

The Landscape of Environmental Expertise

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The Landscape of Environmental Expertise

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INTRODUCTION

This chapter focuses on the institutional ‘land-scape’ of environmental expertise, its organizations and the settings in which these organizations contribute to environmental problem solving. In this task, we refer to these organizations as ‘environmental expert organizations’, which includes organizations as wide-ranging as universities, assessment agencies, advisory councils, consultancy firms and NGOs. The task discusses the activities of these environmental expert organizations. It introduces concepts to analyse relations between policy and expert organizations and to recognize what patterns of decision making and advice dominate a policy sector or a country. This will also help to understand variations among policy sectors and countries. It particularly focuses on the situation in the Netherlands and Flanders.

This chapter uses insights from the policy science literature and is illustrated with various empirical examples. After a general introduction in section 1, section 2 first introduces you to the *large variety of services* delivered by environmental expert organizations to policy making. Then it introduces the *dual nature of policy as reasoning and powering*: policy is a matter of well-reasoned plans, but also of gathering support to get things done. The chapter discusses the concept of the *policy cycle* to enable you to recognize variations and patterns in the roles of expert organizations in decision making according to *phases* of decision making (i.e. time). It then elaborates on a concept that can help recognize variations and patterns in the role of expert organizations in decision making according to policy sector or country (i.e. location or *institutional setting*). The concept used in this chapter is that of *policy regimes*. This concept will help you recognize patterns in the expertise that informs decision making on environmental issues in the Netherlands and Flanders. Section 3 discusses some broad categories of environmental expert organizations against the backdrop of a very short historical description of the development of research for environmental policy. This overview does not pretend to be exhaustive, but outlines the panoramic landscape of environmental expertise and the variety of expert organizations. Finally, section 4 discusses strengths and weaknesses of various regimes, the possibility or impossibility of designing institutions or regimes and aspects of cooperation between expert organizations.

In the policy sciences literature the word ‘regime’ does not have the negative connotation we associate with ‘regimes’ in daily life. A regime is formed by the rules, organizations, tools and resources which are brought together in an institutionalized decision-making process.

LEARNING GOALS

After reading this chapter and completing the assignments in the e-workbook you will be able to

- describe the dual nature of policy as reasoning and powering
- distinguish different activities of environmental expert organizations
- relate the relevance of different activities of environmental expert organizations to different phases of the ‘policy cycle’

- understand and explain the concept of ‘policy regime’ and the way it helps to analyse patterns of environmental decision making and advice
- describe four different kinds of policy regimes: corporatist, state-centred, deliberative and market-oriented
- describe the regimes at work and understand the variation in expert organizations that operate in the landscape of environmental expertise in Flanders and the Netherlands
- recognize strengths and weaknesses of different regimes
- analyse the landscape of expertise in which experts and expert organizations work in terms of policy regimes.

1 Getting a grip on a complex boundary

Environmental experts operate in a complex landscape of organizations and institutions. For example, experts at the Netherlands Environmental Assessment Agency (Planbureau voor de Leefomgeving, *PBL*) provide assessments and data to several ministries, regional authorities and trans-national authorities such as the European Union, as well as occasionally reporting to the Dutch Parliament. At the same time, PBL is just one source of knowledge among other planning agencies, universities and private consultants, or even expertise available at the ministries themselves. To be of use to environmental problem solving, such organizations need to carefully guard their integrity, while at the same time showing how they can help solve environmental problems. Meanwhile, to gather the best possible data (and generate agreement on the reliability of the available knowledge), the Environmental Assessment Agency also needs to cooperate with other knowledge providers, such as academic environmental research groups or the Royal Netherlands Meteorological Institute. All of this requires carefully managed boundary work between science and policy, and relations involving both cooperation and competition with other expert organizations.

The previous chapter showed that there is no clear and universal criterion to demarcate science from other institutions in society. Rather than simple Venn diagrams around ‘science’ and ‘policy’ (or other contrasting institutions), boundaries of science are more complex, multiple, sometimes blurred and sometimes sharply articulated. This does not mean that ‘anything goes’, but it means that the boundaries of science are the temporarily stabilized outcomes of conflict and negotiation, of historic ways to settle the division of expert labour. There is no universal criterion that can be used to organize the provision of expert advice, but rather an elaborate set of rules, regulations, routines, cultures etc. mediating and structuring the exchange of expert knowledge.

When expert organizations are asked to advise on environmental issues, they do not invent their role from scratch. They enter a setting shaped by previous experts and past advisory practices, which they encounter as formal and informal rules, codes, authorities, or even just stories of past events. Experts who give advice for the purpose of environmental decision making operate with rules for advisory processes, implicit expectations from users (such as civil servants, managers or activists)

about the role of experts, the established reputation of an advisory organization, the potential criticism from other experts or the memory of a mismanaged past crisis. Episodes such as the controversy over cockle fishing in the Wadden Sea (also see Task 1 and 2 in the e-workbook on Studienet) or the expansion of the Antwerp harbour (this case will be discussed later on in this chapter) cause disagreements over what to do (responses) to expand into expert disagreements over what to expect (impacts). This in turn affects the future expectations and roles of expertise, as well as the conditions for the provision of reliable expertise, possibly involving new rules and formats for expert advice. In the case of the Wadden Sea, the cockle fisheries debate led to the creation of a participatory platform for stakeholders and experts, the Wadden Academy. In terms of the language introduced in the previous chapter: such past experiences shape (or reshape) the boundaries of science: boundaries become institutional boundaries that set the stage for new interactions between science and decision making.

2 Environmental expertise and policy regimes

2.1 WHAT EXPERT ORGANIZATIONS DO

Environmental expert organizations

Environmental expert organizations provide knowledge and advice to actors involved in collective decision making, such as municipal authorities planning a new neighbourhood, or a company exploring environmental options for its production process. Whenever actors, public or private, establish goals and organize means to achieve these goals within a certain time frame, they are involved in policy making. Although the word ‘policy’ usually makes us think of public decision making, companies and organizations in general also develop plans and make policies.

Policy making involves a range of activities

Policy making involves an impressive *range of activities*. In the case of the municipal authorities planning a new neighbourhood, local politicians may have to convince citizens and environmental groups that the new neighbourhood is compatible with a greener environment. The local environmentalists may come up with their own environmental impact statement to question the municipality’s claims as part of their campaigning activities. In the case of the production process use by a company, the company may want to learn about new technological options for its new facilities, compare environmental performances and calculate the most efficient option. Convincing, questioning, campaigning and learning are just a few examples of the kind of work involved in making environmental and other policies. We could easily expand this list with examples involving strategizing, designing, exploring, evaluating, calculating, resisting and so on.

Expert policy advice

When we think of *expert policy advice*, we tend to think of a handful of typical examples of expert involvement in policy, usually involving the *assessment* of policy alternatives and outcomes. Typical work for environmental experts in our examples would be to compare alternative designs for the new neighbourhood or to compare the company’s technological options. However, experts provide much more than such instrumental advice: assessment is only one kind of activity performed by experts. Experts can be consulted for the full range of activities involved in policy making: they may assist in negotiation processes,

Environmental expert organizations deliver a large variety of services to policy makers

design strategies and long-term goals, facilitate reflection and decision making, or even be asked to help oppositional actors resist and undermine policies. For example, environmental experts could help design win/win options for additional housing in the municipality while improving environmental quality, or help the company think out of the box and shift away from its one-sided focus on production technology, or help an NGO challenge the company's environmental policy. Thus, *environmental expert organizations deliver a large variety of services to policy makers*, matching the diversity of policy work, which involves much more than just assessments or factual information. In other words: expert organizations are asked to contribute to policy-making processes for a variety of reasons – from lack of available technical knowledge to objectivity, outsider's perspective, helicopter view, scientific authority etc.

Mayer, Van Daalen and Bots (2004) have tried to impose some order on this diversity (see box 1). Their overview of expert work was developed for policy sciences advising public policy, but is applicable to expert organizations in general. Each of these activities focuses on specific kinds of policy work, work that – in theory – could also be performed by policy makers themselves. For example, the local politicians in our example may also have made an assessment of housing needs. They may have consulted their own sources of knowledge, for instance by consulting local sources such as housing associations or citizens, or checking indicators of housing demand. Whether this work is to be delegated to external experts (and on what terms) then becomes a matter of boundary work, as discussed in the previous chapter. This does not mean that experts are simply the reserve troops of politics: experts are better at the 'reasoning' than at the 'powering' side of politics, but there is considerable variation in the kind of work that can end up with, or be claimed by, environmental expert organizations.

Box 1

What expert organizations do

Mayer, Van Daalen and Bots (2004) classify the work of expert policy advisers into six broad categories. In our examples of policy making, expert organizations could:

Research and analyse: expert organizations gather new knowledge. This can involve measurements, experiments, but also surveys or qualitative research. In our planning example, this could be research into soil conditions, environmental impacts or the housing needs of the envisaged inhabitants. For the company in our example, they could research the environmental performance of different technologies.

Design and recommend: expert organizations may also suggest policy alternatives, or suggest alternative courses of action to actors. This could include designs for the neighbourhood, but also recommendations for policy instruments that could be used to bring it about sustainability, such as tax cuts for sustainable buildings.

Offer strategic advice: this is what expert organizations do when they suggest overall approaches. In this case, they could suggest overall planning options (a 'development axis' to the next city, or a satellite town) or an approach to planning (e.g. the government as coordinator

rather than planning authority). To the company, they could suggest innovations that focus on the environmental impact of the product rather than the production process.

Mediate: expert organizations do in fact often act as go-betweens, facilitators or coordinators of policy. They can bring together different forms of knowledge, different world-views, or even interests that have crystallized into opposing camps, and try to integrate or accommodate opposing camps. In a town planning process, expert organizations could help develop solutions that allow for multiple use of the same limited space or reconcile conflicting expectations. In a company, they could help different divisions agree on the best options for improved environmental performance.

Democratize: expert organizations also have a public role to play in making sure knowledge is shared and policy options can be discussed in the polity. This is a role expertise can play in the service of public authorities, but also as a challenge to public authorities. In our example, expert organizations could help citizens design alternative plans that can compete with the already developed public plans for the new neighbourhood, or they could instigate interaction between the company and its environmental stakeholders.

Clarify values and arguments: in this role, expert organizations ask questions about what is at stake for the new neighbourhood, clarify what arguments are being used to defend plans, and perhaps point out inconsistencies or faulty arguments (Flyvbjerg, 1998). It is perhaps their most philosophical role, although this can result in concrete policy recommendations. For example, they could question the assumptions underlying the perceived need of a new neighbourhood.

Specific expert advice to policy makers does not have to fall neatly into one of these categories, but may combine elements of several of them. For example, in order to mediate in a planning process bogged down in conflict, they may need to clarify values and arguments, which in turn may require research and analysis of the decision-making process, or even of actors' values.

(Mayer, et al., 2004).

*Dual nature of policy
as reasoning and
powering*

The dual nature of policy as reasoning and powering deserves some extra explanation. Policy is a matter of making well-reasoned plans, but also of getting things done: gathering support and resources, rallying allies and, if need be, defeating the opposition. This is best expressed in the two-faced nature of decision making, involving the use of both reason and power – to the extent that in actual policy conflicts the two may be very hard to distinguish. On the reasoning side of the coin, decisions are about exploring and comparing options, assessing alternatives for their likely outcomes and costs, but also about reasonable debate on values and goals involved. The powering side of the coin is about getting things done: pushing issues to the top of the agenda (while avoiding or delaying others), negotiating and compromising, deciding, raising support and outmanoeuvring opposition (Hoppe, 2010).

Powering goes beyond research and analysis and is a side of policy making that is often difficult to acknowledge or accept for reason-oriented experts. Decision makers and managers ask for expertise not just to gather new knowledge and learn. They also have objectives that may seem not so noble from a rationalist perspective. They may be looking for expertise to help support options they have already chosen, to convince allies, or undermine an opponent. When policy makers lose track of the balance between powering and reasoning, they can end up with rational plans that fail to raise support or fail to notice meaningful objections that were overlooked by the experts they consulted (Scott, 1998). On the other hand, when policy makers shift too far in the direction of power politics, then plans can become ineffective and misguided, while politics may degenerate into cynical power grabbing and gross abuse of expert knowledge.

From the perspective of the environmental expert, it is vital to understand the policy-making side of the cooperation. In order to get beyond the linear model that was discussed in the previous task, experts need to understand the concerns of the policy makers. Experts need to understand what kind of work they are performing: are they merely measuring, or are they being asked to mediate in a conflict? What does the powering side of the policy process look like? In order to come to a working (and ethically acceptable!) relation with policy makers, experts have to understand how their expert work connects to policy work, i.e. they have to understand how boundary work is organized.

2.2 PATTERNS IN THE ORGANIZATION OF EXPERTISE

Collective decision making sets conditions for experts

Environmental experts are expected to contribute to public and private decision making, in order to improve the way we understand, solve, mitigate or otherwise deal with environmental and sustainability issues (see chapter 1). *Collective decision making sets the conditions* in which experts have to carry out their advisory tasks: their advice will have to play a role in a policy process involving complex interactions and engrained institutions. If we understand some of the basic features of collective decision making in a policy sector, we can understand in what arena expert organizations have to function. Convincing the civil servants at a government department requires a different approach to the organization of expertise than convincing a town hall full of angry citizens or the shareholders' meeting of a multinational company. If we can understand these, we can understand what it is that actors in these institutions *expect* from expert organizations.

Actor's expectations from expert organizations

How can environmental experts understand what kind of boundary work is going on? Perhaps the simplest route is to talk to policy makers, in order to understand their ongoing concerns and how they expect expert advice to fit into them. How does the civil servant at the town hall hope the expert report will contribute to the realization of the new neighbourhood plan? Does the company expect the environmental expert to provide a clear answer to the question what new production technology to invest in? Or is the advice to be used in an attempt to find a compromise with the opposition? The overview by Mayer et al. (box 1) can be useful in this respect.

The role of expertise varies with the kind of policy problem

There are several other instruments to interpret what is going on in policy work in order to provide suitable advice. Chapter 1 discussed how *the role of expertise varies with the kind of policy problem*: whereas well-structured problems may be sufficiently addressed with straight-forward instrumental assessments, unstructured (‘wicked’) problems will require a much more reflexive attitude on the part of the experts, one that is sensitive to value differences. This is more likely to lead to mediation work than to simple measurement. In our example: if the municipal authorities have secured sufficient agreement on the goal of providing extra housing and the instrument of building a new neighbourhood, then the work of the expert will be more likely to involve measuring and finding the optimal form of housing. On the other hand, if there is a fierce controversy about whether the neighbourhood should be built at all, and even about whether extra housing is a priority issue, then experts may end up organizing debates, providing arguments, or clarifying what is at stake in this decision. Experts will need to operate differently in issues that are controversial.

Policy Life Cycle

Yet another important way to understand the requirements of policy work is to look at the *phases* of decision making. In an idealized, rationalist conception of policy making, decision making consists of a *cycle* that runs from problem identification to policy design, through a political decision, to implementation, and evaluation, back to an assessment of whether the problem has improved (Allison & Zelikow, 1971; Drucker, 1967). In our municipal example, policy making would start with the observation of a housing shortage, the design of a policy to bring about a new neighbourhood, a political decision to endorse the new neighbourhood, the actual implementation of this plan by allocating plots or providing permits, and end with an assessment of whether the housing shortage has been resolved after the neighbourhood was built. In practice, policy rarely follows these phases in such a neat sequence, for example as the definition of the housing shortage may be contested after the decision was already made. In any case, it is clear that the expert work involved in signalling a problem or designing a new neighbourhood is different from the work involved in assessing whether the problem has been reduced.

Experts work in organizations with previous commitments

Our analysis so far seems to suggest that experts should try to understand the policy situation they find themselves in and then choose the most appropriate course of action. However, experts and their clients are typically not free to explore their options for optimal boundary work, because they work in organizations with *previous commitments*. Expert organizations and their clients have developed routines and arrangements that structure the kind of roles they are expected to play and the way their advice is to be used in decision making. Some of these arrangements may even be anchored in laws and regulations. For example, until 2009, the Dutch government ordered an annual assessment of the progress of its environmental policy from the Environmental Assessment Agency (*Planbureau voor de Leefomgeving*), for the purpose of parliamentary debate (*Milieu- en Natuurplanbureau*, 2009). The production of these reports was part of the annual cycle of environmental policy making, culminating in budget debates. It followed a carefully designed scenario to assure correct timing and was

based on formal and informal rules about the extent to which civil servants could influence its contents and priorities, guaranteeing a high level of independence of the experts in the production of an assessment with considerable political impact (De Vries, 2008).

Institutionalization

This is what we call *institutionalization*: formal and informal rules, more or less routinized practices and shared understandings, stabilized social relations that organize social interaction in stable patterns. Experts and their clients tend to develop stable relations so they do not have to negotiate their boundaries afresh at every interaction. In the example of the Netherlands Environmental Assessment Agency (PBL), these routines developed from a tradition of supplying policy assessments, partly modelled on the older model of the economic planning bureau. Institutionalization does not mean relations cannot be changed: the degradation of the Dutch minister of the environment to the level of a state secretary has had considerable consequences for environmental policy and the role of expert advice in it. Institutionalization merely means that changing things will require work and the mobilization of support.

This institutional boundary is the result of previous arrangements in boundary work, where experts and their clients (or their critics) have figured out ways to organize cooperation or settle disagreements. For example, European fisheries policy needs to find a balance between the fishing quota recommended by international panels of fisheries biologists and the political power of fishery organizations that can organize costly harbour blockades or raise public sympathy for a traditional way of life, or even arouse nationalist sympathies. The complex procedures used to establish fish quota in the European Union try to integrate the scientific advice of fisheries biologists in negotiations between fisheries interests and national stakes in fishing grounds. The result may not always be optimal from a conservation point of view, as many biologists and environmentalists insist that fish stocks are still endangered, and fishery conflicts escalate, but institutions provide at least some (albeit imperfect) set of rules, tools and practices to deal with these tensions (Halffman, 2008; Ostrom, 1990).

Relations between policy and expert organizations

One way to understand such institutionalized cooperation is to identify who dominates the relation. In technocratic *relations*, it is experts who dominate policy making, for example when engineers, rather than politicians, decide on railway routes. Conversely, in decisionist patterns, experts provide options, but policy makers are in clear control of decisions, including the decision of whether to take advice into consideration. This is a style that is more deeply embedded in political institutions in Belgium, where the economic planning bureau has a much weaker position. This approach has been developed into a detailed typology of institutionalized boundary work, which we will not discuss in detail in the context of this chapter (Hoppe, 2008; Wittrock, 1991).

Understanding expert advice through the nature of decision-making processes

Because sectors of public policy making (and even entire countries) have developed their own particular styles of decision making, the coordination of expert advice can be examined by trying to understand the *nature of the decision-making processes* involved. For example, the advice on European fisheries quota is designed to provide input for a specific

forum: the conference of EU fisheries ministers that has to set new fish quota twice a year. This is how European countries distribute fishing rights and try to protect fish stocks from depletion. In order for the ministers to bargain over fishing rights, they have to know what it is that they are bargaining over, and hence it is crucially important that the fisheries biologists provide an assessment of the current and future size of fish stocks that is considered reasonable by the governments represented at the negotiation table. Fish stock assessments work with complex population models that provide quantified estimations of current and expected stock sizes. The nature of the decision making (bargaining by a limited set of government actors) imposes requirements on the kind of advice that is expected – and helps to make this bargaining possible. The rules of this decision-making process and the advice involved in it are set out in EU legislation, anchored in organizations such as the EU conference of Ministers and a Europe-wide network of fisheries biologists organized in advisory committees in the International Council for the Exploration of the Sea. These rules, as well as the organizations, the tools they have developed and the resources they have collected and brought together in an institutionalized decision-making process are what we call regimes. Such regimes allow attention to be focused on public decision making and can be used to situate environmental expert organizations in a wider landscape of (both public and private) policy making, comparing dominant patterns between policy sectors and even countries. Before we go on to describe these regimes, table 1 summarizes the patterns in boundary work discussed so far.

TABLE 3.1 Patterns in boundary work

<i>level of aggregation</i>	<i>typical questions for expert roles and tasks</i>
advisory projects, report level	What kind of expert work is involved in this project? How does it relate to ongoing policy concerns? What aspects of policy work are delegated to experts and on what terms? (Mayer, et al., 2004)
policy problem	To what extent is the problem perceived as well-structured or ill-structured? Do actors agree on what kind of problem it is? (Ezrahi, 1980; Hoppe, 2010)
policy life cycle	What stage of the policy cycle is the policy-making process currently in? For what stage is expertise expected? Do actors agree on what stage the policy is or should be in? (Winsemius, 1986)
relations between policy and expert organizations (developed over the years)	Is the relation dominated by the experts or the policy makers? Does the boundary work stress the independence of expertise or the integration of expertise and policy? (Hoppe, 2008; Wittrock, 1991)
longer-term relations, in a policy sector or country/regimes	How is collective decision making organized and how is expertise organized to accommodate this? What patterns of decision making and advice dominate a policy sector or a country? (Halffman, 2005, 2008; Halffman & Hoppe, 2005)

2.3 THE INSTITUTIONAL SETTING: REGIMES OF EXPERTISE

Environmental policy regimes

Environmental policy regimes are areas of environmental decision making that have become institutionalized: they provide procedures to generate decisions; organize policy access for issues and actors, as well as define their authority and position in the policy process; and set up structured information channels and pay-offs. Examples of environmental policy regimes include the regulation of environmental hazards of chemicals, carbon trading or regional planning. A carbon trading regime defines how and what can be traded, defines who can trade and on what conditions, and how knowledge and information about prices and markets is to be generated and distributed. This does not mean that all policy is well-structured or that no ill-fitting new issues may come up, but new issues and even new domains of public intervention will be organized in light of existing policy regimes, often using the tools and procedures developed for them: carbon trading is built on other market-like policy regimes.

Policy regimes structure the relationship between science and policy

Policy regimes structure the relationship between science and policy, through rules or expectations about styles of problem solving, paths of decision making, and the way information, knowledge and expert advice are selected and contribute to decision making. Some rules may be formalized in legal and regulatory instruments, such as the Dutch law regulating public advisory bodies, the Kaderwet Adviescolleges. This law specifies, for example, that national standing advisory committees should be composed of a small set of experts working in a personal capacity, and should be evaluated at least every five years. Some rules are less visible and more implicit in the operation of public expertise, such as the Flemish insistence on corporatist representation (e.g. unions and employers' organizations) in advisory committees.

Environmental policy regimes 'define' what experts are expected to deliver and how they are expected to deliver it

Thus, environmental policy regimes are essential to the landscape of expertise, because they 'define' *what experts are expected to deliver* and *how they are expected to deliver it*. The relevance of information, knowledge and expert advice in decision-making practices is organized through regulations and requirements on the quality of expertise, and on the type of actors that are allowed or expected to get involved in decision-making processes.

Two key issues to describe regimes:

There are many ways to characterize regimes in social theory, for example by focusing on rules (Ostrom, 1986); discourses (Hajer, 1995); networks of actors (Koppenjan & Klijn, 2004) or combinations of actors, power, rules and discourses (Leroy, Van Tatenhoven, & Arts, 2003). We will use *two key issues to describe regimes*, and specifically, the role that expertise is expected to play in them (Van Waarden, 1992, 1999).

1) experts as neutral arbiters vs. experts seen as partisan

The first is whether expert organizations (or at least some of them) are seen as neutral arbiters in conflict: are decisions organized in such a way that expert organizations are expected to *provide neutral knowledge* (as long as the expertise meets established standards)? Or are experts *seen as unavoidably partisan* or unintentionally biased, requiring some process to balance views?

2) cooperation with a limited set of representatives vs. decisions taken in state organizations

A second key feature is the nature of the arena in which decisions are taken in terms of the relation between governmental and societal actors: do we find a state organization that works in formal cooperation with a *limited set of recognized representatives*, such as civil society organizations and employers' organizations? Or are collective decisions taken mainly in *state organizations* that can be questioned 'from the outside' by actors in society? In the first case, collective decisions will provide systematic and guaranteed access for organized interests to decision making, for example guaranteeing unions a place at the negotiation table when national wage policies are discussed. In the second case, actors such as unions or environmental groups may be consulted, or may have to fight for access to the discussion for each individual issue.

Using these two features of collective decision making, we can distinguish four regimes for integrating expertise into collective decision making, and discover the different conditions under which expertise has to perform: corporatist, state-centred, deliberative and market-based expertise (Halffman & Hoppe, 2005). Avoiding theoretical complexity, we can use a convenient short-cut through the typical justification discourses used in different regimes, namely, how regimes predominantly organize the justification of their decisions.

Corporatist regime

One particular way to organize this justification that has deep historic roots in both the Netherlands and Belgium is the *corporatist* logic: 'We have made the right decision because all the key actors have agreed'. Traditionally, corporatism was strongest in the field of socio-economic policy in these countries, where unions and employers had historically managed to secure systematic access to key policy forums (and to a far greater extent in Belgium than in the Netherlands). Examples of remaining corporatist institutions are the socio-economic advisory councils (the *Sociaal-Economische Raad*, or SER, in the Netherlands and the *Sociaal Economische Raad van Vlaanderen*, SERV in Flanders).

Such institutions stress the importance of consultation and negotiation, but crucial is the notion of 'key actors'. Corporatist policy regimes insist that a distinction should be made between actors that are reasonable and hence recognized as acceptable partners in the negotiations, and actors that are 'unreasonable', too 'radical', or refuse to accept the basic premises of the negotiations. In socio-economic terms, these could include radical, unrecognized unions, while in environmental issues we can think of more radical environmentalist movements such as the anti-whaling Sea Shepherds or anti-nuclear organizations advocating civil disobedience. These movements may even deliberately opt for campaigning strategies outside of state-organized institutions. Such outsider actors tend to be critical of the compromises made in these institutions, or of dominant mainstream interests, for example where an environmental NGO refuses to negotiate acceptable conditions for genetically modified crops on the grounds that genetic modification should not be an option in the first place.

Corporatist policy regimes typically have two ways of organizing expertise. The first is to set up expertise as a neutral arbiter. In the Netherlands, this particularly happened with the planning bureaus — and especially the economic one. Planning bureaus are expected to

come up with the best possible assessment of the state of affairs, as well as the expected future outcomes of policies. Difficult negotiations and political debates are then based on the planning bureaus' assessment of, for example, the expected development of car emissions or of economic growth. This does not mean that the planning bureaus are seen as objective or infallible, but their assessments are seen as the best guarantee to prevent bickering over numbers: at least it is clear what negotiations are about. Questioning their assessments is a political risk, as the press can easily portray this as an opportunistic or weak attempt to defend a bad policy proposal. The EU fish quota regime – as discussed above – follows the same logic, since fisheries biologists had to provide the most reliable figures. However, fisheries ministers dominate the negotiations, with limited or only indirect representation of civil society organizations.

The second way to organize expertise in corporatist policy regimes is much more prominent in Flanders. Here, the various actors around the negotiation table bring their own expertise. For example, unions, political parties and environmental representatives bring their own assessments to the negotiation table. This approach is typically defended as the best way to balance inevitably biased expertise: if all knowledge is coloured by one perspective or another, then the best thing to do is to combine perspectives. For expert organizations, this means that knowledge has to make a case, or has to support an argument in a debate. Evidently, this approach creates costly parallel expert organizations (in unions, political parties, environmental groups etc.), and the opportunities to constrain political conflict by deploying authoritative expertise are smaller, but it does prevent technocratic tendencies in which experts prevail in the definition of the stakes.

State-centred policy regime

A *state-centred policy regime* relies on a different logic of justification: 'We have made the right decision because we followed the correct procedure and made a well-reasoned assessment based on the best information, under the supervision of elected politicians'. State-centred regimes rely on a thorough, professional state apparatus and democratic institutions supervising them. State-centred regimes thus rely on professional standards and responsibility to prevent the dominance of specific interests that may occur in corporatist regimes. The professionals involved may be civil servants, but implementation of highly technical issues may even be delegated to experts in agencies that operate at some distance from government. One example is the European Chemicals Agency, which assesses environmental and health hazards of chemicals: using detailed risk assessment protocols, this expert body produces decisions on whether or not chemicals can be allowed. Thus, accepted procedures and standards are seen as a guarantee that the expertise will remain neutral. Expert organizations are typically organized as part of public organizations, such as research units at ministries, or public knowledge organizations such as the National Institute for Public Health and the Environment RIVM (*Rijksinstituut voor Volksgezondheid en Milieu*). If the experts are perceived to take over political issues, or as biased in favour of regulated actors, then state-centred regimes become vulnerable to charges of being 'technocratic' or 'captured' by specific interests.

Deliberative regime

Deliberative regimes insist that the right decisions were made because there was an open dialogue, in which everybody was able to contribute knowledge and views, enabling a complete and fair assessment. Unlike corporatist regimes, these regimes insist on openness to different perspectives on particular environmental issues, rather than the exclusion of outsider views. They insist that although open deliberation may require more time before decisions can be made, it will prevent obstruction politics by excluded voices later in the policy process, such as ‘not-in-my-backyard’ resistance. For example, if all actors involved in a regional planning project are involved at an early stage, then it is expected that bureaucratic trench-warfare tactics, such as endless appeal procedures through the courts, can be avoided. Instead, deliberative regimes try to bring people together, stimulate learning, out-of-the-box thinking and solutions, create networks and contacts where there were none, even if this runs the risk of obscuring procedure and accountable authority. Deliberative regimes are vulnerable to power politics from strong, manipulative actors, they can struggle to constrain decision making (in terms of time, issues and actors), and they may struggle to create clear and accountable decisions, but they avoid some of the bias of other regimes.

The organization of expertise in deliberative regimes insists on the importance of taking all positions on board and is more aware of different world-views or different disciplinary approaches to environmental problems. A good example is the procedure to produce the Flemish Environmental and Nature Reports (*Milieurapport Vlaanderen* or MIRA and *Natuurrapport Vlaanderen* or NARA), which tries to integrate reviewers and contributors throughout the network of environmental actors in order to produce a widely supported assessment of the state of the environment. Thus, the organization of expertise has to follow a more open, networked pattern, with the editors in a facilitating and mediating position.

These mediating roles can also be performed by commercial expert organizations. For example, consultants have become much more important in Dutch regional planning policy, where they are hired as external advisers or even coordinators in the complex policy networks of regional planning decisions (Grijzen, 2010). Here too, the regime requires particular forms of organization and work from the expert organizations, especially stressing mediation, coordination and the ability to clarify and accommodate different perspectives.

Market-based regime

Market-based regimes argue that fair competition creates the most efficient solutions. Solutions to environmental problems are most likely to arise when companies, research organizations or even civil society organizations or governments are stimulated to negotiate and compete in a market-like arena, typically competing for capital or resources. Proponents of market-based regimes will argue that state organizations are too rigid for real innovative creativity, too slow, and not motivated by the healthy self-interest of a competitive setting. Carbon trading is an example of an environmental policy regime based on a market. Market-based regimes have to be protected from concentration of resources (oligopolies) and have to prevent destructive tactics that may aim for

short-term private gains at the expense of collective ones (corruption and foul play). Market-based regimes are also weak in dealing with political issues such as just distribution or debates over how issues are to be framed.

Expertise can be organized in a market too, for example as consultants or commercial expert organizations compete with each other to provide knowledge. Expertise is then seen as a tradable commodity, where one provider of knowledge can be replaced by another. One way decision makers guarantee this is to make sure all expert organizations provide equivalent knowledge. One solution to this is standardization. For example, once it has been established exactly how water pollution needs to be measured, with what kind of equipment and methodology, then accredited providers of such services are relatively interchangeable. Another typical form of expertise needed in markets is performance measurement: the actors involved need to know how well an organization is performing. Knowledge becomes a matter of tradable information.

TABLE 3.2 Summary of regimes of expertise

corporatist	'all key actors have agreed' State negotiations with limited set of recognized actors, with either a) experts as neutral arbiters, b) expertise brought to the table by actors, seen as partisan.
state-centred	'we followed the right procedure and made a well-reasoned decision' State central to policy, clearly distinguished from citizens and other actors. Expertise in public institutes, professional civil servants as source of knowledge.
deliberative	'we had a fair and open dialogue' State is one among the actors in deliberation with other actors. Expertise distributed and reflexive.
market-based	'we efficiently bought reliable expertise' State is one among the actors. Expertise as tradable commodity.

This division into four types of regime indicates patterns for the way expertise is integrated into the wider policy landscape. In practice, environmental decision making may involve mixed forms, for example as governments rely on a combination of professional bureaucracy and consultation of societal parties. Even though some countries, some periods, or some policy fields may have dominant regime forms, mixtures and combinations of regimes are common (Halffman, 2005; Van Tatenhove & Leroy, 2003). Nevertheless, we can use this approach to outline some contrasts between the Netherlands and Flanders, as well as between policy sectors, as there are considerable differences between regional planning, pollution control and nature conservation policy institutions, to name but a few.

Box 2

The story of the Dutch Institute for Spatial Research

The story of the short-lived Dutch regional planning bureau (the Institute for Spatial Research, *Ruimtelijk Planbureau*, RPB) is illustrative of what happens when the organization of expertise is mismatched with the policy regime at work. The RPB was formed in 2002 as a new expert organization that was to provide an alternative for the older departmental regional planning organization, which had driven most regional planning since World War II. The new agency assessed that regional planning was in need of new and creative solutions; new visions that would require extensive input of designers and architects, to find new solutions for planning conundrums in one of the most densely populated countries in Europe. The new style could even be seen in the outward appearance of its reports: creatively designed, artsy reports, produced together with the Netherlands Architecture Institute, stressing new ideas and solutions. However, this was not what the government and civil servants had expected. The RPB did not conform to the format of a Dutch planning bureau, which stresses (quantitative) policy assessment, computer models and a carefully groomed aura of neutrality and authority. Planning bureaus are expected to assess whether policy targets will be met, to describe the state of the country and the likely developments in the near future, so that ministries can justify their policies to parliament. The RPB had invented itself as a *deliberative* expert institute, whereas planning bureaus were rooted in a *state-centred hierarchical style of governance*. In 2009, a departmental reassessment of the RPB abolished it as an independent institute and integrated it into the Netherlands Environmental Assessment Agency (PBL), realigning its operation with the other planning bureaus.

Environmental experts therefore have to keep an eye not only on policy stages but also on the kind of policy regime they are operating in, and how their expert organization relates to that regime. A deliberative policy regime will ask expert organizations to share a commitment to collective reasoning and reflect on the way problems are framed. Failure to do so will lead to conflict and tension (not that conflict and tension should always be avoided, of course). For example, a stubborn expert insistence on the correctness of their numbers may fail to appreciate policy makers' objections that these may not be the right kind of numbers. Conversely, creatively reflexive experts may not match with a policy regime that insists on reliable figures to support formal negotiations (see the demise of the RPB in box 2).

2.4 VARIATION AND CHANGE

There is no political nor academic agreement on how environmental expertise should best be organized or integrated in collective decision making. Some favour expertise organized in public institutions, some favour markets, some insist that expertise needs to be more deliberative if it is to deal with the complexity of environmental issues. *Different regimes exist side by side* and partly in competition with each other. For example, some political groups may have a strong commitment to

Different regimes exist side by side

deliberative policy making and insist that environmental expertise should therefore become more 'reflexive', appreciative of value differences, and more deliberative; while others try to push a policy sector into the direction of a market.

Differences between countries

In addition, there are considerable *differences between countries*. For example, corporatist policy-making traditions are still much stronger in Flanders than in the Netherlands. However, even though there are strong national styles of policy making (in spite of the creation of the EU), these national styles should not blind us to the considerable *differences* that exist *between policy sectors* within the same country (Halffman, 2005). Dutch policy stimulating the transition to sustainability may be clearly deliberative, but Dutch fisheries policy is still strongly corporatist, with firm positions for sector organizations. We can illustrate these points by describing some recent shifts in the landscape of expertise in the Netherlands and Flanders.

Differences between policy sectors

Decline of corporatist regimes in the Netherlands

A striking feature is *the decline of corporatist regimes in the Netherlands*. This is most clearly visible in the erosion of the guaranteed representation of environmental actors in advisory councils. Environmental advisory councils are now organized as small expert bodies, rather than panels where different views and knowledge could be brought together. Dutch environmental groups in particular now find it more difficult to enter public policy making. They can no longer count on guaranteed access to decision making and have had to give up positions that they had acquired through large-scale mobilization of political pressure. One example is that of Dutch environmental research policy, setting priorities for environmental research, which used to involve a prominent role for the Netherlands Advisory Council for Research on Spatial Planning, Nature and the Environment (*Raad Voor Milieu en Natuuronderzoek, RMNO*). This council, which had its roots among some of the pioneers of the 1970s, was established to allow key stakeholders in the environmental sectors to voice the needs for environmental research. Together with similar 'sector councils' for health, agricultural and north/south research, the RMNO provided a platform where future research priorities could be discussed. Based on formal stakeholder representation in a corporatist style that fell out of Dutch favour in the 1990s, some of these organizations transformed into deliberative organizations, while RMNO tried to create a new profile for itself as a broker in the environmental knowledge market – an attempt that failed, as the RMNO was dissolved on 1 January 2010.

There were several arguments against the corporatist institutions in the Netherlands. Interest groups were seen to block policy innovation. This was especially clear in agricultural policy, where strongly represented agricultural organizations obstructed environmental policies. It was proposed that the government had to take control and determine the general direction of policies, rather than particular policies involved. In addition, old corporatist negotiation structures were accused of being slow and non-transparent. The complicated world of advisory structures and consultation procedures was to be replaced with a smaller, leaner government apparatus, determining policy strategy along main lines rather than in detail, and breaking through the bureaucratic walls that separate ministries and policy sectors.

Planning bureaus have gained a more important role in providing assessments for national ministries in their debates with parliament. This is both the cause and consequence of the decline of corporatism, as a strong environmental assessment agency is now supporting the justification of policy on the basis of ‘we consulted our reliable experts’ (state-centred logic) rather than ‘we consulted all the relevant actors’ (corporatist logic).

At the same time, new forms of generic policy expertise became more influential in Dutch public administration: strategic policy across policy sectors favoured generalists and policy experts over the technical expertise of environmental chemists, toxicologists or ecologists, which had been strongly represented at the ministry. Technical expertise was now seen as something that could be found outside, in public research units situated at a distance from government, or even on the commercial market. Government departments reduced to core functions have externalized expertise or even policy implementation, creating new opportunities for commercial expert organizations and creating more competition with other research organizations such as universities or public research bodies. To the extent that actors in society are seen as necessary for policy development and implementation, consultation is now organized much more in ad-hoc networks and temporary platforms, again creating a market for competing experts. To sum up, the erosion of corporatism in Dutch environmental policy has created a strong need for more state-centred, market-based and deliberative forms of expertise.

In stark contrast, Flanders has been hanging on to corporatism to a greater extent than the Netherlands. First, it does not have a strong national environmental assessment agency that the government can consult, making it independent of organized interest groups, and it has more strongly embedded advisory councils, as mentioned above. These councils are fiercely defended by the societal actors who rely on them for policy influence. For example, when the Flemish government wanted to transform its advisory councils to expert councils, civil society organizations mobilized *en masse* (through their *Vereniging der Verenigingen*, or Associated Associations) to maintain their guaranteed positions at the negotiation table. This does not mean that Flanders is entirely stuck in corporatist regimes. It is interesting that its national Environmental and Nature Reports aim to include a wide set of actors, even beyond the formally represented ones, resembling a *deliberative rather than a corporatist approach* to expertise.

Production of Environmental and Nature Reports resemble a deliberative rather than a corporatist approach to expertise

A more systematic description in terms of Dutch regimes of expertise can be found elsewhere (Halffman & Hoppe, 2005).

3 Types of environmental expert organizations

This section looks into environmental expert organizations in more detail. Since these organizations may operate in different regimes, defying easy classification, we provide this overview using a more mundane taxonomy based on the administrative position of organizations. In outlining the organizations, we refer to their tasks, the institutions and the regimes they deal with.

First let us provide some historic context and show how environmental expert organizations developed at a time of rising interest in ‘the environment’. We then describe environmental expert organizations

belonging to four broad categories: university departments; public environmental organizations (governmental environmental expertise, 'planning bureaus', advisory councils, statistics agencies); environmental consultancy and non-governmental organizations.

3.1 THE DEVELOPMENT OF ENVIRONMENTAL EXPERT ORGANIZATIONS

History of the development of environmental expert organizations

Since institutions grew out of old conflicts and debates, a little *history* can further our understanding of the current landscape (just as Scandinavian fjords suddenly make more sense with some knowledge of the ice age that produced them). Environmental issues are often debated on the basis of expertise, and the settlement of old controversies and shifting power balances have left their mark on the current expert institutions.

Public interest in environmental issues

In most industrialized countries, the *public interest in environmental issues* arose around 1970. Heightened public awareness and concern led to new laws, new policies and new ministries and agencies. As these new government authorities tried to launch new policies, they also required environmental expertise to analyse the state of the environment and assess what policies would produce the best outcomes. For example, shortly after the US Environmental Protection Agency was installed as one of the world's first national environment agencies in 1970, it acquired its own research services to underpin its policies with knowledge. And when Dutch environmental policy was consolidated in a new ministry in 1982, public research to support this policy was consolidated in the Netherlands National Institute for Public Health and the Environment (*Rijksinstituut voor Volksgezondheid en Milieu, RIVM*) in 1984.

Scientists putting environmental issues on the public agenda

However, we should keep in mind that this was much more than just a response by experts to a governmental concern. Many scientists had played a key role in *putting environmental issues on the public agenda* in the first place, and had played a central role in the early environmental movements. For example, risks to birdlife were brought to the public's attention by marine biologist Rachel Carson in the US, with her controversial book *Silent Spring* in 1962. In the UK, bird biologist Derek Ratcliffe was able to show the link between DDT and egg shell thinning in the 1960s, while the Dutch researcher Carl Briejèr shocked the country with his own public denouncement of pesticides, after his retirement as director of the Wageningen plant pathology service, which is in charge of licensing pesticides (*Zilveren sluiers en verborgen gevaren*, published in 1967).

Environmental studies departments

Academic scientists also picked up on environmental issues, but not fast enough for an impatient new generation of young scientists in the rapidly growing universities. Toward the end of the 1970s, many students and young scientists wanted their universities to become more responsive to environmental threats, get involved in environmental campaigning, and organize research institutes. They would mobilize scientific research to address environmental concerns – often against the views of a cautious generation of traditional academics who feared that political involvement would undermine academic independence. In the Netherlands, this led to '*environmental studies*' departments being established at several universities.

Citizen groups

Meanwhile, *citizens* also became involved with environmental expertise. One direct avenue was the stream of local environmental issues that mobilized citizens to defend the quality of their immediate environment. Citizens, organized in local committees or ‘action groups’, questioned health and nuisance aspects of local chemical industries, an example being the protests in Amsterdam against the Progil chemical company in the 1970s. Pollution also led to protests in Flanders, but in the 1970s and 80s regional planning became a major concern for local citizen groups, defending the remaining patches of natural habitats against a lax Flemish regional planning policy that had traditionally favoured economic development and urbanization. Whereas the expansion of the Antwerp harbour had been hailed in the 1950s as a great symbol of modernization and economic development, even though it came at the expense of entire villages, urbanization and industrialization now met with critical opposition. Dramatic cases of soil pollution also mobilized public protest, such as the discovery of highly polluted soil under a newly built neighbourhood at the Dutch town of Lekkerkerk, or the scandal surrounding the industrial pollution of urban waste dumps such as the *Hoge Maaij*, also in the Antwerp harbour area. These citizen groups typically looked for support from scientists, often at universities, to document the pollution of air, soil or water, in order to make their case or as counter-expertise to undermine the reassuring safety claims of polluting industries. In campaigns defending nature, they mobilized the knowledge of local biodiversity among field biologists, amateur as well as professional. A list of birds or plants, preferably rare or protected, could serve as an argument to emphasize the ecological value of an area.

Environmental pressure groups

Larger *environmental pressure groups* demanded access to public decision making and were included in advisory bodies in Flanders as well as the Netherlands. In both countries, environmental contestation resulted in permanent access to decision making through advisory bodies – a move that was seen as stifling and overly compromising by more oppositional environmental groups, such as the more radical wing of the anti-nuclear energy movement. In view of the crucial role of knowledge, Dutch environmentalists, especially those directly involved in research, looked for ways to influence priorities in the allocation of research funds and to identify research issues of environmental relevance.

Growing demand for environmental expertise

Environmental policies and conflicts created a *growing demand* for environmental expertise. For example, the production of environmental impact statements required the development of methodologies, as well as more routinized expertise for producing these statements. Citizen groups looked for experts who could authoritatively measure soil pollution or water quality. Industries looked for experts who could write risk assessment reports, perform certified toxicity testing or provide assurance of regulatory compliance, especially if environmental research facilities could not be organized within the company. The more routinized aspects of environmental expertise thus created a demand for expertise that was not especially interesting for academic scientists and did not fit in well with the mission of public research institutes.

Market for commercial environmental expertise

In the Netherlands, this resulted in a large *market for commercial environmental expertise*, ranging from legal advice to engineering firms or regulatory compliance testing labs. As competition grew and doubts

were raised about the quality of the advice, the commercial sector responded with standardization and quality certification, for instance through ISO certificates. Since the mid-1990s, this sector has become so successful that it has become a competitor to public research organizations, or at least provided a strong argument for privatization of such organizations. For example, some of the old environmental studies departments of Dutch universities have now become private institutes that compete in the cut-throat market of commercial environmental expertise. Meanwhile, commercial environmental expertise has expanded into roles that previously seemed uniquely reserved to public or academic experts, such as mediation in regional planning (Grijzen, 2010).

An overview of organizations clearly shows this diversity. Although it would be impossible to list them all, we can try to offer an outline of the current situation, structured around broadly defined categories of expert organizations. The overview must, of necessity, be selective and we skip think tanks, new media and 'knowledge centres', political parties or informal knowledge networks, even though they may be very important sources of environmental knowledge. Our overview thus includes university departments and public expert organizations, as well as commercial and non-governmental expertise.

3.2 UNIVERSITY DEPARTMENTS

Research units in universities

Both in Flanders and in the Netherlands, there are many *research units in universities* that provide environmental expertise, and their areas of specialization cover the full range of environmental concerns. Some of these specializations focus on environmental concerns, as is the case with environmental toxicology or environmental chemistry, studying the effects and distribution of pollutants in the environment. Some try to cover a wider range of environmental concerns, possibly related to policy concerns, as is the case with general environmental science departments. However, beyond such specialized units, there are many other areas of research that may be relevant, depending on the issue at hand. Meteorology has become increasingly relevant to the study of air pollution, and palaeontology has become relevant for our understanding of long-term climate change. This diversity also includes social sciences, although environmental concerns seem to have coincided less with social science disciplines. Most directly relevant social science can be found in departments of environmental studies, but there are environmental sociologists and policy scientists who specialize in environmental policy, or communication scientists studying the environment in the media.

University scientists have specific concerns, such as the pressure to publish in academic journals. At the same time, however, they are also expected to show evidence of practical relevance and bring in research funding for their departments, which means that many researchers are looking for contract research. Their clients include just about all types of actors in the environmental field, who tend to look to university departments because these are expected to grant an aura of greater cognitive authority and independence, or just because specialized knowledge is not available elsewhere. However, academic researchers tend to look for the kind of research projects that will also provide academic benefits, such as opportunities for publications. Sometimes

civil servants choose to avoid academic advisers, as the latter typically demand more control over their research than other research organizations. With a higher degree of independence also comes less predictability, which can become a liability for a policy maker. Some (especially senior) academics also have important roles in the public debate or even in politics, for example when scientists raise concerns over new environmental problems, sometimes even associating themselves with environmental movements.

University groups are found participating in all policy regimes, but academics are particularly well represented in deliberative regimes, which stress out-of-the-box thinking and mediating or facilitating roles. Academic scientists often participate in corporatist committees to support negotiations, either as ‘Crown-appointed members’ or even on behalf of one of the stakeholders. In order to organize more systematic cooperation with policy makers, governments may set up research programmes or centres geared to specific policy functions (see box 3).

Box 3

Examples of research programmes for policy

To mobilize more academic knowledge for policy use, the Flemish government set up the Policy Research Centre Programme in 2001. This involves 14 research centres at universities, but with network structures that may involve several universities, occasionally even abroad. The Centres (*Steunpunten Beleidsrelevant Onderzoek*) are funded for periods of 5 to 6 years, with a programme and projects developed in negotiation with relevant Flemish government departments. The centres produce policy-relevant reports and advice, while drawing on synergy with their academic environment. The combination of project- and programme-based funding is intended to create units at universities that maintain a clear focus on a policy client. There are several centres that are directly relevant to environmental issues. The Centre for Environment and Health, coordinated from the Free University of Brussels, and the centres for Sustainable Development and Spatial Planning and Housing, both coordinated from the Catholic University of Leuven, are currently operational, while other programmes have been completed, such as those of Sustainable Development (2006-2011) and Environmental Policy Sciences (2001-2006).

In the Netherlands, the government initiated research programmes to apply and develop knowledge for policy. Examples are BSIK and programmes such as *Kennis voor klimaat*, *Klimaat voor ruimte*, or *Leven met water*, which are consortia of knowledge producers and users that have to do scientific research and translate the findings into new products, processes or social concepts. The consortia also have to pass on and disseminate knowledge to third parties outside the consortia. But they also work on a project basis — e.g. the project to permanently evaluate environmental legislation (STEM, *Structurele Evaluatie Milieu Wetgeving*) is commissioned to a consortium of universities and consultants.

3.3 PUBLIC ENVIRONMENTAL EXPERT ORGANIZATIONS

Environmental expertise at the government

Governments — ministries or the civil service — may not always be seen as a source of expertise, but they have a long history of providing policy-relevant knowledge and expertise. We should not forget that civil

servants constitute the professional staff of a modern state. Throughout the 20th century, an increasingly skilled and expert civil service developed, and as environmental issues rose on the political agenda in the 1970s and 80s, new departments were set up, often staffed with experts in the young environmental sciences. As municipal and provincial authorities acquired greater responsibility for environmental policy, they too expanded their own environmental expertise. The same goes for the Dutch regional water boards, details of which are beyond the scope of this chapter. Below we outline some of the organizations that they can turn to for advice.

Box 4

The national civil service in the Netherlands and Flanders

With respect to the national civil service, one must be aware of a key difference between the Netherlands and Flanders. In Flanders (and in Belgium in general), the highest echelon of a ministry is occupied by a 'cabinet': the trusted personal support staff of a minister, usually of the order of 10-20 people. Cabinet staff is 'political' in the sense that it will be replaced together with the government. Members of a cabinet are chosen not only because of their political loyalty to the minister in charge, but also because of their expertise. This assures that a minister is provided with sympathetic counsel, as well as some expert resources to assess the quality of information provided by the civil service or other organizations. In contrast, ministers in Dutch governments have a minimal personal staff, such as a press officer. Between a minister and the civil service, there is only the Secretary General, the head of a department. When government changes, the Secretary General and the top echelon of the civil services remain in position, which is seen as an important way to guarantee continuity of policy and expertise. Evidently, a good rapport between a new minister and their Secretary General is vital to allow the minister to take control of the departmental civil service.

For a Flemish cabinet, the civil service is merely one source of expertise, looking more directly at the stakeholders in its constituency, leaving considerable room for political manoeuvring in stakeholder negotiations. The Dutch system puts the civil service in a more central position, as the main source of expertise for a political representative. Dutch politicians have relied heavily on a professionalized civil service, with staff rotating between government departments to break through corporatist regimes.

*Externalizing
departmental research*

With a high policy demand for specialist knowledge about environmental issues, including knowledge requiring additional research or time away from the immediate pressures of policy making, government departments acquired additional research units. A recurring issue has been whether such specialized units should be located as separate units within the civil service, as a network distributed among civil servants, or as completely separate units outside the civil service. Since the 1990s, the trend has been to *externalize departmental research*, although this has generated new challenges to keep the expertise coordinated with policy needs. Attempts to achieve such coordination have led to several shifts in the funding of external research, with an increased use of project-based funding, rather than exclusive reliance on lump-sum funding. This allows departments to organize specific research projects as required, with a relatively high

degree of control over the conditions and results. Although this tendency towards outsourcing knowledge generation — on the pretext of ‘relying on the market unless’ — has some general characteristics of a market regime, it is usually combined with more traditional ways to organize expertise in both countries.

This would not be the right place to present a complete list of expert organizations, but we can describe some of the most important ones.

- The Flemish Research Institute for Nature and Forest (*Instituut voor Bos- en Natuuronderzoek*, INBO) is a research organization that covers ecological and forestry research. It provides expertise to the Flemish government, as well as to other actors in the field of nature conservation, while also publishing research papers for an academic audience. The nature research part of the organization was established at the insistence of, and with much support from, the Flemish conservation movement, which hoped it would help put nature conservation higher on the policy agenda. As such, it fits in with the Flanders corporatist regime.

- The Flemish Environment Agency (*Vlaamse MilieuMaatschappij*, VMM) is an important source of environmental expertise to the Flemish administration, although it is also involved in policy implementation. (Given the often highly technical and specialized nature of environmental policy, such combinations are not uncommon in environmental policy fields.) Similar technical expertise tasks have been allocated to the Public Waste Agency of Flanders (OVAM).

- In the Netherlands, the National Institute for Public Health and the Environment (*Rijksinstituut voor Volksgezondheid en Milieu*, RIVM) is a key source of environmental expertise for the government. The environmental side of its activities includes environmental risk assessment of chemicals and the environmental monitoring networks.

- Covering the natural environment in the Netherlands is Alterra, the ‘research institute for the living environment’, located at Wageningen University. Alterra offers expertise about ecosystems and soils, as well as about landscape and climate.

- Both countries have technological research institutes that were originally state-centred institutes, but now operate largely on the market of environmental expertise, viz. the Flemish VITO and Dutch TNO. Both organizations are important sources of knowledge for risk standards and assessments.

In addition to these prominent research institutes, which cover the traditional core topics of environmental policy, there are also public research institutes for related areas such as fisheries, water management and meteorology. In the Netherlands, inspectorates (e.g. *VROM-inspectie*) monitor and enforce the implementation of departmental policies. They encourage compliance with the laws and regulations in matters such as the built environment, spatial planning, water and the environment, by companies, organizations, citizens and governments. Their objective is to solve problems, protect vulnerable interests and reduce risks in accordance with governmental aims.

From the perspective of well-reasoned policy development, such research institutes address the government’s need for technical or specialized knowledge. Civil servants typically design a work programme together with the researchers at these institutes, to

guarantee that the research continues to be coordinated with policy needs. Some of these research institutes are also expected to work for other clients, such as European regulatory authorities, or are even expected to generate research resources in competition with academic researchers or on the commercial research market.

The political dimension of research organizations

However, the existence of these research organizations also has a *political dimension*. Their existence means that the development of environmental problems is monitored, and that new issues that may become a problem in the future are signalled. In other words, their research helps to keep environmental issues on the policy agenda, and public environmental research institutes are therefore an important asset to environment ministries, for example in the competition over policy resources with other government departments. Environmentalists are also aware of their importance: the predecessor of the Flemish INBO was originally installed at the insistence of the conservation movement, as it was convinced that nature conservation could only be successful if the state of nature in Flanders was clearly documented (Halffman, 2008).

We should point out that these governmental research facilities operate first and foremost in the service of the executive, as state-centred institutions, that is, government departments along with local, national or international executive branches of government. The Flemish and Dutch parliaments both have very few expert resources at their disposition, which impedes their role as overseer of the executive, especially in a technically complicated field such as the environment.

Planning bureaus

Planning bureaus

Planning bureaus are public expert organizations with the specific task to provide the executive with authoritative knowledge. This specific type of organization exists in only a handful of countries. In the technocratic optimism of the mid-20th century, they were intended as *planning* agencies, but they actually became *assessment* agencies, assessing the state of affairs as well as expected future developments and likely policy effects. While planning bureaus in the Netherlands acquired exclusive roles as clearinghouses for policy purpose assessments, other countries did not develop this pre-eminence of centralized agencies.

The areas dealt with by the Netherlands Environmental Assessment Agency (*Planbureau voor de Leefomgeving, PBL*) include the environment, nature conservation and regional planning. It employs several hundreds of experts in a variety of specializations, and also acts as a clearinghouse for data and knowledge generated by the government and other sources of expertise. Its focus is primarily on the national government, but its clients also include regional and increasingly international institutions. In order to guarantee policy relevance, its activities are organized in a work programme that is negotiated with the national government, and senior experts in the organization are in regular contact with policy makers. The PBL produces dozens of reports each year, across the full range of environmental topics, but it also has statutory tasks to provide periodic assessments of the state of the environment and environmental policy.

The PBL was modelled as a planning bureau on its economic counterpart, the Netherlands Bureau for Economic Policy Analysis (*Centraal Planbureau*). Such planning bureaus have a cognitive authority in Dutch

policy making that is virtually unrivalled in other countries. Carefully maintained independence and integrity and a strong conviction that accepting their assessments is generally the wiser political option mean that their assessments generally define the terms of the policy debate. It is even common for planning bureaus to assess likely outcomes of election manifestoes of political parties. Whether in election times, during the formation of government coalitions, in policy development, political negotiations with actors in society or in political debate, the planning bureaus usually define what is at stake in these negotiations by providing an authoritative assessment of the playing field (Halffman, 2009; Huitema & Turnhout, 2006). Such institutions are modelled on the role of the neutral arbiter in corporatist regimes discussed in section 2.

In Flanders, the economic planning bureau never acquired the central position of cognitive authority that characterizes its Dutch counterpart, and no environmental planning bureau was based on it. Both the national *Federaal Planbureau* and the Flemish *Studiedienst van de Vlaamse Regering* focus on economic policy analysis, without the authority of their Dutch counterpart, and report only on concise indicators of sustainability. The closest equivalents to comprehensive policy assessment are the Environmental and Nature Reports for Flanders (*Milieurapport Vlaanderen*, or MIRA, and *Natuurrapport* or NARA), offering annual assessments of the state of the environment, including projections of likely policy outcomes. MIRA is produced under the auspices of the *Vlaamse Milieumaatschappij*, while NARA is produced by the Research Institute for Nature and Forest (both mentioned above). Even though both the NARA and MIRA reports are also considered to be the best available assessments, their cognitive authority is constructed in a very different way. These reports are coordinated by a small group of editors (rather than the large team of planning bureau experts in the Netherlands), who coordinate a team of largely volunteer authors and a very extensive review process that can include hundreds of experts from a wide variety of environmental research and other organizations. It is through this extended peer review system that Flanders generates assessments of the environment that are widely considered to be reliable and fair (Halffman, 2008). It may be clear that very different corporatist institutions guide the Flemish expert organizations.

Advisory councils

Advisory councils

Advisory councils or committees bring together experts and/or representatives of societal organizations to generate advice or counsel for policy purposes. Advisory councils are typically used to explore difficult problems away from the bustle of immediate concerns at departments, to mobilize cognitive authority in support of policy makers, or even to mediate in conflicts and generate agreement between the actors represented in the councils. Advisory councils have to find a balance between policy relevance, independence and representation of their constituency (whether fields of expertise, societal groups or the general concerns in a policy sector).

Permanent or temporary councils

In designing advisory councils, choices have to be made for a number of important features. First, advisory councils can be *permanent* ('standing') or *temporary*. Permanent councils, such as the Flemish MINA-raad or the Dutch Gezondheidsraad, develop expertise and networks over time and

acquire status, all of which can be assets when dealing with well-established policies. Temporary councils may be designed to accommodate new actors, issues and ideas that can bring about a break-through in complex or deadlocked policy issues. One example is the use of a temporary advisory council by the Dutch government to break through the deadlock over natural gas drilling in the Wadden Sea. Over the last few decades, however, both the Flemish and Dutch governments have become wary of installing new temporary councils, as this practice had created a panoply of ad-hoc councils.

*Independence and
policy status of councils*

Second, the statutes of advisory councils specify the degree of *independence and policy status*, typically indicating whether the council can initiate advice or can only respond to government requests or, conversely, whether government is obliged to respond to advice given.

*Experts or social
representation*

A third key design feature is whether to aim for councils of experts or for *societal representation*. Expert councils generate more cognitive authority and tend to remain more aloof of on-going concerns, with more freedom to come up with new, unconventional ideas. An important example of a council with very high cognitive authority is the Health Council of the Netherlands (Bijker et al., 2009), which is actually a network of carefully managed councils that regularly produce reports touching on health and the environment. On the other hand, councils involving societal representation — such as the Flemish *MINA-raad* — may provide a forum for negotiation with societal organizations and potentially generate more societal support. The drawback is that vested interests may become entrenched in such councils, representing specific interests rather than the general interest. This institutional innovation includes some deliberative features.

In a major clean-up of the array of advisory councils in 1997, the Dutch government opted for a small number of standing councils of experts, which had to transcend the traditional boundaries of policy domains (a process known in Dutch as ‘*ontkookering*’). An important consideration was that experts would provide policy makers with a stronger position from which to bring about policy change, even where entrenched vested interests had been blocking them (‘primacy of politics’). The result was a system of about a dozen strategic councils of experts. Other expertise was to be acquired on a more flexible project basis. However, below the radar of political visibility, dozens of specialized ‘technical’ advisory councils continued to exist, such as those for technical water management issues or for risk assessments of pesticides or genetically modified organisms. (The Health Council was a more visible exception.) Thus, some issues seemed to require permanent access to specialist technical knowledge. Societal representation was effectively removed from the national advisory councils (with the exception of the Social and Economic Council) (Hoppe & Halffman, 2004). In this way, deliberative and corporatist influences were minimized, and state-centred arguments were stressed during this institutional change.

In 2003, the Flemish government intended to follow the Dutch example by reorganizing its advisory councils in the context of a large-scale restructuring of Flemish government (operation *Beter Bestuurlijk Beleid* — Better Administrative Policy). This would have meant a radical break with the tradition of systematic societal representation in the Flemish advisory bodies. Civil society organizations objected strongly and even

organized themselves into the Associated Associations (*Verenigde Verenigingen*), bringing together trade unions, sports associations, but also the already associated Flemish environmental movements (*Bond Beter Leefmilieu*). Their campaign successfully modified the government's plans, and the Flemish strategic advisory councils continue to operate with a combination of experts and representatives of civil society organizations (Fobé et al., 2009).

Box 5

Key environmental advisory councils

A key environmental advisory council in Flanders is the Environment and Nature Council (*Milieu- en Natuurraad* or *Mina-Raad*), consisting mostly of representatives from civil organizations including environmental groups, but also unions and employers' organizations. Similar councils cover regional planning or agriculture and fisheries. In contrast, the Netherlands has stuck to the path of a small number of expert councils, some with as few as three experts. In early 2011, the installation of an expert advisory Council for the Living Environment (*Raad voor de Leefomgeving*) was being prepared, which is to deal with the environment, regional planning, water, agriculture, food and nature conservation. Such small councils of reputable experts, typically university professors, rely on a professional secretariat to prepare advisory reports, relying on additional hired expertise where needed. It will take over from a larger professional council ('VROM-raad'), which was itself the sequel to a stakeholder council in the older Dutch corporatist-style advisory system.

Statistics agencies

Statistics agencies

Statistics agencies are not the first sources of environmental expertise that come to mind, but they do play a role as clearinghouses for certain official statistics, like the national accounting matrix with environmental accounts (NAMEA). Although they are government agencies, they have statutory independence, to prevent providers of statistics from polishing up data to their advantage. Having national statistics agencies reduces the collective cost of duplicated information gathering for public as well as private actors. However, gathering statistics is still a costly business, and statistics agencies have to prioritize what to gather, in consultation with their clients. Increasingly, statistics are gathered at an international level (such as Eurostat and OECD) and there is even some degree of competition over which agencies provide the best information, with new sources challenging the previously exclusive position of the national agencies.

As public policy has expanded to include environmental issues, statistics agencies have also started to add environmental statistics to their traditional socio-economic focus, with some initial hesitation over the potential threat that the controversial nature of much of environmental statistics might undermine their integrity. Statistics Netherlands (*Centraal Bureau voor de Statistiek* or CBS) provides extensive data of relevance for environmental policy, ranging from pesticide use to air and water emissions, land use, and since 1995 also integrated indicators of environmental economics. It has also cooperated with volunteer field biologists to help set up ambitious biodiversity indicators. Due to issues of ownership of these data, a new data authority has been set up to manage and provide access to biodiversity data.

Statistics for Flanders are still mainly collected at the national level by Statistics Belgium. With its administrative accountability to the Department of Economics, its focus remains firmly on social and economic indicators, but it also provides a set of very general environmental statistics, for instance on national carbon emissions, air quality and water pollution.

3.4 ENVIRONMENTAL CONSULTANCY AND ENGINEERING SERVICES

As environmental issues became part and parcel of mainstream politics and business, a market evolved for environmental consultancy and environmental engineering services. The evolution of environmental management problems, both public and private, has led to the development of a market place. A large industry sector that offers products and services to help analyse, measure, prevent, limit or correct environmental problems is doing business under the label of environmental management consultancy, environmental engineering services or developers of clean technologies. Commercial services have followed policy issues, agreements, treatments, covenants, standards, laws, regulations and environmental management practices. These policy activities serve the demand-driven development of environmental consultancy. For example, the introduction of the Environmental Impact Assessment should have been an incentive for the Dutch and Flemish markets, as it was in the US (Sam, 1999). The services delivered in this branch are commissioned by governments, but have expanded to the profit sector (Maltby, 1995).

We should not forget that regulated industries themselves possess vast amounts of environmental expertise. This includes knowledge of the environment, of environmental technologies, and even knowledge of policies or regulations that may be hard to find elsewhere. For example, the regulation of environmental hazards from chemicals is extremely technical and complex, ranging from regulations about end-of-pipe filters to emission limitations, and to pre-market toxicity testing of chemicals, including pesticides. These regulations have become so complex that only a specialized community of experts can fathom them completely, many of whom work in the regulated industries. From a public perspective (as well as a corporate responsibility perspective), the challenge is to set up decision-making processes that encourage industry to share this knowledge in a way that avoids bias or abuse; in other words to overcome market considerations and incentives that are the main drivers in industry.

3.5 NON-GOVERNMENTAL ORGANIZATIONS

The institutionalization of the environmental 'movement' has provided 'socially acceptable forms of knowledge-making' (Jamison, 2003, p. 46). Such organizations not only react to policy with scepticism, but also call the scientific impartiality of policy 'evidence' into doubt (Cramer, Eyerman, & Jamison, 1987). We distinguish two types of environmental organizations doing boundary work between science and policy.

First, some non-governmental organizations (NGOs), like Greenpeace and Friends of the Earth, are highly professionalized and expertise-driven. Or in other words, 'environmental organizations are big employers of

scientific talent' (Yearley, 1992, p. 436). They employ trained researchers and their use of scientific evidence make them very well informed partners in decision making and negotiating on environmental issues – even though their knowledge and position are often questioned by opponents. Although these organizations often involve many volunteers in their activities and campaigns, it does not make sense 'to see NGO personnel as strictly 'lay'. But it is often equally difficult to see them as strictly 'scientific', for they rarely generate the science that they deploy, and they frequently challenge notions of expertise, scientific certainty, and issue closure in the interests of opening up environmental debates.' (Eden, 2010, p. 217)

Other volunteer expert organizations on the boundary between science and policy are the private data managing organizations, which in the Netherlands are mainly concerned with biodiversity (PGOs, *Partikuliere Gegevensbeherende Organisaties*) (Lawrence & Turnhout, 2005). Decision-making processes mostly invite both NGOs and PGOs as stakeholders and expert organizations with a particular interest. These roles are sometimes performed in corporatist regimes that need their data and expertise – for example the policy on endangered species. In other issues they operate in more deliberative regimes, as in the Dutch implementation of the European Water Framework Directive, which aims to achieve consensus among all interested parties on objectives and measurements to improve water quality.

4 Conclusion: the niches of expert organizations in a landscape of regimes

The organization of collective decision making sets the stage for the roles that expert organizations are expected to play. While we can interpret this institutional boundary work in terms of the policy cycle or institutional patterns of cooperation (see section 2.2), we have stressed here how *policy regimes form a setting for environmental expertise*. For example, deliberative regimes will require expert organizations to mediate, facilitate and be responsive to diverging viewpoints and world views. Deliberative policy making requires creativity from its experts, finding new and unexpected avenues that can create win/win solutions or construct novel compromise. This is radically different from a chemical company that has to submit a toxicological report to a government agency in order to introduce a new chemical substance, where creative new solutions would most likely undermine the company's case. Instead, they will need expertise that closely follows the standardized methodology of toxicity testing, performed by a certified laboratory, available on the market of expert companies.

Therefore, it is crucially important for expert organizations to understand the environmental policy setting they will have to operate in, and these regimes provide a heuristic tool for this. Mismatches can critically undermine the position of expert organizations, as happened with the Dutch Institute for Spatial Research (see Box 2: The story of the Dutch Institute for Spatial Research). It is also important to keep in mind that different ways of organizing expertise into collective decision making have their own particular *strengths and weaknesses*:

- Corporatist regimes offer good opportunities to bring key organized interests together, negotiate solutions with them and then commit them to the outcome of the negotiation. Expertise can support these

Policy regimes form a setting for environmental expertise

negotiations with an authoritative assessment of the state of affairs or proposed policies. Weaknesses are the risk of getting locked into traditional solutions, and that of specific interests overwhelming the common good.

– State-centred regimes put the common good first, as defined through democratic elections. Their need for expertise revolves around the assessment of policy alternatives and public accounting for policies chosen. A key weakness is that the state can lose sight of the complexities of policy details and policy implementation, or can run into policy blocking opposition in society.

– Deliberative regimes stress the consultation of a wide circle of actors, not just the favoured ones of corporatism, and insist on creative discussion to come up with new solutions. Expectations of expertise involve the skill to clarify conflicts, reinterpret them and facilitate the generation of new solutions. Weaknesses include a lack of focused decisions and identifiable decision makers that can be held accountable.

– Market-based regimes insist on the motivating power of competition as well as the intelligence of the market in terms of punishing inadequacy and inefficiency. Expertise is expected to provide information that will allow market calculation, or assess regulatory compliance. Among its weaknesses are a limited appreciation of political disagreement, such as conflicts over inequality or the framing of environmental issues, and the need for regulation, so as to prevent foul play or over-concentration.

One may be tempted to think that institutions could be designed for specific policy issues, depending on the nature of the problem or the way it should be dealt with. However, this would mean assuming that public policy is only a matter of solid reasoning. Collective decisions are always also a matter of powering. For example, corporatist guarantees for civil society organizations to participate in decision making did not come about because somebody thought such an arrangement would be a smart design, but because these organizations fought long and hard to be recognized as relevant voices in the debate. Perhaps the greatest trap for expert organizations is *not just to lose track of the regimes* in which they function, but especially of the *powering* that runs through them.

Expert organizations have to be aware of the regimes in which they function, and the powering that runs through them

Expert organizations operate side by side in this landscape. Their professional ethos may induce them to share knowledge, and in many cases they may cooperate to produce advice or simply to improve understanding of environmental problems. For example, Dutch planning bureaus sometimes set up research projects together with universities. Alterra is deliberately located at Wageningen University in order to stimulate contacts and cooperation. The benefits of such cooperation are many: researchers at public institutes may get access to new knowledge and new networks, or may get better opportunities to publish research, while researchers at academic institutes may acquire better access to policy-relevant research and resources.

However, some of these expert organizations also fish in the same pond and may actually compete for research contracts, authority, status and legitimacy. For example, university departments sometimes compete with consultancy firms for lucrative government projects, but sometimes such projects could also be managed by an advisory council. Expert organizations not only share knowledge, but sometimes also question each other's findings. This condition of the expertise landscape is called *cooperative competition* (or co-opetition for short).

Cooperative competition

Bureaucratic politics leading to a mismatch of expertise

One particular form of competition that can play a role especially among government institutes is *bureaucratic politics*, where organizations try to take away responsibilities and budgets from neighbouring organizations. This may result in an *issue being studied by the wrong organization*, with *mis-matched or incomplete expertise*, simply because the organization wants to hold on to the remit and the budget that goes with it.

Multiple identities of experts

Fortunately, the situation is not always so bleak. One way expert organizations can try to maintain their position is by finding a particular niche, for example by specializing in mediation and facilitation in environmental conflicts, or by developing exclusive ties to a particular client such as a government department. This could allow such organizations to get access to clients early, keep track of their needs, have preferential access to information and possibly even secure tailored research contracts. It is also quite common for environmental expert organizations to establish more or less formalized networks where knowledge can be shared, or even to form knowledge consortia that can aim for bigger research contracts. Another powerful glue keeping this diversity together originates in the *multiple identities of experts*. Experts not only have collective identities as members of environmental expert organizations, but also have individual professional identities that originate in their training or disciplinary background. It is especially in environmental expertise, which typically ranges across disciplines, that this can create important cross-linkages. A member of the environmental planning bureau may thus not only be a civil servant working as an expert in a public organization, but may also be a member of a professional association and a professor at a university.

While the notion of boundary work insists on the responsibility of individual experts in shaping their relation to the world of decision makers, the institutional side of the story also shows how not everything is negotiable all the time – fortunately, as our brain and social network would quickly overload if all could be questioned at once. However, this defence of the existence of institutions and of the sensitivity of environmental experts to the institutions of environmental policy should not be seen as a blanket endorsement of existing institutions. Every now and then, some institutions may need to be disregarded, questioned, reformed, abolished or redesigned.

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