuring that their policies, programmes and

budgets support development that is both ecologically and economically sustainable (World Commission on Environment and Development 1987: 13–14).

The principle of environmental policy integration has since diffused rather quickly. It was picked up early and systematically by the European Union, with the so-called Cardiff process in the mid-1990s that aimed at 'greening' sectoral policies and at gradually strengthening its legal foundation (Lenschow 2002). For example, Article 2 of the 2007 Lisbon Treaty states that the internal market of the European Union 'shall work for the sustainable development of Europe . . . and a high level of protection and improvement of the quality of the environment'. A number of countries in the European Union and beyond have adopted their own instruments and procedures to promote environmental policy integration (Jacob, Volkery and Lenschow 2008; Jordan and Lenschow 2008). Internationally, an Environmental Management Group was established in the United Nations system to integrate environmental objectives across agencies and programmes, and the principle informed the discussion on upgrading the United Nations Environment Programme to a world environment organization (Biermann, Davies and van der Grijp 2009). Research shows that, out of 50 non-environment intergovernmental organizations, by 2017 around half had incorporated the principle of environmental policy integration in their basic legal documents (Tosun and Peters 2018).

The *effect* of measures and procedures for environmental policy integration, however, has proven to be difficult to assess given a lack of robust comparative research. The literature suggests that while such measures can institutionalize concern for environmental objectives, priority-setting about other societal objectives shifts over time (Jordan, Schout and Unfried 2008; Dunlop et al. 2012). In a review of 30 OECD countries, Jacob and colleagues (2008) found an emphasis on soft and symbolic action for environmental policy integration, rather than operational structures that significantly alter administrative routines and power distribution among interests. In addition, studies emphasize the complexity of pursuing environmental policy integration in multilevel governance, when priorities, resources and capacity for promoting environmental objectives differ across levels (Goria, Sgobbi and Von Homeyer 2010; Söderberg 2011; Storbjörk and Isaksson 2014).

Furthermore, over the last 10–15 years alternative concepts have come up that relate to environmental policy integration in some way, both in public administration more generally (Tosun and Lang 2017) and in environmental policy more specifically. Such concepts often represent a more sector-specific type of environmental policy integration or have a particular coalition of actors behind them. In the world of development cooperation, 'environmental mainstreaming' has been used widely (Persson 2009). The OECD Development Assistance Committee launched in 2016 its Policy Coherence for Sustainable Development programme, which

seeks to align development, foreign and trade policies of donors and institutions. The concept of climate policy integration has received increasing attention since the 2000s (Mickwitz et al. 2009; Dupont and Oberthür 2012; Adelle and Russel 2013; van Asselt, Rayner and Persson 2015). Moreover, policy discourses around 'green growth', 'green economy', 'blue economy' and 'low-carbon development' have emerged with a view to promote synergies between environmental and economic objectives through win-win narratives. More examples are found in specific communities of practice, such as nature-based solutions in spatial planning, ecosystem-based adaptation in climate adaptation and eco-engineering in industrial policy.

More recently this integrative notion has been embodied in the 17 Sustainable Development Goals that the United Nations General Assembly adopted in 2015. Here, policy integration is seen as essential by not only governments but also civil society and academia (Stakeholder Forum 2016; International Council for Science 2017; Kanie and Biermann 2017). And, given their expressed focus on sustainable development, the goals represent an integration challenge par excellence. Here, it is not just a traditionally marginalized objective, such as the environment, that is to be integrated into the mainstream and sector objectives, but rather a comprehensive agenda that is to be matched with domestic development priorities and at different time-scales (Nilsson and Persson 2017).

Research Findings

How and to what extent has environmental policy integration contributed to environmental protection? Despite the scientific interest in environmental policy integration that we just reported, the literature still does not provide a compelling answer (Runhaar, Driessen and Uittenbroek 2014). Therefore, we now take stock of empirical research that has been published in peer-reviewed journals and that reports on specific cases of environmental policy integration and its achievements in different countries and policy sectors and at different policy levels.

We used the Scopus database as our main source for data collection and broadly follow the approach used by Runhaar and colleagues (2018) in a similar literature review on climate adaptation mainstreaming. We first identified keywords based on scientific concepts, namely environmental policy integration, environmental mainstreaming, environmental policy coherence and environmental sector integration. Without duplicates our search yielded 154 articles and articles in press (as of 18 August 2017) (Table 9.1). In a second step, we filtered this pool of papers by their empirical value based on an abstract search. We then filtered based on a full text search. We found that some papers were not empirical, or lacked relevance or substantial implications concerning environmental policy integration despite

Table 9.1: *Overview of papers on environmental policy integration in Scopus (as of 18 August 2017)*

Key words search	Number of hits	Empirical	Conceptual	Normative	Irrelevant	Unavailable
'Environmental policy integration'	100	54	16	6	15	9
'Environmental mainstreaming'	11	3	2	1	4	1
'Policy coherence' AND 'Environmental'	34	11	3	4	12	4
'Sector integration' AND 'Environmental'	9	2	0	0	7	0
Total	**154**	**70**	**21**	**11**	**38**	**14**

mentioning keywords in the title or abstract (allocated to the category 'Irrelevant'). Eventually, 70 papers qualified for further analysis, out of which 46 focus on European countries, two on other industrialized countries and 15 on developing countries. Six papers studied countries across these categories and one paper did not specify a geographic location.

Subsequently we coded the papers based on a scheme developed by Runhaar and colleagues (2018). We then organized the variables into four categories: (1) *outputs* of environmental policy integration processes, such as explicit environmental objectives in sectoral policies; (2) *outcomes* or *impacts*, that is, the implementation of these objectives into concrete measures or their effects; (3) *instruments* employed to promote the incorporation of environmental objectives in sectoral policies; and (4) *factors* that stimulated or inhibited incorporating environmental objectives in sectoral policies.

To assess the degree to which outputs and outcomes of environmental policy integration effectively contributed to environmental protection, we translated findings from the analyzed papers into the following categories that each represent a certain degree of environmental policy integration (as discussed above): (1) *coordination*, that is, avoiding contradictory sectoral policies or compensating for adverse environmental consequences of sectoral policies; (2) *harmonization*, that is, an attempt to bring environmental objectives on equal terms with sectoral objectives; and (3) *prioritization*, that is, favouring environmental objectives over sectoral objectives. We employ these degrees for analytical purposes only and do not a priori assume that prioritization is always the ideal outcome of practices of environmental policy integration.

In order to characterize cases of environmental policy integration reported in the papers we selected, we used the coding scheme that we lay out in Table 9.2.

Patterns of Policy Integration

Figure 9.1 shows the number of scientific publications on environmental policy integration per year and their geographical focus. The data shows a growing research interest in environmental policy integration as well as a broadening of the geographical focus of practices from merely European studies to an increasing inclusion of developing countries. Interestingly, research on non-European industrialized countries, such as Australia, Canada, Japan and the United States, is comparably scarce. This does not mean, however, that in these countries environmental considerations are not integrated into decision-making by non-environmental ministries. For instance, in Canada this sometimes happens under the heading of sustainable development with no formal recognition of environmental policy integration as a distinct concept. In contrast, in the European Union the concept of environmental policy integration is institutionally fully embedded and thus more solidly established and used (Meadowcroft and Fiorino 2017).

We identified 97 cases of environmental policy integration from the 70 papers, referring to distinct practices (Runhaar et al. 2018). Some cases had a clear

Table 9.2: *Coding scheme*

Variable	Explanation
Policy sector involved	Transport, energy and so forth
Policy level involved	International or national
Environmental objectives at issue	Biodiversity, climate change and so forth
Direction of integration	Horizontal: integrating environmental protection across policy sectors (e.g., a comprehensive cross-sectoral strategy for policy integration); vertical: interactions 'up and down' between government tiers centred around environmental policy integration.
Strategies for promoting environmental policy integration (adapted from Runhaar 2016)	Supportive constitutional and legal provisions; regulatory tools; bottom-up voluntary policy instruments; economic instruments and incentives; communicative or informational tools; organizational tools and resources; managerial and procedural instruments.

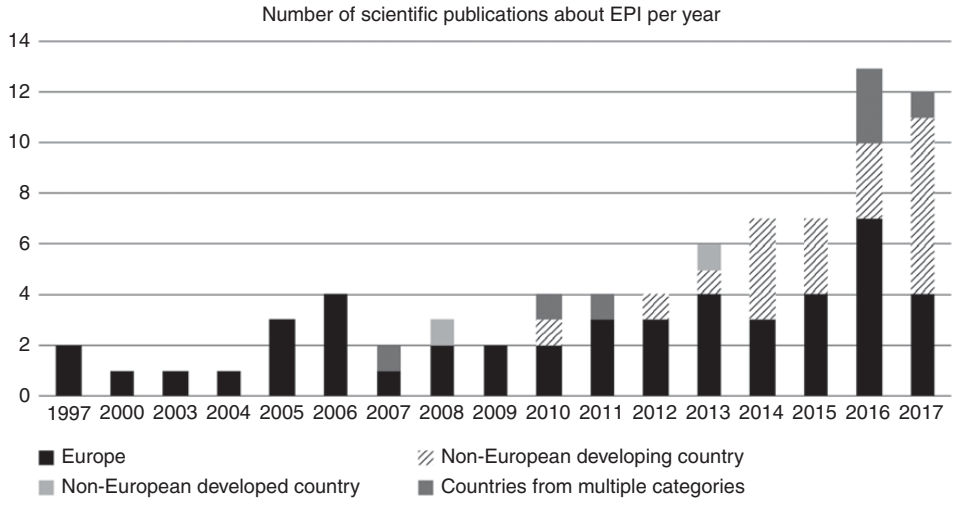

Figure 9.1: Number of scientific publications about environmental policy integration per year (n=70)
Note: whereas for our analysis we used papers that were published until 18 August 2017, this Figure shows all papers published until the end of 2017 to avoid the possible misinterpretation of a substantial drop in papers after 2016.

geographical delineation (European Union-wide, national, regional or local practices), while others represented distinct policies (for example, European Union policies such as the Common Agricultural Policy or the Renewable Energy Directive and its implementation by member states).

That the main share of our sample of empirical scientific studies related to Europe might be partly explained by the explicit incorporation of environmental policy integration as a principle in the European Union. European Union member countries most often reported about are Sweden (11 cases), the Netherlands (8 cases) and the United Kingdom (7 cases) – countries thus that are often considered frontrunners in environmental policy integration (European Environment Agency 2005). However, Norway also appears relatively often in our sample with 11 cases, which may be explained by its ambitious sustainable development policies to combat environmental pressures exerted by its strong oil and energy industry (Lafferty, Knudsen and Larsen 2007). The same applies to Sweden, which experienced an exceptional bioenergy expansion before joining the European Union (Söderberg 2011, 2014).

Many cases (37) relate to the energy sector, followed by transport and telecommunications (31) and agriculture and food (31), as shown in Figure 9.2. This strong representation of these sectors can be explained by the main environmental hazards in industrialized countries, which are chemical and physical in nature: air pollution

from industry and transportation, water pollution, chemicals in consumer products and the use of pesticides (Negev 2016). Furthermore, due to their high pollution levels and urgency of taking action towards environmental protection, industry, energy, transport and agriculture have been declared target sectors for environmental policy integration by the European Commission (Dyrhauge 2014).

In terms of what environmental objectives or concerns are integrated most often, depletion, contamination or degradation of natural resources (48 cases), together with ecosystems, biodiversity and nature conservation (47 cases), rank highest, followed by climate mitigation, including renewable energy (37 cases), energy efficiency (33 cases) and reduction of greenhouse gas emissions (20 cases). Because nature conservation and air and water pollution are traditional environmental topics that have been on the policy agenda for much longer than climate mitigation, these results are not surprising. This also explains why climate adaptation is the least represented issue since political awareness around this topic came even later than climate mitigation.

The specific environmental themes addressed in each of the sectoral policies from Figure 9.2 differ. In the energy sector the emphasis is on reducing greenhouse gases. In the transport sector, depletion or contamination of natural resources (probably due to air pollution) scores on equal terms with renewable energy and energy efficiency (17 cases), closely followed by ecosystems (15 cases). The agriculture and food sector more closely resembles the picture presented in other sectors where the integration of nature conservation and the depletion or contamination of natural resources dominate, while the attention for climate mitigation is lower.

Looking at the policy level at which practices of environmental policy integration occur, the papers that we analyzed suggest that the national level is by far the most represented with 57 cases, as shown in Figure 9.3. In terms of the actors involved in processes of environmental policy integration, the level at which environmental policy integration is pursued seems to matter as well. Governments seem to have a major role in driving and facilitating environmental policy integration, for instance by administering supportive constitutional provisions and legal enforcements, although the government's role seems to be less prominent at the local and regional levels than at the international and national levels (Figure 9.3).

Disjuncture between Policies and Practices

In 97 per cent of all cases, efforts for environmental policy integration had led to policy outputs, whereas in only 21 cases did such efforts translate into a policy outcome. This suggests a gap between integrated sectoral policies and their

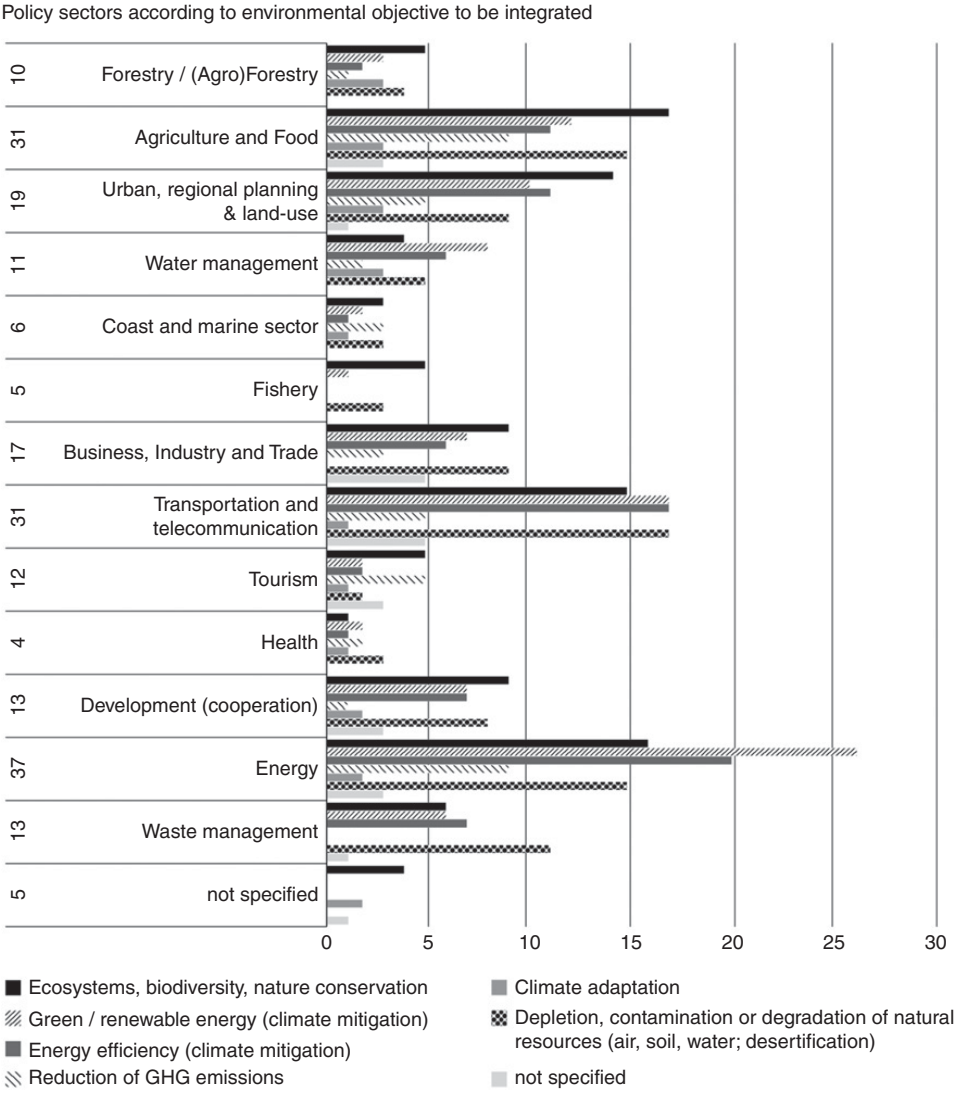

Figure 9.2: Policy sectors subject to integrating environmental objectives (n=97)
Note: the number of cases (n=97) is exceeded, because a case may involve environmental policy integration in multiple policy sectors.

implementation 'downstream' (Runhaar et al. 2018). In some reviewed papers, the implementation gap is explained by a disjuncture between discourses in high-level policy documents and sceptical positions and practices at the operational local level (e.g., Hertin and Berkhout 2003; Nilsson, Eklund and Tyskeng 2009; Huttunen 2015). Several other case studies mention the lack of operationalization of goals and policies into concrete measures for implementation as a cause for the

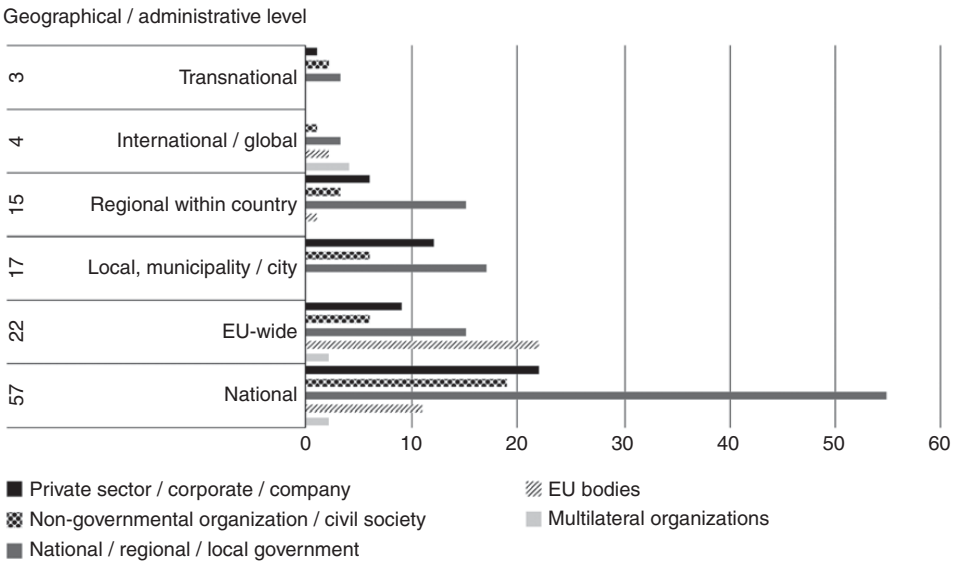

Figure 9.3: Levels at which environmental policy integration is studied and actors involved (n=97)

implementation gap. According to Storbjörk and colleagues (2009: 11), 'those who are aware of the benefits of [sustainable development] do not necessarily know how to make the ideals of "win-win" concrete and operational, thus making the move from words to action difficult'. In addition, 'no readily available definitions currently exist of what constitutes an environmentally positive regional development project. Often it is left to businesses themselves to define their own green profile by putting a mark in a square in their application form that says the project 'benefits environmental sustainability' (Storbjörk, Lähteenmäki-Smith and Hilding-Rydevik 2009: 13). Simeonova and van der Valk (2010) come to a similar conclusion when investigating integrated spatial planning in the Netherlands. Despite the government's efforts to embed environmental concerns in all sectoral policies at the national, regional and local level, this approach has not yet manifested in an operational, integrated policy. Revell (2005: 355) observes the same issue in the transport policy in the United Kingdom where 'the integration of economic and environmental goals has been progressively watered down from policy formulation to implementation, making it increasingly unclear as to what environmental management means in operational terms'.

Looking at the degree of policy integration that can be distilled from the cases, we focus on the 94 cases in which outputs were reported. Outcomes of environmental policy integration were reported in only 21 cases, out of which only 7 cases indicated the degree of environmental policy integration that was achieved.

This does not point to a failure of environmental policy integration as such. We simply could not derive this information from all studies we included in our analysis, given that in 43 cases no outcomes were reported whereas in the other 31 cases policy outcomes did not seem to be part of the analysis. We conclude that despite a large number of policy outputs achieved, 40 per cent of these cases report that not even the lowest degree of integration was achieved, namely policy coordination. In 36 per cent of all cases the degree of policy coordination was achieved, in 12 per cent harmonization was realized and in only 1 per cent were environmental objectives prioritized over sectoral objectives. In 10 per cent of the 94 cases the degree of integration in policy outputs was not mentioned. These findings suggest that environmental policy integration is only partly effective in integrating environmental objectives into sectoral policies. Difficulties in integrating environmental objectives and in overcoming sectoral objectives that conflict with environmental objectives are reported with regard to the European Union's Water Framework Directive, Common Agriculture Policy and Structural Funds and between national and local agri-environmental, waste and water policies (for example, Schout and Jordan 2005; Watson, Bulkeley and Hudson 2008; Rosendal 2012; Huttunen 2015; Regina et al. 2015; Abazaj, Moen and Ruud 2016). Policy incoherence can take various forms, such as contradicting texts within a policy document, the absence of discussion of potential conflicts of different objectives in strategies and plans or non-aligned decisions resulting in inconsistent governance frameworks which are reported to pose prioritization problems on the ground (for example, Kivimaa and Mickwitz 2006; Lafferty, Knudsen and Larsen 2007; Nilsson, Eklund and Tyskeng 2009; Bizikova, Metternicht and Yarde 2018).

As shown in Table 9.3, in most cases with outputs (41 cases) a combination of horizontal and vertical integration efforts or integration processes involving non-state actors were reported. This approach seems most successful for the translation of outputs into outcomes (in 13 of 41 cases) and effective environmental protection (in half of all cases an effect was noted, ranging from coordination up to harmonization). In another 36 cases with outputs, vertical integration processes were reported; yet this strategy seems not very effective for implementation (in 7 out of 36 cases policy outputs were translated into outcomes) or for having environmental effects on sectoral policies and plans (in 16 of the 36 cases). Horizontal integration processes are most often associated with effective environmental protection (8 out of the 13 cases with outcomes) but also face an implementation gap (only 1 out of 13 cases). It is unclear whether the *direction* of the integration efforts (that is, horizontal or vertical) or the *intensity* of efforts (that is, their combination) is important for promoting environmental protection

Table 9.3: *Horizontal and vertical environmental policy integration processes versus number of achievements in terms of environmental protection (n=94)*

Policy integration processes	Outputs (Outcomes)	Effects (Not specified)	Coordination	Harmonization	Prioritization
Horizontal integration	13 (1)	4 (1)	5	3	0
Vertical integration	36 (7)	15 (5)	13	3	0
Horizontal and vertical integration and/or non-state actor involvement	41 (13)	17 (3)	14	6	1
Not specified or unclear	4 (0)	2 (0)	2	0	0
Total	**94 (21)**	**38 (9)**	**34**	**12**	**1**

through environmental policy integration. The latter seems most plausible but this needs further research.

The Effects of Strategies for Policy Integration

The majority of the cases reported a combination of different instruments employed to achieve environmental policy integration. With top-down regulatory instruments ranking highest and supportive constitutional and legal provisions ranking third, top-down instruments are dominant in the reviewed cases (Figure 9.4). Voluntary bottom-up instruments are the least reported strategies. They include voluntary incentive schemes for the implementation of waste-to-energy plants in the private sector in France (McCauley 2015) or self-directed, bottom-up initiatives by farmers across Europe to integrate environmental and agricultural practices (Buizer, Arts and Westerink 2016). However, this picture is not that clear-cut, given that the remainder of the instruments can contain both top-down as well as bottom-up elements (Runhaar 2016). For instance, economic tools comprise top-down financial compensation for abolishing slash-and-burn practices of smallholders (Park and Youn 2017) and agricultural subsidies to foster ecological farming in the European Union Common Agricultural Policy (Rosendal 2012; Huttunen 2015; Regina et al. 2015), but also voluntary green budgeting (Geeraert 2016) or tradable emissions permits and certificates (Nilsson 2005).

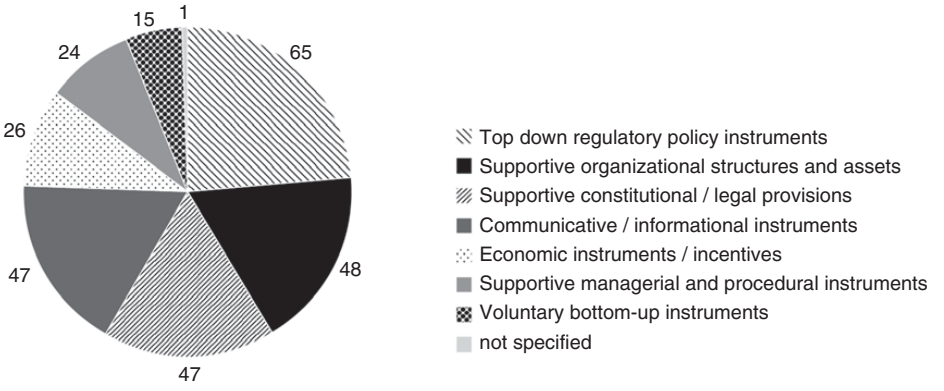

Figure 9.4: Frequency of environmental policy integration instruments reported in the 97 cases

We observed communicative and informational strategies in 17 per cent of all cases. They include capacity-building workshops (Velázquez Gomar 2014), higher level directions regarding classification criteria for environmental quality standards (Söderberg 2016), technical support and guidance in environmental management, such as reviewing environmental impact assessments and monitoring compliance with regulations (Nunan, Campbell and Foster 2012) or multi-stakeholder platforms for managing conflicts, and achieving coherence in sectoral and structural policies and accompanying guidance documents (Abazaj, Moen and Ruud 2016). The presence of these communicative and informational strategies next to top-down strategies is in line with reported tendencies to increasingly supplement top-down legislation with network structures and bottom-up policy instruments to more effectively contribute to incorporating environmental objectives into sectoral policies (Schout and Jordan 2005; Persson, Eckerberg and Nilsson 2016).

It is striking that managerial and procedural tools lag behind, which suggests that the uptake of procedures that facilitate integration (such as reporting, monitoring, ex-post or ex-ante impact assessments for evaluation or checklists) poses challenges. A possible explanation is that the tools provided (for example, by higher policy levels, such as the national government, the European Union or the United Nations) are not instructive or practical enough to translate into daily practices, routines or workflows. However, previous studies suggest these tools are important for the successful implementation of environmental policy integration (Kivimaa and Mickwitz 2006; Runhaar, Driessen and Uittenbroek 2014; Mullally and Dunphy 2015; Persson et al. 2018). Entrenched organizational routines may also inhibit the uptake of new procedures or processes (Uittenbroek et al. 2014). Such explanations resonate with the previously mentioned mismatch between (higher

Table 9.4: *Number of achievements of environmental policy integration strategies in terms of environmental protection (n=94)*

Strategy	Outputs (Outcomes)	No effect (Not specified)	Coordination	Harmonization	Prioritization
Supportive constitutional/legal provisions (47)	46 (8)	19 (4)	18	5	0
Top-down regulatory policy instruments (65)	64 (10)	26 (6)	26	5	1
Voluntary bottom-up instruments (15)	14 (5)	5 (1)	4	4	0
Economic instruments and incentives (26)	25 (6)	13 (1)	9	2	1
Communicative and informational instruments (47)	47 (11)	20 (3)	16	7	1
Supportive organizational structures and assets (48)	47 (14)	14 (3)	22	7	1
Supportive managerial and procedural instruments (24)	24 (10)	7 (3)	8	6	1

level) policy objectives and local practices and the lack of operationalization and concretization of policy measures inhibiting policy implementation.

Table 9.4 indicates the relative effectiveness of the various environmental policy integration strategies. The figures need to be interpreted with some caution. First, the majority of the cases reported a combination of different strategies, which makes an isolation of one particular success category impossible. Second, the relatively low number of strategies that were identified and that could be associated with effects on environmental integration also means we have to interpret the figures as indicative only.

Table 9.4 also suggests that supportive organizational structures and assets and supportive managerial and procedural instruments are the most effective strategies for realizing environmental integration. Interestingly, while the latter are among the least represented in the all cases that we reviewed, they also yielded the highest outcome rate. This implies their relative importance as an ingredient to environmental policy integration that permeates downstream local practices. In contrast, overall we found top-down instruments not to be very effective, neither in terms of

translating outputs into outcomes nor in having a strong effect on sectoral policies (except for regulatory instruments). This suggests that they are not a prerequisite for effective practices of environmental policy integration, which contradicts a recent evaluation of strategies for climate adaptation mainstreaming, a specific form of environmental policy integration (Runhaar et al. 2018). We hypothesize that the effectiveness of strategies depends at least in part on the specific environmental objective to be integrated.

Enabling Factors and Barriers

Among the 21 cases in which policy outputs had been translated into outcomes, we found that in 13 cases the main enabling factors include cooperation with private actors, in 11 cases political commitment, in 10 cases the framing of the environmental problem at issue and linking to sectoral objectives and in 9 cases learning. If we only look at cases in which policy *outputs* were achieved with an effect ranging from coordination up to harmonization, we find a similar pattern. The three highest ranking enablers resonate with previous findings for climate adaptation mainstreaming and climate policy integration (Runhaar et al. 2018), while the results differ with regard to the importance of policy entrepreneurs, focusing events and subsidies from higher levels of government. This can be explained by climate adaptation being relatively new on the political agenda and therefore greatly relying on the mechanisms of agenda-setting and external funding. The most often mentioned enabler, cooperation with private actors, illustrates the importance of mixed forms of horizontal and vertical integration with non-state actor involvement for successful environmental policy integration, which had not only the highest representation among the reviewed cases but also the highest success rate in generating outcomes. The apparent importance of political commitment may correspond with our findings of the dominance of top-down instruments. Yet, formal requirements and supportive legal provisions seem to be more salient for higher-level-integration outputs than for creating outcomes, suggesting their relative weight in the early stages of environmental policy integration. The framing and successful linking to sectoral objectives, as indicated in almost half of the cases, is closely intertwined with solving conflicts of interest and thus, achieving higher levels of integration such as policy coordination or harmonization.

Looking at barriers and enablers among cases in which outputs did not translate into outcomes (n=74) is helpful for understanding the implementation gap in policy integration. Conflicting interests (also because of the specific framing of the environmental objectives at issue; 40 cases), organizational structures, routines and practices (44 cases) and a lack of access to knowledge and guidance (38 cases) appear to be important barriers.

The importance of barriers that we found in organizational structures, routines and practices corresponds with the low presence of managerial and procedural strategies for environmental policy integration, which seem very effective for overcoming implementation deficits. It also is in line with a reported disjuncture between policy instruments and objectives and local practices, decision-making procedures and outcomes (Hertin and Berkhout 2003; Nilsson, Eklund and Tyskeng 2009; Huttunen 2015). This disjuncture is clearest in the absence of long-term environmental targets and requirements for reporting about the implementation of sectoral action plans (Lafferty, Knudsen and Larsen 2007; Giordano 2014); a high level of institutionalization of inadequate organizational structures or rigid procedures leaving no room for environmental concerns; ministerial resistance to adopt environmental policy integration into procedures (Jordan and Lenschow 2000; Rosendal 2012; Simeonova and van der Valk 2016); as well as a mismatch between administrative boundaries and those required for efficient environmental or ecosystem management (Ansong, Gissi and Calado 2017).

Conflicting interests are reported in sectoral policies for agriculture, forestry and water management (Revell 2005; Nilsson, Eklund and Tyskeng 2009; Rosendal 2012; Fertel et al. 2013; Kalaba, Quinn and Dougill 2014; Huttunen 2015; Regina et al. 2015; Selianko and Lenschow 2015; Söderberg 2016; Bizikova, Metternicht and Yarde 2018). In trade-offs between environmental and economic objectives, the latter are often prioritized (Ruddy and Hilty 2008; van Stigt, Driessen and Spit 2013; Dyrhauge 2014; Abazaj, Moen and Ruud 2016; Brendehaug, Aall and Dodds 2016; Geeraert 2016). This occurs across all sectors and scales, such as in urban development where Simeonova and van der Valk (2016) observe the undermining of nature policy priorities due to clientelism-oriented municipal practices satisfying the economic needs of landowners, or in the European Commission where sectoral directorates-general keep focusing on their own objectives instead of integrating environmental concerns despite legal obligations to do so (Schout and Jordan 2005).

Another frequently mentioned barrier is the lack of access to, and availability of, knowledge and guidance. Notably, knowledge about the environmental impacts of sectoral policies and developments seems to be lacking (Kivimaa and Mickwitz 2006). Several case studies mention issues with systematic, consistent monitoring, reporting and environmental impact assessment instruments that hamper the development of informed, integrated policies and practices (Lenschow 1997; Scobie 2016; Simeonova and van der Valk 2016; Alons 2017). The call for improved top-down guidance through the European Commission or the climate convention and managerial tools requires improvements of communicative and informational tools, as we have shown above, but also addresses the need for intensifying cross-sectoral collaboration to better disseminate knowledge and best practices.

Conclusions and Future Directions

We have provided here an overview of how environmental policy integration has been conceptualized in scientific research and in policy practice, and we explored its origins and diffusion over time. We then provided a meta-analysis of research on environmental policy integration to assess how environmental policy integration has contributed to environmental protection.

One key finding is that many scientific publications on environmental policy integration report on practices in Europe. Given the institutional embeddedness of the concept as we discussed at the beginning of this paper, this is no surprise. It does not mean that integrating environmental objectives into non-environmental policies does not occur elsewhere. It simply might happen under different labels, such as environmental mainstreaming, green growth and so forth.

Another important finding is the discrepancy between the adoption of environmental policy integration in terms of objectives and commitments and its actual implementation, that is, translation into concrete measures. Overall, we found relatively few cases in which environmental objectives were given a substantial status in non-environmental policies (that is, up to the levels of harmonization and prioritization).

These might raise questions about the effectiveness of pursuing environmental policy integration, also in comparison to traditional environmental policy. We have two remarks here.

First, the low number of cases in which harmonization or prioritization was found does not mean that environmental policy integration is ineffective. That is rather a normative issue: environmental policy integration implies considering environmental objectives versus sectoral objectives and does not imply that environmental objectives should be prioritized always. Yet this also does not mean that the implementation gap – and our observation that in a substantial number of cases no integration at all was found – is not problematic.

Second, one could ask whether the environment is better protected by relying on a specialized environmental administration or by distributing responsibilities more widely across government and trying to integrate environment into mainstream decision-making. In our view, however, posing that question in such general terms is probably a mistake. Both modes of environmental policy delivery appear essential. Modern environmental policy is inconceivable without specialized institutions (agencies, personnel, budgets and knowledge development) dedicated to environmental issues. Yet environmental impacts can never be managed successfully unless they are also integrated into the design of sector-based policies. Climate mitigation is perhaps the clearest example here: specific institutions are required, such as the United Kingdom Climate Committee, and yet an effective

approach is unthinkable without integration of climate mitigation into energy policy, agricultural policy, industrial policy, urban design and so on.

The barriers we identified suggest that the *actual detailed design* or *architecture* of the particular institutions and processes, whether specialized or integrative, matters. A specialized environmental administration can be well connected to centres of governmental power or be isolated in a silo, just as policy integration can provide meaningful engagement or amount to little more than a rhetorical flourish. We suspect that it is not so much specialized versus integrative approaches that are at issue, but how each is applied in practice – hence the significance for future research on environmental policy integration to determine from experience the more or less successful approaches.

In general, more comparative research and evaluations are needed to answer the question, 'what works, where and why?' and to see what opportunities are and how barriers might be overcome. More specifically, we see five future research directions, recommending not to restrict the analysis to the concept of environmental policy integration but also to include similar concepts such as environmental mainstreaming.

(1) First, more systematic research is needed to identify the strategies by which environmental policy integration is promoted as well as their specific design (Runhaar, Driessen and Uittenbroek 2014). These strategies should not only include public policies and interactive modes of governance, but also non-state forms of governance that promote the structural integration of environmental protection into sectoral policies (that is, eco-labels, community-based initiatives, philanthropic funding and so forth).

(2) Second, more research is needed into the processes of institutionalization of environmental policy integration both internationally and nationally. For instance, what processes and institutions are developed to strengthen the role of environmental departments and agencies as against other departments and to what effects?

(3) Third, comparative research is needed to increase our understanding of how strategies for environmental policy integration are employed in distinct policy sectors, at different policy levels and in different institutional contexts. As was shown in the previous sections, a majority of the empirical studies are related to Europe. Systematic investigations in countries outside Europe are rare but growing. Also, investigations into the environmental policy integration practices in other than the energy sector, transport sector and agricultural sector are needed. Moreover, our review shows that most papers analyze national strategies for environmental policy integration, leaving the regional and local but also international levels underexplored.

(4) Fourth, we found limited evidence of the achievements of strategies for environmental policy integration in practice in terms of enhancing environmental

protection and environmental quality. The incorporation of environmental concerns in non-environmental policy sectors has been analyzed mostly on output and outcome levels but not in terms of implementation and impact. We should increase our understanding not only of what degrees of integration have been achieved in practice, but also of whether this integration leads to environmental protection. In this respect, it is also interesting to investigate how strategies for environmental policy integration will contribute to societal transformations that are needed to achieve the Sustainable Development Goals and targets from the 2015 Paris Agreement under the climate convention.

(5) Fifth, a last question concerns the transferability of successful practices of environmental policy integration. To what extent can one transfer promising and successful strategies for environmental policy integration to other countries, levels and sectors, and under which conditions? This not only requires a better view on enabling and constraining factors for successful environmental policy integration, but also more research into translation, transformation and policy learning.

References

Abazaj, J., Moen, Ø., & Ruud, A. (2016). Striking the balance between renewable energy generation and water status protection: hydropower in the context of the European Renewable Energy Directive and Water Framework Directive. *Environmental Policy and Governance*, 26 (5), 409–21.

Adelle, C., & Russel, D. (2013). Climate policy integration: A case of déjà vu? *Environmental Policy and Governance*, 23 (1), 1–12.

Alons, G. (2017), Environmental policy integration in the EU's common agricultural policy: Greening or greenwashing? *Journal of European Public Policy*, 24 (11), 1–19.

Ansong, J., Gissi, E., & Calado, H. (2017). An approach to ecosystem-based management in maritime spatial planning process. *Ocean and Coastal Management*, 141, 65–81.

Biermann, F., Davies, O., & van der Grijp, N. (2009). Environmental policy integration and the architecture of global environmental governance. *International Environmental Agreements*, 9 (4), 351–69.

Bizikova, L., Metternicht, G., & Yarde, T. (2018). Environmental mainstreaming and policy coherence: Essential policy tools to link international agreements with national development. A case study of the Caribbean region. *Environment, Development and Sustainability*, 20 (3), 975–95.

Brendehaug, E., Aall, C., & Dodds, R. (2016). Environmental policy integration as a strategy for sustainable tourism planning: Issues in implementation. *Journal of Sustainable Tourism*, 25 (9), 1257–74.

Buizer, M., Arts, B., & Westerink, J. (2016). Landscape governance as policy integration 'from below': A case of displaced and contained political conflict in the Netherlands. *Environment and Planning C: Government and Policy*, 34 (3), 448–62.

Dyrhauge, H. (2014). The road to environmental policy integration is paved with obstacles: Intra- and inter-organizational conflicts in EU transport decision-making. *Journal of Common Market Studies*, 52 (5), 985–1001.

Dunlop, C. A., Maggetti, M., Radaelli, C. M., & Russel, D. (2012). The many uses of regulatory impact assessment: A meta-analysis of EU and UK cases. *Regulation and Governance*, 6, 23–45.

Dupont, C., & Oberthür, S. (2012). Insufficient Climate Policy Integration in EU energy policy: The importance of the long-term perspective. *Journal of Contemporary European Research*, 8 (2), 228–47.

European Commission (2016). *Environmental integration*. Available at: http://ec.europa.eu/environment/integration/integration.htm. Accessed: 17 June 2019.

European Environment Agency (2005). *Environmental policy integration in Europe: Administrative culture and practices*. Available at: www.eea.europa.eu/highlights/Ann1120649962. Accessed: 17 June 2019.

Fertel, C., Bahn, O., Vaillancourt, K., & Waaub, J.-P. (2013). Canadian energy and climate policies: A SWOT analysis in search of federal/provincial coherence. *Energy Policy*, 63, 1139–50.

Geeraert, A. (2016). It's not that easy being green: The environmental dimension of the European Union's sports policy. *Journal of Sport and Social Issues*, 40 (1), 62–81.

Giordano, T. (2014). Multi-level integrated planning and greening of public infrastructure in South Africa. *Planning Theory and Practice*, 15 (4), 480–504.

Goria, A., Sgobbi, A., & Von Homeyer, I. (2010) (eds.). *Governance for the environment: A comparative analysis of environmental policy integration*. Cheltenham: Edward Elgar.

Hertin, J., & Berkhout, F. (2003). Analysing institutional strategies for environmental policy integration: The case of EU enterprise policy. *Journal of Environmental Policy and Planning*, 5 (1), 39–56.

Hogl, K., Kvarda, E., Nordbeck, R., & Pregernig, M. (2012). Effectiveness and legitimacy of environmental governance synopsis of key insights. In K. Hogl, E. Kvarda, R. Nordbeck, & M. Pregernig (eds.), *Environmental governance: The challenge of legitimacy and effectiveness* (pp. 280–304). Cheltenham: Edward Elgar.

Huttunen, S. (2015). Farming practices and experienced policy coherence in agri-environmental policies: The case of land clearing in Finland. *Journal of Environmental Policy and Planning*, 17 (6), 573–92.

International Council for Science (2017). *A guide to SDG interactions: from science to implementation*. Paris: International Council for Science.

Jacob, K., Volkery, A., & Lenschow, A. (2008). Instruments for environmental policy integration in 30 OECD countries. In A. Jordan & A. Lenschow (eds.), *Innovation in environmental policy? Integrating the environment for sustainability* (pp. 24–45). Cheltenham: Edwar Elgar.

Jordan, A. J., & Lenschow, A. (2008). *Innovation in environmental policy? Integrating the environment for sustainability.* Cheltenham: Edward Elgar.

Jordan, A., & Lenschow, A. (2000), 'Greening' the European Union: What can be learned from the 'leaders' of EU environmental policy? *European Environment*, 10 (3), 109–210.

Jordan, A., Schout, A., & Unfried, M. (2008). The European Union. In A. Jordan, & A. Lenschow (eds.), *Innovation in environmental policy? Integrating the environment for sustainability* (pp. 159–79). Cheltenham: Edward Elgar.

Jordan, A., & Lenschow, A. (2010). Environmental policy integration: a state of the art review. *Environmental Policy and Governance*, 20, 147–58.

Kalaba, F. K., Quinn, C. H., & Dougill, A. J. (2014). Policy coherence and interplay between Zambia's forest, energy, agricultural and climate change policies and multilateral environmental agreements. *International Environmental Agreements*, 14 (2), 181–98.

Kanie, N., & Biermann, F. (2017) (eds.). *Governing through goals: Sustainable Development Goals as governance innovation*. Cambridge, MA: The MIT Press.
Kivimaa, P., & Mickwitz, P. (2006). The challenge of greening technologies: Environmental policy integration in Finnish technology policies. *Research Policy*, 35 (5), 729–44.
Knudsen, J. K., & Lafferty, W. M. (2016). Environmental policy integration: The importance of balance and trade-offs. In D. Fisher (ed.), *Research handbook on fundamental concepts in environmental law* (pp. 337–68). Cheltenham: Edward Elgar.
Lafferty, W. M., & Hovden, E. (2003). Environmental policy integration: Towards an analytical framework. *Environmental Politics*, 12 (3), 1–22.
Lafferty, W. M. (ed.) (2004). *Governance for sustainable development: The challenge of adapting form to function*. Cheltenham: Edward Elgar.
Lafferty, W. M., Knudsen, J., & Larsen, O. M. (2007). Pursuing sustainable development in Norway: The challenge of living up to Brundtland at home. *European Environment*, 17 (3), 177–88.
Lenschow, A. (1997). Variation in EC environmental policy integration: Agency push within complex institutional structures. *Journal of European Public Policy*, 4 (1), 109–27.
Lenschow, A. (2002). Greening the European Union: An introduction. In A. Lenschow (ed.), *Environmental policy integration: Greening sectoral policies in Europe* (pp. 3–21). London: Earthscan.
McCauley, D. (2015). Sustainable development in energy policy: A governance assessment of environmental stakeholder inclusion in waste-to-energy. *Sustainable Development*, 23 (5), 273–84.
Meadowcroft J., Langhelle, O., & Ruud, A. (eds.) (2012). *Governance, democracy and sustainable development: Moving beyond the impasse*. Cheltenham: Edward Elgar.
Meadowcroft, J., & Fiorino, D. J. (eds.) (2017). *Conceptual innovation in environmental policy*. Cambridge, MA: The MIT Press.
Mickwitz, P., Aix, F., Beck, S. et al. (2009). *Climate policy integration, coherence and governance*. Helsinki: Partnership for European Environmental Research.
Mullally, G., & Dunphy, N. P. (2015). *State of play review of environmental policy integration literature*. Dublin: National Economic and Social Council.
Negev, M. (2016). Interagency aspects of environmental policy: The case of environmental health. *Environmental Policy and Governance*, 26 (3), 205–19.
Nilsson, M. (2005). Learning, frames and environmental policy integration: The case of Swedish energy policy. *Environment and Planning C: Government and Policy*, 23 (2), 207–26.
Nilsson, M. Eklund, M., & Tyskeng, S. (2009). Environmental integration and policy implementation: Competing governance modes in waste management decision making. *Environment and Planning C: Government and Policy*, 27 (1), 1–18.
Nilsson, M., & Persson, Å. (2017). Policy note: Lessons from environmental policy integration for the implementation of the 2030 Agenda. *Environmental Science and Policy*, 78, 36–39.
Nunan, F., Campbell, A., & Foster, E. (2012). Environmental mainstreaming: The organisational challenges of policy integration. *Public Administration and Development*, 32 (3), 262–77.
Oberthür, S. (2009). Interplay management: Enhancing environmental policy integration among international institutions. *International Environmental Agreements*, 9 (4), 371–91.
Ortolano, L., & Shepherd, A. (1995). Environmental impact assessment: Challenges and opportunities. *Impact Assessment*, 13 (1), 3–30.

Park, M. S., & Youn, Y.-C. (2017). Reforestation policy integration by the multiple sectors toward forest transition in the Republic of Korea. *Forest Policy and Economics*, 76, 45–55.
Persson, Å., Runhaar, H., Karlsson-Vinkhuyzen, S., Mullally, G., Russel, D., & Widmer, A. (2018). Editorial: Environmental policy integration: Taking stock of policy practice in different contexts. *Environmental Science and Policy*, 85, 113–15.
Persson, Å. (2004). *Environmental policy integration: An introduction*. Stockholm: Stockholm Environment Institute.
Persson, Å., Eckerberg, K., & Nilsson, M. (2016). Institutionalization or wither away? Twenty-five years of environmental policy integration under shifting governance models in Sweden. *Environment and Planning C: Government and Policy*, 34 (3), 478–95.
Persson, Å. (2009). Environmental policy integration and bilateral development assistance: Challenges and opportunities with an evolving governance framework. *International Environmental Agreements*, 9 (4), 409–29.
Regina K., Budiman, A., Greve, M. H. et al. (2015). GHG mitigation of agricultural peatlands requires coherent policies. *Climate Policy*, 16 (4), 522–41.
Revell, A. (2005). Ecological modernization in the UK: Rhetoric or reality? *European Environment*, 15 (6), 344–61.
Rosendal, G. K. (2012). Adjusting Norwegian agricultural policy to the WTO through multifunctionality: Utilizing the environmental potential? *Journal of Environmental Policy and Planning*, 14 (2), 209–27.
Ruddy, T. F., & Hilty, L. M. (2008). Impact assessment and policy learning in the European Commission. *Environmental Impact Assessment*, 28, 90–105.
Runhaar, H. (2016). Tools for integrating environmental objectives into policy and practice: What works where? *Environmental Impact Assessment Review*, 59, 1–9.
Runhaar, H., Wilk, B., Persson, Å., Uittenbroek, C., & Wamsler, C. (2018). Mainstreaming climate adaptation: Taking stock about 'what works' from empirical research worldwide. *Regional Environmental Change*, 18 (4), 1201–10.
Runhaar, H., Driessen, P., & Uittenbroek, C. (2014). Towards a systematic framework for the analysis of environmental policy integration. *Environmental Policy and Governance*, 24 (4), 233–46.
Runhaar, H., Driessen, P., & Soer, L. (2009). Sustainable urban development and the challenge of policy integration. An assessment of planning tools for integrating spatial and environmental planning in the Netherlands. *Environment and Planning B: Urban Analytics and City Science*, 36 (3), 417–31.
Schout, A., & Jordan, A. (2005). Coordinated European governance: Self-organizing or centrally steered? *Public Administration*, 83 (1), 201–20.
Scobie, M. (2016), Policy coherence in climate governance in Caribbean small island developing states. *Environmental Science and Policy*, 58, 16–28.
Selianko I., & Lenschow, A. (2015). Energy policy coherence from an intra-institutional perspective: Energy security and environmental policy coordination within the European Commission. *European Integration Online Papers* 19 (2), 1–29.
Simeonova V., & van der Valk, A. (2010). The role of an area-oriented approach in achieving environmental policy integration in the Netherlands, and its applicability in Bulgaria. *European Planning Studies*, 18 (9), 1411–43.
Simeonova, V., & van der Valk, A. (2016). Environmental policy integration: Towards a communicative approach in integrating nature conservation and urban planning in Bulgaria. *Land Use Policy*, 57, 80–93.
Söderberg, C. (2011). Institutional conditions for multi-sector environmental policy integration in Swedish bioenergy policy. *Environmental Politics*, 20 (4), 528–46.

Söderberg, C. (2014). What drives sub-national bioenergy development? Exploring cross-level implications of environmental policy integration in EU and Swedish bioenergy policy. *European Journal of Government and Economics*, 3 (2), 119–37.

Söderberg, C. (2016). Complex governance structures and incoherent policies: Implementing the EU water framework directive in Sweden. *Journal of Environmental Management*, 183, 90–97.

Stakeholder Forum (2016). *Seeing the whole: Implementing the SDGs in an integrated and coherent way.* London: Stakeholder Forum.

Storbjörk S., Lähteenmäki-Smith, K., & Hilding-Rydevik, T. (2009). Conflict or consensus: The challenge of integrating environmental sustainability into regional development programming. *European Journal of Spatial Development*, 34, 1–22.

Storbjörk, S., & Isaksson, K. (2014). Learning is our Achilles heel: Conditions for long-term environmental policy integration in Swedish regional development programming. *Journal of Environmental Planning and Management*, 57 (7), 1023–42.

Tosun, J., & Lang, A. (2017). Policy integration: Mapping the different concepts. *Policy Studies*, 38 (6), 553–70.

Tosun, J., & Peters, B. G. (2018). Intergovernmental organizations' normative commitments to policy integration: The dominance of environmental goals. *Environmental Science and Policy*, 82, 90–99.

Uittenbroek, C., Janssen-Jansen, L., Spit, T., & Runhaar, H. (2014). Organizational values and the implications for mainstreaming climate adaptation in Dutch municipalities: Using Q methodology. *Journal of Water and Climate Change*, 5 (3), 443–56.

Van Asselt, H., Rayner, T., & Persson, Å. (2015). Climate policy integration. In K. Bäckstrand, & E. Lövbrand (eds.), *Research handbook on climate governance* (pp. 388–99). Cheltenham: Edwar Elgar.

Van Stigt, R., Driessen, P., & Spit, T. (2013). Compact city development and the challenge of environmental policy integration: A multi-level governance perspective. *Environmental Policy and Governance*, 23 (4), 221–33.

Velázquez Gomar, J. O. (2014). Environmental policy integration among multilateral environmental agreements: The case of biodiversity. *International Environmental Agreements*, 16 (4), 525–41.

Watson, M., Bulkeley, H., & Hudson, R. (2008). Unpicking environmental policy integration with tales from waste management. *Environment and Planning C: Government and Policy*, 26 (3), 481–98.

World Commission on Environment and Development (1987). *Our common future*. Oxford: Oxford University Press.