

Handbook of Environmental Protection and Enforcement

Principles and Practice

Andrew Farmer

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Foreword

In 1991 a package arrived on my desk. It contained some of the first applications for permits under the UK's then-new Integrated Pollution Control regime. I asked myself many questions – what was the purpose of the permitting process, what could be considered and what not, which other officials did I need to speak to? Needless to say, before I could get to grips with these questions and get through the package, another arrived (and another). Since then I have worked with a variety of environmental bodies and international organizations, and a much broader range of practical and fundamental questions has been posed. It is the examination of these questions that originally stimulated my interest in writing this book.

Environmental problems are as much a problem today as when the European Union (EU) adopted its Integrated Pollution Prevention and Control (IPPC) Directive and as when the US created an Environmental Protection Agency (EPA). Of course, some problems are solved and new ones appear. These changing circumstances are the challenges for regulation, the market, etc. They are also the challenges that environmental enforcement authorities have to tackle day by day and in a wide range of changing social and economic circumstances. This book looks at these issues from a practical perspective, identifying the key issues and how these have been addressed. This is done to help inform those involved – in the environmental enforcement authorities themselves, industry, the public, and so on – although key issues are derived from the academic literature to help inform the practical.

There are many people from a wide range of national authorities and international organizations that deserve my thanks for the many discussions that I have had on environmental regulation. There are too many to list and it is inappropriate to single any out. However, I would like to thank one particular colleague with whom I have worked on a wide range of studies on environmental enforcement authorities, Patrick ten Brink, for many stimulating debates.

List of Acronyms and Abbreviations

The use of acronyms has been kept to a minimum in this book in order to make the text more accessible. Where acronyms and abbreviations are introduced in specific cases, these are explained as they arise and are not carried forward throughout the book. The limited number of acronyms used through the book are given below.

BAT	Best Available Techniques
BATNEEC	Best Available Techniques Not Entailing Excessive Costs
DEC	Department of Environment and Conservation (New South Wales)
EEA	European Environment Agency
EECCA	Eastern Europe, Caucasus and Central Asia (countries of the former Soviet Union, excluding the Baltic States)
EIA	Environmental Impact Assessment
EMAS	Environmental Management and Audit Scheme
EPA	Environmental Protection Agency
EP OPRA	Environmental Protection, Operator Pollution Risk Appraisal
EU	European Union
ICAC	Independent Commission Against Corruption Scheme (New South Wales)
IMPEL	EU Network for the Implementation and Enforcement of Environmental Law
INECE	International Network for Environmental Compliance and Enforcement
IPC	Integrated Pollution Control
IPPC	Integrated Pollution Prevention and Control
ISO 14001	International Organization for Standardization – environmental management standard
IUCN	The World Conservation Union
LAAPC	local authority air pollution control (UK)
NAFTA	North American Free Trade Agreement
NGO	Non-governmental organization
OECD	Organisation for Economic Co-operation and Development
PPP	pollutes pays principle
REPIN	Regulatory Environmental Policy Implementation Network
SBTCP	Small Business Stationary Source Technical and Environmental Compliance Assistance Program (Kentucky)

SME	small and medium-sized enterprise
UBA	Federal Environmental Agency (Germany)
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
VROM	The Netherlands Ministry of Housing, Spatial Planning and the Environment

Introduction: The Principles and Nature of Regulation

Introduction

Environmental protection poses many challenges in today's society, not least taking account of the range of different social, economic and environmental contexts across the world. This book focuses on one critical area to deliver environmental protection – the work of environmental enforcement authorities.

The environmental enforcement authorities addressed here are those that take action to ensure that environmental regulation is implemented. This is focused primarily on the 'traditional' command and control regulatory areas of issuing permits, monitoring and inspecting activities and, where appropriate, taking enforcement action. The role of such regulation has changed and the range of alternative approaches has increased. However, it still forms the core of environmental protection activity in most countries.

This type of regulatory activity has a long history. Nonetheless, probably never before has so much effort been given to examining the nature of regulatory regimes and measures to improve the effectiveness and efficiency of the institutions responsible for ensuring regulatory outcomes are met. This is due to new priorities in developed countries, the particular problems that transition countries have in reforming older institutions and development of new institutions in developing countries. This book aims to examine these issues through the range of basic regulatory activities that environmental enforcement authorities undertake.

It is appropriate at this stage for the reader to ask for clarification of what an 'environmental enforcement authority' is. For the purposes of this book, the term is used for any governmental body (ministry, agency, local government, etc.) that is responsible for key aspects of regulation, such as permitting or inspection. It does not specifically include other bodies that might be critical for regulation, such as the courts (although some legal capacity issues will be discussed). The focus of the book is also on issues such as control of pollution and regulation of industry. This does not preclude a discussion of wider issues where appropriate, but it does not, for example, consider the management of national parks and regulation of hunting or fisheries, although these might be included within the functions of some of the institutions considered here.

Environmental enforcement authorities vary significantly in their structures, duties and powers. Chapter 2 provides an overview of this variety, setting the context for the issues addressed later in the book. One of the first practical stages in regulation can be the issuing of permits or licences and Chapter 3 discusses what is involved in this, different types of permitting regime and their relationship to other types of instrument. Authorities need to be confident that permit conditions are complied with, so Chapter 4 discusses approaches to monitoring and inspection. If conditions are not complied with, a variety of sanctions might need to be imposed – what these are and how authorities use them are discussed in Chapter 5. Environmental enforcement authorities should also be proactive in supporting businesses to comply and Chapter 6 considers compliance assistance approaches. Chapters 7 and 8 focus on financing and management, addressing a number of capacity development issues. The book concludes with a final chapter on networking – how environmental enforcement authorities can work together to improve their effectiveness.

The book follows a common structure throughout. To illustrate the general discussion of issues, a number of case examples are provided from around the world. These can be used to illustrate usual or best practice, problems that are being faced or simply to demonstrate the variation in practice. These cases are important as it is very easy to interpret a general discussion in the light of one's own national experience – the cases help provide different perspectives.

Each of the following chapters concludes with a series of checklists. These seek to ask some pertinent, practical questions of environmental enforcement authorities based on the issues that have been discussed. They aim to begin the process of examination (where appropriate), although any detailed examination of the work of an environmental enforcement authority would need to draw upon other sources (such as detailed management techniques).

This book, therefore, focuses on the practical. However, one cannot do this effectively without considering the wider context. This is the purpose of this chapter, which begins by examining the nature of regulation and asking whether it is effective. It then structures regulation in the context of the 'regulatory cycle' and identifies and discusses the principles that underlie the work of a modern regulatory authority. It also considers further issues such as 'better regulation' and their impact on regulatory activities.

The changing face of environmental regulation

Regulation is both an intention (such as rules set out in law) and a process (such as the permitting and inspection activities of an environmental enforcement authority). The nature of environmental regulation has been under increasing examination from both a practitioner and academic perspective for a number of years. The critical questions that have arisen ask how effective and efficient are existing regulatory regimes and what can be done either to make these regimes more effective and efficient or what alternative regimes might be introduced that are better at achieving the desired outcomes.

This debate has been stimulated by a number of factors:

- There has been a changing understanding of the nature of environmental challenges. The problems of large-scale discharge of harmful pollutants have either been controlled in many industrialized countries or the regulatory regimes for tackling these have been firmly developed (Farmer, 1997, 2005a). Focus has shifted to wider issues of continual improvement, resource use, energy efficiency, product quality, etc. This has challenged the instruments available to the regulator and the working methods it employs.
- The accepted economic climate has changed. Globalization is an increasing challenge with companies demanding 'level playing fields' of competition, and a neo-liberal agenda is not only increasingly predominant in western Europe and the US, it has also come to dominate practices in some transition economies and others such as in South-east Asia. This has resulted in a number of pressures on regulatory activity, not least a need to justify the cost-effectiveness of action.
- The social context has also changed, with the public demanding greater accountability of public bodies and a greater say in the decisions that are made. Alongside this there is increasing scepticism (and cynicism) of decision makers. Interestingly, in some countries this is combined with a significant mistrust of scientific and technocratic methods of decision making more generally, which can be a particular challenge to environmental enforcement authorities.

Regulation has, historically, developed through the creation of a range of different control systems that have the objective of achieving certain outcomes through changes in the behaviour of those subject to the regulation. Increasingly the concept of a 'risk society' has grown, which recognizes that society is surrounded by risks that it, itself, produces. In order to address these risks, various forms of 'surveillance' are demanded (termed a 'surveillance society' by Lyon, 2001), and failure to manage risks can result in demands for standardized systems of control (Power, 1997). Lidskog et al (2005) argue that 'the idea behind regulation is not to eradicate risk, but to manage it and draw boundaries for the acceptable'. There is also an increasing scepticism and lack of confidence in regulatory systems due to publicized examples of the failure of regulation to deliver what the public are told it will do (Löfstedt, 2004).

The nature of environmental regulation also cannot be separated from wider developments in the thinking on governance in general. In particular, the nature of the nation state is under scrutiny, driven by international developments, globalization, demands for localized decision making and a questioning of what governments should or should not be involved in. Some have argued that this represents a combination of decentralization and fragmentation of power. For example, some have argued that there is a tendency for deregulation by the State, whereby it is slowly divesting itself of its regulatory systems, either by removing a regulatory regime or by allowing some forms of self-regulation by interest groups (e.g. an industry sector). Importantly, this might not result in fewer rules; rather that they do not emanate from the 'centre', but are more diffused through society.

Organizations other than those of the State can be involved in developing and implementing rules. In environmental management examples of this are found with certifiers and verifiers for environmental management systems, or in ecolabelling. As Black (2002) stated, ‘in decentred analyses regulation “happens” in the absence of legal sanction – it is the product of interactions, not of the exercise of the formal, constitutionally recognised authority of government’. From this viewpoint, regulation should not be viewed as a process whereby the government manages the problems perceived by society, but rather that both government and society have problems and solutions and both are mutually interdependent.

While elements of this ‘decentralization’ of regulation have occurred, arguing that this is a fundamental trend for future governance is too extreme (Lidskog et al, 2005). Indeed, there are many examples of the nation state exerting increased influence, and a number of recent developments in environmental regulation do not necessarily lead to a view of declining control (the last 20 years, for example, has seen a major increase in traditional environmental regulation in some European countries, much driven by collective action at European Union (EU) level). Indeed, rather than view the State as central to regulation or argue that deregulation is always desirable, some argue that the debate needs to be taken to another level, building on these different processes and understandings (Gunningham and Grabosky, 1998). In other words, there are different threads in society each with their own rule systems. Traditional command and control government-led regulation remains a key part of this. The adoption of alternative policy instruments (e.g. taxes) also reflects a change in the governance landscape. Whether this reflects a retreat or an extension of State influence is a subject of debate (e.g. Jordan et al, 2003).

Command and control regulation is considered to be the preserve of the State as only it is assumed to have the capacity to be effective at ‘commanding’ and ‘controlling’ (Black, 2002). Baldwin (1997) defines command and control regulation as ‘the exercise of influence by imposing standards backed by criminal sanctions. . . The force of law is used to prohibit certain forms of conduct or to demand positive actions or lay down conditions for entry into a sector.’ The role of the State in command and control regulation can be viewed in different ways (Baldwin and Cave, 1999; Lidskog et al, 2005). One is the ‘normative tradition’. This sees the State operating regulation in order to achieve a common good, that is, a series of publicly agreed desirable outcomes. This assumes that the free market will not deliver these outcomes and assumes that the actors in the process (regulators), with their expert knowledge, can be trusted to deliver the common good (e.g. environmental enforcement authorities delivering environmental protection). In contrast an ‘interest-based’ view of regulation does not see regulation as acting for the interests of society as a whole. Rather, regulation is one of a series of different clashing interests. In this case those with expert knowledge can be found within each of the competing interests. This is particularly evident today in the prominence of the debate over the appropriateness of environmental regulation in relation to the interests of business sustainability.

Command and control regulation depends upon enforcement. However, recourse to legal remedies is seen as inefficient and not cost-effective, particularly

in comparison to other approaches, such as education and negotiation (Baldwin, 1997). Indeed, as will be seen in later chapters, regulation based solely on enforcement is very rare. It is usually complemented by other approaches, so that its effectiveness is increased.

It is also important to stress that, in understanding the nature of regulation, it is vital to take account of the widely different social, economic and development contexts of different countries. Across the world the understanding of the role of the State varies as do the expectations of social norms. In transition countries, for example, one response after the rejection of the socialist systems was to question the role of the State as a reaction to years of State control over most aspects of life. Changing circumstances in developing countries also need to be addressed. For example, Jha and Whalley (1999) note that as environmental management systems in developing countries often rely on informal social norms, these systems break down under rapid population growth (such as urban migration). It should also be noted that transplanting western models of legal structures ('rule of law' and particularly that the government itself is subject to the rule of law) has often failed in developing countries due to economic issues, corruption, resources, political will and so on. One reason is that, in developing countries, informal means of resolving disputes are often more important than formal ones (Ogus, 2004). Identifying trends in the changing role of regulation must, therefore, note the context in which these trends occur in order to take into account the social (and other) factors that affect these changes.

Adopting approaches other than command and control or making command and control more flexible is part of the changing nature of environmental regulation. Measures such as emissions trading, environmental management systems and negotiated agreements are covered in more detail in Chapter 3.

Does regulation work?

The basis for the work of environmental enforcement authorities is environmental regulation. It is not unreasonable, therefore, to ask whether such regulation works. If it does not work, is this the fault of the regulation itself, the way that it is implemented (by authorities) or the fault of wider problems? In this case what can be done to improve the situation to achieve environmental outcomes? If it does work, it is also important to know why, so that success can be built upon. However, in answering the question, it is necessary to examine it from two perspectives – does regulation work for individual activities, and does regulation work when considered in its overall effect on the activities that are subject to it?

The first part of the question, on individual activities, has a variable answer. There are many companies that comply and have actively changed their practices to meet the objectives of the regulation. However, non-compliance also occurs and, although sanctions might be imposed to encourage future compliance, there still continue to be cases of deliberate non-compliant behaviour that are either undetected or for which responsibility cannot be assigned. There is a wide range of factors that can affect whether a company or individual might comply or not

Table 1.1 *Factors affecting compliance*

Factors motivating compliance	Barriers to compliance and factors encouraging non-compliance
Economic	
<ul style="list-style-type: none"> • Desire to avoid a penalty • Desire to avoid future liability • Desire to save money by using more cost-efficient and environmentally sound practices 	<ul style="list-style-type: none"> • Lack of funds • Greed/desire to achieve competitive advantage • Competing demands for resources
Social and moral	
<ul style="list-style-type: none"> • Moral and social values for environmental quality • Societal respect for the law • Clear government will to enforce environmental laws 	<ul style="list-style-type: none"> • Lack of social respect for the law • Lack of public support for environmental concerns • Lack of government willingness to enforce
Personal	
<ul style="list-style-type: none"> • Positive personal relationships between programme personnel and facility managers • Desire, on the part of the facility manager, to avoid legal process • Desire to avoid gaol, the stigma of enforcement and adverse publicity 	<ul style="list-style-type: none"> • Fear of change • Inertia • Ignorance about requirements • Ignorance about how to meet requirements
Management	
<ul style="list-style-type: none"> • Jobs and training dedicated to compliance • Bonuses or salary increases based on environmental compliance 	<ul style="list-style-type: none"> • Lack of internal accountability for compliance • Lack of management systems for compliance • Lack of compliance training for personnel
Technological	
<ul style="list-style-type: none"> • Availability of affordable technologies 	<ul style="list-style-type: none"> • Inability to meet requirements due to lack of appropriate technology • Technologies that are unreliable or difficult to operate

Source: US EPA, 1992

comply with an environmental regulation. Table 1.1 summarizes these. For any particular company or individual compliant behaviour or non-compliant behaviour will reflect which combination of these factors is most important. For example, economic factors will vary from country to country and from time to time.

Why an individual or company complies, or not, has been the subject of much study. Theoretical approaches suggest that the individual or company will weigh up the costs of compliance with the possible penalties of non-compliance either as an absolute or by considering the marginal expected penalty (Shavell, 1992; Heyes, 2000). A company, therefore, will comply if the cost of reducing emissions to the required standard is equal to, or less than, the expected penalty. From an economic perspective such analysis is rational. Indeed, the consequence of the argument is that increasing the costs of non-compliance through more effective enforcement will increase compliant behaviour. However, it is not always the case that operators will make rational economic decisions, or that they will not be subject to other influences. For example, an operator might make a decision based on social or moral expectations (Table 1.1) even if the economic 'equation' might suggest an alternative approach. For example, Tyler (1990) argued that examining responses to why laws are obeyed showed that individuals 'are almost equally likely to comply with the law because they view it as legitimate, whether they think the likelihood of their being caught is high or low'. Spence (2001) also noted that the complexity of law (such as multiple regulations) increases the likelihood of non-compliance, especially for smaller companies (which is an aspect of enforceable regulation – see below), that is, non-compliance is not necessarily the result of rational economic decisions. Whatever the basis for non-compliance, it is necessary to develop enforcement strategies that tackle this behaviour (van Snellenberg and van de Peppel, 2002).

Of more interest is the question of the effectiveness of regulatory activity when viewed from the perspective of business sectors as a whole. What benefits has regulation delivered compared to what would have happened without regulation? For example, Baert et al (2002) argued that the huge improvement in the performance of incinerators in Flanders is an example of the effectiveness of enforcement, although this is a response to new regulation, so it remains unclear what changes would have occurred in the absence of detailed inspection.

There are, in fact, few studies that have sought to examine sectors and observe the links between enforcement activity and compliance behaviour. Recent reviews (Cohen, 2000; Silberman, 2000) conclude that there is evidence, but it is limited and further research deserves to be undertaken. Some examples of the evidence of the effectiveness of environmental regulation include:

- Magat and Viscusi (1990) examined discharges and non-reporting for pulp and paper mills in the US and found that enforcement action had a deterrent effect.
- Deily and Gray (1991) identified an effect of enforcement for steel mills in the US.
- Laplante and Rilstone (1996) examined different discharges for pulp and paper mills in Canada and found that enforcement action had a deterrent effect.

- Nadeau (1997) examined the extent of violations in pulp and paper mills in the US and identified a deterrent effect of enforcement.

There is also an argument that some companies not only comply with environmental regulations in order to avoid sanctions, but also because the regulations can induce efficiencies in the way that businesses operate and improve commercial competitiveness. This is known as the 'Porter Hypothesis' after the economist Michael Porter who first proposed the argument.

The Porter hypothesis has generated significant debate and it is not possible to examine this in detail here. For example, Haq et al (2001) concluded, from a survey of the assessment of the costs of environmental regulation to businesses, that companies can take advantage of the opportunities that environmental regulation provides, but environmental regulation cannot guarantee greater competitiveness or innovation. They also note that, in examining EU law, industry has tended to overestimate the costs of regulation during development compared with the actual costs when implemented.

A recent literature review (Defra, 2006c) concluded that there is a positive link between improved environmental performance and enhanced firm financial performance. However, the report considers that previous studies have not adequately addressed or proved causality (i.e. that improved financial performance is the result of improved environmental performance), so the quality of the evidence is at best 'moderate'. Improved environmental performance can also be the result of other measures, such as environmental management systems or voluntary agreements (Defra, 2006d), so it need not be regulation that drives the performance or long-term financial consequences.

Further work is clearly required on the effectiveness of regulation and the motives for compliant and non-compliant behaviour. It is, however, important to consider not only whether most companies', or average companies', environmental performance is influenced by regulation, but also what is the best means of tackling the behaviour of those who are deliberately non-compliant. Many environmental inspectors, for example, are clear that targeting such behaviour is an important priority and that regulation is the tool with which to do it. What is the best method of social control for a company that deliberately fly-tips asbestos waste next to a school?

The regulatory cycle

The elements of command and control environmental regulation can be viewed in terms of a regulatory cycle. Figure 1.1 presents a schematic view of the cycle. The different elements include:

- **Legislative development** involves the development of the regulations which apply to different activities and which environmental enforcement authorities enforce. This can include both primary and secondary legislation. It can also include the development of guidance to interpret this legislation.

- **Strategic planning** involves the preparation of the strategies and plans that are required in order to implement legislation. These strategic plans might be required by law, or be developed by an environmental enforcement authority to guide its work. They could, for example, set out the overall principles by which its work might be undertaken, such as adopting a risk-based approach (see below). Strategic plans can also be developed for the individual parts of the regulatory cycle (such as an inspection plan).
- **Permitting** involves setting conditions which apply to individual activities and can involve a range of different procedures.
- **Monitoring** includes a range of procedures and practices, both for individual installations and, where appropriate, operations (such as waste collection), and for more general environmental quality to determine whether permit conditions are complied with.
- **Inspection** involves a range of supervisory practices whereby the environmental enforcement authority determines whether the activity complies with its legal requirements, such as those established in permits.
- **Enforcement** involves a range of actions taken against activities that are found to be non-compliant.
- **Reporting** procedures are those through which data derived (mainly) from permitting, monitoring and enforcement activities are made available to, for example, the public, government and other authorities.

The stages described above form a logical progression from establishing requirements in law to making sure these are implemented. However, the process should be cyclical. Legislation should be developed taking account of knowledge about the effectiveness of monitoring and information on rates of non-compliance. In a similar way, the process of permitting should also take account of information on compliance, particularly for individual activities. Indeed, to present regulatory activity as a single ‘cycle’ is somewhat misleading or incomplete. In practice there should be a series of feedback processes between the different elements where information exchange can improve decision making.

Environmental enforcement authorities undertake various parts of the regulatory cycle. In some countries a single institution covers much of the cycle, while in others different parts might be the responsibility of separate institutions (Chapter 2). In all cases it is essential that information is available throughout the cycle (within or between institutions).

In undertaking these various activities a strategic approach is required. This means that a compliance enforcement programme should be developed which identifies the objectives of the regulatory activity (environmental outcomes) and the principles of its implementation (e.g. keeping costs to a minimum). Without such a strategic approach the emphasis on different areas of environmental enforcement can be misplaced, resulting in ineffective environmental management, as has been noted for a number of Eastern Europe, Caucasus and Central Asian (EECCA) countries, which can ‘apply the law inconsistently and chaotically’ as a result (OECD, 2003a).

An effective programme would include:

- creating enforceable regulations which will, if implemented, deliver the required outcomes;
- identifying which activities require regulation;
- understanding the regulatory culture of the activities to determine which approaches, instruments, etc., would be most appropriate;
- ensuring that regulated activities clearly understand their obligations (such as through permits);
- promoting compliance among these activities;
- monitoring compliance with legal obligations;
- taking action against non-compliance in a way that deters future violations;
- ensuring an effective administration to undertake these activities;
- monitoring the entire programme and modifying it if necessary.

Each of these activities and management processes will be addressed in later chapters. However, it is important to stress the importance of an overall strategy or programme for compliance and enforcement at this stage. Note that this is different from a strategy for an individual environmental enforcement authority (addressed in Chapter 8), as the overall approach to compliance will be wider than an individual authority. Fulton and Gilberg (1992) argue that for an enforcement programme to be effective it requires the following characteristics:

- Enforcement programmes should be strong enough to have an impact on the regulated community, to change behaviour and to deliver environmental compliance. Thus the programme must reach enough violators to pose a credible threat, impose sufficient penalties and communicate its results to the regulated community.
- Enforcement programmes must be efficient using all available tools – administrative, civil judicial, and criminal remedies, as well as adopting targeted approaches such as risk-based regulation of target resources.
- Enforcement should be creative, seeking to achieve results beyond compliance.
- Enforcement should be fair, providing confidence in the system.

Principles for the work of an environmental enforcement authority

There are a number of principles which should inform the work of environmental enforcement authorities. These transcend the different types of activities that can be undertaken and it is, therefore, important to consider them at this point to help inform later discussion. In this section some principles will be identified with simple examples of what they might mean in practice. Some of these will then be examined in more detail in later sections.

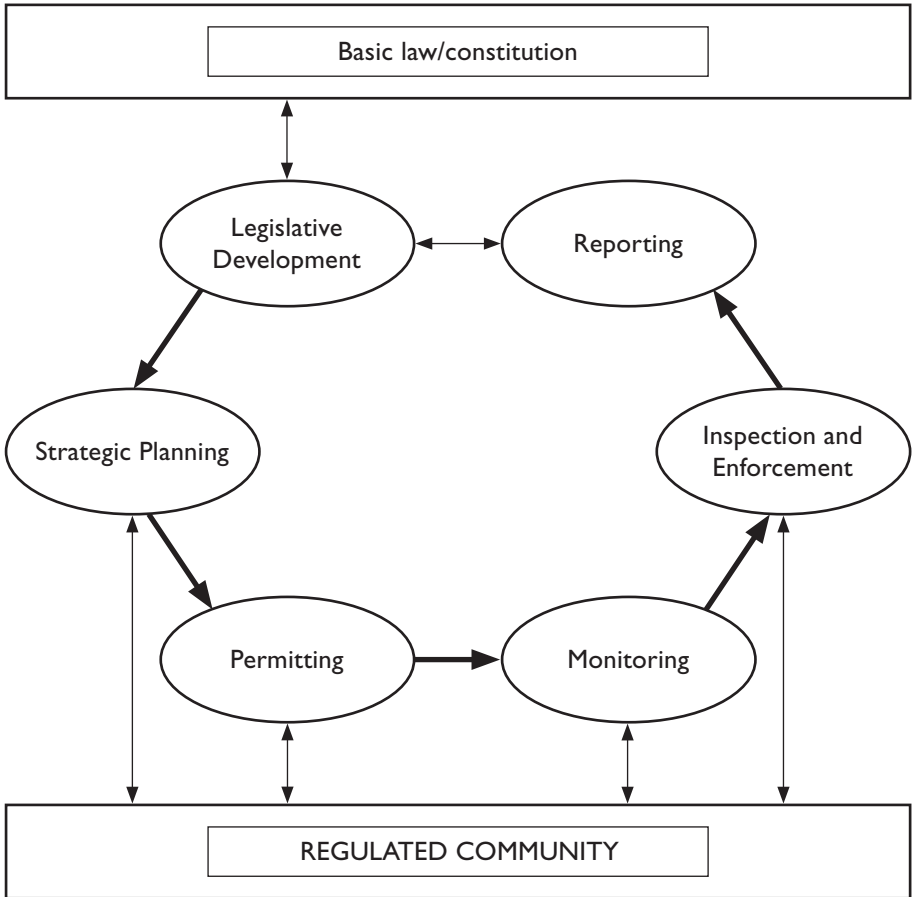


Figure 1.1 Elements of the regulatory cycle

The activities of an environmental enforcement authority should be transparent and accountable

Regulators are responsible to a variety of stakeholders, including their parent ministry, Parliament, other public bodies, the regulated community and the public. Practical examples include:

- Regulations should be easily understood.
- Environmental enforcement authorities should publish (and report against) clear standards of service.
- Environmental enforcement authorities must provide an accessible complaints service.
- Environmental enforcement authorities should publish their enforcement policy, justify the choice of enforcement actions and be transparent in calculating administrative penalties.

- There should be provision of information and advice in a variety of methods.
- Environmental enforcement authorities should be accountable for the efficiency and effectiveness of their activities.

Regulation should be enforceable and consistent

Regulations must be written in a way that ensures that they can be enforced. Vague laws, inconsistent or contradictory regulations will inhibit the work of environmental enforcement authorities and frustrate industry in its attempts to be compliant. Stability and certainty in regulation is important for companies. They also want to see equal treatment with their competitors, etc. Elements include the following:

- Regulations should be clear, with relevant terms, etc., fully defined.
- Regulations should be consistent with each other, especially when more than one regulation will apply to an individual activity.
- The conditions set in regulations must be achievable by all concerned.
- There should be consistency in the delivery of the same type of regulation across a country (or wider), including in the imposition of sanctions.
- There should be consistency in regulatory approaches across different areas of regulation.
- There should be consistency in the advice given.

Regulation and regulatory activity should be risk based and proportionate

The burdens of regulatory activity (both to the regulator and to the regulated) should reflect the degree to which the regulated activity poses a threat to health and the environment. Examples include:

- Regulatory activity (throughout the regulatory cycle) should be based on the risk posed to health and the environment by the activity being regulated.
- Resources of the environmental enforcement authorities should be concentrated on those areas of most importance.
- Sanctions must be proportionate and meaningful and be firm and fair. They should change behaviour, ensure no financial benefit to offenders and deter future non-compliance.

Regulation and regulatory activity should be outcome focused

Environmental regulation has the objective of protecting health and the environment. It is important that regulatory activity and the costs imposed on businesses are targeted at those outcomes. Examples include:

- Regulatory outcomes should be clearly defined.
- Outcomes should be carefully monitored and assessed to determine whether regulation is delivering.
- Penalties, for example, should be based on managing the risk of re-offending (e.g. sufficient to act as a deterrent).

Regulation and regulatory activity should be *as simple as possible* and not impose unnecessary costs

This principle could be seen as similar to being proportionate. However, it is important to highlight this particular element, not least because of the current stress on this issue. In order to deliver this, environmental enforcement authorities should:

- measure and set targets to reduce costs;
- have simpler administrative requirements;
- only require what is necessary to achieve the desired objectives.

Transparency and accountability

The transparency and accountability of regulation and environmental enforcement authorities include a range of elements. They include the simple condition that the activities of regulatory bodies are open to public scrutiny as far as possible. However, there is also a need for a proactive engagement with stakeholders. Thus adopting a freedom of information approach (in law or in practice) can be like inserting a pane of glass to form a window into the institution. Nevertheless, a proactive approach is needed to help many of those who look through that window understand what they are looking at.

There is a need for accountability of environmental enforcement authorities to their parent ministries (and similar). These institutions usually report on their activities and are subject (to varying degrees) to public scrutiny for their actions and spending. For example the US General Accounting Office examines the work of the US Environmental Protection Agency (EPA) and, in the UK, the Environment Agency can be examined by Parliamentary Committees and the National Audit Office. Examinations of regulatory practice can be undertaken by a dedicated body and be similar to an audit. In other cases hearings can be held with stakeholder views being obtained. The latter are particularly valuable as they enable statements of accountability made by an environmental enforcement authority to be questioned.

The more problematic area of ensuring transparency for environmental enforcement authorities is engagement with the public. This deserves examination in more detail. Healy (2005) notes that there has been considerable interest in public participation in environmental decision making, as it 'promises to bring a broader, more representative range of knowledge and values to bear on the complexity and uncertainty of environmental problems'. Public participation is seen as being able to encourage consensus and thus provide a more viable platform for delivering successful outcomes (Irwin, 1995). However, Healy (2005) argues that such participation is constrained in that it takes place within the 'representations of knowledge' of those organising the participation so that it results only in supplementing knowledge within these boundaries. Public understanding and values are re-shaped to take part in the discourse made available to it. In other words it does not break out of the 'box'. This is particularly the case when public

participation is merely appended to existing forms of decision making. As a result public views usually play an advisory role rather than a substantive one in decision making (Healy, 2005).

This is especially evident in much of the public participatory practices of environmental enforcement authorities. Consultation on a draft new regulation or on a permit application are clear examples of where the details of the discourse are tightly constrained. Indeed, attempts by the public to raise wider issues are often dismissed as being outside of the regulatory decision-making framework. The earlier that public consultation takes place, the less constrained might be the discourse. For example, in Finland all regulations are developed at the outset with a consultative forum (not a draft to comment upon). While this might not overcome the fundamental problems identified by Healy (2005), it does at least provide wider boundaries of discourse in which to participate.

Consensus building is viewed as a symbol of a fair, transparent and participative process. However, Connelly and Richardson (2004) argue that in reality there will be practical constraints and tensions between the different goals of the participants which means that inclusivity will be compromised and that processes need to be put in place to seek to minimize these.

It is important, therefore, to identify barriers to effective engagement with stakeholders. Feindt and Oels (2005) identified the following aspects relating to the nature of the discourse on environmental issues:

- Environmental problems are not self-evident, but have complex interactions, long timeframes, etc. They are often not articulated in everyday language, but are expressed using expert language and concepts. In addition interpretations of environmental problems are often contested, with multiple expert interpretations.
- The way that an environmental problem is articulated affects how it will be dealt with. Some problems are of no interest to the public, others are of great concern.
- The environmental discourse is also part of wider social discourses and competes with these. This is evident, for example, in the discourse on competitiveness, where environmental discourse actively competes with it, yet the two have also shaped each other. Competition between discourses means that basic concepts are not necessarily agreed, so that experts compete with each other and the public can perceive the knowledge as 'fragile', that is, certainties disappear and confidence declines.
- The concepts used in environmental discourse are linked with management practices and institutional issues. They have a history and frame the discourse from the perspective of these structures. The language can, therefore, have an in-built conservatism and can inhibit interaction with the public which is outside of this institutional framework.

Feindt and Oels (2005), therefore, note that a proper understanding of the issues relating to discourse on environmental problems can highlight the following points to help the process:

- an awareness of the role of language in constructing policies;
- a sceptical attitude towards claims of a single objective truth;
- an inclination to regard knowledge as contestable;
- an awareness of bias in different types of language and knowledge;
- an awareness that language and knowledge result in power relation outcomes;
- an understanding that practices and institutional systems affect language and knowledge;
- a realization that discourse can democratize knowledge production and policy making.

There is, therefore, a need to deliver participatory processes that are fully deliberative and not technocratic (as far as possible). To achieve this Vigar and Healey (2002) recommended five principles for an effective policy process; authorities should seek to:

- articulate the message clearly;
- frame the activity within the policy sector and help guide strategies and programmes in other relevant sectors;
- help to coordinate policy interventions through links to other policy communities operating across differing spatial scales;
- be legitimized through working with a broad range of stakeholder groups;
- mobilize stakeholders towards implementing programme goals.

There is today an increasing scepticism of 'expert' judgements, which are, after all, what environmental enforcement authorities depend upon. Knowledge claims are increasingly contested and this means that it can be increasingly difficult to reach an expert consensus (Lidskog and Sundqvist, 2004). This is not only stimulated by increasing publicity over a wide variety of issues (including regulatory failures), but also from increasing education levels among the population and increasing access to all types of information, such as from the internet, although it may be of variable quality.

These issues do, therefore, pose significant challenges to environmental enforcement authorities. Such bodies often wish to communicate expert, technical knowledge and yet this itself can present a barrier to the objectives of communication and participation.

Enforceable regulation

Two hundred and fifty years ago Benjamin Franklin noted that 'laws too gentle are seldom obeyed; too severe, seldom executed' (Franklin, 1756). Laws must be correctly crafted to ensure enforceability. Enforceable regulation is such that environmental enforcement authorities have the legal and administrative means at their disposal to encourage or, in the event of wilful non-compliance, to compel those being regulated to comply with their obligations under the legislation. However, this includes a number of elements, including:

- Those being regulated need to be clearly defined.
- The obligations on those being regulated need to be clear and understandable.
- The obligations must be achievable through available technologies and techniques.
- The obligations need to be communicated effectively to those being regulated.
- The obligations need to be achievable, including within a realistic timescale, with clear deadlines.
- Compliance with the regulatory obligations must be viewed as more beneficial than breaking the law, for example, through fear of sanctions.
- Ways of avoiding compliance must be reduced, through controlling fraud in reporting, effective inspections, etc.
- The options for enforcement action by environmental enforcement authorities and others need to be clearly defined.

Baert et al (2002) noted that regulations can be developed which are not clear or technically feasible, 'especially in cases where national or regional governments feel the need "to do something"'. They argue that it is important for environmental enforcement authorities to evaluate rules and feed back results to policy makers to help tackle this problem. Inconsistency between different regulations (such as different definitions, objectives, etc.) also impede regulatory activity for both environmental enforcement authorities and companies (Farmer et al, 2003; Farmer, 2006). Thus environmental enforcement authorities must work closely with those developing regulations to ensure that what is adopted is enforceable.

There are a number of factors that can inhibit the enforceability of regulation, including:

- **Technology availability:** if it is not possible to measure a particular pollutant, for example, due to a lack of available technology, there is no point in setting a standard for it.
- **Capacity:** environmental enforcement authorities might have insufficient capacity to undertake the required regulatory compliance work. If it is not possible to oversee the regulation, a simpler version should be adopted, extra resources found or alternative approaches considered.
- **Limits to legal instruments:** there may be legal or practical limits on the level of fines and other non-compliance penalties (prison sentences, etc.) and hence these do not provide a sufficient incentive to comply. This should be addressed by altering these constraints, if possible, or seeking other incentives for compliance.
- **Political opposition:** in reality it may not be politically possible to require the closure of a plant that does not comply, for example, and that will not invest in measures to meet the requirements. Regulation must operate within accepted social expectations.

An example of unenforceable conditions were the maximal allowable concentrations established in the Soviet Union. These covered a wide range of substances and were so strict that almost no industrial activity could comply with them. As a

result small fines were usually paid, viewed by operators simply as part of the usual operating costs of the activity. The legitimacy of the regulations derived in this system were also questioned by operators and the public due to the secrecy within which such standards were developed. With greater openness, the legitimacy has also been questioned because of perceived bias and corruption of environmental authorities (Ivanova, 2002). EECCA countries today still have problems with the enforceability of regulatory requirements. For example, many laws adopted over recent years allow too much discretion to enforcement staff as well as retaining unenforceable conditions. As a consequence the system ‘fosters a general disbelief in the fairness of regulatory requirements and encourages compliance evasion’ (OECD, 2003a).

The way that fines are imposed can also be seen as impractical. For example, under the 1999 Environmental Code in Sweden the system for issuing fines was changed so that they became automatically required in cases of breaches of permit conditions, irrespective of the reasons for the breach. Municipalities are responsible for imposing these fines. However, for political reasons there have been occasions where they have refused to do this. The resulting court cases have been contradictory; in one case the politicians were fined, in another they were acquitted (Lindgren, 2002). The system is, therefore, sub-optimal.

It is important for operators to consider that the conditions imposed on them are fair, technically feasible and not too costly. This can result in the operators being more willing to take effective action for environmental protection as goals are seen to be achievable. If there are strict limits, industry can accept these if there is a reasonable time given for implementation. For example, in Sweden it has been recognized that retrofitting old installations to meet new standards can be three or four times more costly than for new installations (Lindgren, 2002). Therefore, permitting authorities give time for this to be done and, thus, make it practicable.

Environmental enforcement authorities are not ultimately responsible for the text of the regulations that they enforce. However, they do need to work closely with those developing regulations to identify any problems with enforceability. Indeed, they have the practical knowledge that policy makers lack. This must include implications for the practical consequences for the authority itself, such as the interpretation of permit conditions or how conditions can be assessed during inspection. Environmental enforcement authorities also have an intimate knowledge of regulated activities and this knowledge can be important in informing those drafting regulations of the enforceability of the regulations (this might also be required to balance views from businesses themselves). Such knowledge can include information on economic issues (cost of pollution control and monitoring equipment, timing of investment programmes, cost-effectiveness, etc.) and technological issues (availability, reliability, etc.).

Risk-based and proportionate regulation

Risk-based regulation is not the same as risk management. However, depending upon the sophistication of the approach, it can include some of the same analytical

processes. The nature of the assessments used to assess risk can cause controversy, for example, whether they result in the targeting of the right activities for regulatory activity (Finkel, 1994) or whether the analytical process can delay decision making (Schierow, 2004). Indeed, no risk-based approach can be viewed as a foolproof analytical process as the issues addressed are not always easily analysed. The European Environment Agency (EEA), for example, concluded that 'there is no credible way of reducing the pros and cons of alternative courses of action to a single figure, economic or otherwise, not least because of the problem of comparing incommensurables and because the pros and cons are unlikely to be spread evenly across all interest groups' (EEA, 2001). Thus any risk-based approach must be able to demonstrate that decision making is improved (such as improved environmental outcomes).

It is important to note that risk-based regulation is not new. In fact, it is probably as old as environmental regulation itself. Where environmental enforcement authorities have any freedom to make operational decisions, they have usually targeted activities that they consider pose a greater risk to health and the environment or might be more likely to be non-compliant. This need not be the result of a detailed analytical process, but may be based on the experience of individual inspectors, for example. Therefore, in 1990 Poland established its 'List of 80' most serious polluters. The aim was for these activities to receive more concerted regulatory attention. An activity can be removed if it undertakes a range of measures to improve environmental performance. This has acted as an incentive for improvement and by the end of 2001, 52 activities were removed from the list and 16 were conditionally removed. Consequently in 2002 the 'List of 80' contained 40 activities (Panek-Gondek, 2002). Slovakia also adopted a simplified risk-based approach to inspection (Rajniak, 1998). This involved a scoring system (0, 1 or 2) for each of the following attributes of a facility:

- indicators for a range of operation parameters;
- indicators for flue gas cleaning systems;
- whether there are possibilities for fuel substitution;
- whether the operational system can be changed;
- whether there are cases of non-compliance;
- whether the sector is known for non-compliance;
- existence of complaints against the process;
- the economic status of the facility;
- whether there is a modernization plan;
- whether there is an environmental management system.

Risk-based regulation can, however, be constrained, for example, by requirements in law for inspection at specified intervals.

Risk-based regulation is necessary wherever environmental enforcement authorities have resource constraints, which is almost universally the case. In these situations, the authorities need to target their resources on what can deliver the most outcomes. Risk-based regulation can achieve this. Even if resources are not

an issue, it should be noted that regulatory activity does impose costs to businesses and it is reasonable to target regulation on more 'risky' activities, so that the costs to more compliant businesses, for example, are reduced.

Where risk-based regulation is undertaken, it is important that the way that it is implemented is transparent and that any criteria for differential regulatory activity are robustly determined. A business receiving greater regulatory attention is justified in asking why. For this reason it is also important for risk-based approaches to be developed in close communication with the business sectors affected. The way that risk-based regulation is implemented across a country might also need to vary. For example, Arquette et al (2002) argued that risk-based approaches in the US need to take account of specific cultural values (and, therefore, cultural priorities) when being implemented in Native American communities.

Risk-based regulation can be used for a wide variety of regulatory activities. For example, in the Netherlands, elements of risk-based assessments have been incorporated into analyses underlying the development of compliance strategies for different sectors (Van der Schraaf, 2005). Risk-based approaches can also be combined with various forms of compliance assistance into an overall Compliance Management System which, as Paddock (2005) notes, is reflected in the US EPA's approach of 'smart enforcement'. Environmental enforcement authorities, therefore, can vary significantly in their approach to risk-based regulation. Hutter (2005), for example, concludes that 'in some cases regulatory agencies seem to talk of risk-based regulation as if it represents an entire perspective or framework of governance, in other cases it is used much more loosely to refer to an ad hoc scenario involving the piecemeal adoption of risk-based tools and an uneven use of the language and rhetoric of risk'.

To take account of all of the potential risk issues requires a significant quantity of information on the operation of an activity. To illustrate these issues it is worth considering three practical examples. The first is the operator and pollution risk appraisal of the Environment Agency of England and Wales (Case 1.1). This is a procedure which brings much relevant information together into a single analytical system, which is focused via the permitting procedure. This approach has also been adopted (in a modified form) by the EPA of Ireland. A similar range of issues is also taken into account by Environment Canada (Case 1.2). However, in this case the information is collated and assessed via a central data system. Finally, risk-based regulation is important in targeting regulatory activity when environmental enforcement authorities are confronted by a large number of small activities. An example is given from the US for underground storage tanks, with a combination of national and State level approaches (Case 1.3).

Outcome-focused regulation

There is widespread recognition of the need for regulation to be focused on outcomes rather than processes. This, indeed, drives much of what is undertaken to deliver a reduction in costs and risk-based regulation. The discussion earlier on whether regulation works informs any discussion of outcome-focused regulation.

Case I.1 Operator and pollution risk appraisal in England and Wales

The Environmental Protection, Operator and Pollution Risk Appraisal (EP OPRA) approach aims to incentivize improved environmental performance and provide a transparent means by which operators can assess their own performance and see how they may improve it. It also allows the Environment Agency to target better its resources in proportion to risk. Compliant businesses are rewarded by reduced regulatory charges and fewer site inspections (and associated administrative burdens). The risk assessment framework incorporates an element of professional judgement, but the methodology itself is relatively objective in nature. The methodology was introduced in 2003 and extended to waste management licensing in 2005.

When first introduced, EP OPRA consisted of four attributes, which were assessed by the operator at the time of application for a permit/licence:

- 1 *Complexity* – how complex is the process? The more complicated it is, the more effort is needed to put into inspecting and regulating it.
- 2 *Location* – how close is the operation to areas such as a drinking water source, housing or wildlife habitats? The Agency also looks at whether any discharge is being released into rivers, at local air quality and whether the site is on a floodplain.
- 3 *Emissions* – how much pollution is being released and how harmful is it to the environment?
- 4 *Operator performance* – such as whether it has an environmental management system.

The 2005 version of EP OPRA introduced a fifth attribute, compliance rating. This is assessed by the Environment Agency, after the permit has been issued, using information from the Agency's Compliance Classification Scheme, which was introduced in 2004. This attribute allows the Agency to adjust its regulatory activity according to its assessment of compliance. An EP OPRA score is a banded profile made up of a series of letters in the range A–E, where 'A' represents the lowest risk and 'E' the highest risk for the attribute in question. OPRA is used to plan much of the Agency's work, including:

- carrying out site visits;
- checking the processes and procedures in place to comply with permit/licence conditions and the law;
- reviewing any self-monitoring;
- assessing operational activities;
- monitoring the achievement of environmental quality standards.

Further information on the issues addressed in each attribute is given below.

Complexity attribute. This attribute takes into account the following factors:

- activities carried out;
- potential for significant releases to one or more media;
- use of one or several interconnected but distinct processes;
- potential for accidental emissions;
- inventory of potentially hazardous materials;
- size relative to its sector;
- whether significant regulatory effort is required to assess and maintain compliance and to maintain public confidence.

Location attribute. This attribute takes into account the following factors:

- proximity of human habitation (domestic and industrial/office occupation, schools, hospitals, etc.);
- proximity to sites designated under wildlife legislation;
- sensitivity of receiving waters;
- potential for direct release to waters and the presence of control measures;
- potential for flooding and the consequence of uncontrolled emissions to the flood waters;
- inclusion within an Air Quality Management Zone.

Emissions attribute. This attribute is generally based on the values in the permit rather than actual emissions. The potential for emissions arising from unforeseen events and accidents is covered under the complexity attribute. The emissions attribute takes into account the following factors:

- the type and quantity of substance;
- the media into which the release takes place, e.g. air, land, water;
- the relative impact of that substance on that media.

Operator performance (management systems) attribute. This attribute takes into account the following factors:

- presence/absence of management systems, etc., covering areas such as:
 - operations and maintenance;
 - competence and training;
 - emergency planning;
 - auditing, monitoring, reporting and evaluation.

Compliance rating attribute. This attribute takes into account the following factors:

- non-compliance with permit requirements;
- potential impact on the environment as a result of non-compliance;
- additional compliance assessment effort required to deal with permit breaches.

Case 1.2 *Risk-based regulation in Canada*

In 2002–2003 Environment Canada developed its Compliance Analysis and Planning database. This not only aims to improve the regulator's information base, but includes an analytical framework for assessing the relative risks of different activities so as to guide regulatory activity (Barrett, 2003). The database integrates all existing Environment Canada information on all facilities subject to regulation, including basic site data as well as information on releases, etc. This is achieved without seeking new information from companies (and hence not imposing new burdens).

Using the data, Environment Canada is able to identify the risk factors that each activity poses to health and the environment. These factors include environmental indicators, the facility's compliance history, length of time since the last inspection, etc. For each factor the activity is given a score, for example, higher levels of toxic releases result in a higher score. The scores then guide the development of general and specific inspection plans. This includes a statistical sampling plan which weights inspection activity so that the probability of a facility being included in the next inspection cycle depends on its total risk factor score. The actual rates of inspection depend on issues such as regional resources. The results of this approach also enable Environment Canada to consider whether additional regulatory tools are required.

Case 1.3 *Risk-based decision making for small processes in the US*

In 1995 an approach was introduced to delivering risk-based decision making for regulating underground storage tank (UST) corrective action programmes in the US. There are over 250,000 UST releases and over 30,000 new ones each year. Clean-ups have been initiated at more than 209,000 sites and completed at more than 107,000 of these. However, UST implementing agencies still face a major challenge. To help them deal with these challenges, the US Environmental Protection Agency (EPA) provides support for streamlining (simplifying and accelerating) administrative and field investigation processes. Risk-based decision making helps UST implementing agencies and UST owners and operators manage clean-ups of UST releases based on relative risks to human health and the environment. In addition risk-based decision making provides a decision-making framework to help keep transaction costs under control.

The risk-based decision-making process utilizes a risk and exposure assessment methodology. Once a site is listed, qualitative and quantitative risk assessments are used as the basis for establishing the need for action and determining remedial alternatives. To simplify and accelerate baseline risk assessments at Superfund sites, the EPA has developed generic soil screening guidance that can be used to help distinguish between contamination levels that generally present no health concerns and those that generally require further evaluation. The Resource Conservation and Recovery Act Corrective Action Program also uses risk-based decision making to set priorities for clean-up so that high-risk sites receive attention as quickly as possible; to assist in the determination of clean-up standards; and to prescribe management requirements for remediation of wastes.

Many States have developed their own risk-based approaches. For example, Ohio has developed corrective rules that include a Site Feature Scoring System (SFSS) and risk-based action levels to assess corrective action sites. Ohio developed a risk-based approach which uses four tiers of risk assessment. The complexity of risk assessment increases from Tier I to Tier IV. The process initially uses conservative scenarios and assumptions. Less conservative assumptions are introduced as additional site-specific data are provided to justify them. Based on data collected during an initial site check or assessment, the operator completes an SFSS form, which determines whether or not additional corrective actions are necessary. If contamination is present at or below the action level, further remediation is not required at that time. If the action levels are exceeded, additional corrective actions are necessary. As an alternative to Tier I (the SFSS action levels), Ohio also allows owners and operators to conduct risk assessments to determine whether clean-ups are necessary and to develop site-specific target clean-up levels. Tier II, a baseline risk assessment, uses conservative assumptions about pathways and chemicals. Tier III is a more detailed risk assessment and, if sufficient data exist, specific pathways (e.g. to groundwater) may be eliminated in the assessment. Tier IV consists of a risk assessment with Monte Carlo Sensitivity Analysis. This tier requires additional site-specific information to justify less conservative assumptions about pathways and chemicals.

If one is able to identify what ‘works’, then this should drive the regulatory focus. However, this can be easier said than done.

The US EPA, for example, has an extensive body of regulation and has collected information for many years on regulatory activity, emissions and state of environment information. It is, therefore, pertinent to ask how well the outcomes of regulation are understood. An interesting analysis of this was undertaken by Davies and Mazurek (1998). While they noted that there have been significant declines

in a number of emission and ambient pollution indices, there is great difficulty in attributing these to regulatory activity. They state 'it is neither conceptually nor factually correct to assume that, because declines in many pollutants have followed investment in pollution control programs, the decline is due to the programs'. Economic changes have contributed to some changes and the authors state that 'voluntary compliance has significantly reduced pollution below what it would otherwise be'. As a result they conclude that 'overall, it is impossible to document the extent to which regulations have improved environmental quality'.

However, while it might be difficult always to link cause and effect, it is certainly reasonable to ask the question 'what is it for?' for any new regulatory proposal. If a regulation, or any component of it, does not lead to delivering the desired outcome, it is, at best, unnecessary and, at worst, harmful. For example, are *all* of the monitoring and reporting requirements required in the conditions of an individual permit necessary to ensure compliance?

Simple regulation that does not impose unnecessary costs

Simplification and reducing the costs of regulation and regulatory activity cover a wide range of possibilities including removing regulations, merging regulations into a more manageable form and resolving overlap or inconsistency within or between regulations. It also includes reducing the burden of paperwork and other administrative processes. The aim of simplification should be to reduce regulatory burdens wherever possible but without removing necessary protections for the environment or workers. However, there are also pressures for deregulation. This questions the need for environmental protection and can be seen explicitly or implicitly in a number of contexts. Environmental enforcement authorities should resist an agenda which increases risks to health and the environment. Deregulation is not, therefore, included in the further discussions of simplification in this book.

Simplification has become an important agenda in many countries. The agenda goes by many different names, such as 'cutting red tape', reducing the 'administrative' or 'regulatory' burdens on companies, 'streamlining' regulation, 'simplifying' regulation, 'paperwork reduction', 'smart regulation' and 'better regulation'. Increasingly public authorities have introduced regulatory reform programmes to improve the efficiency and effectiveness of regulations in a variety of ways, for example, the removal of obsolete and contradictory requirements, the consolidation of overlapping legal requirements, the application of new tools with the support of information technology and the introduction of organizational and structural changes.

The Organisation for Economic Co-operation and Development (OECD) survey 'From Red Tape to Smart Tape' uses the term 'administrative simplification' to cover these types of measures (OECD, 2003b). The OECD has also produced the following checklist to question whether regulation is well defined and targeted:

- Is the problem correctly defined?
- Is the government action justified?
- Is regulation the best form of government action?
- Is there a legal basis for regulation?
- What is the appropriate level (or levels) of government for this action?
- Do the benefits of regulation justify the costs?
- Is the distribution of effects across society transparent?
- Is the regulation clear, consistent, comprehensible and accessible to users?
- Have all interested parties had the opportunity to present their views?
- How will compliance be achieved?

The Mandelkern Group on Better Regulation (Mandelkern Group, 2001) identified the following common principles for better regulation:

- The principle of necessity – are the regulations needed?
- The principle of proportionality – balancing the advantages which regulation provides with the constraints it imposes.
- The principle of subsidiarity – decisions being taken as close as possible to the citizen.
- The principle of transparency – the need for participation and consultation.
- The principle of accountability – the responsibility for decisions, etc., should be identifiable.
- The principle of accessibility – regulation to be accessible to those to whom it is addressed.

The interpretation of better regulation or simplification results in different outcomes in different contexts. For example, risk-based regulation (see above) is one aspect and Chapter 3 will discuss what simplification means for permitting. Better regulation also informs strategic approaches to reforming regulation, bringing the different drivers together. This will be illustrated by two examples – the ‘Smart Regulation’ approach in Canada (Case 1.4) and the reform of regulation in the Netherlands (Case 1.5). The Smart Regulation initiative in Canada represents one of the most comprehensive approaches to simplification and better regulation. It is comprehensive in that it covers all governmental regulatory activity and seeks to involve a very wide range of stakeholders. An important aspect of smart regulation is that it establishes, up front, the principles upon which it operates – these include a commitment to environmental sustainability. This statement of principles provides a benchmark against which the many specific initiatives can be judged and through which stakeholders can have more confidence. Smart Regulation has also adopted a rigorous process for taking forward its initiatives, including studies and extensive consultation processes. This framework approach is important in its success and it is clear that being systematic in analysis and delivery is a key objective.

These strategic approaches to simplification have a number of benefits:

- They provide a focus for high-level commitment to simplification.
- They can provide a forum to debate fundamental issues.

Case I.4 Smart Regulation in Canada

Smart Regulation in Canada is a national government initiative aimed at improving the regulatory system (across all subject areas) (EACSR, 2004; Canadian Government, 2005). It aims for a 'better coordinated, more transparent system that remains forward-thinking and accountable to citizens'. Smart Regulation includes a series of projects that aims to strengthen the policies, processes, tools and communities needed to improve regulatory performance. Smart Regulation is based on the following principles:

- *Protecting the public interest:* To find the right blend of policy instruments to achieve the greatest overall benefit, recognizing that social, environmental, and economic objectives are mutually supporting.
- *Extending the values of Canadian democracy:* Decision making on regulatory matters is conducted in an open and transparent manner, with the government communicating intended results and being accountable for outcomes.
- *Leveraging the best knowledge in Canada and worldwide:* Recognizing that knowledge and evidence form the basis of regulation, and striving to maximize a diversity of knowledge sources and perspectives. Cooperation within Canada and internationally to share knowledge will be maximized.
- *Promoting effective cooperation, partnerships and processes:* To strengthen cooperation with all levels of government and improve policy coherence, timeliness, efficiency and effectiveness. It engages stakeholders, and fosters international cooperation to improve economic competitiveness.

The Federal Government has also established the following strategic objectives of Smart Regulation:

- Enhanced coordination across the Federal Government and better cooperation with other governments in Canada and internationally to help set and meet national objectives that promote social, environmental and economic well-being and improve the quality of life.
- Increased policy coherence and the integration of social, economic and environmental principles and objectives into all stages of policy, regulation and decision making.
- Improved transparency, efficiency, timeliness and predictability of regulatory and decision-making processes, and reduced administrative burden for businesses and citizens.
- Strengthened planning and priority setting and more proactive and timely problem and risk identification to facilitate responsive regulation and better to protect the public interest.
- Improved identification, management and mitigation of aggregate and unintended impacts on areas and sectors through greater use of longer-term, integrated and whole government approaches to regulation.

- Strengthened regulatory management from design to implementation and evaluation of regulation for the continuous improvement and ongoing renewal of regulation across government.

Smart Regulation was formally launched in early 2005, following an examination of issues through earlier studies. Currently, initiatives are being implemented in three areas:

- *Strengthening regulatory management*: A series of initiatives aimed at strengthening the policy and analytical requirements of regulation, along with the capacity to manage regulation through its life cycle, from development to implementation and review.
- *Enhancing regulatory cooperation*: Initiatives aimed at achieving greater collaboration and cooperation within the Federal regulatory community, across jurisdictions within Canada and internationally.
- *Achieving results in key sectors and thematic areas*: Initiatives being undertaken by regulatory departments and agencies.

The Federal Government developed a Consultation and Engagement Strategy for Smart Regulation. The strategy outlines opportunities to help shape the regulatory approach and to ensure that it is fair, relevant and effective. The means to achieve this are:

- *Web-based information exchange*: The official site on regulation, www.regulation.gc.ca, provides the public with information about Smart Regulation.
- *Reference Group on Regulating*: This group consists of people who represent wide interests and provides an external perspective on the Government Directive on Regulating. A Regulation Advisory Board will also be created.
- *Cross-Canada workshops*: A series of workshops was held in selected locations across Canada to allow discussion of issues.

‘Developing a New Management System for the Development and Implementation of Regulation’ is central to Smart Regulation. Initiatives include:

- *Government Directive on Regulating*. This establishes a life-cycle approach to regulatory governance by identifying requirements for regulatory management, impact analysis and reporting results.
- *Framework for Assessing, Selecting and Implementing Instruments for Government Action*. This assists in selecting appropriate instruments for government action (e.g. laws, regulation, taxation, standards, publications and education) to provide guidance to Federal departments and to increase consistency in the analytical work supporting the decision-making process.
- *The Guide for Effective Regulatory Consultations*. This assists departmental officials in designing a consultation plan during the development

of regulatory proposals. It covers topics such as ensuring clarity of purpose and objectives; coordination of regulatory consultation across departments; conducting internal and external scans; choosing the right tools; developing realistic timelines; and evaluating the process.

- *An Umbrella Results-based Management and Accountability Framework.* This is a mechanism for ongoing performance measurement. The framework will measure the impact of the Smart Regulation according to key outputs and outcomes.
- *Regulatory Review.* A framework for regulatory review has been developed to ensure that regulations are achieving their intended results. It includes guidance on evaluation criteria and review mechanisms to be used, and provides a filter through which departments and agencies can assess their regulations in relation to good governance criteria, both when the regulation is introduced and periodically throughout its life span.
- *Framework for Developing Integrated Compliance Strategies and Plans.* This provides guidance to Federal departments to improve consistency in analytical work by taking into account issues relating to compliance strategies and plans early in the policy development process. This improves the evaluation of the risk of non-compliance and provides a better understanding of the tools available to respond to issues affecting compliance. This will provide greater transparency of compliance strategies and plans and a more consistent approach on the use of compliance tools.
- *Regulatory Risk Management Framework.* This provides uniform guiding principles for developing, assessing and managing regulatory response to public risk. It will also encourage improved response to horizontal risk issues that affect multiple departments or agencies.

- They can identify where the major burdens on businesses are and, therefore, where simplification initiatives ought to take place.
- They bring simplification initiatives together into a common framework and provide more ‘joined-up’ thinking.
- They can keep up the pressure – not allowing environmental enforcement authorities or others to relax once a single initiative has been adopted.
- They are important in reacting to proposals for new regulation (to tackle the adoption of burdensome regulation on one issue while a simplification measure is being adopted for regulation on another issue).

Strategic approaches must ensure buy-in from all relevant stakeholders. This should include different levels of government (such as seen in Canada), business and community groups. The latter are particularly important if the process is not to be perceived as an unravelling of environmental protection.

Case 1.5 *Modernizing environmental regulation in the Netherlands*

The initiative to modernize regulation in the Ministry of Housing, Spatial Planning and the Environment of the Netherlands (VROM) began in 2002. The objectives of the initiative are:

- reduction of the number of regulations;
- improving the transparency, feasibility and enforceability of the remaining regulations;
- reducing the administrative costs for businesses and citizens and the governmental costs for regional and local authorities.

In order to undertake this work, the following processes were set in place:

- ten working groups, each for a sector of VROM legislation;
- a small management team, with representatives of the various VROM Directorates;
- a sounding board group with representatives of stakeholder interests;
- representatives of other ministries.

Under the modernizing initiative there are currently 70 sub-projects, such as:

- Simplification of waste regulation obligations, harmonizing obligations at national and provincial level and producing a 'one-stop shop' for registration.
- Simplification of environmental impact assessment (EIA) regulations, limiting them specifically to those contained in the EU EIA Directive and removing existing additional national requirements.

A major focus of the measures that have been developed within the initiative has been to simplify permitting, and details of these developments are given in Chapter 3.

In reviewing the regulatory requirements, the risks of the different activities for the environment are considered. Inspection and enforcement aspects are not an element of the simplification initiative itself, but they are being considered in another project: 'professionalization of the environmental enforcement process'. Periodic reports about the results of the simplification are sent to Parliament and are discussed there. The reports give information about the simplification of the legal framework and about the reduction of the administrative costs.

An important element has been to analyse the burden placed upon industry. The Dutch Ministry of Finance has produced a methodology (Ministry of Finance, 2003) for defining and quantifying administrative burdens for businesses which has become known as the 'standard cost model' and has been used by other countries (such as Denmark and the UK) and for specific

regulatory requirements (Vroonhof and Boog, 2004). All Dutch ministries have a quantified target to reduce the administrative burdens for businesses and citizens. VROM was the front runner in the simplification process because environment legislation has a reputation for being very complicated. VROM has the overall objective of achieving a 30 per cent reduction in administrative burdens by the end of 2007 (the overall government objective being a 25 per cent reduction).

An interesting example of an attempt to modify traditional regulation to give industry opportunities to reduce its costs was the Project XL ('eXcellence and Leadership') developed by the US EPA in the late 1990s. The basis of the approach was, as the US EPA (1997) stated, 'the offer is simple: if you have an idea that promises superior environmental protection to what would be achieved under the current regulatory system and if you use a meaningful stakeholder process, then we will work with the relevant state and local agencies to grant the flexibility needed to put those ideas to the test'. This approach had potential benefits for cost-effective approaches. However, the approach did result in uncertainties, a lack of clarity and concern that it might result in anti-competitive effects.

Re-examining environmental regulation

The principles and issues discussed in the previous sections can inform many different areas of the work of environmental enforcement authorities and elements of these will inform the discussion of such work in the forthcoming chapters. However, a fundamental examination of the nature of environmental regulation can also take place, bringing together many different threads in an attempt to re-focus the work of relevant authorities. The 'better regulation' agenda has, as we have seen, stimulated much of this, but the principles discussed above are much broader. It is, therefore, worth illustrating such approaches with reference to two examples – the discussion on 'reinventing environmental regulation' from the US in the mid-1990s (Case 1.6) and the discussion on 'modern regulation' that has been undertaken more recently by the Environment Agency of England and Wales (Case 1.7).

Taking forward such fundamental reviews poses a number of challenges and these will need to inform the strategic management approaches of an environmental enforcement authority (see Chapter 8). Key points are:

- To gain the maximum benefits it is necessary to take a holistic approach and tackle the bigger and harder challenges, i.e. a comprehensive reform of legislation to move to a more consistent legislative platform, rather than tinkering around the edges of regimes.
- A fundamental review is a complex area to tackle and, therefore, it requires significant specialist collaboration and detailed analyses.

Case 1.6 Reinventing environmental regulation in the US

The 'reinventing environmental regulation' debate in the US received high-level attention with the publication of a statement from the, then, President and Vice-President in March 1995 (Clinton and Gore, 1995). Although this is now getting old, it does set out some important issues, which are more widely applicable. It identified ten principles for reinventing environmental regulation:

- 1 Protecting public health and the environment are important national goals, and individuals, businesses and government must take responsibility for the impact of their actions.
- 2 Regulation must be designed to achieve environmental goals in a manner that minimizes costs to individuals, businesses and other levels of government.
- 3 Environmental regulations must be performance based, providing maximum flexibility in the means of achieving environmental goals, but requiring accountability for the results.
- 4 Preventing pollution, not just controlling or cleaning it up, is preferred.
- 5 Market incentives should be used to achieve environmental goals, whenever appropriate.
- 6 Environmental regulation should be based on the best science and economics, subject to expert and public scrutiny, and grounded in shared values.
- 7 Government regulations must be understandable to those who are affected by them.
- 8 Decision making should be collaborative, not adversarial, and decision makers must inform and involve those who must live with the decisions.
- 9 Federal, state, tribal and local governments must work as partners to achieve common environmental goals, with non-federal partners taking the lead when appropriate.
- 10 No citizen should be subjected to unjust or disproportionate environmental impacts.

It can be seen that a number of these principles relate strongly to those identified earlier in this chapter, with some more focused on national issues, such as on goals, minimizing costs, being performance based, collaborative, proportionate, etc. Clinton and Gore also described a series of improvements to the 'current system' and then 25 'high priority actions'. Three of these are useful to examine because of their relationship to the issues discussed earlier.

- *Increase the use of regulatory negotiation and other consensus-based decision processes.* The US Environmental Protection Agency (EPA) has used formal and informal regulatory negotiation to develop regulations. The action was that the EPA will now routinely evaluate the appropriateness of using

consensus-based rule making every time it issues or revises a regulation and expand its use of informal negotiation in other settings.

- *25 per cent reduction in paperwork.* The EPA's goal was to reduce existing monitoring, record keeping and reporting burdens by at least 25 per cent, giving special emphasis to requirements imposed on States, localities and small business, by examining not only the need for the requirements, but also how essential information can be collected and provided at lowest cost.
- *Risk-based enforcement.* The action was to target enforcement, through a series of coordinated actions, to violations that present the most serious threats to human health and the environment.

The US General Accounting Office provided an interesting critique of the EPA's challenges in taking forward the reinventing environmental regulation agenda (USGOA, 1997). This noted the following:

- Key stakeholders are concerned over the large number of complex and demanding initiatives and confusion over the underlying purpose of some.
- The large number of initiatives might be diverting attention from high priority efforts.
- Some initiatives have required resources that are simply not available.
- Some initiatives have unclear objectives and guidance, thus posing a barrier to delivery.
- The EPA has difficulty getting 'buy-in' from some staff who have become accustomed to existing ways of working.
- The EPA has difficulty getting agreement among external stakeholders.
- There is a limit to what can be 'reinvented' given the current statutory obligations on the EPA.
- The EPA's process for resolving problems internally and externally does not distinguish between those that need to be resolved by senior staff and those by lower levels.
- The EPA has an uneven record of success and in evaluating the success of many of its initiatives, so it will have difficulty in demonstrating to stakeholders what changing regulation will deliver.

These issues are particularly interesting in that many are also challenges for other environmental enforcement authorities (at least in some areas) and, therefore, need to be taken into account in assessing the practicability of any regulatory vision.

Case 1.7 *Modernizing environmental regulation in England and Wales*

In England and Wales, the Environment Agency has been developing its 'Modernising Regulation Change Programme' (EA, 2005), an approach which uses dialogue, joint problem solving, incentives and rewards to supplement or replace traditional approaches. The Environment Agency's approach to modern regulation aims for proportionate, risk-based responses that will drive environmental improvements, reward good performance, but still provide the ultimate reassurance that appropriate action will be taken on those who fail to meet acceptable standards. It also responds to criticism made by Parliament, etc., over a lack of a coherent vision (see Bell and Gray, 2002).

The Programme aims to increase the efficiency and effectiveness of the Agency's regulatory activities (to enable the implementation of new regulatory duties) and aims to minimize the burdens placed on business. Administrative Burdens are costed using the Standard Cost Model, developed originally in the Netherlands (see above), which is being used to cost existing and new burdens. The Programme has resulted in a number of outcomes to date, including:

- From 1 April 2005, holders of 23,000 low-risk abstraction licences (48 per cent of the total number) were released from the licensing regime. These will save approximately £1 million a year as a result.
- At least 500,000 potential new low-risk hazardous waste producers did not need to register with the Environment Agency, saving them around £14 million a year.
- The number of low-risk waste inspections has been reduced from 125,000 to 84,000 per year, freeing resources to tackle illegal operators.
- From May 2005 businesses that produce hazardous waste needed to be registered. However, new rules allowed this to be done electronically and 80 per cent of the 190,000 registrations were undertaken this way.

- A fundamental review requires a great deal of resources and commitment from government, business and regulators.
- It is not always easy to get effective engagement with and quality input from stakeholders.
- Significant cultural changes can be required in government departments, regulators and business to implement the changes (sometimes even to be prepared to open up discussion on some issues).
- In many instances it will be necessary to invest up front in order to reap the benefits and savings, e.g. data management and sharing infrastructure.

Conclusions

Environmental regulation is necessary to ensure that the environment is improved and that further degradation is as limited as possible. Such regulation needs to be part of an effective compliance strategy. To do this regulation must be targeted at the right activities and be enforceable. The responsibilities of implementation and enforcement fall to environmental enforcement authorities. They undertake the various, inter-related parts of the regulatory cycle, preferably in an integrated way that increases the effectiveness of each aspect of regulation.

In undertaking regulation, environmental enforcement authorities should adhere to a number of principles. The activities should be focused on outcomes rather than simply implementing administrative procedures. They should be risk based, focusing regulatory activity on facilities that pose the greatest risk to the environment and where the greatest benefits can be gained from the available resources of the authority. It is also important to note that environmental enforcement authorities' actions do impose costs on businesses. Some of these are necessary, but the authorities should operate in such a way as to minimize these wherever possible.

Having taken account of these issues, it is useful to undertake a strategic review of the nature of regulation generally or for the environmental enforcement authority in particular. This either reforms or forms part of an overall compliance strategy. Once this is done, the environmental enforcement authority is able to undertake its various specific administrative functions and focus its management and resources on delivering these. These issues form the subject of the remaining chapters of this book.

The Nature of Environment Enforcement Authorities

Introduction

Many countries have an 'Environmental Protection Agency' (EPA), such as Denmark, Ireland, Ghana, Guyana, Sweden and the US. The list becomes longer if one includes 'Environment Agency' or 'Environmental Agency'. However, just because bodies in Denmark and Ireland have the same name does not mean that they do the same things. One issues environmental permits, the other does not. It is, therefore, important to remove one's expectations, or one's national experience, of environmental enforcement when considering how different countries approach the structures they establish for implementing environmental regulations. Indeed, later chapters on permitting, inspection, etc., will contain basic elements that are more familiar across different countries than the structures that implement them.

This chapter, therefore, provides an overview of the types of public bodies that undertake core environmental protection (permitting, inspection and enforcement). The aim is to demonstrate the diversity, as well as providing the context for later chapters. It also seeks to identify elements of structures that improve the effectiveness of environmental enforcement, the appropriateness of which will vary according to the context (e.g. Arnold and Whitford, 2005). The chapter continues with a consideration of interactions between institutions necessary for effective working and concludes with an examination of some issues of institutional capacity. At the end of the chapter three checklists are offered to assist in questioning the structural aspects of environmental enforcement authorities.

Varieties of structure

In Chapter 1 the regulatory cycle was described, identifying a series of stages in regulation. Each of these stages can be viewed as an individual activity, for example, permitting. The basic question underlying the establishment of structures of environmental enforcement authorities is – should all of the activities of the regulatory cycle be undertaken by the same institution and, if not, how should they be divided up?

Across the world there have been many different answers to this question. These are driven by a number of factors. Primary among these are those of principle. However, other factors are also important, such as history (institutional inertia), constitutional issues, politics, finance and simple practicalities.

The principles that are important need not be shared between countries. Most notable is the principle that insists that there is a fundamental requirement that permitting and inspection should not be undertaken by the same body, the reason being that to combine them would be equivalent to being both law maker and police officer. This is a view strongly held in, for example, the Netherlands. For a number of other countries this issue is not viewed as relevant and permitting and inspection are contained within the same body. The decision to combine these roles can be viewed as being enhanced by a 'principle' of integration, that is to say by the idea that the greater the number of functions that are brought together, the greater the likelihood there is for better decision making (sometimes known as 'joined-up thinking'). There are also opportunities for efficiency gains. This was one objective behind the creation of the Environment Agency in England and Wales, which brought together a range of separate bodies. There has been debate in Sweden on the separation and integration of permitting and inspection activities. In fact, the Swedish EPA has a division that is only involved in inspection activities and other divisions where permitting and inspection activity are integrated. Lindgren (2002) argued that inspectors working in isolation had a more 'theoretical and formal' approach to their work and seldom feel confident to discuss how to solve problems, while those operating in an integrated environment seek more practical solutions.

There is also a principle of seeking to take decision making as close to the people, or communities, as possible. In this case, more localized structures are common. This was a driving force for recent structural change in Poland and has had a major dynamic contribution in Japan.

The constitutional arrangements in some countries can define institutional opportunities. This is most obvious in countries with Federal constitutions, such as Australia, Canada, Germany, Spain and the US. Here the Provinces, States, etc., have constitutional control of a wide range of issues, including environmental management. For example, Germany has a Federal Environmental Agency (UBA), but it is not a regulatory body as the constitution does not allow this – such functions exist in structures established in the Länder. In Spain (IRI, 2003) the Central Government has no environmental inspectors of its own. Permitting and inspection are undertaken by the 17 Autonomous Communities. Reports on these activities are sent to the Central Government. The Central Government can give feedback on the reports and indeed the Central Government has been asked by the Autonomous Communities to give more feedback and hence enhance the efficiency of inspections, for example. However, some Federal systems do allow regulatory activity at the national level, as is evident in the US.

Whatever institutional structure is created for environmental enforcement in a country, it should take account of the following objectives:

- The structure must be appropriate for meeting the overall objectives for the environment (i.e. particular priorities) and the country's compliance and enforcement strategy. While other priorities will affect the structure (e.g. a political policy for decentralization), these environmental priorities must then be reflected in that structure.
- Environmental enforcement authorities should have autonomy from political interference so that they can implement the law in a transparent fashion.
- The structures must also allow for effective interaction with other relevant bodies (such as a regional structure that interfaces with regional government) or national divisions which interface well with sectoral ministries.
- Structural change should only be undertaken where the benefits outweigh the costs, such as in disruption to work. Frequent reorganization is undesirable and probably reflects a desire by politicians or managers to be 'seen to be doing something'.
- The structure must allow for a clear designation of responsibility for each key area of work, including issues such as compliance promotion, while at the same time allowing for flexibility if priorities or budgets change.

Further factors affecting the nature of environmental enforcement authorities will become apparent through this and subsequent chapters. To provide a sense of the variety of approaches, this chapter will proceed by examining examples of different structural arrangements.

Structures in practice

Ministries and their relationship to environmental enforcement authorities

Environmental enforcement authorities are usually under the supervision (to varying degrees) of an environmental ministry. It is, therefore, useful to examine the nature of such ministries before considering the structures of environmental enforcement authorities themselves in more detail.

The institutional structure and authority of environmental ministries differ considerably between countries, as does the division of responsibility for different environmental issues between ministries. In Federal countries similar issues can apply at the Province or State level. The range is generally as follows:

- A Ministry of Environment in charge of all (or almost all) environmental affairs – this is the dominant model in many countries.
- Environmental responsibilities included within 'multi-functional' ministries – the Ministry will have responsibility for several policy areas which includes the environment, for example Austria has a 'Federal Ministry of Agriculture, Forestry, Environment and Water Management' and Cyprus a 'Ministry of Agriculture, Natural Resources and Environment', thus bringing agriculture and environment together. Land-use planning responsibilities can be brought

together with environment issues (e.g. in Croatia and Slovenia), but other examples include food safety and rural affairs (e.g. England).

- Environmental portfolios split between two or more ministries – in the Netherlands, for instance, the Ministry of Agriculture, Nature and Food Quality covers the policy areas of nature management and rural development, whereas most other issues related to environmental protection are dealt with by the Ministry for Housing, Spatial Planning and Environment (VROM). In a number of countries policy areas for the protection of drinking or bathing waters can be the responsibility of health ministries (e.g. Macedonia).

The relationship between an environmental enforcement authority and its parent ministry varies, particularly the exact legal/administrative position. The range for environmental enforcement authorities is generally:

- Semi-autonomous agency reporting to the Environment Ministry – for example, the Swedish EPA. However, this plays an active role in national policy development to such an extent that the Agency and Ministry work so closely together that the lines of responsibility often become blurred.
- Agency effectively forming part of the Environment Ministry – in Denmark, the EPA is an integrated part of the Ministry, as is the Inspectorate in the Netherlands.
- Regional and local authorities. Environmental enforcement authorities can be established at regional and local level, making them more distant from the ministry and they can be responsible to local government. In Japan, for example, permitting is undertaken by local authorities and in France water control is undertaken by the regional Water Agencies.

Case 2.1 describes the situation in the Netherlands where the inspectorate is located within the ministry, but recent restructuring has clarified the division of policy and enforcement roles.

In Eastern Europe, Caucasus and Central Asia (EECCA) countries there are varying structures and resulting relationships between environmental ministries and enforcement bodies. Enforcement institutions are usually subordinate to an Environment Ministry. In most cases they form part of the structure of the Ministry itself, having a level of the Ministry's department, and the head of the inspectorate reports to the Environment Minister. In some instances this relationship is not fully defined in law, which can lead to a lack of coordination between the activities of the two institutions or overlaps in the areas of policy development and control. Only in a few cases (e.g. in the Ukraine) is the Environmental Inspectorate an autonomous institution with its own status, budget and management functions.

Whatever the relationship, it is important that a clear delineation of responsibility is established within environmental enforcement authorities in environmental regulation. Environmental regulation must be able to take place without political interference (it is an interpretation of law). Similarly, while environmental enforcement authorities should be able to influence policy making, they should be

Case 2.1 Institutions in the Netherlands

The Netherlands Ministry of Housing, Spatial Planning and the Environment (VROM) contains the Directorate for Environmental Protection and the VROM Inspectorate. They each report directly to the Minister via a secretariat. The Directorate General for Environmental Protection coordinates and oversees national environmental policy. It works on issues such as climate change, noise, biotechnology and environmental taxes as well as the enforcement of environmental laws. The role of the Directorate General for Environmental Protection is similar to that of a 'Ministry of the Environment'.

The VROM Inspectorate has regulatory functions. Its activities are based on the following three principles:

- 1 Through the integration of several Inspectorates, the Ministry Inspectorate presents itself as a single body in the various regions of the country.
- 2 A clear division between policy and enforcement. The Inspectorate works solely on enforcement thus avoiding situations where regional inspectors share responsibility for policy or must determine policy of their own.
- 3 The Inspectorate focuses entirely on the proper implementation of legislation by combining and concentrating resources.

These authorities changed in January 2002. As a result of these changes, the three former Inspectorates within VROM – the Inspectorate for the Environment, the Spatial Planning Inspectorate and the Public Housing Inspectorate – were merged with the Criminal Investigation Department to create the VROM Inspectorate with the aim of enhancing enforcement by increasing synergy. The new VROM Inspectorate is a relatively independent part of the Ministry. Its relative independence emphasizes the separate character of policy and enforcement within VROM.

The day-to-day work of implementing environmental law (permitting) is carried out by the provinces, municipalities and the water boards. This results in a large number of permitting bodies.

separate from it, as their main task is to enforce the law and not to define it. It is, therefore, good practice that the mandate and strategic direction of environmental enforcement authorities should be established in law. Further directions to the environmental enforcement authority can be given by instructions from a minister.

National environmental enforcement authorities

In many countries environmental enforcement authorities are established at the national level. In some countries there has been a conscious decision to bring a

wide range of environmental enforcement issues together into a single institution, although usually some issues are addressed elsewhere. In others there may be more than one national institution. National level bodies are common in smaller countries, due to a range of practical drivers. However, they also occur in larger countries, where the national authority is also likely to have its own regional structure, although this is separate from the structures of local government.

National level responsibilities can be split over a number of institutions. This can focus attention on specific issues and can ensure that important areas are not ignored due to a particular emphasis on a limited number of areas, such as due to political influence. However, it does pose a challenge if a more integrated approach to regulation is the objective. Separate institutions do not prevent this, but to achieve it requires detailed cooperative arrangements. The Environment Agency in the UK (Case 2.2) illustrates this. When the UK's Integrated Pollution Control (IPC) was introduced in 1991, it required detailed cooperation between the existing separate institutions and the need for an integrated approach was one stimulus for institutional reform and the creation of a single entity. The advantages to a single institution are:

- In principle, all of the resources of the environmental enforcement authority are directed at the same set of strategic objectives and this increases the likelihood of a coherent enforcement strategy.
- Communication opportunities between different functions are potentially maximized. It has greater flexibility in directing resources at the most crucial problems, including the needs of enforcement.
- A single authority can ensure that negotiated settlements embody principles that are supportive of overall objectives and are not in conflict.
- There can be economies of scale, for example, on administration.

Three examples are given here, although further examples are given below in the section on Federal systems:

- The Environment Agency of England and Wales (Case 2.2) acts like a national institution as the devolution evident in Scotland and Northern Ireland does not apply in England. This example is of an institution with a wide range of responsibilities and a regional structure. It is semi-autonomous from its parent ministry.
- The Ministry of Environment and Waters in Bulgaria (Case 2.3) has a section dedicated to environmental regulation and a regional structure, but these functions are retained within the ministry.
- The EPA in Guyana (Case 2.4) is an example of a semi-autonomous national authority in a developing country.
- Regulatory responsibilities in Cyprus (Case 2.5) are retained within a ministerial structure, with different departments responsible for different issues.

Case 2.2 *The Environment Agency of England and Wales*

The Environment Agency was created by the 1995 Environment Act and began operations in 1996. It was created to bring together a range of diverse functions, including industrial pollution control (formerly undertaken by Her Majesty's Inspectorate of Pollution), water management (formerly undertaken by the National Rivers Authority) and waste regulation (formerly at local government level). The responsibilities of the Environment Agency are:

- **Pollution control:** the Agency is the main regulator of discharges to the aquatic environment, to air and to land.
- **Waste regulation:** the agency is the regulatory authority for all waste management activities including the permitting of sites such as landfill and incineration facilities. It also issues permits for handling special waste such as radioactive, chemical or medical materials.
- **Water quality management:** the Agency has a duty to maintain and improve the quality of surface and groundwaters.
- **Water resource management:** the Agency manages the use and conservation of water through the issue of water abstraction licences for activities such as drinking water supply.
- **Flood risk management:** the agency is the main body responsible for creating and maintaining flood defences and providing flood warning systems.
- **Navigation:** the Agency runs canal locks and issues licences for boats travelling on some inland waterways.
- **Fisheries:** the Agency is responsible for maintaining and improving the quality of fisheries, such as through managing angling.

The Agency has a head office. At national level there are also 22 National Services, such as the National Laboratory Service and the Information Services Unit. The Agency is divided into eight regions, each of which has a Regional Office, run by a Regional Director. Each has Area Offices at a more local level, so that across the Agency there are 26 area offices. They are responsible for the day-to-day management of issues in the area (such as industrial regulation).

The Agency has established close relationships with other relevant ministries and agencies, such as those responsible for land-use planning and biodiversity protection.

Case 2.3 Environmental enforcement in Bulgaria

In Bulgaria the main national institution responsible for the implementation of environmental legislation is the Ministry of Environment and Water (MoEW). MoEW has, inter alia, the responsibilities to:

- develop environmental legislation;
- develop economic instruments, such as charges, sanctions, etc. for implementation of the environmental policy;
- manage and control protected areas and protect biodiversity;
- issue permits for use of natural and mineral resources;
- decide on environmental impact assessments for large plants and activities of national importance;
- issue permits for waste management activities when they are conducted on the territory of more than one Regional Inspectorate (see below);
- issue permits for import, export and transit shipment of waste;
- prepare an annual report on the state of the environment;
- coordinate the activities of the regional bodies (RIEW) of the MoEW, through its General Division for Coordination of RIEW.

In addition the Executive Environmental Agency is a specialized body within the MoEW responsible for:

- environmental monitoring;
- developing methodological guidelines for the Regional Inspectorates regarding measurement and analysis;
- collecting, processing and disseminating environmental information about the state of the environment;
- preparing and publishing the Yearbook for the State of the Environment in Bulgaria.

The main regional level responsibilities lie with the 15 Regional Inspectorates for Environment and Water (RIEW) which are responsible to the MoEW (i.e. not part of local government) and cover the following areas:

- pollution regulation activities;
- monitoring of implementation and enforcement of legislation;
- supporting municipalities in developing and implementing environmental policy programmes;
- disseminating environmental information to the public;
- issuing decisions on environmental impact assessments for sites and activities of regional importance;
- issuing of permits for activities and installations for treatment of waste.

Case 2.4 The Guyana Environmental Protection Agency

The Guyana Environmental Protection Agency (GEPA) was established by Guyana's 1996 Environmental Protection Act. It is a national body. It has the responsibility to manage, conserve, protect and improve the environment, to prevent or control pollution and to assess the impacts of economic development activities on the environment. It also has responsibilities for environmental education and awareness raising. In order to deliver these objectives, GEPA has taken various steps (GEPA, 2004):

- establishing environmental quality standards;
- requiring projects that could have a significant impact on the environment to undertake an environmental impact assessment;
- regulating and permitting activities with the potential for pollution;
- establishing penalties and fines for environmental damage;
- monitoring impacts on the environment from activities;
- developing a public awareness and education programme.

In order to take these forward, GEPA has agreed memoranda of understanding with a range of other governmental bodies, including the Guyana Geology and Mines Commission, Guyana Forestry Commission, Ministry of Agriculture and Ministry of Health. This has included the devolution of powers of GEPA where relevant, including for monitoring activities in order to ensure compliance with permit conditions and report instances of non-compliance to GEPA.

Local environmental enforcement authorities

Environmental enforcement activity can also be delivered through local institutions. This places the regulatory activity close to local communities, but has a disbenefit in relation to institutional capacity. A national authority can afford to have staff specialized in a range of different industrial activities, for example, and deploy these staff as regulatory demands require. For local institutions this is generally not possible, and staff have to address the full range of activities in their areas of responsibility. To manage this, systems can be put in place to share experience and expertise between institutions. Two examples of local institutions are given. In France (Case 2.6) regulatory activity is contained within single local institutions, whereas in Italy (Case 2.7) there is a fragmentation of responsibilities even at local level. Further examples of local institutions (with national authorities) are given in the following sections.

Case 2.5 Institutions for environmental protection in Cyprus

Responsibilities for environmental protection within Cyprus are spread across ministries and between departments within the environment ministry. Key ministerial responsibilities include:

- The Ministry of Agriculture, Natural Resources and Environment (MANRE), which has prime responsibility for many aspects of environment management including key aspects of pollution regulation.
- The Ministry of the Interior (MoI) is responsible for town and country planning, including related environmental issues. The Department of Town Planning and Housing (DTPH) of the MoI is responsible for imposing environmental conditions (based on recommendations of the MANRE's Environment Service and the environmental impact assessment Technical Committee) through the planning permit.
- The Ministry of Labour and Social Insurance (MLSI) has primary responsibility for industry 'inside the factory gate'. This covers environmental issues as well as safety, health and dangerous substances (including asbestos).
- The Ministry of Health (MoH), which has responsibility for many aspects of water quality.

There are two Technical Committees relating to the environment, one responsible for evaluating environmental impact assessments and the other for reviewing the licensing of discharges and the Registration of Processes under the laws (respectively) for the Protection of Water and the Protection of Air.

A number of institutions can be responsible for individual media. For example, those responsible for water include:

- The Water Development Department (WDD) of MANRE is responsible for most aspects of the implementation of water policy and the management of water resources.
- The Geological Survey Department (GSD) of MANRE is responsible for mineral and groundwater exploration and hydrogeological/geotechnical data. Its main environmental roles relate to the impact of pollution on groundwater.
- The Department of Fishery and Marine Resources (DFMR) of MANRE is responsible for controlling and combating marine pollution.
- The Public Health Service (PHS) of the MoH has an inspectorate responsible for the monitoring of drinking and bathing water quality.
- Municipalities are nominally responsible for water supply, sewerage and wastewater treatment and rainwater drainage.

Institutions responsible for permitting are:

- General issues and wastewater discharges: MANRE Environment Service and Water Development Department.
- Agricultural pollution: MANRE Department of Agriculture.
- Drinking water, bathing waters and groundwater: MoH Public Health Service.
- Fisheries waters: MANRE Dept of Fisheries and Marine Resources.

Institutions responsible for monitoring are:

- Water quality and drinking water: MoH Public Health Service.
- Urban wastewater: MANRE Environment Service and Water Development Department.
- Agricultural pollution: MANRE Water Development Department, Environment Service, Department of Agriculture.
- Fisheries waters: MANRE Dept of Fisheries and Marine Resources.

Responsibilities for Inspection and Enforcement are similar to those for Monitoring, except that MANRE's Water Development Department and Environment Service play a stronger role.

Case 2.6 *The regulatory structure in France*

France has a centralized form of government, and the responsibility for industrial pollution control lies within the Ministry of Ecology and Sustainable Development in its Directorate for Pollution and Risk Prevention (IRI, 2002). Other Directorates are concerned with the related issues of nature and landscape, water, environmental evaluation and international affairs. Responsibility for organization and implementation of environmental regulation (permitting and inspection) generally lies with the Direction Régionale de l'Industrie, de la Recherche et de l'Environnement (DRIRE) in each of France's 24 regions. The DRIRE was created in 1992 and is supported by inspectors in over 200 DRIRE offices in the 100 Departments. In addition to pollution control and risk prevention, the DRIRE are also responsible for regulation of vehicles, for nuclear safety, for the security of energy supply systems, and for industrial research and development in the region. With regard to pollution control and risk prevention, individual DRIRE inspectors are responsible for all regulatory aspects on sites under their control. These include permitting, inspection, enforcement and advising on appropriate penalties in relation to non-compliance.

Case 2.7 *The regulatory structure in Italy*

In Italy there is no single environmental enforcement authority as different institutions are responsible for compliance and enforcement. For example, there are planned and unplanned inspections. The planned inspections are mainly carried out by the Regional Environmental Agencies (ARPA), which are divided into provincial departments, sometimes working with the Provincial Police. The National Environmental Agency (APAT) undertakes major accident management inspections (together with other bodies) and nuclear inspections. The unplanned inspections are carried out mainly by the Comando Carabinieri per la Tutela del Territorio (CCTA), the Corpo Forestale dello Stato (CFS), la Guardia di Finanza (GdF), the Provincial Police, and, if necessary, involve the ARPAS, which gives technical and scientific support.

Environmental enforcement at national and local level

Many countries have established environmental enforcement authorities at both national and local level. In some cases local institutions are responsible for small activities and national institutions responsible for larger activities. However, there are also a number of other models. The reasons for different structures vary. As the cases below will illustrate, there can be issues of principle or political policy to devolve responsibilities locally. There are also issues of practicality. For example, Sri Lanka adopted an environmental permitting system in 1990. It originally required that permits be obtained through the Central Environmental Authority. However, this had insufficient staff to cover the 25,000–30,000 industrial activities in the country. Thus permitting and inspection functions for many activities were progressively transferred to the responsibility of local authorities (Ellepola, 1998). This is purely for practical reasons.

It is important not to underestimate the importance of local institutions. In some countries local authorities are active, with a strong commitment to governance and active participation of the communities that they represent. Case 2.8 presents an overview of developments in environmental protection in Japan. Here local authorities have not only been effective in environmental enforcement, but they have developed new approaches and have driven the development of national structures.

Some countries have adopted a strong principle of local environmental management. This is evident in Denmark, where regulatory functions are almost entirely devolved for principled reasons (Case 2.9). The national EPA has responsibility for policies, guidance, etc. Poland (Case 2.10) has undertaken a more recent devolution of environmental enforcement responsibilities, but some are retained in a national institution, responsible for major activities. Sweden (Case 2.11) has authorities established at national, regional and local level.

Case 2.8 *Environmental institutions in Japan*

Japan has had a mixed history of pollution control. In the 1960s and 1970s pollutant emissions were severe and resulted in widespread protest with over 3000 local citizen protest movements (Krauss and Simcock, 1980). This found support among local government (Prefectures), which has limited autonomy, and some members of which acted in opposition to the national government that was led for many years by the Liberal Democratic Party. Local governments started to push through pollution control regulations that were much stricter than national law. This included high profile measures in opposition-led authorities in Tokyo, Osaka and Kyoto which showed that pollution control measures could work and were popular with the public. Around the same time there were also high profile court cases that resulted in compensation for the victims of pollution. In 1967 the Government adopted the Basic Law for Environment Pollution Control. However, this was weak and resulted in further campaigns against the Government.

As a result the Government re-assessed its position and in 1970 14 pollution control bills were submitted to the Diet (Parliament) and were passed (Rosenbluth, 1999). This became known as the 'Pollution Diet'. This transformed Japan from having some of the worst pollution regulation in developed countries to having some of the most advanced and resulted in significantly reduced pollution. This leap forward in 1970 was not followed up and further legal development was limited.

The laws passed much responsibility to local government and established an institutionally weak Japanese Environment Agency (JEA) which had very limited jurisdiction. The Ministry of Environment was established in 2001, taking over from the JEA. This has raised the profile of environmental protection and new laws have since been adopted. However, the difficulty in adopting new legislation has resulted in the adoption of alternative approaches, such as the widespread use of voluntary agreements.

As a result Japan has a relatively decentralized approach to industrial pollution regulation. In broad terms the national government adopts legislation (on an industry sector or media-specific basis) that sets standards for operation (such as emission limit values). Local government (i.e. the Prefectures) has to treat this legislation as a minimum standard. They are free to adopt stricter standards if they consider these to be necessary (e.g. for local environmental reasons) and are free to adopt administrative practices to implement these requirements.

Prefectures are responsible for implementation and enforcement, as are a number of metropolitan authorities. The coast guard also inspects marine discharges. Violations are notified to the police. These authorities have had good capacity, but this has been declining recently. However, compared to many countries the inspection capacity in Japan remains high.

The Prefectures have taken forward this responsibility and freedom in a variety of ways. All 47 have adopted stricter standards (OECD, 2002b), for

instance. For example, the Prefecture around Lake Biwa is concerned with phosphate pollution and has a local ordinance to prohibit the use of phosphate-based detergents by local industry. Local government is also essential in promoting cleaner production.

More stringent emission limit values are often established where environmental quality standards are not met. Some Prefectures (e.g. Tokyo) have also adopted approaches of regulating the total pollution load (an emission ceiling) for air and water pollution. Prefectures have additionally adopted a variety of integrated approaches to industrial regulation, bringing together the various requirements on industry into a single more integrated regulatory framework. Upon the order of the Minister of the Environment, Prefectural governors can also be required to establish Regional Pollution Control Programmes with different measures to achieve pollution objectives. Currently such programmes operate in 24 areas.

Case 2.9 *Institutions in Denmark*

The Danish Ministry of the Environment has three agencies and three independent research institutes that are under the Minister of the Environment. The Danish Environmental Protection Agency (EPA) is one of these agencies and is, therefore, in effect a department of the Ministry of the Environment. The EPA has its origins in a recommendation of an independent committee from 1972 that supported a ministry structure with a small cabinet and large agencies.

The Agency carries out its work through the administration of a large number of laws and national regulations. The Environmental Protection Act sets down the administrative principles by which the Agency works. The Act, as it is a framework law, is supplemented with guidelines and regulations issued by the Ministry of the Environment and the Danish EPA. The Environmental Protection Act is based on the principle of decentralization, where the municipalities and the counties administer the centrally issued legislation. The local authorities are the environmental enforcement authorities for permits and inspections for industry.

Nielsen (1996) argued that the decentralization of environmental enforcement in Denmark has a historical basis, but, moreover, it was driven by the following arguments:

- Decentralization will encourage local engagement in environmental issues.
- There can be a number of different and suitable local solutions to the same environmental problem.
- There was a wish to give local elected politicians a say in environmental decision making.

Case 2.10 *The regulatory structure in Poland*

In Poland the national Inspection for Environmental Protection (IEP) is responsible for ensuring compliance and monitoring of environmental conditions (Panek-Gondek, 2002). In 2002 the IEP employed 2500 people. The IEP is divided into the Chief Inspectorate for Environment Protection headed by the Chief Inspector for Environmental Protection, responsible at the national level. At the regional level, 16 regional (Voivodeship) Inspectorates for Environmental Protection are headed by Voivodeship Inspectors for Environmental Protection and supported by 34 field offices (in larger regions). The Chief Inspector supervises the IEP, sets the main activities for inspection authorities, and is supervised by the Ministry of Environmental Protection. At the regional level, Voivodeship inspectors act in the name of each Voivod (provincial governor) and perform the inspection activities, which are set by the Chief Inspector. The Chief Inspector produces annual recommendations which guide the regions in their work, but they do not specify action, that is, what and when to inspect. There is national guidance, but much prioritization is done at the regional level.

Case 2.11 *The Swedish Environmental Protection Agency*

The Swedish Environmental Protection Agency (SwEPA) was founded in 1967 as an amalgamation of several government authorities with environmental responsibilities. It is an independent authority and the Director-General is directly answerable to the Government. The Government controls SwEPA by means of ordinances, commissioning of reports, the budget and appointment of the Director-General and the board. However, individual ministers are not authorized to interfere in the work of SwEPA. SwEPA has overall responsibility for developing the national environmental quality objectives, monitoring achievement and coordinating the efforts made by other agencies to achieve these objectives. In terms of staff numbers, SwEPA is much larger than the Ministry of the Environment, which employs 160 people compared to SwEPA's 500.

Responsibility for most environmental regulation rests with the regional environmental protection departments of the 21 county administrative boards. There is a close cooperation between these departments and SwEPA. At a local level, the 289 municipalities also have responsibilities for permitting and inspection. Swedish municipalities are independent of the government, although the activities of the county boards are largely determined by central laws and regulations.

Environmental enforcement in Federal countries

Federal countries have generally defined responsibilities for administrations within their constitutions, usually ensuring that powers cannot be taken from regional structures to the national government. For environmental regulation two outcomes are evident. The first is that regulatory functions can be undertaken at national level, but that specific powers are retained at regional level. This is exemplified by the United States (Case 2.12) and details of the interaction between Federal and State institutions will be examined further later (such as Chapter 3 on permitting). In Germany (Case 2.13) permitting and inspection are generally only undertaken at the regional level, with national level institutions providing guidance, and so on. In Argentina (Case 2.14) national level institutions also do not have enforcement powers. Finally, some Federal countries have a very high degree of devolved autonomy and the component regions/cities have quite separate authorities, as illustrated by the Environmental Protection Agency from Abu Dhabi (Case 2.15). Nigeria is an example of another country with a federal administrative system, with much power residing in the States. It established an EPA at national level in 1991, with each State also being encouraged to develop their own EPAs (Adegoroye, 1994).

Relationships between institutions

Environmental enforcement authorities do not work in isolation. There is a need for effective interaction with other institutions. Most obviously this is the case if

Case 2.12 *The United States Environmental Protection Agency*

The United States Environmental Protection Agency (EPA) became operational on 2 December 1970. It was established to consolidate in one agency a variety of Federal research, monitoring, standard-setting and enforcement activities to deliver environmental protection. The EPA is led by the Administrator, who is appointed by the US President. The EPA employs 18,000 people across the country, including at the headquarters in Washington, DC, ten regional offices, and a number of laboratories. The EPA works with the 50 States, and other agencies. The EPA has ten regional EPA offices to liaise with the activities of the States in their areas. The States have also adopted their own structures for environmental enforcement, implementing both national and State law.

The US Constitution results in a government which is a balance of centralization and decentralization and, in the case of the EPA, it cannot compel States to become partners in pollution control enforcement, but can only encourage them. Most States have however chosen to implement and enforce EPA law directly through State laws that are consistent with those of the EPA.

Case 2.13 *Institutions in Germany*

The German Federal Environmental Agency (Umweltbundesamt/UBA) was established by an Act of Parliament in 1974 as an independent Federal administrative body. It reports to the Ministry of the Environment, Nature Conservation and Nuclear Safety (Bundesumweltministerium/BMU) which exercises legal as well as technical supervisory control over the Agency. This also includes the competence to set political priorities and to define the content of the Agency's work. The way in which the work is conducted is decided by the Agency itself. For this, the Agency draws its expertise from its own competencies as well as from scientific and commissioned research.

The Agency is subdivided into a central body for administration as well as four scientific departments:

- Environmental Planning and Strategies.
- Environment and Health: Water, Soil and Air Hygiene, Ecology, which decides on objectives, indicators and is responsible for monitoring.
- Environmentally Compatible Technologies and Products, which is responsible for developing technical solutions.
- Chemicals Safety and Genetic Engineering, which is responsible for enforcement in these areas, as enforcement is usually the responsibility of the Länder.

In Germany, the responsibilities for environmental issues are divided between the State level (Länder) and the Federal level (Bund). For this reason, some of the Länder have their own environmental agencies, such as the State Institute for Environmental Protection Baden-Württemberg (LfU-BW, around 450 employees) or the North Rhine-Westphalia State Environmental Agency (LUA-NRW, around 650 employees). Although their main responsibilities and functions are similar to those of the UBA, their work is, unlike the agencies at the Federal level, not only geographically restricted but also limited to certain issues as assigned to the Länder. More particularly, it is at Länder level that the main elements of environmental regulation (permitting and inspection of industrial installations) are undertaken.

environmental regulation is divided between institutions. It includes formal interactions with ministries. However, it also includes relationships with a wide range of other actors with an interest in environmental regulation.

There are a number of reasons why relationships are needed:

- There may be a formal reporting requirement to a parent ministry which judges performance and from which the authority receives its guidance and funding.

Case 2.14 *The structure of environmental enforcement institutions in Argentina*

The environmental enforcement structure in Argentina is divided across a number of institutions at national and Provincial level (Nonna, 2000). Federal level institutions do not have the oversight function that exists, for example, in the US Environmental Protection Agency (EPA) (Di Paola, 2000). The primary national institution is the Secretariat of Environment and Sustainable Development.

At the Provincial level the administrative structures vary from Province to Province. These structures can be complex. Each has some centralized body for coordination of environmental regulation, although this can be a ministry, secretariat, under-secretariat or office, with variations in authority. Thus in Buenos Aires, the Secretariat on Environmental Policy coordinates environmental issues, but much implementation is through other bodies such as the Provincial Secretariat of Public Health, the Ecological Division of the Province and AGOS-BA (the Provincial company responsible for water and sewerage systems).

There are further administrations at the municipal level. Additionally, the Government has been establishing Basin Commissions for river basins. These are yet to come into full operation, but each results in significant institutional interaction. For example, the Rio Matanza-Riachuelo Basin interacts with 22 different environmental institutions from different levels of authority.

Nonna (2000) argued that the institutional framework is confusing and inefficient. While there is some action to improve the situation at national level, this will only be a partial solution. This requires a clear definition of responsibilities and the establishment of coordinating mechanisms (Di Paola, 2000).

- There may be a legal requirement to consult or work with other bodies and it is important to clarify the best means to achieve this.
- The capacity of the environmental enforcement authority might be insufficient, so that it needs to draw on expertise, etc., from other bodies.
- There is a need to communicate across the regulatory cycle to ensure feedback and effective decision making.

A critical area for effective interaction is where different institutions are responsible for permitting and inspection (whether divided at national or local level, or both). Without such cooperation, effective implementation of the regulatory cycle (Chapter 1) will not occur. Dimovski and Glaser (2002) provide an interesting example of the range of practice in the inspectorates of the western Balkans. They noted a wide variety of interaction between the inspection and permitting process (Table 2.1). There are various levels of involvement, which indicate a range of good and poor practice:

Case 2.15 Environment Agency, Abu Dhabi

The Environment Agency of Abu Dhabi (EAD) is a governmental agency, established in 1996. Its aim is to protect the environment and promote sustainable development in the Emirate of Abu Dhabi, the capital of the United Arab Emirates (UAE). The Agency is responsible for assisting the Federal Environmental Agency (FEA) and the UAE Ministry of Agriculture and Fisheries in implementing environmental laws. It now employs over 300 staff. It covers a wide range of issues including:

- regulation of activities affecting the environment;
- fisheries management;
- environmental monitoring;
- management of freshwater resources;
- wildlife management;
- environmental awareness and education.

On the first of these the EAD is developing its approach and has the following goals:

- to identify objectives of environmental management;
- to develop environmental standards and guidelines;
- to develop permitting and approval procedures;
- to develop permitting and approval infrastructure;
- to develop auditing and enforcement capability.

Within the EAD is the Environmental Monitoring and Inspection Department. This conducts environmental inspections, enforcement, monitoring and follow-ups with businesses to deliver compliance with permit conditions. It has the following sections:

- Environmental Inspection Section.
- Environmental Auditing Section.
- Marine Environment Monitoring Section.
- Air Quality and Noise Monitoring Section.
- Soil and Groundwater Monitoring Section.

- Those that undertake inspections also write and issue permits.
- Inspectors that advise and approve permits.
- Inspectors that provide advice to those issuing permits.
- Inspectors that have no involvement in the permitting process.

Table 2.1 *Involvement of inspectorates in the permitting process*

Issue	Albania	Bosnia	Bulgaria	Croatia	Macedonia	Serbia	Montenegro	Romania
Integrated permitting	Yes	Yes	Yes	NA	No	NA	No	Yes
Not at all	NA	NA	NA	Yes	No	NA	Yes	NA
Advising is compulsory	Yes	NA	Yes – inspectorate	NA	No	Yes	No	Yes
Advising but not compulsory	NA	NA	NA	Yes	No	NA	Yes	Yes
Permit writing	(Yes)	NA	Yes – inspectorate for hazardous waste and water use	No	No	NA	No	Yes
Approval of permit	Yes	Yes	Yes	No	No	NA	No	Yes
Appeal procedures against permit	Yes	NA	NA	Yes	No	NA	No	Yes
Public hearing on permits	No	NA	Yes – inspectorate	Yes	No	NA	Yes	Yes
Court hearing on permit appeals	No	NA	NA	NA	No	NA	Yes	Yes

Source: Dimovski and Glaser, 2002

Case 2.16 Institutional responsibilities in Spain

The national Ministry of Environment has been in place since 1996. There are separate legal acts at the regional level setting up respective Ministries of Environments. For example, the Catalonian Ministry was set up following the publication of the Statutes of Autonomy for the region; it was most recently restructured in 1999. The Ministry has its own Minister, a general secretariat with sub-directorates for legal assessment, administrative coordination and for study and analysis. In addition there are General Directorates for Environmental Quality, for Environmental Pacification, and of Natural Heritage and Physical Environment. Each of these in turn has sub-directorates – for example, within the DG for Environmental Quality, there is a sub-directorate on prevention and environmental quality and another on the quality of air and meteorology. These are complemented by a series of Catalan agencies, notably: a waste treatment agency; a waste treatment agency laboratory; a Centre for Cleaner Production; and the Water Agency of Catalonia.

In Spain, discussions between the central and regional authorities on responsibilities for the environment are carried out in a formal way. This is important as Central Government has been losing power to the regions in a number of areas and the environment is one area where central authorities have less primary responsibility. Formal communication between the Central Government and the regions is undertaken through:

- ‘Sectoral Conferences’ – These are formal meetings where all the regional ministries meet with the Secretary of State or Directors of the ministries. There is a sectoral conference on environment, which meets at least twice a year. Conferences may meet thematically for different issues. This is the formal place where the regions can communicate their concerns and interests to the Central Government.
- Bilateral meetings – A region can also request a bilateral meeting with the ministry, minister, secretaries of state or other levels, on matters of importance.
- Network of environmental authorities – This is co-ordinated by the Central Government Directorate of Environmental Evaluation and Quality and has an observer from the European Commission’s DG Environment. This is useful both for central and regional governments. They publish technical results of the meetings, and meet about three to four times per year.
- ‘Commissions’ – These are specific bodies where the central and regional authorities work together. For example, there is a Technical Commission on Chemical Risk, which consists of representatives of Central Government ministries and the autonomous regions, which works for the National Commission of Civil Protection, within the Ministry of the Interior, in relation to major accident management.

Case 2.17 *Coordination between national and municipal administrations in Russia*

An agreement was reached in 2000 between the national Committee for the Use of Natural Resources, Environmental Protection and Environmental Safety of the City of St Petersburg administration and the regional office of Ministry of Natural Resources (MNR) (then responsible for enforcement at the national level) for St Petersburg and Leningrad Oblast (Kozeltsev, 2004). This agreement was to coordinate a number of environmental enforcement issues through a working group. In particular clear divisions of responsibilities were identified for the following areas:

- developing standard registers and structures for natural resources;
- inspections;
- verification of accuracy of the calculation of pollution charges;
- setting maximum pollution emission limits;
- training of environmental protection staff.

For example, an agreement on inspection principles and procedures was developed. Of 30,000 activities in the Oblast 90 per cent are inspected by the City authorities and 10 per cent by the MNR regional office. Joint and coordinated inspections can also take place.

Without sufficient interaction with other relevant bodies, the efficiency of environmental enforcement authorities can be impaired. For example, Darbinyan and Ashikyan (2002) stated that the State Environment Inspectorate in Armenia is 'isolated', with poor interaction with other central government institutions, including those within the same Ministry of Nature Protection and this prevented effective working of the Inspectorate. In Trinidad and Tobago the Environmental Management Authority was established, but not all enforcement functions were invested in it. Therefore, effective coordination was required with other government bodies that retained these functions (Grenade-Nurse, 1998).

There are many ways in which such interaction can be established, from formal agreements to informal communication. Where any regular interaction is required, some form of formal agreement is useful. However, whatever systems are put in place, only practical application will achieve results. In Spain (Case 2.16) a range of measures have been put in place to facilitate communication between national and regional authorities in a Federal structure. This is as much driven by the desire for political influence as for policy effectiveness. A more focused example of interaction is given in Case 2.17, where an agreement between national and local institutions in Russia is targeted at environmental delivery. In China (Case 2.18) there are significant problems coordinating the work of different environmental

Case 2.18 *China's changing environmental structures and the problems it faces*

China has made significant changes to its environmental enforcement structures. A key part of this was to elevate the State Environmental Protection Agency (SEPA) to the ministerial level within the overall governmental structure (OECD, 2005a). This has been supported by a range of environmental administrations at provincial and other levels. These changes mirrored other governance changes in China, whereby there has been greater decentralization and simplification of central government structures. However, even with these changes there are still problems with effective environmental management. These include:

- *Lack of coordination between environmental and sectoral decision making.* SEPA has to work with a range of other bodies to achieve its objectives. However, such coordination can be poor. This is partly because SEPA has only recently 'risen' in rank and because of concern over the potential economic consequences of environmental measures. SEPA's response has been to narrow its focus on areas that limit the need for cooperation. Thus China needs to increase the standing of SEPA and/or adopt higher level coordinating mechanisms
- *Conflicts between national and local decision makers.* Local environmental bodies are funded locally and are less independent than SEPA. They tend, therefore, to have different views on the balance between environmental and economic issues (although there are cases of strident local environmental officials). Some action has been taken to tackle this problem by requiring the heads of environmental administrations to be confirmed by a higher level administration and by making such administrations more independent.
- *Gap between mandate and capacity at the national and sub-national levels.* There is insufficient capacity in environmental administrations to do their work, so that, for example, SEPA has been given widening mandates while undergoing a reduction in staff levels. Thus staff capacity needs to be increased.
- *Inadequate and contradictory approach to funding environmental administrations.* Many local environmental administrations are reliant on the collection of non-compliance fees for their survival and some have sought to impose unjustifiably strict emission limits to ensure this income stream. This is clearly a conflict of interest (see Chapter 7) and adequate funding needs to be ensured to tackle this.

Case 2.19 *Establishment of a compliance and enforcement network in Ghana*

In Ghana a compliance and enforcement network was established in the mid-1990s. This brought together a range of law enforcement, regulatory and ministerial bodies (including the Environmental Protection Agency). The network meets quarterly to discuss various issues, including difficult regulatory cases. It has, for example, addressed the need for joint inspections, and collaborative actions on enforcement. Ahorttor and Asiamah (1998) stated that the work of the network has resulted in the following benefits:

- permitting has become quicker and less complicated;
- environmental pollution problems have been solved more quickly;
- there has been increased public awareness leading to improved compliance and enforcement;
- fewer cases need to go to the courts;
- prosecutions have become faster (as the Attorney General is represented on the network).

enforcement authorities. A different form of networking is described in Case 2.19, illustrating different branches of national government working together in Ghana, delivering improved outcomes.

Institutional capacity

Institutional capacity is critically important in delivering effective enforcement. Capacities of environmental enforcement authorities in some countries have declined in recent years. In China (Case 2.18) changing emphases on decentralization has reduced the capacity of the national State Environmental Protection Agency (but not preventing it from being given additional tasks). Many EECCA countries suffered from economic decline over the last two decades so that they have lost personnel, have problems of personnel retention and have poor equipment to the point that their functions are severely inhibited (OECD, 2003a). Developing countries are also susceptible to resource problems, particularly as economic conditions change (such as currency fluctuations). However, environmental enforcement authorities can also be subject to capacity problems, such as when sweeping cost-cutting governments are elected, as has occurred in British Columbia (WCEL, 2004). A further case of the capacity of institutions being undermined by political action is illustrated by recent changes in Russia (Case 2.20). The capacity of environmental enforcement authorities can also vary significantly in the same region of the world, due to issues of civil unrest, history, and so on, as shown by differences in North Africa (Case 2.21).

The capacity requirements of an environmental enforcement authority will depend upon its responsibilities. Later chapters cover issues such as inspection planning, financing and wider management planning. These address the need to identify practical objectives (e.g. number of inspections per year) and the need to match these to resources. Overall institutional capacity is examined through a combination of these issues. Chapter 8 also identifies the range of expertise that an environmental enforcement authority is likely to require (from lawyers to finance officers) and institutional capacity includes having this range of expertise available.

An example of the type of analysis that can be undertaken is illustrated by Denmark. In developing its environmental protection activities in the 1980s, Denmark undertook an examination of the necessary capacity (Nielsen, 1996). A survey in 1984 found that the 275 municipalities (responsible for enforcement) together employed inspection staff totalling 190 person-years, or 0.37 person-years per 10,000 inhabitants. However, it was agreed that the necessary capacity would be 1 person-year per 10,000 inhabitants, resulting in a need to employ an extra 320 inspectors. Permitting activity involves about a quarter of the time necessary for inspection.

Environmental enforcement authorities in many countries have capacity problems. Indeed, even in relatively rich countries they might argue, legitimately, that increased capacity would deliver enhanced outcomes. This forms part of the debate over budget negotiations with the government, for example (Chapter 7).

The capacity of an environmental enforcement authority is not simply a function of its totality of personnel, their skills and available equipment. It is also influenced by the processes which it employs in its work. An institution which works effectively with other bodies, has efficient working methods and information management and communicates well with those whom it regulates, will improve its effective capacity. Thus the response to capacity problems should not simply result in a bid for further resources, but also a re-examination of how the authority works. This is a different process to reassigning priorities in response to budget cuts (Chapter 7).

Dimovski and Glaser (2002), for example, identified the following problems in the capacity and operation of the inspectorates of the western Balkans.

- The countries' legislative and administrative structures are in a state of change, driven partly by approximation to European Union (EU) law.
- Cooperation between ministries of environment and other governmental bodies occurs, but this is mostly derived from personal relations rather than formal systems of interaction.
- Most inspectorates lack personnel with legal training, lack structured compliance monitoring, lack consistent non-compliance response and lack enforcement procedures that stand up in court (as they lose about 50 per cent of cases), although in theory they generally have adequate tools to enforce laws.
- Inspectorates need to be more proactive in providing compliance assistance and promotion.
- Training needs to be radically improved.

- Reporting on inspection is common, but inspectorates have yet to use performance indicators.
- Data storage and retrieval is developing, but there is still too much reliance on paper systems.
- Monitoring and reporting on the state of the environment is weak.

These problems include both ‘resource’ capacity issues and capacity problems due to inefficient process.

Various processes can be taken to enhance capacity. These include:

- increasing budgets (Chapter 7);
- improving budget management (Chapter 8);

Case 2.20 *Institutional changes in Russia – two steps back and one step forward*

At the time of the break-up of the Soviet Union (1991) the Russian Federation created a Ministry of Environment. In 1997 this was reduced in position to the State Committee for Environmental Protection. In 2000 its separate identity was further diminished by absorption into the Ministry of Natural Resources (MNR). At each stage the official line for the changes was that these would improve decision making. However, independent experts viewed the changes as a major decline in the ability of the authorities to enforce environmental law. The 2000 changes provoked particular opposition as the MNR is responsible for the mining, oil, gas and forestry sectors, which often have problems with environmental regulations. The 2000 change also resulted in a major decline in the number of inspectors, number of inspections and quantity of environmental fees collected (see Table 2.2).

In 2004 further changes occurred. While the MNR retained environmental policy functions, the permitting, inspection and enforcement functions for environmental law were transferred in March to a new Federal Service for Oversight in Ecology and Natural Resources, reporting to the MNR. In May 2004 further changes occurred when the body expanded to become the Federal Service for Ecological, Technological and Nuclear Oversight, reporting to the Central Government. This improved the reporting arrangements.

Thus while Russia has experienced some similar problems found in other Eastern European, Caucasus and central Asia (EECCA) countries in developing its enforcement system (e.g. resource availability), it has also suffered from what is still an overall retrograde restructuring, which many view as a political attempt to reduce the role of environmental regulation in the economic life of the country.

Source: World Bank, 2004

Case 2.21 Institutional development in North Africa

The Maghreb Regional Network for Environmental Compliance and Enforcement (Chapter 9) has identified recent problems and developments in environmental enforcement in North Africa:

- Algeria has adopted a number of environmental protection initiatives in the last few of years, including the National Environmental Action Plan. Unfortunately, there are serious obstacles, including civil unrest, political turmoil, and the continuing economic crisis throughout the country. These are major impediments to environmental enforcement and are compounded by other factors, including vague definitions of roles and responsibilities within the environmental institutions.
- In Morocco, until recently, most of the national laws relating to the environment were 50 years old. However, the country recently created a new Ministry specializing in environmental protection and revised environmental law setting out a number of control requirements.
- Tunisia is a leader in environmental protection in the Middle East/north Africa region and has a stronger institutional and legislative framework for environmental protection.

- improving training (Chapter 8);
- improving procedures (e.g. Chapter 3);
- learning from networking (Chapter 9).

One example is given here, the use of peer reviews to identify capacity problems and recommend solutions (Case 2.22). This type of approach allows for a new perspective on capacity issues, as well as a systematic overview.

Conclusions

There is a wide range of structural arrangements for environmental enforcement authorities across the world. These reflect the size, constitutions, political priorities, principles, histories and practical situations in these countries, each expressed to varying degrees. This chapter has provided an overview of what environmental enforcement authorities 'look like'. It therefore forms the basis for the discussion of their functions in subsequent chapters.

The independence of environmental enforcement authorities is important to ensure the confidence of businesses and the public. This can be a particular challenge, especially where authorities are closely integrated into ministerial structures. However, even in such cases there are structures and processes that can be undertaken to 'ring fence' their role.

Table 2.2 *Changes to the inspection capacity and fees and fines collected over 11 years in Russia*

Indicator	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
No. of inspectors	5070	NA	8200	7235	7260	5819	4805	3309	2068	NA	2111
No. of inspections (1000s)	158	180	175	185	197	207	217	160	84	40	129
No. of identified non-compliances (1000s)	108	167	228	240	242	268	290	214	180	NA	204
Claims and fines levied (millions new roubles at 2002 prices)	NA	1823	1879	1286	394	441	466	412	344	94	NA

Source: World Bank, 2004

Case 2.22 *Using peer reviews to enhance environmental enforcement in Kyrgyzstan*

A peer review of environmental enforcement in Kyrgyzstan was carried out at the request of the Ministry of Ecology and Emergency Situations by a team of seven experts from the Organisation for Economic Co-operation and Development (OECD), central and eastern European and Eastern Europe, Caucasus and Central Asia (EECCA) countries (Bularga and Krzysztof, 2005). The review involved a series of interviews with more than 70 individuals including political leaders, managers and experts from the Ministry (capital and regions) and other governmental and non-governmental bodies. The team subsequently reported its findings to a round table of representatives from these groups.

The Ministry has full executive authority for environmental protection, but has undergone frequent restructuring since its establishment in 1989 prior to independence. Around 2200 large industrial installations are regulated at national or sub-national level by 185 inspectors employed by the Ministry. Regulation also applies to SMEs (small and medium-sized enterprises) and the number of SMEs has rapidly grown to around 30,000. The peer review team noted that the focus of activity of the inspectors is now on the extraction of payments for pollution charges not least to compensate for the limited funding of the authorities to the extent of 'distorting the very mission and integrity of the compliance assurance system and eroding the self-confidence and public credibility of enforcement officers'. The team also found the following further problems:

- The regulatory system is working against the authority of inspectors to conduct on-site inspections and favouring companies' short-term interests.
- The frequent reforms of the administration are without a vision for achieving environmental objectives and working methods use resources inefficiently.
- Some interaction with the regulated community is too confrontational due to lack of dialogue, low understanding of compliance issues and use of outdated instruments of compliance promotion.
- There are far too limited human and financial resources for the authorities to undertake monitoring and inspections.

The team concluded that the main challenge in Kyrgyzstan is for the authorities to shift their work from revenue raising to ensuring environmental compliance. Greater use of preventative actions is required and the regulated community needs to be treated in a consistent and transparent fashion. There also needs to be greater awareness by industry and the public of the benefits of environmental protection. More specifically the review team noted that the following are essential to deliver improvement compliance:

- The environmental authorities need to acquire adequate powers and their institutional status be raised.
- The adoption of risk-based and performance-oriented working methods will increase efficiency and target action to maximize environmental outcomes.
- The authorities need to embrace higher professional standards and foster international cooperation.
- There is a need for greater and more open interaction with stakeholders.

No environmental enforcement authority is able to work entirely on its own and, if it tries, its actions are likely to be sub-optimal. As a result it is essential that effective cooperative and coordinating mechanisms are put in place.

Institutions, whatever their structure, need sufficient capacity to undertake their functions. Many environmental enforcement authorities have sub-optimal capacities and there is a variety of measures that can be taken to enhance this capacity.

This chapter concludes with three checklists to examine the structural features of environmental enforcement authorities.

Checklist: Determining the appropriate structure for an environmental enforcement authority

- 1 Are there issues of principle which restrict the options available for institutional structures?
- 2 Are there constitutional issues which require structures to be developed in particular contexts?
- 3 Are there political priorities for public bodies (e.g. devolution) which affect the structures of environmental enforcement authorities and how can they respond to these?
- 4 Are there issues of principle which form opportunities for environmental enforcement authorities (e.g. integrated approaches)?
- 5 What are the public interest priorities for how close an environmental enforcement authority should be 'to the people'?
- 6 What types and levels of structure does industry consider to be easiest to work with?
- 7 Does the environmental enforcement authority have sufficient autonomy from a ministry to ensure that it is viewed as acting independently and objectively?
- 8 In developing local enforcement structures are these more effective as units of a national authority or as elements of regional/local government?
- 9 What additional structural units (e.g. laboratories, legal departments) does an environmental enforcement authority require?

Checklist: Developing inter-institutional relationships

- 1 What relationships between other public bodies and with private bodies are necessary for the environmental enforcement authority to undertake its work effectively – are there particular relationship problems affecting environmental enforcement?
- 2 Where are these relationships currently good, poor or non-existent?
- 3 What particular relationships are necessary to ensure effective feedback within the operation of the regulatory cycle?
- 4 Where can formal agreements be established which set out precisely how other organizations can communicate and work with the environmental enforcement authority?
- 5 Has the environmental enforcement authority ensured that such agreements do not compromise its duties in any way?
- 6 Are there opportunities for establishing networking arrangements for the country as a whole or for individual regions?
- 7 Are staff in the environmental enforcement authority fully aware of the agreements and inter-institutional relationship processes that have been established and can they implement them?

Checklist: The capacity of environmental enforcement authorities

- 1 Has the environmental enforcement authority undertaken an audit of the number of staff it requires to perform its various functions effectively?
- 2 Has the environmental enforcement authority undertaken an audit of the skills it requires to perform its various functions effectively?
- 3 What additional resources are required to meet any gaps identified?
- 4 What processes are available to obtain these resources?
- 5 Are there changes in the working practices of the environmental enforcement authority that can increase the efficiency of resource use or liberate staff skills?

These questions will be further elaborated in Chapters 7 and 8.

Permitting

Introduction

Chapter 1 introduced the idea of a regulatory cycle and considered the importance of regulations (the first stage in the cycle) being developed as a way to deliver enforceable, effective and efficient outcomes. Businesses first, usually, encounter the regulatory cycle when they apply for permission to do something. This permission is usually a ‘permit’ or ‘licence’ and is the subject of this chapter, which begins with some introductory comments on the purpose of permits and then considers the processes that the permitting authority and operator go through to obtain a permit. A variety of different types of permitting is then examined. More detailed consideration of permitting is then given in order to define what is permitted and how permits are reviewed. As permitting imposes some significant costs, ways to improve the efficiency of permitting are addressed. Finally, the chapter concludes with a consideration of non-command and control instruments that might either have their own permitting systems or which interact with the systems covered earlier in the chapter, such as emissions trading, environmental management systems and negotiated agreements. At the end of the chapter six checklists are suggested, aimed at improving the efficiency of permitting systems.

The environmental permitting system can be defined as ‘an administrative procedure by which an authorisation is granted to a facility or individual to perform an activity under specific legal conditions deemed necessary to ensure the protection of environmental quality and public health’ (OECD, 2003c). The system involves the granting of permits to activities (companies or individuals) to allow them to undertake specified activities.

In this chapter the term ‘permit’ will be used throughout. However, many of the ‘permits’ that are included could be referred to as ‘licences’ in individual countries. Some countries tend to distinguish ‘permits’ as being granted to activities that could pollute the environment and ‘licences’ granted to activities concerned with natural resource extraction (from quarrying to fishing). Some countries will use ‘permit’ where others use ‘licence’. In the context of the issues in this chapter, the distinction is not particularly relevant and, to avoid confusion, ‘permit’ is used.

Permits set conditions on what an activity can or cannot do. The range of conditions will be established by the nature of the regulatory regime and can be interpreted in the light of the specific characteristics of the activity receiving a permit. Specifically, permits can have the following elements:

- they set limitations on specified types of activity so as to protect the environment;
- they can set requirements for monitoring and reporting on compliance;
- they can set possible requirements for monitoring the impacts of the activity in the environment (to examine whether permit conditions achieve what they set out to do);
- they can set requirements on the management of the operation (e.g. to ensure staff know their responsibilities).

Permits have a wide variety of functions:

- the conditions achieve the protection of the environment and health;
- they provide increased opportunities for public involvement and participation in environmental protection and ensure that the community has useful information about the activities of the facility;
- the monitoring and reporting required can increase understanding of the environment.

There are many different types of permit or permissions in use across the world. They can be issued to control various types of activity, such as a building permit, resource use permit (e.g. water abstraction), permit to discharge pollutants, permits to operate a facility that is hazardous (accident management), etc. Permits also vary in their complexity. The following provides a simple hierarchy of increasing complexity:

- *Simple notification* – these are not permits, but under this procedure there is simply a legal obligation on an operator to notify an authority that it is operating. The conditions for the operation may be set out in law. Thus enforcement activity takes place on the assumption that the operator knows what to do without being told this in a permit. This is appropriate for small activities with little environmental risk.
- *Standardized permit* – these are issued to facilities of particular types, where the conditions of the permit have already been set out for all such facilities for the whole country, for example. There is no significant negotiation of permit conditions, merely a need by the authority for it to be confident that compliance will be met. Such permits can also be known as ‘general binding rules’.
- *Bespoke permits* – these are permits where the conditions set out in the permit are determined through negotiation between the operator and the environmental enforcement authority in order to meet the objectives of regulation set out in law. They are, therefore, potentially unique for that activity. Bespoke permits can be issued for part of the operation of a facility (e.g. air emissions) or for the whole of the operation of a facility in an integrated permit.

In practice some combination of these is possible, such as a bespoke permit that contains standardized elements. Across many countries permitting requirements

have shown a number of trends, such as a move from end-of-pipe pollution control to pollution prevention and from single-medium permitting to integrated permitting. Permitting can also be combined with other forms of instruments to achieve environmental outcomes, such as environmental management systems, negotiated agreements, economic instruments, and so on. Some consideration of these will be given later in this chapter.

The permitting cycle and the permitting process

Permitting should not be undertaken in isolation from the rest of regulatory activity. It forms a part of the regulatory cycle discussed in Chapter 1. From the perspective of permitting, the cycle can be considered in more detail. For more complex forms of permitting a range of issues needs to be addressed in obtaining or issuing a permit. There are various stages of the permitting procedure that can be identified, although each would need to be adapted according to the individual requirements of the permit. The following stages are important, particularly for bespoke permits:

Defining and communicating permitting requirements

The fundamental requirements for permitting are set out in law. This can identify what activities require a permit, what aspects need to be addressed and which conditions applied. However, the law might only describe these elements in broad terms. Therefore, guidance needs to be issued on their interpretation. This might be issued by a ministry, the environmental enforcement authority or both.

The environmental enforcement authority also needs to issue information on how the permitting process will take place, such as deadlines, application procedures, etc. Finally, this information needs to be communicated to the activities that are likely to be subject to such permitting, such as through the internet, publications, workshops, and so forth. Business associations might also contribute to the communication process. This information can be used within a compliance assistance programme (Chapter 6).

Activities prior to applying for a permit

Before the operator of an activity applies for a permit it is common for there to be discussions with the permitting authority. These discussions can identify whether a permit is needed, what type of permit might be required and clarify the processes for obtaining a permit. Applicants can be guided to information relevant to their activity. If the application is for a renewal of a permit, the authority should discuss previous regulatory compliance issues that might relate to the application. The aim is to help the applicant to produce an application which contains all of the relevant information, so that it can be processed quickly. This reduces costs to businesses and, potentially, the permitting authority and is, therefore, good regulatory practice. It is important, however, that the permitting authority does not enter into any agreement during this process – this should only come later during formal determination of the application.

Preparation of the application and submission by the operator

The responsibility for preparing and submitting the permit application lies with operators. They must ensure that they address all of the issues identified in the permit application form and any supporting guidance. In many cases the operator will need to describe the activity in detail, any releases to the environment and the consequences of these releases, such as through interpreting the results of pollutant dispersion modelling. The operator might also need to provide information on how the activity is managed, measures taken to prevent accidents and other information, such as whether the activity has certified environmental management systems. They might also need to provide copies of other relevant permits that they might have received. In many countries submission will be by paper copy, while in others electronic submission or completing an on-line form is possible. The operator might also be required to pay a fee for processing the application (the issue of fees is addressed in more detail in Chapter 7).

Checking the application by the permitting authority

When the permitting authority receives the application the receipt should be recorded (in some countries there is a time limit for processing the application which begins upon receipt). Soon after receipt a check should be made that all of the required documentation is provided. If this is the case, the application will be valid. If there is any important information lacking, this will delay processing as the authority will need to inform the operator, who should then submit the missing material.

Confidentiality issues

In submitting the application the operator might identify information that it considers to be commercially confidential, such as details of a new manufacturing process that would be of interest to competitors. The permitting authority will need to consider if this is the case prior to making details of the application public and so remove the material. Similarly, in some cases the information might have national security implications and will need to be treated with discretion.

Consulting interested parties

Normally permit applications will need to be available for comment by the public. In many countries the operator is required to place an advert in a specified newspaper or journal announcing the application. The authority will also place the application on a public register. The authority will need to record the receipt of any comments and place these on the register. It is also common for other governmental bodies to be consulted for their views (such as the inspection institution if this is separate from the permitting authority). Additionally, it might be important to consult other staff within the permitting authority, such as to obtain technical advice from another staff member who has issued a permit to a similar activity elsewhere.

Determining the permit conditions

Once all of the relevant information and comments have been received, the permitting authority can assess the application. This will require a technical assessment of each of the elements of the application comparing them to what might be

required, for example as set out in technical guidance. Once this has been done, the permit conditions can be established. This will vary according to the type of permit and legal obligations. For example, under the European Union (EU) Integrated Pollution Prevention and Control (IPPC) Directive (see below) assessment of the permit will examine how the activity compares to expected technical obligations. However, the permit will not prescribe a particular technology or technique, but rather emission limit values for specified pollutants. In another permitting context, a technical obligation might be included. The permit conditions will also establish obligations for monitoring and reporting. Conditions can be standardized or varied depending on the regime. In Sri Lanka, for example, conditions for discharges to water are generally standardized according to the type of receiving water (river, coast, etc.). However, certain industry sectors (e.g. the textile industry) have more relaxed discharge standards (Ellepola, 1998).

Permits can be issued, in some cases, with 'probationary' periods. In Sweden this is done where an activity is trying out new technologies, but it is unclear what the outcomes will be (Lindgren, 2002). Once this is clear, fixed conditions will be set in the permit after one or more years. Industry and the permitting authorities are in favour of this approach, but there is criticism from lawyers who argue that permit conditions should be clear at the outset so that the public, for example, know what has been agreed to.

It is important that there is consistency and clarity in such conditions. For example, the methods used for monitoring will affect the data that are produced. Therefore, simply setting an emission limit is not sufficient. It is necessary to say how this is to be monitored, not least to ensure comparability of results between activities. In many countries permit determination is simply a technical assessment. However, in some countries (e.g. Sweden) a formal hearing might take place, whereby an open discussion of appropriate permit conditions will occur.

Issuing or refusing the permit

Once the permitting authority has determined the permit conditions, the permit can be issued. This should be sent to the operator, indicating when it is valid from and valid to (if appropriate). If the authority is not satisfied with the application, it should issue a formal refusal. In either case the operator is usually able to appeal against the decision. Countries adopt various options for appeal procedures. It is usual for a first appeal to be made to the permitting authority itself, then a higher administrative authority, such as a parent Ministry. Following this, recourse might be available to the courts. Because of the possibility of appeal, the permitting authority should ensure that its determination is as accurate as possible, so that any controversial issue is justified, such as with reference to published technical guidance. Finally, the permit should be placed on the public register and it is often appropriate for this to be accompanied by a statement from the permitting authority justifying the conditions that it contains and how stakeholder comments have been taken into account. The latter can be particularly important when the public raise issues beyond the competence of a permitting authority. For example, an activity might meet strict regulatory conditions, but a local community opposes it because of its position. This is a land-use planning issue, not necessarily one of

pollution regulation, and the permitting authority will need to make this clear in its statement for the public register.

Subsequently changing or cancelling the permit

Before the permit expires, the operator might wish to change the nature of the facility, such as a change in a manufacturing process. Regulations usually specify the types of changes that would require a permit to be revised. Usually the same type of process is followed for revising a permit as for issuing an initial permit, although the range of information required might be restricted to issues specific to the variation and, if the change is relatively minor, public consultation might not be required. Finally, the permit will be surrendered if the facility closes. Authorities might also revoke a permit as a sanction for non-compliance (see Chapter 5).

Permit review

Following examination of compliance monitoring information and possible further environmental assessment, it might be necessary to add or change conditions in the permit. The compliance history could also result in changes to monitoring and reporting obligations. Furthermore, technological issues may have changed over time indicating that the operating conditions of the activity should be improved to meet current expectations. If significant changes are required, the operator might be required to submit a new permit application for a revised permit, requiring it to go through all or most of the above stages again.

In conclusion, it can be seen how important the cyclical nature of permitting is. Clearly any revision of a facility's permit must take account of the experience gained in monitoring and enforcement of the conditions of the existing permit. Even with new facilities, the permitting authority should consider the experience gained from the monitoring and enforcement of similar types of activity or other facilities run by the same operator. A permitting process which simply views itself as a one-way process, interpreting legal provisions, is not sufficient.

Examples of permitting

To illustrate the types of permitting that can be undertaken in different contexts, three are described here. The first is a type of simple permit, illustrated by permits issued under the local authority air pollution control regime in the UK. The second is a permit issued for part of the operation of an activity, but with separately determined conditions, illustrated by air pollution permits in the US. Finally, there is a complex integrated permit covering most or all of the activities of a facility and this is illustrated by the EU's IPPC permitting regime.

UK local authority air pollution control

Local authority air pollution control (LAAPC) came into force in England and Wales in 1991 and covers around 17,000 activities. The main features of LAAPC are:

- Prescribed processes must not operate without an authorization from the local enforcing authority in whose area they are located.
- Operators of prescribed processes must submit a detailed application for authorization to the local enforcing authority. All applications for authorization (except in relation to small waste oil burners and mobile plant) must be advertised locally and full details (except commercially confidential or national security information) must be made available so that the public can comment before the process is authorized to start operation or to undergo a substantial change.
- Local authorities are statutorily obliged to include conditions in any authorization they issue that are designed to ensure that the process is operated using the Best Available Techniques Not Entailing Excessive Cost (BATNEEC) to prevent and minimize emissions of prescribed substances and to render harmless any substance that may be emitted. Secretary of State Process Guidance Notes on all the main categories of prescribed processes have been issued to every local enforcing authority. These Notes contain the Secretary of State's views on what are the BATNEEC for each category of process. In most cases these will be the conditions set out in permits.
- In addition to any specific conditions included in an authorization, all authorizations implicitly impose a duty on the operator to use BATNEEC for any aspect of the process that is not covered by the specific conditions.

Permits issued under the US Clean Air Act

Permits are issued to various sources of air pollution under the US Clean Air Act (Title V), hence they are known as Title V permits. Most Title V permits are issued by State and local permitting authorities (called 'part 70' permits after the relevant part of the Code of Federal Regulations), while permits issued by the US Environmental Protection Agency (EPA) are called 'part 71' permits. The EPA reviews and comments on permit applications made to State and local authorities. A Title V permit:

- records in one document all of the air pollution control requirements that apply to the source. This provides the public, regulators and the operator with a clear picture of what the facility is required to do to be in compliance;
- requires the operator to make regular reports, which are made public, on its emissions of pollution and the controls it is using to limit its emissions;
- adds monitoring requirements to ensure compliance;
- requires the operator to certify each year whether or not it has met the air pollution requirements in its permit;
- makes the terms of the Title V permit federally enforceable. This means that the EPA and the public can enforce the terms of the permit, along with the State.

The time it takes to issue a permit is determined by a number of factors, including what type of permit it is, its complexity, which permitting authority is involved,

how controversial the activity is, and whether the permit is subsequently appealed. A New Source Review permit issued by the EPA takes between six months and one year. In California, State law requires agencies to issue such permits within 180 days.

If the EPA issues a permit, sources must commence construction within 18 months of receiving a permit, otherwise the permit expires. Title V permits must be renewed every five years. The expiration time varies according to local regulations.

Every proposed Title V permit has a 30-day public comment period and a 45-day EPA review period. The public and the EPA review periods may start at the same time, which can speed up the time to issue a permit. When the EPA reviews a Title V permit, it provides comments to the State or local permitting authority on ways to improve the permit and changes that must be made before the permit can be issued. If the EPA objects to a permit, the permitting authority has 90 days to revise the permit and make the corrections requested by the EPA. If it fails to do this, the EPA becomes the permitting authority and issues or refuses the permit. Where the EPA does not object to a permit, any member of the public may petition the EPA to object to the permit within 60 days of the end of the EPA review period. The petition must be based on issues that were raised during the public comment period, unless this was not practical.

Permitting under the 1996 EU IPPC Directive

The EU IPPC Directive came into force on 30 October 1996. Specified industrial activities are to be authorized through permitting in order to attain ‘a high level of protection for the environment taken as a whole’. This is to be achieved by preventing or reducing emissions to air, water and land, including measures concerning waste and energy efficiency. The overall objective of the Directive is to implement the Best Available Techniques (BAT) taking into account the local conditions. Note that the ‘T’ is ‘techniques’ and not ‘technology’, thus including any aspect of the operation of a facility (e.g. management) appropriate to achieving the desired outcomes. Key elements of IPPC include:

- The requirement for installations to implement BAT ‘without prescribing the use of any technique or specific technology, but taking into account the technical characteristics of the installation concerned, its geographical location and the local environmental conditions’. Permits set out emission limits derived from the assessment of BAT.
- Installations are to have integrated permits covering all discharges to different media, etc.

The IPPC Directive (Article 2) has the following definitions relevant to the permitting process:

- ‘permit’ shall mean that part or the whole of a written decision (or several such decisions) granting authorization to operate all or part of an installation,

subject to certain conditions which guarantee that the installation complies with the requirements of this Directive. A permit may cover one or more installations or parts of installations on the same site operated by the same operator.

- ‘installation’ shall mean a stationary technical unit where one or more activities listed in Annex I are carried out, and any other directly associated activities which have a technical connection with the activities carried out on that site and which could have an effect on emissions and pollution.
- ‘operator’ shall mean any natural or legal person who operates or controls the installation or, where this is provided for in national legislation, to whom decisive economic power over the technical functioning of the installation has been delegated.

The IPPC Directive achieves industrial regulation through integrated environmental protection. This should lead to some greater environmental and economic efficiencies as more optimal pollution reduction techniques are used given that all media are taken together and a move towards clean(er) technologies and processes is encouraged rather than end-of-pipe solutions. The Directive applies to six categories of industry: energy; production and processing of metals; minerals; chemicals; waste management; and ‘other’. The ‘other’ group includes facilities operating in the areas of pulp and paper production, textile treatment, tanning, food production, and the intensive rearing of poultry and pigs. Within each category, the scope of the Directive is defined further either by relation to the nature of the process or product (e.g. refining of oil) or the size of the operation (e.g. production of ferrous metal above 20 tonnes per day).

There are around 50,000 IPPC installations in the EU countries. The country coverage varies significantly – with 20 installations in Malta and 30 in Luxembourg, to 6495 installations in the UK, 7705 installations in Germany and an estimated 10,000 in Italy. Within countries there can be a significant variation across regions. For example, in Spain, where there are over 4000 IPPC installations, nearly 1700 are in Catalonia alone.

Determining BAT can be a complex technical process. For this reason the European Commission has organized the development of guidance on BAT for different sectors (Case 3.1). EU countries have issued guidance to operators on how to submit applications under IPPC. Case 3.2 gives an example of this from the UK which seeks to guide operators to produce a high quality application.

Integrated permitting, like IPPC, has a long history. For example, it has been in place in Sweden since the 1970s and was adopted in other countries (such as the UK) subsequently. However, it can be difficult to develop. This is illustrated by the fact that its use has been explored by the US Environmental Protection Agency, but has not been comprehensively adopted. IPPC represents an example of true integration (if properly implemented). Other forms of integration also exist, whereby medium-specific permits are brought together, but with limited integrated analysis. Case 3.3 from the EECCA countries and Case 3.4 from Turkey illustrate examples of this. The administrative integration that these demonstrate is important. It can be a first step to a more detailed integrated analytical integration

Case 3.1 Determining Best Available Techniques under the IPPC Directive

Under the Integrated Pollution Prevention and Control (IPPC) Directive permit conditions including emission limit values must be based on Best Available Techniques (BAT). To assist the permitting authorities and companies to determine BAT, the European IPPC Bureau in Seville has worked with Technical Working Groups composed of governmental, industry and non-governmental organizations (NGO) representatives to develop BAT Reference documents (BREFs) to advise permitting authorities. A BREF contains a number of elements leading up to the conclusions of what are considered to be BAT in a general sense for the sector concerned. A BREF does not remove the obligations on operators and Member States under the Directive to make decisions at national, regional or local level. BREFs do not prescribe techniques or emission limit values, that is, they are not legally binding. While BREFs are developed specifically to assist the implementation of IPPC, the large amount of technical information they contain is useful in other contexts and they have, therefore, proved informative for environmental authorities in other parts of the world. The structure of a BREF includes:

- *Executive Summary.* This is a 'stand-alone' document, including the principal conclusions on BAT and the emission and consumption levels associated with the use of BAT.
- *General Information.* This provides information about the industry addressed by the BREF, such as production capacity and economics, and gives an indication of the key environmental issues for the sector.
- *Applied Processes and Techniques.* This describes the production processes and techniques currently applied in the industrial sector, including variants.
- *Current Emission and Consumption Levels.* This describes the range of currently observed emission and consumption levels for the overall process and its sub-processes, including emissions to air, water and solid residues arising from the activities. Multi-media complexity and performance data are included, where appropriate.
- *Techniques to Consider in the Determination of BAT.* This provides a catalogue of emission reduction or other environmentally beneficial techniques that are considered to be most relevant in the determination of BAT (both generally and in specific cases), including end-of-pipe and process/operating issues. For each the environmental benefits are described. Information on each technique includes achieved environmental benefits, operational data, cross-media effects, applicability and economics.
- *Best Available Techniques (BAT).* This concludes what is considered to be BAT in a general sense for the sector. The overarching criteria of costs of techniques and their environmental performance, including cross-media implications, are considered. This section does not set emission limit values but will suggest emission and/or consumption levels that are associated with the use of BAT.

- **Emerging Techniques.** This identifies any novel pollution prevention and control techniques that are reported to be under development and may provide future cost or environmental benefits.

Full texts of all BREFS for different industry sectors are available at: <http://eippcb.jrc.es/pages/FActivities.htm>

Source: European Commission, 2005b

Case 3.2 *Guidance on permit applications under IPPC from the Environment Agency for England and Wales*

The Environment Agency for England and Wales has issued guidance for operators on how to produce a 'good' application for a permit under the EU Integrated Pollution Prevention and Control (IPPC) Directive. A good initial application means the regulator is likely to need to ask fewer questions later on, giving a faster decision. This guidance, however, is applicable for those applying for many types of permits in many countries. An edited version is, therefore, reproduced here. The key elements are:

- Be concise, it is the quality of the application that counts not the size of it.
- Set out clearly a response to each issue on the application form and explain whether the proposed activity departs from any relevant standards or benchmarks that apply. If the proposals are clearly set out and robustly justified it makes consideration of the issues more effective and less time consuming for all parties.
- It is essential that the application contains:
 - a non-technical summary including a succinct summary of how the installation will be operated and how it meets the required standards; a succinct non-technical summary should also assist others, such as the public, to understand and comment upon the application;
 - details of the emissions that will result from the proposed activities and their comparison with the relevant sector benchmark levels;
 - an assessment of the environmental and health impacts of the installation that demonstrates that a high level of protection for the environment and human health is provided.
- Include proposals and timescales for all aspects of the installation that require improving.
- Do not provide unnecessary information in response to any section of the application.
- The application should refer to normal operations as well as abnormal and potential accident situations.

Case 3.3 *Permitting processes in EECCA countries*

Permitting in Eastern Europe, Caucasus and Central Asia (EECCA) countries (OECD, 2003c) largely consists of three types:

- Permits for pollutant emissions (derived from Soviet approaches introduced in the 1970s to 1980s).
- Permits for the use of natural resources, such as minerals (mostly introduced after the break-up of the Soviet Union).
- Permits for carrying out specific activities, such as waste processing.

In most EECCA countries separate permits are issued for pollutant emissions for different media, although Georgia, Kazakhstan and Kyrgyzstan have brought these together into a single document. Interestingly, in the early 1990s 'environmental passports' were introduced in all EECCA countries. These brought together a wide range of technical and environmental information on a facility into a single file and were viewed as a precursor to integrated permitting. However, they proved costly to administer, so that they were only retained in Armenia, Russia and the Ukraine. Thus there are various approaches to bring permitting together, even if true integration is not yet possible.

once the capacity of operators and environmental enforcement authorities allows this. Fully integrated permitting with fully integrated analysis is desirable. However, there is no point in introducing it into the regulatory regime until both industry and the environmental enforcement authorities (permitting and inspection) can properly cope with it.

Defining what requires a permit

At first glance it might seem straightforward that once a regulation prescribes that industrial activities should require a permit to operate, then an environmental enforcement authority would know what activity requires a permit. However, in practice, a whole range of questions can arise in deciding what should or should not be included in a permit. The most recent exploration of the issues was undertaken by Ten Brink and Farmer (2005a). This addressed these issues in a European context. Nonetheless, the range of approaches found is probably applicable in a much wider context. This section outlines some of this variation. For specific issues relating to the detailed legal interpretation of EU law (which is specific to the EU), such as the requirement under IPPC to take account of 'technical connection' (a subject of debate) in defining an 'installation' subject to a permit, the reader is referred to the original source for more details of these legal issues.

Case 3.4 Permitting in Turkey

In Turkey many types of activity are required to have a permit (IEEP and Ecotec, 2002). Permits set specific emission limits for discharges. These are often negotiated, although a range of prohibitions exist, for example, the discharge of specified dangerous substances into receiving waters. When an operator requires a permit, an application is submitted to the regional office of the Ministry of Health (MoH). It details the proposed operation, including discharges. The MoH then circulates the application to other relevant authorities. These agencies are able to comment upon the application and suggest changes. However, it is the MoH which establishes the final conditions. Depending on the complexity of the permit, an application may take a few weeks to a few months to process. The length of the life of a permit is also variable, and in some cases it may be, in practical terms, indefinite.

There is also a complex process of integration across environmental media for permits. There is generally one final permit that integrates all of the intermediate permits – *Gayri Sihhi Müesseseler Ruhsatı* (Hygiene Permit). The Hygiene Permit is not equivalent to an Integrated Pollution Prevention and Control (IPPC) permit. While most of the issues to be addressed in an EU IPPC permit are included in the Hygiene Permit (although not those concerning site restoration, for example), they are not fully integrated in the sense of seeking to optimize protection of the environment as a whole. The MoH would identify any highly significant cross-media effects, but full optimization is not achieved. The permit is also derived from the input of several separate bodies. However, the ‘integration’ is undertaken by the MoH and is, therefore, more health focused. Thus optimization of the wider environment may be of a lower priority in the final conditions within the Hygiene Permit.

Some questions that arise in defining the scope of an activity to be included in a permit are:

- Can parts of an installation be given separate permits, or does the whole installation always require a single permit?
- Can a permit cover more than one installation or parts of several installations?
- Can a permit be given to one operator with responsibility for other operators?
- Is it possible to issue a single permit for companies with installations at different sites?

Bringing different activities together into a single permit can have environmental and administrative advantages. However, there are also potential disadvantages. These include:

Advantages:

- single permit and documentation;
- a truly integrated approach assessing impacts on the environment as a whole, including assessing interactions between activities;
- an ability to assess interactions between different activities;
- the optimization of pollution control and monitoring systems;
- integrated waste management;
- cost-benefits to industry due both to administrative integration and achieving cost-effective measures on a large scale.

Disadvantages:

- possible lack of clear responsibilities for individual operators;
- where such permits are not obligatory, it is not possible to force all operators into a single permitting system, thus potentially undermining its benefits;
- difficulties in undertaking detailed assessments of the relative impacts, etc. of each activity and, therefore, establishing integrated permit conditions;
- in complex situations very complex permits might result, causing difficulties in interpretation for operators and regulators;
- difficulties in identifying sources responsible for offences;
- difficulties in implementing legal obligations.

Across Europe there is no consistent approach to any of the questions on the previous page. This is illustrated in the following tables (Ten Brink and Farmer, 2005a).

Table 3.1 *Can parts of an installation be given separate permits, or does the whole always require a single permit?*

Yes	Czech Republic (CR), Norway (N), Poland (in principle) (PL), United Kingdom (UK).
No	Austria (AU), Belgium – Flanders (B (Fl)), Cyprus (CY), Spain – Galicia (E (Gal)), France (F), Ireland (IRL), Lithuania (LT), Malta (M), The Netherlands (NL), PL (in practice), Slovakia (SK), Slovenia (SLO).

Table 3.2 *Can a permit cover more than one installation or parts of several installations? (Conditions that can apply – yes, but only for ‘same site’ (ss) and/or ‘same operator’ (so))*

Yes	AU (ss), CR (ss/so), D (ss/so), F (ss/so), Finland (FIN), LT, NL (ss/so), PL (ss/so), SLO, UK (ss/so, in principle).
No	CY, Germany (D) (for parts of installations), IRL, M, N, PL, UK (in practice).

Table 3.3 *Can a single permit be given to one operator with responsibility for other operators?*

Yes	FIN, IRL, NL (limited).
No	AU, B (FI) CR, CY, D, E (Gal), F, LT, M, NL (usually), N, PL, SK, UK.

Table 3.4 *Is it possible to issue single permits for companies with installations at different sites?*

Yes	CY, LT, N (potentially), Sweden (partially).
No	AU, B(FI), CR, D, E, FIN, F, IRL, M, NL, P, PL, SK, SLO, UK.

It can be seen from this that even with a common permitting framework prescribed from the EU (the IPPC Directive), there is a significant diversity in the scope of what a single permit might cover. In most cases, in most countries, the scope is limited. However, where the legal conditions allow and the practical outcomes are viewed positively, a much wider range of activities can be included within a permit determination. It should be noted, though, that even where permits are issued that include additional operators, sites, etc., this is often the exception rather than the rule.

It is important to note that these issues can also present themselves to permitting authorities due to changes in the nature of installations over time. An important example of this is where a large complex installation breaks up, with subsequent separate multiple ownership. For example, in the Czech Republic there were many examples of this during privatization of the state factories between 1991 and 2001. One example was a large steel works (4×5km) which constituted one company during the socialist period, but broke up to include about 100 different activities with many owners. Problems that arise when installations break up include:

- How to establish who are the operators of the installations after the break-up, i.e. who has the power to decide about necessary alterations and the power to carry them out. This criterion also helps to decide whether a group of companies or an economically dominating company on the site (parent company) can be regarded as the formal operator of an installation.
- It significantly increases the costs of determining permits and compliance due to the increased administration.
- Some legislation may have size thresholds to determine whether certain types of regulation are required (e.g. on major accident management). Breaking up an installation may mean that some regulations no longer apply, even if all activities continue.
- Disintegration can disrupt environmental management systems and efforts at resource and energy efficiency as well as responsibility for the clean-up of historical pollution.

- Problems can arise regarding emergency response.
- Problems arise in determining the scope and boundaries for the permit procedure. For example, aspects of an older permit could remain valid.

A related situation is where many industrial activities are co-located on ‘industrial estates’. They may directly interact in their activities, or may each contribute to environmental pressures. Measures to bring the regulation of these activities together could be beneficial. There is limited use of such permits in the EU, and where this is the case this might only be for restricted instances, such as for the same operator. In Sweden harbours and engineering, industries are required to have a permit covering all of the activities at the location, some of which are tightly technically connected and others have little or no technical connection. In a number of countries there are legal constraints on the use of such permits. Most commonly this constraint concerns the need for a permit to be issued to a single legal entity. This is, for example, the case in Germany. However, even here there are some opportunities to address issues beyond the single legal entity. Thus laws on liability and soil protection provide some administrative link between economically linked activities. Also in setting emission limit values in a new permit a consideration of neighbouring emissions must be taken into account.

These issues are illustrated by the following cases:

- Case 3.5 from Finland illustrates how ownership need not be a factor in determining the scope of permitting.
- Case 3.6 shows how the Netherlands is examining options for integrated permitting of complex installations.
- Case 3.7 shows that activities with different operators can be issued a single permit in England and Wales.
- Case 3.8 shows that activities with little or no technical connection, but with the same operator, can be issued with a single permit in Sweden.
- Case 3.9 provides an example of setting permit conditions to allow flexibility between sites with a common ownership in England and Wales.

In conclusion, therefore, the issues that affect how wide the scope of permitting can be are varied and include:

- whether more complex permitting is perceived to deliver additional environmental benefits;
- the capacity of the permitting authority to assess complex situations;
- the legal basis for permitting, such as whether permits have to be issued to single legal entities or not;
- the precise nature of the activity/ies to be permitted and how these have changed over time, such as in relation to thresholds for permitting set out in law;
- the effect on the ability to be able to assess compliance in complex permitting situations;
- interaction with other measures, such as negotiated agreements.

Case 3.5 *The scope of permits in Finland*

In the Finnish Environmental Protection Act all polluting installations receive permits according to a single national law and the requirements are the same for all installations. Installations on the same site can have:

- separate permits with separate permit procedures;
- separate permits in one permit procedure (handled at the same time);
- one permit for all installations at the site.

If the joint impact of separate activities posing a risk of environmental pollution is significant, these shall be addressed in determining permit conditions. For environmental permits the activities are understood as covering primary activities plus supplementary support activities insofar as these form a technically and productively integrated operational unit whose environmental impacts or waste management need to be examined together.

In Finland ownership of an activity does not play a decisive part in permitting. The permit is applied for the whole operation/site/installation. If there are separate owners they are jointly responsible for the permit. If the ownership of one part changes, the new owner is a successor to the same permit with the same conditions. A change in ownership does not change the permit. The change has to be informed to the authority, so that the responsible party is always known to the authority – but the permit and its conditions remain the same.

Case 3.6 *The scope of permits in the Netherlands*

In the Netherlands permits are issued for sites which may include several installations, where they are suitably connected. In the Dutch permitting system the 'establishment' is the key concept and is defined in the Environmental Management Act as any enterprise undertaken commercially, or of a size commensurate with a commercial enterprise, which is conducted within certain bounds. Thus functional and organizational connections are important. The Dutch system has various elements:

- *Geographic boundaries:* The boundaries are primarily defined by the limits of the building and of the site where the activities take place. The boundaries do not need to exist physically.
- *Economic boundaries:* Activities are organizationally linked when they have the same operator and/or when there is one person in control of the activities.

- *Technical boundaries:* Technical links between activities help constitute an establishment (e.g. common energy sources). The same applies to activities that have functional links, e.g. the same means of transport are used or when services and materials are exchanged.

In the Netherlands some large industrial sites exist with a number of installations operated by different companies. The competent authority would regard these installations preferably as one establishment since this would be advantageous in terms of:

- a reduction in the number of permit decisions and procedures;
- greater opportunities to deal with the cumulative environmental effects (emissions to air, noise, odour, safety issues) of all the installations;
- greater potential to encourage operational links between installations (e.g. use of waste from one installation by another as a raw material);
- greater room for individual installations to exchange some effects (emissions) within the overall limit for the establishment.

Therefore, the competent authority prefers to try to issue one permit. This permit would contain a general chapter with requirements applicable for the whole establishment and possibly overall environmental targets, for example, maximum annual loads for certain emissions for the establishment as a whole. In addition the permit would contain specific chapters only applicable for the identified activities that are part of the establishment. Two options can be considered. For the first there is one permit holder, namely the company which has responsibility over all installations (through civil law contracts with the other companies) and thus is able to comply with all of the requirements of the permit. Normally this company is also in charge of, and will provide for, the common services for all the companies running activities on the site. The second option is that there are several permit holders. There is one central permit holder/company which can be held responsible for complying with all permit requirements; again this company has power over all installations through civil law contacts with the other companies and will normally provide for, and be in charge of, the general common services on the site. Moreover there are other companies/permit holders which can be held responsible as well, but only for complying with the permit requirements applicable to the specific activity they operate. In cases of non-compliance the competent authority will first address the permit holder which is in charge of the specific installation and then the 'general' permit holder. The general permit holder will be addressed first in a case of a non-compliance where the common services are concerned.

Case 3.7 *The scope of permits in England and Wales*

Where an installation is controlled by more than one operator, then each operator is required to obtain a separate permit for the part of the installation that it controls (Defra, 2002). These 'multi-operator' installations exist in many sectors and include installations where some operators only undertake 'directly associated activities'.

Some flexibility has been given to the Environment Agency in interpreting the term 'installation', but only at the margins (e.g. judging whether a technical connection with the installation is made or broken) in order to ensure reasonable consistency. In such cases staff are asked to consider whether a different approach would result in setting different permit conditions. If there was some doubt as to whether two activities should be joined together in a permit, then the regulator would consider whether there would be any additional conditions it would attach if the activities were in fact joined together as part of one installation. If so, this would increase the likelihood of issuing a single permit. Thus a certain pragmatism prevails.

Case 3.8 *The scope of permits in Sweden*

In Sweden permits can be issued for several installations that have little or no technical connection, but are operated by the same operator. There are also cases where permits have been issued for installations with little or no technical connection that are operated by different operators (subsidiaries), but where the power to take economic decisions with regard to the operations of the installations lies with one company (parent company). However, these permits regularly concern activities with an 'operational connection', that is, activities that concern the same type of production or different stages in a production chain. These types of permits are most frequent in the engineering industries, which often concern several different types of activities that do not always have a technical connection. The consequences of these types of approach can include difficulties in monitoring and enforcing compliance with different conditions in the permit – the more complex and widespread the permitted activity is, the more difficult it is to control compliance. Furthermore, problems may arise when parts of the activity covered by the permit change. The permit requirements for changes in the operation of an activity may lead to a need for a new permit for the whole activity, although the changes only concern one part of the activity. Permits for large, diverse activities, including on different sites, may also give rise to problems when parts of the activity covered by the permit are sold or outsourced.

Case 3.9 UK permitting of power stations

A new permitting approach was established in England and Wales under its, then, Integrated Pollution Control (IPC) regime in 1991. This occurred at the time of the privatization of the electricity system in order to allow the two resulting major national private electricity generators, PowerGen and National Power, to meet local conditions while at the same time meeting corporate targets for sulphur dioxide emissions and having some flexibility in deciding how to do so. Each power station had a permit with two emission limits – the A limit and B limit. The A limit was set to reflect the local environment and releases could not exceed this. The B limit reflected the national sulphur dioxide ceiling and could be adjusted with prior notice provided the national total for the company was not exceeded.

The effect of these limits was to provide an absolute maximum on emissions from an individual installation, but also to allow a quantity of emissions to be applied as a company ‘bubble’, to be allocated to individual power stations as the company deemed most efficient, taking account of the operation of the electricity market. This movement of emissions has some similarity to the effect of an emissions trading system. The system allowed for control of individual sites for local environmental protection and an overall cap on emissions to meet national requirements, such as the Second Sulphur Protocol of the United Nations Economic Commission for Europe (UNECE) Convention on Long-Range Transboundary Air Pollution.

Permitting authorities need to examine these issues to determine the relative benefits and disbenefits in each case, within the regulatory flexibility and constraints available, to determine the scope of the permits that they issue.

Reviewing permits

Permits need to be reviewed at different intervals to ensure that they still meet the current requirements for the particular type of activity. The frequency of review can be set out in law, or it can be at the discretion of the environmental enforcement authority, depending upon the country and regulatory regime. For example, the EU’s IPPC Directive requires that ‘Member States shall take the necessary measures to ensure that competent authorities periodically reconsider and, where necessary, update permit conditions.’ The IPPC Directive states conditions which could initiate a review:

- The pollution caused by the installation is of such significance that the existing emission limit values of the permit need to be revised or new values need to be included in the permit.

- Substantial changes in the BAT make it possible to reduce emissions significantly without imposing excessive costs.
- The operational safety of the process or activity requires other techniques to be used.
- New provisions of EU or national legislation result in additional issues to be addressed.

However, generally, it is up to individual countries to determine what ‘periodically’ means. As a consequence, countries have developed their own practices in permit review, and there is a large variation in the length of permits, in review frequency and in type of review carried out. The range is illustrated in Table 3.5. Some key points are:

- Some countries review permits every five years, others every ten and others at much longer intervals.
- Some countries apply different rules on permit review for specific categories of installations. For instance, in Italy electricity production plants with capacity above 300MW are allowed longer permits; in other countries low-risk sectors have much longer permit review periods.
- Several countries allow longer periods or low permit fees for activities with certified environmental management systems.

This variation in approaches to reviews can also be seen in permitting systems around the world, for example in Sri Lanka permits can be required to be renewed on an annual basis (Ellepola, 1998). In the Philippines there was a requirement for an annual review of permits. This was beneficial in that industry would provide the regional authority with information in areas where inspection capacity is low, however, it did mean that the authority’s resources were concentrated on permitting procedures rather than other proactive approaches to helping industry (Vasquez, 1996).

Some review periods are set in law and others are determined by authorities depending upon circumstances. Both approaches can have advantages and disadvantages. Set review periods emphasize to operators that there will be a need to re-examine their activities and the timetable is clear for all parties. Specified review periods would also allow the permitting authority to plan activities well into the future. However, a more flexible approach allows the permitting authority to focus attention on activities or sectors which require review, for example, due to technological changes. This focuses resources on actions that are likely to maximize environmental outcomes.

Public participation

As noted in Chapter 1, transparency in regulatory activity is important, one important reason being to achieve public confidence. Thus it is important that the purpose and processes of the permitting system are clear for the interested public. More specifically, it is usual for the permitting procedure to include a period where

Table 3.5 *A summary of Member State practices on reviewing permits issued under the IPPC Directive*

Member State	Practice
Austria	Review at least every 10 years.
Belgium – Brussels	Fully review every 15 years. Permits may also be updated as a result of an inspection. Such updating currently takes place on an annual basis.
Belgium – Flanders	Maximum permit length up to 20 years. In practice review occurs frequently, e.g. when general and sectoral operating conditions in regional legislation are revised.
Belgium – Walloon	The Government specifies the frequency of review. Furthermore, permit or sectoral conditions can also specify reconsideration and updating frequency.
Denmark	Review at least every 10 years. National legislation also sets other reasons for permit revision.
Finland	No legal requirement, but in practice permits are reviewed at intervals of 5–10 years on a case-by-case basis by the permitting authority.
France	Review every 10 years.
Germany	National law provides indications on permit renewal only for landfills, which should be reviewed every 4 years.
Greece	No legal requirement, but permits are expected to be reviewed every 5 years.
Ireland	No general legal requirement, but legislation specifies some instances where the competent authority must review and update permits.
Italy	Renewal every 5 years. Longer periods are allowed for installations having an ISO (International Organization for Standardization – environmental management standard) 14001 (6 years) or Environmental Management and Audit Scheme (EMAS) certification (8 years). Electricity production plants with a capacity over 300MW have a first renewal after 7 years.
The Netherlands	National legislation requires that permits must be reviewed ‘regularly’, but this is not defined.
Portugal	Permit validity is set between 5 and 10 years. Further reconsideration may be required for reasons specified in national legislation.
Spain	Renewal at a maximum of 8 years. National legislation specifies other reasons for review. Review every 10 years (but not compulsory), or 4 years for certain activities.
Sweden	The competent authority is required to assess the sufficiency of the permit conditions granted, and initiate renewal if necessary.
United Kingdom	No specified legal requirement.

Source: European Commission, 2006

the application is available for public comment. Usually the procedures for public participation are simple – advertising and placing it on a public register. However, other techniques are sometimes used, particularly in cases of significant public concern, such as informal meetings and hearings. A few countries have formal processes where permit determination can include a participatory element, such as the environmental courts in Sweden.

In some countries the public rarely, in practice, provide comments, except in a few high profile cases. In other countries, public comments can be received on a large number of applications. Different types of ‘permitting’ have different participatory opportunities. Notification can eliminate participation and standardized conditions significantly reduce the opportunities for debate. Thus the consequences for public participation need to be taken into account in reforming permitting. This is illustrated by Case 3.10 from Finland.

In seeking to ensure effective public participation, it is important that barriers to public participation are reduced as far as is possible. Lack of uptake by the public in the process does not necessarily mean that they are not interested. Chapter 1 discussed participatory issues and, in the context of permitting, it is important to ensure:

- that the opportunities for participation are clear;
- that opportunities for participation are communicated adequately to those who need to know when they need to know;
- that participation is not inhibited (as far as possible) by information that is too technical or otherwise confusing;
- that additional participatory techniques are used if these are viewed as desirable by the public.

Case 3.10 *Public involvement in permitting Finland*

Finland adopted new legislation for environmental permitting in 2000. This introduced integrated permitting, not only for the (approximately) 600 processes covered by the Integrated Pollution Prevention and Control (IPPC) Directive, but also for 25,000 smaller installations. The Finnish Ministry of the Environment proposed the adoption of simpler permitting systems including a notification procedure for asphalt and quarrying activities. This new procedure would have speeded up the permitting process, but would have also reduced public participation in that process. Under the integrated permitting process the public can make submissions during the permit application procedure and submit complaints after the permit is issued. In Finland there is significant participation with about 38 per cent of permit applications receiving submissions and 20 per cent of decisions receiving complaints. For quarrying, the number of complaints rises to 50 per cent. Thus the proposed simplification measure was criticized and it was questioned whether it was consistent with the Finnish constitution. As a result the proposed initiative was withdrawn.

Simplifying permitting

The acquisition of a permit can involve different administrative processes, which can be complex and impose significant costs on businesses, not least as the time that the permit acquisition can take can increase business uncertainty. This is particularly the case where an industrial activity is subject to different regulatory regimes each with the need to obtain a separate permit. There are, however, a number of ways to achieve the objectives of permitting (ensuring environmental objectives are met), while at the same time reducing the administrative burden (including costs to the environmental enforcement authority). Delivering less costly permitting regimes is an important contributor to a better regulation agenda (Chapter 1).

There is a wide variety of simplification approaches to the way that permitting is undertaken. These include:

- changing the processes of individual permit regimes to introduce streamlining measures, such as on-line permit application procedures;
- seeking to combine multiple permitting processes into a single permit;
- removing the requirement to apply for permits and replacing this with a generally applicable rule or by a notification procedure;
- accelerated permitting whereby permit procedures are altered to allow for more rapid determinations;
- reducing the information requirements for permits.

The Organisation for Economic Co-operation and Development (OECD) (OECD, 2002a) noted that, of 28 OECD countries in 2002, 16 had programmes to review and reduce the number of licences and permits required by national government and 11 by sub-national government. This survey was not limited to environmental law, but shows that initiatives on permit simplification are relatively widespread. The OECD identified four principles in the use of permits that should be used widely in the introduction of new systems and to simplify existing permitting systems:

- Permits should only be used where there are clear risks to the public associated with the conduct of the business and apparent information problems for consumers.
- Renewal requirements should be adopted only where there is a substantial need to verify continued competence and suitability to undertake the business.
- Requirements in permits should be directly and substantially related to the ability to carry out the business without risks to the public.
- Information and procedural requirements should be restricted to the minimum necessary to verify the above.

The variety of approaches to reducing the burden of businesses is illustrated by the following cases:

- Bringing a large number of different permitting regimes into a single permit and removing bespoke permitting requirements for smaller processes in the Netherlands (Case 3.11).
- Replacing bespoke permitting by a notification procedure in Sweden (Case 3.12).
- Taking measures to speed up the permitting process in Germany to reduce costs (Case 3.13).
- Reducing the information requirements for permit applications in Denmark (Case 3.14).
- Integrating permitting obligations, including shorter deadlines in Belgium (Case 3.15).
- Introducing simpler administrative processes for permitting in Finland (Case 3.16).
- Bringing two permit regimes together through a detailed analysis in England and Wales (Case 3.17).

These cases demonstrate that some very specific measures can be taken to simplify permitting without radical changes. However, there are also advantages to a more fundamental change, linking changes to the permitting process with changes in institutional arrangements to add increased efficiency. Such revision can also be enhanced by detailed assessments of the costs of different options, so that changes can be targeted at the most burdensome problems. The Dutch and Swedish cases illustrate the financial benefits that can result.

Some permit simplification initiatives have taken complex analysis to develop, as they seek long-term detailed changes. Case 3.11 from the Netherlands is a case in point. Bringing permitting regimes together seems always to deliver benefits, as long as it is implemented correctly and the permit process is properly thought through. Thus leaving complex overlapping regimes in place can be considered bad practice. Bringing in general binding rules in place of permitting has benefits, but also limitations. It must be clear that the change would not result in reduced environmental outcomes (e.g. for some local sensitive environments) or undermine public confidence/participation. Undertaking a major initiative to bring different permits together requires significant investment in staff time and involvement of business. This will, later, prove a useful investment. However, up-front commitment is necessary and failure to complete the process properly could result in problems to the regulator and/or business.

Other instruments to change environmental behaviour

As indicated in Chapter 1, command and control regulation (with permits as discussed in this chapter) is only one of a series of different types of instruments available to governments to improve the environmental performance of industry and other activities. Some of these instruments interact with traditional permitting

Case 3.11 *Reducing the number of permits required in the Netherlands*

In the Netherlands, as part of the simplification initiative of the Government, the Environment Ministry (VROM) has undertaken an initiative to bring together its permitting requirements into a single framework. A second aspect of simplifying permitting requirements is to extend the use of general environmental rules to a wider number of activities – providing certainty and simpler administrative processes.

The objective of the combined permit initiative is to bring all of those permits issued by VROM into a single permit framework. Overall this will reduce around 25 different types of permit to one, covering up to three layers of government. VROM will also produce a web-based application form which allows the operator to complete only those sections which apply to that operation, thus seeking to avoid the outcome of increasing integration leading to increasing complexity. The VROM permit will also be supported by a guide for users to help the applicant through the process. The process is also currently being extended to include permits issued under the authority of other ministries.

A further component of the revision of permitting rules in the Netherlands is the extension of the use of general environmental rules to which companies must conform, but without needing to apply for a permit. Currently in the Netherlands many companies are already subject to general environmental rules. This amounts to about 300,000 companies, compared to 100,000 with individual permits. Under the proposed changes, only 40,000 will still require an individual permit. Currently the costs of regulation for the 100,000 establishments is €680 million and for the 300,000 with general rules it is €202 million. Extending the scope of the general rules to cover 50,000 additional installations is estimated to lead to a saving of €329 million for businesses.

and, therefore, it is beneficial to consider these briefly. They are emissions trading (which can have its own permitting system), environmental management systems (a voluntary commitment to environmental performance) and negotiated agreements (an alternative form of ‘contract’ with government). Other types of instrument have less obvious interactions. For example, environmental taxes are generally separated from interaction with command and control regulation, although there can be a link with the financing of environmental enforcement authorities, as will be seen in Chapter 7.

Case 3.12 *Replacing permit requirements by notification and other procedures in Sweden*

A further way to reduce permitting burdens is to replace the requirement for bespoke permits with notification and other procedures. This approach in Sweden mainly concerns environmentally hazardous activities and is targeted to reduce the administrative burdens for companies, mainly by replacing permit requirements with notification for some activities. An approach based on national environmental quality objectives and environmental risks has been used to ensure that simplification will be environmentally efficient and cost-effective, while avoiding a net reduction in environmental protection. The objectives of the initiative are to:

- ensure the permit and notification requirements for environmentally hazardous activities are in line with the national environmental quality objectives;
- significantly decrease the number of operations requiring a permit;
- decrease the number of operations requiring notification;
- retain compliance with EU-related requirements for permits and notification.

Information on 30 permit and notification procedures was collected through a survey. The applying/notifying enterprises represented different categories and sizes. The actual time and costs for the procedures were estimated. The costs for the applicants'/notifiers' own work were estimated at 530 Swedish kronas per hour (SEK/h) (€56). Other costs relating to the work on the application/notification were as shown in the table:

Type of costs	Estimated costs SEK/year
Premises	100,000 (€10,572)
Office supplies, computers	50,000 (€5286)
Education and training	50,000 (€5286)
Overhead	15%

In addition, actual costs for public notice (advertisement in newspapers), legal advice, technical consultants and charges to the competent authorities were included. The time estimation included all of the elements directly connected to the work on the application/notification procedure, such as meetings, reading of documents, examinations, assembling of information, etc.

Costs and time from the start of the company's work on the application/notification until the final decision of the competent authority were estimated as shown in the table:

<i>Type of project</i>	<i>Costs SEK</i>	<i>Time (months)</i>
Permit issued by the Environmental Court	600,000 (€63,432)	24
Permit issued by the County Administrative Board (significant effects)	300,000 (€31,716)	17
Permit issued by the County Administrative Board (no significant effects)	300,000 (€31,716)	12
Notification to the Municipality	20,000–30,000 (€2114–3172)	3–5

Currently, the permit requirement applies to about 6000 installations. The initiative proposes to replace the permit requirement by an obligation to notify for 1350 of those installations. An obligation to notify currently applies to about 15,000–20,000 activities. About 100 of these would, according to the proposal, no longer have to be notified. However, as some activities that today require a permit would be under an obligation to notify, the total number requiring notification will be increased by about 1250.

The total cost reduction for the enterprises was estimated at 95 million SEK/year (€10 million). Cost reduction for courts and other authorities was estimated at 30 million SEK/year (€3.2 million).

Case 3.13 *Accelerated permitting in Germany*

One approach to reducing the burden to businesses is to adopt measures to speed up the permitting process (Rauscher, 2001). This has been undertaken in Germany, where substantial amendments to its permitting law were achieved through two Acts on accelerating approval procedures (permitting) in 1996. These placed time limits on the application process and detailed elements required in that process, but without changes in public participation. This illustrates the benefits that small alterations to the permit application process can have.

Case 3.14 *Simplifying information requirements in Denmark*

Another type of simplification approach is to reduce the information requirements in a permit application. This has been done in Denmark. In total approximately 6500 businesses in Denmark are subject to permit procedures. Approximately 5000 of these businesses are covered by a new simplified system while approximately 1100 larger companies will remain under more strict procedures. The new system reduces the amount of information that businesses will have to submit to apply for a permit. For a number of industries, companies are given binding standard conditions for the businesses. Standardized requirements are set for each type of industry. The standard conditions are based on the best available techniques in the particular industry and are formulated in collaboration with industry associations and decentralized public authorities.

Case 3.15 *Changing the permitting system in Belgium (Walloon Region)*

In 1999 a decree on environmental permitting was introduced to simplify permitting. It applies to all activities which are subject to environmental permitting requirements in the Walloon Region of Belgium, across a wide variety of business sectors. The benefits of the new integrated permitting system are:

- The procedure for obtaining the permit is shorter and is characterized by rigorous deadlines.
- The decree introduces one single environmental permit replacing numerous environmental permits and authorizations. In addition, environmental and planning authorizations are granted in the form of a single permit.
- A single competent authority issues permits.
- Activities are divided into three classes depending on the potential impact on the environment. In addition, there is a simplified method of declaration for the enterprises, giving rise to fewer environmental impacts.

Case 3.16 *Simplifying permits in Finland*

Simplification of the permitting procedure started in 1994 with the creation of the Environmental Permits Committee. Together with the Environmental Law Committee, it produced a report in 1996, the results of which led to the Environmental Protection Act that came into force in 2000. The Act represented a major renewal of environmental legislation in Finland and the simplification of the permit procedure was its central aim. The simplification of permitting was based on the objective to achieve environmental protection goals efficiently with lower costs. The simplification of the administration will be operational in 2007.

Finland has three permitting authorities, two at State level and one at municipal level. The municipal level deals with the largest number of facilities requiring a permit (about 25,000, mostly small and medium-sized enterprises (SMEs)). The State authorities cover the largest installations (about 650 installations regulated under Integrated Pollution Prevention and Control (IPPC), as well as other larger industries). The aim of simplifying the administrative provision is to achieve a 'one-stop shop' approach and to separate permitting and inspection at the regional level.

According to Hildén et al (2003a) the administrative costs to permitting authorities increased from 70–80 person-years to 100–110 person-years during the simplification process. However, this increase is not necessarily linked to the simplification process itself, but to the widening of the legal scope and the number of installations that require a permit. Therefore, this is seen as a transitional aspect. Costs of the simplification procedure to industry and SMEs have been difficult to assess because of limited data availability (Kautto et al, 2003; Sjöblom and von Troil, 2003). Hildén et al (2003b) believe this is because the database for monitoring of permit simplification was not developed.

No monetary estimates of the benefits are available, but representatives of industry found that the simplification of permitting had the following benefits (Similä, 2003):

- It reduces the administrative burden within the company.
- The requirements of an integrated permit are easier to justify within the company.
- An integrated, but installation specific, permit makes business arrangements easier.
- An integrated permit is easier to integrate within an environmental management system.

Case 3.17 *Bringing together waste and IPPC permitting in England and Wales*

In the UK a proposal was issued in February 2006 on the Environmental Permitting Programme in England and Wales. The proposal consists of a detailed consultation paper (DEFRA, 2006a) and an accompanying partial Regulatory Impact Assessment (DEFRA, 2006b). It aims to simplify the process of environmental permitting and compliance systems without altering the standards that have to be met. The problem being addressed is that different regulatory systems have been developed largely independently of each other. This has led to a regulatory system that is perceived as excessively complex and one that imposes unnecessary administrative burdens upon both industry and regulators. A key feature of the proposed system is that it should be capable of later extension to contain other permitting systems, such as water quality and radioactive substances.

The UK Government identified the features that an ideal permitting and compliance system should contain if it is to meet simplification objectives. Because most of these could apply to any system in any country, many are worth highlighting. Thus the system should:

- contain a high degree of commonality for permitting and compliance tasks;
- avoid unnecessary prescription;
- be easily understood and implemented;
- deliver risk-based regulation where the level of regulatory control is, as far as is practicable, proportionate to the environmental risks posed by the activities;
- be capable of extension to other permitting and compliance systems;
- meet obligations in a way which can accommodate change without significant regulatory change;
- apply a uniform approach across the country.

In implementing new permitting systems, the UK Government has highlighted key principles, including the two following points:

- Permit application forms should be as concise as possible to reduce the administrative burden. They must be designed in consultation with industry.
- Only information that is necessary should be required to be submitted with a permit application. Applicants should also be in no doubt about what they are being asked to provide.

Specifically, the objective is that the delivery of waste and Integrated Pollution Prevention and Control (IPPC) permitting and compliance should be through a single site-based permit, thus simplifying the existing regimes. Costs and benefits broadly consist of two elements: first, the changes that would lead

to reductions in the administrative burdens on industry. These savings accrue directly, as industry would make savings in its own administrative costs, and indirectly to the extent that the regulator's efficiency gains are passed on to industry in the form of lower charges. Second, there are wider economic benefits to industry resulting from a more efficient system.

Emissions trading

Emissions trading, whereby permissions to emit a quantity of pollutants are traded between enterprises, has been adopted in a number of countries. There is an extensive literature on emissions trading. However, the purpose of this short section is not to analyse the efficiency of different systems, but rather to introduce the concept of emissions trading and comment on permitting issues relevant to it. The purpose of the system is to achieve an overall environmental goal (that might otherwise be tackled through traditional command and control regulation), but leave sufficient flexibility to businesses to make decisions on emission controls when it is most cost-effective for them. There are two broad types of emissions trading scheme:

- Cap and trade, where an overall absolute cap (ceiling) of emissions per unit of time (e.g. per year) is fixed, for example, the sulphur dioxide trading scheme in the US (Carlson et al, 2000). The cap is allocated between various parties (e.g. industrial activities), who can then trade. This approach ensures that the particular emission target is achieved.
- Baseline and credit, where the baseline establishes a standard against which allowances are generated. If emissions of the activity are lower than the standard, then the difference can be traded. There is no absolute cap implied in this case as more activities meeting the standard will increase total emissions.

Thus if the primary aim is to achieve a particular reduction in emissions, the cap and trade system is preferable. However, the allowances under cap and trade need to be allocated and there are two basic ways of doing this:

- Allowances are auctioned, so that operators pay for all the allowances they receive. This is probably the most economically efficient method.
- Allowances are given away free to operators on the basis of past, or expected future, performance ('grandfathering'). This approach is often preferred in practice, particularly by industry.

Some combination of the two is possible, such as the EU emissions trading scheme, where most allowances are grandfathered, but a small proportion can be auctioned.

For an emissions trading scheme to work successfully, it is necessary that there is accurate monitoring of the pollutants being traded. This is not only for environmental reasons, but also to ensure a fair economic relationship between actors within the scheme. Thus emissions trading schemes can require that a permit is issued which details the monitoring and reporting requirements. These permits do not, like traditional permits, set emission limits, etc. Emission objectives are defined by the allowances obtained by the activity. The importance of the monitoring and reporting is such that additional conditions might be applied. For example, under the EU emissions trading scheme the data require independent verification. As regulators depend on the ability and integrity of verifiers for the proper functioning of the system, it is important that they do their job well. This requires good standards for verification procedures and accurate accreditation, for example, following recommendations of the International Emissions Trading Association.

As emission trading systems are different to traditional permitting, the institutional arrangements for their administration can be different. This is well illustrated by the EU emissions trading scheme and the different administrative responses in selected European countries (Skinner et al, 2005). Germany set up a dedicated central emissions trading authority, the German Emissions Trading Authority of the Federal Environmental Agency. This was because an effective national system was needed, yet other forms of environmental regulation are largely undertaken within the 16 Federal states. Therefore, existing structures were not appropriate and administration of emissions trading is separated from other industrial regulation. Similarly, in the Netherlands permitting under, for example, IPPC is undertaken by the provinces and municipalities, so a separate national emissions trading authority has been established (Dekkers and Allesie, 2005). In contrast, in Sweden and England and Wales the existing national authorities (with varying other regulatory functions) were considered most appropriate for issuing emissions trading permits.

Skinner et al (2005), after surveying emissions trading permitting authorities, also note that the following issues are necessary for them to be effective:

- It is important that the infrastructure is clearly defined and it is considered good practice for this to be enshrined in law.
- The institution should be visible, have easy access and be operated in a well coordinated way with other relevant teams and institutions.
- The development of an emissions trading scheme is initially resource intensive for the regulator. It is therefore important that realistic levels of resources are provided in order to establish the scheme.

A number of the issues discussed earlier for traditional permits also apply to those for emissions trading. For example, there are potential administrative cost savings from bringing permitting systems together. Thus, under the EU emissions trading scheme, France has integrated the permits with IPPC permits, while the Netherlands and the UK have not. Some countries have also developed more efficient permitting processes, such as in England and Wales (Case 3.18).

Case 3.18 *Electronic permitting for emissions trading in England and Wales*

The Environment Agency in England and Wales has adopted electronic approaches to facilitate permitting for emissions trading. Permit applications are submitted using an electronic template, the details from which are imported to a permitting database from which permits are generated and issued electronically. Monitoring reports will also be received electronically and stored on the permitting database. This process is not used for IPPC permits.

Environmental management systems

There are a number of different types of environmental management systems. These include the international ISO 14001 (International Organization for Standardization – environmental management standard) and the EU's Environmental Management and Audit Scheme (EMAS). Both are voluntary. There can also be national schemes or similar and these can be expressly linked to command and control regulation and be obligatory (Case 3.19). For example, in Ireland IPPC permit conditions require companies to have a form of environmental management system and report on performance in an annual environmental report. This type of system, therefore, is simply another permit condition. Further information on the nature and implementation of environmental management systems can be found in Earthscan's environmental management handbook (Brady, 2004).

An environmental management system can help companies to speed up both notification of environmental problems at their facilities and identification of solutions, and hence some non-compliance issues are avoided or at least reduced in duration. Assuring legal compliance is often considered by companies as an important benefit and a reason for their implementing a quality environmental management system. Some feel that environmental management systems can improve permit applications and reduce the time needed by permitting authorities, can facilitate inspection and can lead to improved compliance.

There is currently considerable research being undertaken into how far environmental management systems improve compliance and, therefore, whether the regulatory load on companies with such systems might be reduced, for example, by reducing reporting obligations in permits (and, conversely, 'regulatory relief' can increase participation in environmental management systems, Wätzold et al, 2001). Howes et al (2005) review the published evidence for the effectiveness of environmental management systems in improving compliance by companies of permit conditions in Europe and the US. They found that while an environmental management system does lead to improved environmental performance, identifying a link with improved compliance is very difficult. They suggest two reasons for this:

Case 3.19 *Environmental management systems in the Irish permitting process*

In Ireland activities that receive a permit under its Integrated Pollution Control (IPC) system are required to have an environmental management system (Larkin, 1998). This needs to include:

- a schedule of objectives and targets to a minimum of five years;
- an environmental management programme, including a timetable for meeting targets, identification of those responsible for targets, how they will be achieved and a report on the programme submitted as part of the installation's Annual Environmental Report;
- pollution emission register of substances emitted and where they are emitted;
- a documentation management system;
- taking corrective action where required;
- adoption of procedures for awareness and training;
- procedures for communication with the public on the installation's activities.

The incorporation of the environmental management system requirement in permitting has had the following benefits:

- it is a structured environmental management tool;
- it leads to a reduction in emissions and the minimization of waste production;
- it provides improved environmental control;
- it can be easily monitored through environmental audits;
- it can often lead to cost savings;
- it improves the corporate image;
- it helps meet stakeholder demands;
- it can improve market access and security.

- The objectives of a regulatory regime and an environmental management system are not necessarily the same.
- There is significant variation between types of environmental management system and how any one type is implemented in a country and between sectors, making detailed examination of outcomes, etc., difficult.

However, an environmental management system, such as ISO 14001, does require a number of elements that should enhance compliance, such as:

- identification and periodic evaluation of legal requirements;
- training records;
- operational control procedures;
- monitoring records;
- internal audit;
- external certification.

The EU has established the Remas Project (<http://remas.ewindows.eu.org>) to examine the link between environmental management systems and compliance. Results so far show that these elements are improved in companies with environmental management systems. However, identifying improved compliance itself is more problematic.

Negotiated environmental agreements

Negotiated environmental agreements (sometimes called ‘voluntary agreements’) are increasingly being applied across the world and are considered to be a possible instrument to help address environmental problems covering a broad range of pollutants and natural resources (see Case 3.20). A negotiated agreement involves a discussion between an authority (such as an environmental enforcement authority) and an industry sector or a large individual company whereby it agrees to meet specified environmental outcomes (e.g. a reduction in pollutant emissions). The agreement does not specify how this is to be done, leaving flexibility for the company/sector to find the most cost-effective options. The agreement should include measures for monitoring and reporting to check on progress. Failure to achieve objectives could result in the authority resorting to more traditional command and control measures.

Negotiated environmental agreements have been applied, either as alternatives to other instruments (e.g. taxes) or complementary to them (e.g. permits). Negotiated agreements were potentially seen as an instrument that could be finely tuned, quick to set up and that could build on industry’s internal knowledge to achieve the environmental objectives at lower costs. The evidence from experience is divided on whether negotiated agreements are mature policy tools that offer more than just policy learning, with strong opinions for and against. In fact they have failed to offer significant benefits in some areas, but have helped meet targets and been considered as valuable tools in other areas (see Ten Brink, 2002). Negotiated agreements can fail for various reasons, such as individual companies not contributing to outcomes and acting as free-riders in the system.

Negotiated agreements can have a number of advantages:

- They should be able to deliver environmental benefits at lower costs to business.
- Agreements can lead to greater company commitment.
- Such agreements could be used to negotiate overall pollution reductions between groups of permitted installations.
- They can be linked to instruments other than permitting, e.g. in Sweden where the agreement with the energy intensive industry on energy efficiency contains an incentive allowing for a reduction in energy taxes.

- They can also act as incentives to look beyond the boundaries of traditional permits and the definition of ‘installation’, such as across a company’s activities, resulting in an improvement in achieving an integrated approach.

Negotiated agreements can have a number of disadvantages:

- There is a need to ensure that voluntary action and legal requirements are kept separate.
- Negotiated agreements do not guarantee implementation.
- It is important that the environmental impact (e.g. a pollutant) is considered on a global rather than a local scale.
- Negotiated agreements can be as time consuming and difficult to verify as traditional regulation.

Negotiated agreements contribute in many countries to the regulation of environmental aspects of industrial installations. In effect they can act as multi-site instruments. However, the same activities within the agreement could require traditional permits. Thus negotiated agreements can simply complement permits, with permits retaining primacy, or they can address certain objectives which permits do not address. For example, in the Netherlands a number of negotiated agreements with sectors of industry contain the obligation for the participating companies to make company environmental plans describing the measures that

Case 3.20 *Negotiated agreements and environmental management systems in the Netherlands*

In the Netherlands voluntary agreements are reached between regional permitting authorities and 11 industrial sectors, with reduced requirements for small and medium-sized enterprises (SME) participation. They include the following features:

- The sectors have specified environmental targets for 2000 and 2010.
- The regional authorities and the sector sign a covenant agreeing the sector-wide plan.
- In consultation with licensing authorities, companies draw up four-year company environmental plans (CEPs). The CEPs incorporate their sector’s Best Available Techniques (BAT) targets on which companies have to report annually.

One of the key issues of the sector-specific covenants is that all companies should develop an environmental management system. This may be certified (for some companies, mainly large ones, certification is mandatory) or be equivalent to a certified environmental management system.

the company will take and the obligation for the competent authority to take these plans into consideration when issuing permits, if and when these plans have been approved by them. In practice permits seldom incorporate the measures described in company environmental plans. More often permits merely codify measures at the moment a company actually wants to start implementing them (when a revision of the permit is needed).

Negotiated environmental agreements, therefore, can offer opportunities for achieving environmental outcomes beyond those available in traditional permitting. At this stage they are probably best viewed as complementing permitting – doing what permits cannot do. How far they might replace all or part of permitting remains to be seen and would certainly depend on the confidence that authorities and the public have in industry, which can be culturally determined and vary significantly from country to country.

Conclusions

Permitting is a critical stage in the regulatory process. However, it is evident that there is a wide range of different approaches to permitting and that countries are actively revising permitting systems to achieve different objectives. The trend in recent years towards more integrated permitting and towards extending the scope of an individual permit is driven by the objective of optimizing environmental protection and, potentially, optimizing business costs. The trend for simplification aims at reducing business costs and enhancing the efficiency of the work of the permitting authority. These two trends sometimes go hand in hand and sometimes there is tension between them.

Whatever system is adopted to deliver these outcomes, it is important that the permitting process is clear and the procedures are set out in a way that ensures a ‘good’ application from the operator. This is to the benefit of all concerned. This chapter has sought to set out the stages in the process that can ensure this.

Permitting is, however, only one way to set objectives for businesses to meet environmental objectives. Other instruments are used and can be effective in achieving outcomes. Nevertheless, ultimately the choice of instrument should be that which delivers environmental outcomes most efficiently. In many cases an instrument/policy mix is most appropriate.

This chapter, therefore, concludes with six checklists to examine permitting processes and how parallel instruments can be made to work.

Checklist: Institutional arrangements

- 1 Are there appropriate legal obligations in place to require businesses to obtain permits for activities that might impact on the environment?
- 2 Are authorities established with clear legal authority for issuing permits?
- 3 Does the permitting authority have sufficient staff with sufficient technical capacity to examine permit applications adequately or does it have access to such experience outside of the authority?

- 4 Are permit conditions set to ensure an adequate level of environmental protection?
- 5 Is there consideration of the whole process rather than end-of-pipe solutions in setting conditions?
- 6 Is consideration being given to integrated permitting, where appropriate?
- 7 Are the institutional arrangements set at the appropriate level (national, local, etc.) to address permitting questions?

Checklist: Permitting procedures

- 1 Has the permitting authority adequate processes in place to communicate permitting objectives to relevant businesses?
- 2 Does the permitting authority conduct discussions with businesses prior to application to provide information and ensure a 'better' application?
- 3 Are the application forms clear and as simple to complete as possible and are they supported by clear guidance?
- 4 Has the authority provided opportunities to make application submissions easier, such as electronic submissions or on-line forms?
- 5 Does the permitting authority record receipt of the application, undertake an initial check to ensure completeness and seek any missing information from the operator?
- 6 Does the authority check confidentiality issues accurately and ensure an adequate balance between the commercial interests of the company and the legitimate interests of the public?
- 7 Does the permitting authority ensure adequate consultation with interested parties (see separate 'Public participation' checklist)?
- 8 Does the authority ensure permit conditions are determined accurately according to legal and technical guidance and does it clearly justify its decisions?
- 9 Are adequate review procedures in place to ensure that activities deliver expected environmental outcomes?

Checklist: Scope of permitting

- 1 Is the legal basis for permitting prescriptive in relation to the scope of what can be permitted or is it flexible?
- 2 Would bringing additional activities together in a single permit increase opportunities for environmental protection?
- 3 Would bringing additional activities together in a single permit increase or decrease business costs for permitting?
- 4 Would bringing additional activities together in a single permit affect the ability of the enforcement authority to assess non-compliance and determine who is responsible?
- 5 In considering whether to extend the scope of permits does the authority weigh up the balance between environment, business and compliance outcomes and does it have the technical capacity to do this?

Checklist: Public participation

- 1 Do the permitting procedures specify in law the requirements for public participation?
- 2 Is there adequate communication with the public to alert them to participatory opportunities?
- 3 Are the correct sections of the public adequately informed?
- 4 Are the participatory procedures clear?
- 5 Are the staff of the permitting authorities trained in dealing with the public?
- 6 Does the permitting authority examine different participatory approaches to meet the circumstances of different communities, etc?
- 7 In its permit determination does the permit authority issue a statement indicating if/how it has addressed any public concerns that have been raised?

Checklist: Simplifying permitting

- 1 Has a quantification of business costs associated with permitting been undertaken and are the most costly aspects identified?
- 2 Has the permitting authority identified options to change permitting procedures to reduce costs without reducing environmental protection?
- 3 Has the permitting authority examined the opportunities for bringing different permitting processes together into one permitting process to maximize the reduction in administrative tasks in permitting?
- 4 Has the permitting authority considered the use of general binding rules to minimize the need to make individual permit applications without reducing protection of the environment?
- 5 Has the permitting authority improved the support it gives to businesses in the permitting processes, for example, by providing clear guidance to support on-line applications for permits?
- 6 Has the permitting authority increased the use of IT tools for permitting processes particularly by increasing the use of fully on-line applications to allow the replacement of paper-based systems wherever possible?
- 7 Has the permitting authority ensured that simplification measures do not undermine necessary public participation?

Checklist: Interaction with other instruments

- 1 As far as possible, are the permitting arrangements for other instruments consistent with those for traditional permitting?
- 2 Are the institutional arrangements for the permitting of other instruments done in such a way as to deliver as little duplication for businesses with traditional permitting as far as possible?
- 3 Are the benefits of environmental management systems determined and are these taken into account in setting permit conditions and other aspects of the regulatory response?
- 4 Is there an optimization of thinking regarding the scope of permitting and what can be achieved with negotiated environmental agreements?

Monitoring and Inspection

Introduction

Once a permit has been issued to an activity, it is necessary to know whether the activity subsequently complies with the permit. Two processes are required to achieve this – monitoring and inspection. Inspection is, of course, a mechanism to monitor a facility, so the two terms overlap. However, in this chapter ‘monitoring’ is used more to refer to the assessment of physical issues, such as pollutant concentrations. Many (such as the public) would view an ‘inspection’ as meaning some form of site visit. However, not all countries interpret the term this way (possibly reflecting linguistic differences) and use the term to cover all compliance assessment work (including desk-based). In this chapter ‘inspection’ is taken to involve visiting a site.

There are also other procedures which help to assess compliance. General environmental monitoring (not targeted at an activity) can detect problems which might lead to identifying a non-compliant activity. A more common additional process is that of citizen complaints; local communities may identify non-compliant behaviour and report it. This is never systematic, but has proved to be very important in some instances.

Monitoring should be timely and regular and it should be undertaken according to appropriate methods and in such a way as to ensure that it is accurate. Without it, neither public authorities nor businesses will be able to draw sensible conclusions about the performance of an activity and, in particular, whether there is compliance with permit conditions. Monitoring not only provides an assessment of the compliance of individual activities, but the cumulative information derived from different sources can be used to assess the effectiveness of specific compliance programmes. However, it is important that the information can answer questions concerning the programme’s objectives. Otherwise a distorted view of a programme’s effectiveness can result (see Butler and Fekete, 2005, for a critique of the assessment of the US Environmental Protection Agency’s (EPA’s) National Petroleum Refinery Compliance Program).

This chapter is not the place to examine the technologies of monitoring, that is to say which equipment to use for different pollutants, various media and issues of calibration. These are best covered in specific technical manuals and details of effective monitoring have been described by IMPEL (2001). Instead it will begin by examining the nature of self-monitoring, discussing why it is important and

what it involves. It will then examine measures taken to reduce the burden of monitoring on companies.

The chapter then continues with an examination of inspection activity, considering what inspection actually is and how it can be planned. This is illustrated by examples of countries, their different inspection capacities and contexts. The chapter concludes with four checklists to assist in examining the practical implementation of the monitoring and inspection activities of environmental enforcement authorities.

Self-monitoring

Self-monitoring (also known as ‘self-supervision’ and including ‘self-recordkeeping’ and ‘self-reporting’) is a system of requirements that is undertaken by those being regulated to ensure that they meet compliance obligations. In other words, industry, for example, is responsible for monitoring its own activities (e.g. emissions of pollutants) rather than this being done by the environmental enforcement authority. Across many countries (particularly in the developed world) self-monitoring is a mandatory activity and the specific requirements of a self-monitoring programme can be explicitly set out in permits. However, in other regions, it is applied in a more limited way (e.g. only 5–10 per cent of regulated activities in Eastern Europe, Caucasus and Central Asia (EECCA) countries undertake self-monitoring).

Specific activities that can be included in self-monitoring programmes include:

- the monitoring of the operations of an activity (e.g. resource use), emissions of pollutants, the ambient environment around the installation;
- keeping records of the results of such monitoring, of action taken to tackle operational problems and of accidents;
- reporting to the environmental enforcement authorities;
- defining internal management responsibilities for the above activities.

Self-monitoring has a number of benefits, including:

- Self-monitoring is likely to generate more information than an environmental enforcement authority could gather through inspection activity.
- A greater understanding is gained by operators of how their processes function and of the consequences for the environment.
- Reliable data are derived for operators to improve business performance. Self-monitoring data can be valuable for project design and decision making on investment.
- Information is generated first by the operator, so that any unexpected results can be tackled quickly and corrective action taken without the need for communication from an environmental enforcement authority. This can reduce liabilities to businesses from environmental damage.
- The costs of self-monitoring are met by the operator as a standard business operating cost, so that the administrative costs of environmental enforcement authorities are reduced.

- Self-monitoring will result in a greater quantity of data across all processes than an environmental enforcement authority is likely to be able to gather and, therefore, there is an improved understanding of the pressures on the environment and increased information for compliance enforcement activities.
- A well-functioning self-monitoring system can increase trust between businesses and environmental enforcement authorities.

Requirements for self-monitoring must be clearly set out in permits. These should include (IMPEL, 1999b):

- sampling (where, how, storage, etc.);
- instrumental measurements (type, location, calibration, etc.);
- process conditions that are relevant to the time when measurements are taken;
- data analysis;
- reporting;
- standards and quality assurance.

Environmental enforcement authorities need to ensure that the conditions are so prescribed that the data and samples obtained are subject to a clear audit trail in order to reduce opportunities for fraud. It is, therefore, good practice to adopt certification schemes to ensure the quality of self-monitoring and audit the practice at regular intervals (as is illustrated by Cases 4.4 and 4.5 from the UK).

Self-monitoring will often require businesses to employ private consultancies to undertake some monitoring activities. For example, in Sweden specialist companies are used to calibrate equipment used to monitor fugitive dust emissions (Lindgren, 2002).

Self-monitoring, therefore, has a number of advantages. Bringing together the monitoring information within a business enables more comprehensive auditing. When cases of non-compliance are detected through self-monitoring, some countries allow operators to self-disclose these and this can reduce the level of sanctions that might be applied (see Chapter 6).

The following cases illustrate a range of self-monitoring examples:

- environmental auditing and self-monitoring for public authorities in the US (Case 4.1);
- self-disclosure in China (Case 4.2);
- the strengths and weaknesses of self-monitoring in Kazakhstan (Case 4.3);
- the monitoring certification scheme for self-monitoring in the UK (Case 4.4);
- external auditing of self-monitoring in the UK (Case 4.5).

Reducing the costs of monitoring

Monitoring (whether undertaken by public bodies or by self-monitoring by enterprises) can be expensive. For example, the US EPA has an extensive information

Case 4.1 Environmental compliance audits in the US

The US Environmental Protection Agency (EPA) defines an environmental compliance audit as a 'systematic, documented, periodic, and objective self review of facility operations and practices related to meeting environmental compliance'. Audits:

- verify compliance with regulatory requirements;
- evaluate the effectiveness of environmental management;
- identify unregulated potential risk at a facility.

In December 1995 the EPA issued a new auditing policy, 'Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations' that establishes incentives for self-auditing for Federal agencies. These include a penalty incentive for self-monitoring, disclosure and correction, where the EPA will not seek certain penalties or will recommend that criminal charges not be brought for violations that are uncovered through an environmental audit (explained further in Chapter 5). The Audit Policy covers only violations that are promptly disclosed and corrected, provided that other important safeguards are met. These safeguards protect health and the environment by precluding penalty reductions for violations that cause, for example, serious environmental harm or may have presented an imminent and substantial endangerment. The EPA has issued guidance documents to assist the development of effective auditing programmes. For example, the 'Environmental Audit Program Design Guidelines for Federal Agencies' provides information, criteria and direction to Federal agencies that are designing audit programmes.

The EPA has developed a number of audit protocols to assist the development of audit programmes. These protocols provide detailed regulatory checklists that can be customized to meet specific needs. The audit protocols are provided in an easy to understand question format for evaluating compliance. They have currently been developed for each of the following laws:

- Comprehensive Environmental Response, Compensation and Liability Act.
- Clean Water Act.
- Emergency Planning and Community Right-to-Know Act.
- Federal Insecticide, Fungicide and Rodenticide Act.
- Resource Conservation and Recovery Act.
- Safe Drinking Water Act.
- Toxic Substance Control Act.

Case 4.2 *Obligations on self-disclosure by non-compliant companies in China*

In China non-compliant companies are required to disclose publicly the following information (Peiyuan, 2005), building on self-monitoring information:

- corporate environmental policy;
- gross emissions including:
 - total amount of wastewater and its pollutants,
 - total emissions to air and the constituent pollutants,
 - total amount of solid waste produced and amount disposed;
- corporate solution to pollution including:
 - investment of key projects to tackle pollution,
 - whether emissions meet local and national standards,
 - the amount of disposed and reused wastes,
 - the amount of disposed dangerous wastes;
- compliance with laws and regulations:
 - record of non-compliance with laws and regulations,
 - documents of administrative penalties,
 - details of accidents and other reported incidents;
- environmental management, including:
 - emission fees related to laws and regulations,
 - emission fees that have been submitted,
 - reports submitted on emissions,
 - permit applications,
 - installation of automatic emission monitoring equipment and functioning of the instruments,
 - the percentage of days that the facility normally operates,
 - the rate of compliance with ‘Three Simultaneity’ (when a new facility is built control of pollution must be designed, built and put into operation simultaneously – the rule of ‘Three Simultaneity’).

system. Its annual expenditure is around \$375 million and requires around 120 million person hours for reporting and recordkeeping. Unlike a permit, monitoring and reporting are recurrent costs (although also with potential start-up costs) and it is important that what companies are being asked to monitor and how they are being asked to report accurately reflect the nature of that activity and the needs of regulators. Unnecessary monitoring (that which is not needed for regulatory decision making), for example, is not justified.

While all countries should seek to avoid unnecessary monitoring (and costs to business), this is particularly important in countries with poorer economic conditions. The principal way to achieve this is to target monitoring activity on what is important. For example, the following actions can be taken:

Case 4.3 *Strengths and weaknesses of environmental self-monitoring in Kazakhstan*

Although there was some self-monitoring in Kazakhstan in the 1970s, most self-monitoring has developed since 2000. The following strengths and weaknesses of the system have been identified.

The strengths:

- The requirements for self-monitoring are clearly set out in law, with requirements to minimize fraud and negligence. Secondary legislation also sets out guidance on procedures.
- Enterprises bear full responsibility (including costs) for undertaking self-monitoring, provision of all necessary resources to do this and for the regular communication of results to authorities.
- There is certification of laboratories, annual approval of programmes and inspection.
- Self-monitoring data are used in law enforcement.
- There is increasing interest in enterprises introducing environmental management systems (ISO 14001 (International Organization for Standardization – environmental management standard)).
- Non-governmental organizations (NGOs) are increasingly interested in accessing the data.

The weaknesses:

- There are gaps and inconsistencies and a lack of clarity of the definitions in the laws and regulations.
- There is a lack of clarity of the mandated scope of self-monitoring.
- Assessment of performance is based more on completing the right form rather than the actual quality of the self-monitoring process.
- There is continuing low mutual trust between the authorities and industry.
- Many regulated activities have poor laboratories.
- There is a lack of mechanisms for public disclosure of information.
- There is only limited communication and coordination between different sections of the Ministry of Environmental Protection on self-monitoring issues.

Source: OECD, 2005b

- only monitor those things that are necessary (e.g. this can be clarified by wider monitoring studies to identify critical elements);
- only require collection of data that can actually be used;
- ensure that the frequency of monitoring is linked to the required accuracy of the results;

Case 4.4 *The UK Environment Agency's Monitoring Certification Scheme*

The Environment Agency's Monitoring Certification Scheme (MCERTS) sets standards for self-monitoring. It provides a significant element of the quality assurance framework underpinning the Operator Monitoring Assessment (OMA) scheme. MCERTS covers issues such as:

- continuous emissions monitoring systems;
- continuous ambient air quality monitors;
- manual stack emission monitoring;
- chemical testing of soil;
- continuous water monitoring equipment;
- self-monitoring of effluent flow.

MCERTS has attracted hundreds of practitioners receiving qualified training and the certification of a number of laboratories. MCERTS has also attracted international interest. These include the development of a similar system in Italy and a Memorandum of Understanding between the Environment Agency and the German Federal Environment Agency that brings together the MCERTS and German performance standards and test procedures for continuous emissions monitoring systems so that it is easier for MCERTS approval to be gained for equipment that already has approval in Germany.

Case 4.5 *External auditing of self-monitoring in the UK*

The Environment Agency has introduced Operator Monitoring Assessment (OMA) to strengthen its auditing of businesses self-monitoring. OMA aims to:

- assess businesses' self-monitoring using a consistent and transparent approach;
- promote necessary improvements;
- help target the Agency's monitoring programme.

The OMA is undertaken by Agency staff. Guidance to its staff aims to ensure a consistent and transparent approach to an audit. It has also produced guidance for businesses on how to prepare for such an audit.

- optimize the costs of continuous monitoring compared to discontinuous monitoring;
- replace, where possible, parameters that are expensive to monitor with those that are cheaper that can act as a proxy;
- standardize monitoring methods, etc., to increase efficiency.

Another approach to simplification is to make better use of the monitoring processes in a more efficient framework. Belgium (Flanders) represents an example of bringing together disparate reporting obligations into a unified framework in order to make monitoring more streamlined and effective (Case 4.6). The development of IT tools to support this also aids simplification. The experience from Flanders suggests that a gradual approach can be successful. It is important to start from a comprehensive inventory of existing reporting obligations in order to identify those obligations that apply to the largest target group as candidates for

Case 4.6 *Integrated environmental reporting initiatives in Flanders*

In Belgium (Flanders) an initiative was introduced to streamline environmental data reporting requirements for all subjects and so reduce the administrative burden on them. The initiative introduces a single form and reporting schedule for the reporting of environmental data to the Flemish authorities. The reporting system has been in operation since 2005. Under previous legislation, an operator could be subject to data reporting obligations under as many as four different schemes:

- effluent data under water pollution control legislation, used mainly as a basis for the calculation of an annual water pollution tax;
- data on waste production and transport under waste management legislation, used for monitoring and planning purposes and as a basis for the calculation of an annual waste tax;
- data on the volume of groundwater abstracted from aquifers, used mainly as a basis for the calculation of an environmental levy on groundwater use;
- emission data under integrated pollution control legislation, applicable to facilities with levels of emissions or energy consumption exceeding certain thresholds.

These data had to be reported to different administrations using different forms and at different time intervals and dates. Under the new scheme, most of these reporting requirements have now been integrated. Companies have to submit their data by completing a single form and returning it to a central administrative focal point once a year. From 2006, it also became possible to submit the data electronically via a single internet form. A dedicated website has been created and the data are publicly accessible.

inclusion in an integrated reporting system. If successful, the system can later be expanded to include other, more specialized reporting obligations, which concern a more limited target group. All administrative authorities with responsibility for the collection and management of environmental data from operators should be involved in the preparation and implementation of the reform, as they will need to revise their respective regulations and operating procedures. Cooperation will be required for the establishment of a central focal point and appropriate arrangements for data processing and sharing. Stakeholder involvement and support is also crucial. Since this is a 'win-win' initiative, with benefits for stakeholders as well as public authorities, such support should be forthcoming.

Reducing monitoring and reporting obligations can be one simplification option. However, this can be controversial if there is concern that this undermines confidence in environmental enforcement as illustrated by Case 4.7 from the US.

Case 4.7 Reducing reporting requirements in the US

The US Pollution Prevention Act 1990 established requirements for facilities to report on pollutant releases. In 1994 the Environmental Protection Agency (EPA) expanded the rules to double the number of substances covered. The reporting has resulted in large amounts of information being available as well as significant burdens for some businesses. In 2005 the EPA introduced a rule change that shortened the reporting forms and eliminated the requirement to report on a number of substances. As a result this eliminates a reporting requirement for some facilities. The proposal is expected to save 165,000 hours per year for businesses, although the EPA does not quantify this in monetary terms.

However, the proposal has received criticism from public interest groups. For example, PennEnvironment (2005) argued that, compared to 2003 reporting results, the rule changes would mean that 216 facilities in Pennsylvania would no longer be required to report toxic chemical releases to the public. Communities in 51 Pennsylvania zip codes will lose all the pollution information about chemical releases in their neighbourhoods. Similarly a national group, OMB Watch (2005), produced a report criticizing the EPA analysis underlying the proposal and the consequences of reduced reporting.

In contrast the National Association of Manufacturers praised the proposed rule change, stating that 'By reducing threshold reporting requirements for releases that have minimal environmental impacts, the rule improves an overly broad regulation that created unnecessary costs and actually diverted resources away from significant environmental priorities. This sensible update will provide some relief to small manufacturers and free up resources for addressing critical environmental priorities (Uma, 2005).'

Inspections

What are inspections and what do they consist of?

Inspections are an essential part of environmental regulation. This is not because every activity that receives a permit or is under some other obligation will be inspected. Rather that inspection activity establishes a process whereby non-compliance can be detected. It is this threat of detection that encourages compliant behaviour.

Case 4.8 provides a definition of inspections as derived from the European Union's (EU's) Recommendation on minimum criteria for environmental inspections. Countries can have their own definitions of inspection, but most are similar. Inspections are activities, usually a site visit, which examine the performance of a regulated facility. However, the scale of the examination and, therefore, the nature of the inspection can vary and, indeed, ought to vary.

In general three types of inspection are recognized:

- 1 *Walk-through inspection.* This form of inspection provides a quick assessment of the activity. In undertaking this inspection an inspector will 'walk through' the facility. They will check that pollution control equipment is in place, observe the operational practices and check that records are being kept. This type of inspection provides an initial screening process, so that if there are concerns a more thorough inspection could subsequently take place. Walk-through inspections also make the presence of the inspection authority felt by operators, thus encouraging future compliance.
- 2 *Detailed compliance assessment inspection.* This is a thorough inspection. It would include the basic elements of a walk-through inspection, but also include a more detailed assessment of records, interview staff, examine self-monitoring practices and records and undertake a more detailed assessment of the process itself and pollution control equipment. Where appropriate it would collect evidence of non-compliance with permit conditions.
- 3 *Sampling inspection.* This type of inspection includes the collection of physical samples for later analysis. This is the most resource intensive type of inspection.

In practice some variation is likely to occur. For example, a walk-through inspection might raise questions that can readily be resolved with some more detailed work on the spot.

Inspections can also be classified in other ways. They can be routine or non-routine. Routine inspections are planned and non-routine are unplanned, such as in response to a pollution event or a complaint.

Inspections are also divided into announced and unannounced. With an announced inspection, the operator is informed of the inspection beforehand, while an unannounced inspection is a surprise to the operator. Both have advantages and disadvantages. If operators are aware of inspections, they can prepare for them in a way that adds value to the visit. An unannounced visit is more likely to detect non-compliant behaviour that the operator wishes to hide.

Case 4.8 *Environmental inspections defined by the EU*

The EU's 2001 Recommendation on minimum criteria for environmental inspections (2001/331) provides the following definitions [slightly amended] for inspection activity.

'Environmental inspection' is an activity which entails, as appropriate:

- checking and promoting the compliance of controlled installations with relevant environmental requirements;
- monitoring the impact of controlled installations on the environment to determine whether further inspection or enforcement action (including issuing, modification or revocation of any authorization, permit or licence) is required to secure compliance;
- the carrying out of activities for the above purposes including:
 - site visits,
 - monitoring achievement of environmental quality standards,
 - consideration of environmental audit reports and statements,
 - consideration and verification of any self-monitoring carried out by or on behalf of operators of controlled installations,
 - assessing the activities and operations carried out at the controlled installation,
 - checking the premises and the relevant equipment (including the adequacy with which it is maintained) and the adequacy of the environmental management at the site,
 - checking the relevant records kept by the operators of controlled installations.

Environmental inspections, including site visits, may be:

- routine, that is carried out as part of a planned inspections programme; or
- non-routine, that is, carried out in such cases in response to complaints, in connection with the issuing, renewal or modification of an authorization, permit or licence, or in the investigation of accidents, incidents and occurrences of non-compliance.

An individual inspection can be any combination of these different classifications, such as an unannounced, routine, walk-through inspection or an announced, non-routine, sampling inspection.

Apart from the overall objective of ensuring compliance, inspections have a number of specific purposes to them. These include:

- showing a 'compliance presence';
- identifying if there are environmental problems and their source;

- ensuring that records and self-monitoring data are of sufficient quality;
- checking that pollution control equipment is working correctly;
- obtaining information to assess compliance;
- checking if any additional measures have been taken;
- obtaining evidence for the imposition of sanctions.

Undertaking an inspection requires planning. The following section will consider inspection planning for an environmental enforcement authority as a whole. This section will consider planning for an individual inspection.

An inspector should seek to be as familiar with a facility as possible prior to an inspection. Obviously previous inspections and their reports will assist in this (or communication with those who have undertaken these inspections). Familiarity is important not only for undertaking an effective inspection, it also establishes credibility with operators.

Usually there is a reasonable amount of information available on a facility, especially for larger facilities. The most critical information is that provided during the permitting processes. Not only can this be quite detailed, but the information is also structured and focused on meeting environmental regulations. Other information (such as company reports) is also useful. This information will be supplemented by reports from the facility, such as self-monitoring, or notices concerning changes (e.g. a new manager). The file of the facility will include all previous correspondence with the inspection authority. All of this information will help the inspector to identify what are the most critical environmental issues and what aspects of the facility might affect these.

From this analysis, an inspection plan can be developed. This is important in all cases and especially if there is an inspection team (e.g. bringing in staff from other institutions), so that other members of the team understand the critical issues. A plan ensures a quality inspection. Case 4.9 provides an example of the criteria for inspection contained in the EU's Recommendation on minimum criteria for environmental inspections. The plan should identify:

- *The objectives of the inspection* – why it is being undertaken and what its goals are.
- *The specific actions to be taken* – records to be checked, information and samples to be taken.
- *The procedures to be taken* – safety procedures for the inspectors, routine or non-routine inspection, specific parts to be inspected, how this will be done, equipment to be used, how an inspection report will be produced and who is responsible for each element.
- *Timetable* – when activities will be undertaken and whether follow-up is anticipated.
- *The resources required* – people, equipment.

With an inspection plan, the inspection will be focused on the desired goals, with clear procedures and responsibilities, thus improving the efficiency and effectiveness of the process.

Case 4.9 *Inspection criteria in the EU's Recommendation on minimum criteria for environmental inspections*

The EU's 2001 Recommendation on minimum criteria for environmental inspections (2001/331) provides the following criteria [slightly amended] for undertaking individual routine and non-routine inspections.

The following criteria should be applied in respect of all site visits:

- That an appropriate check is made of compliance with legal requirements relevant to the particular inspection.
- That if site visits are to be carried out by more than one environmental inspecting authority, they exchange information on each others' activities and, as far as possible, coordinate site visits and other environmental inspection work.
- That the findings of site visits are contained in reports and exchanged, as necessary, between relevant inspection, enforcement and other authorities, whether national, regional or local.
- That inspectors or other officials entitled to carry out site visits have a legal right of access to sites and information, for the purposes of environmental inspection.

For routine environmental inspections the following additional criteria should be applied:

- That the full range of relevant environmental impacts is examined, in conformity with the applicable legal requirements, the environmental inspection programmes and the inspecting bodies' organizational arrangements.
- That such site visits should aim to promote and reinforce operators' knowledge and understanding of relevant legal requirements and environmental sensitivities, and of the environmental impacts of their activities.
- That the risks to and impact on the environment of the controlled installation are considered in order to evaluate the effectiveness of existing authorization, permit or licensing requirements and to assess whether improvements or other changes to such requirements are necessary.

Non-routine site visits should be carried out in the following circumstances:

- In the investigation by the relevant inspecting authorities of serious environmental complaints, and as soon as possible after such complaints are received by the authorities.
- In the investigation of serious environmental accidents, incidents and occurrences of non-compliance, and as soon as possible after these come to the notice of the relevant inspecting authorities.

- Where appropriate, as part of the determination as to whether and on what terms to issue a first authorization, permit or licence for a process or activity at a controlled installation or the proposed site thereof or to ensure the compliance with the requirements of authorization, permit or licence after it has been issued and before the start of activity.
- Where appropriate, before the reissue, renewal or modification of authorizations, permits or licences.

In undertaking an inspection, the inspector may require a number of 'tools'. These can include official identification, a checklist for the activities identified in the plan, background information, information for the operator, equipment for sampling, safety equipment, and so on.

Environmental enforcement authorities have produced detailed step-by-step guides to inspections (e.g. US EPA, 2002). In undertaking a site visit, the inspector should inform those in charge. The purpose of the visit should be explained as should the examination, sampling, etc., to be undertaken. Any issues that arise should be communicated at the time and, if immediate action is required, this must be stressed. If there is to be follow-up, this can also be discussed with the manager. An end-of-visit meeting is usually good practice, but this must be an informal communication as only following post-inspection analysis, etc., will the authority issue a formal statement.

For inspections undertaken in response to incidents, accidents or complaints, other specific issues will need to be examined. Such inspections need to:

- clarify the reasons of the incident and its impact on the environment, and as appropriate, the responsibilities and possible liabilities;
- mitigate the environmental impacts of the incident through a determination of the appropriate actions to be taken by the operator and the authorities;
- determine any action to be taken to prevent further accidents, incidents and occurrences of non-compliance;
- enable enforcement action or sanctions to proceed, if appropriate;
- ensure that the operator takes appropriate follow-up action.

Environmental enforcement authorities should ensure that after every site visit they process and store the data from inspections, including any evaluation and conclusions, such as any sanctions to be imposed. These reports should be finalized as soon as possible and made available to the operator (so they can comment) and (following revision if necessary) the public.

The inspection report presents a factual record of the inspection itself as well as the results of analysis of any samples taken or subsequent checking of records or data. The report must be clear and focused on the objective of the inspection. It must state the inspector's conclusions on the compliance status of the facility, such

Case 4.10 *Inspections in Mexico*

In Mexico Federal environmental inspections are conducted under the General Law on Ecological Balance and Environmental Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*), and the Federal Law on Administrative Procedures (*Ley Federal de Procedimiento Administrativo*). Inspections have to follow an Inspection Visit Programme authorized by the Office of the General Attorney for Environmental Protection (*Procuraduría Federal de Protección al Ambiente – PROFEPA*). They can also be undertaken following complaints from interested parties.

In order to undertake an inspection, an inspection order to the installation must be issued by PROFEPA (Torres, 2000). This names the inspector, the objective of the inspection, its legal foundation and the areas to be visited. Operators have to provide access to the inspector and all required information, unless this has commercial confidentiality. Following the inspection a report is prepared of the findings. This is read in the presence of two witnesses from the company and signed by those present and a copy given to the company. If non-compliance is found, the company is required to address this to the satisfaction of PROFEPA.

Case 4.11 *Inspections in Brussels, Belgium*

All major industrial sites are inspected by the Brussels Inspectorate for Management of the Environment (BIME) at least once per year. In this context, an inspection takes about five days, including the time for preparation for site inspection, for follow-up actions in maintaining the file and for any enforcement action. Unplanned or non-routine inspections are generally associated with responding to public complaints. A relatively small proportion of the Inspectorate's time on inspection is attributable to site incidents or emergencies. BIME encourages complainants to make complaints initially to local authorities, but the BIME is invited to deal with those that cannot be handled effectively by these authorities. About 20 per cent of inspection time is spent on the administration of complaints. The time for this activity is programmed formally into work plans on the basis of previous experience, and the system is carefully administered by creation of complaint files that are closed only upon satisfactory resolution of the complaint. In addition, complaint statistics are analysed in order to plan the deployment of effort to best effect.

as in relation to each condition specified in the permit. The length of the report will vary depending upon the range of activities undertaken. Once the report has been checked, a copy of the final version should be sent to the operator and a copy placed on file and on the public register. If non-compliance is detected, a range of possible options can be made available (Chapter 5). If follow-up inspections are required (such as to check that a change demanded during the visit is made), the planning process might need to be repeated for this, although it is likely to be more focused in its objectives.

Environmental enforcement authorities undertake many types of inspections in different circumstances. Two examples are provided in Case 4.10 for Mexico and Case 4.11 for Belgium to illustrate this.

Inspection planning

Inspection authorities also plan inspections. In this case they plan what inspections should take place during the year based on the activities they view as most needing inspections, a contingency for non-routine inspections and matching this to the resources available. The EU's Recommendation on minimum criteria for environmental inspections recommends some critical elements of inspection plans (Case 4.12). IMPEL (1999b) also identified the following key elements that should be included in inspection planning:

- the industries to be inspected;
- data management;
- resources available;
- time available for inspections;
- guidelines for inspections and related activities;
- frequency of inspections for different categories of activity;
- non-routine inspections;
- prioritization criteria;
- evaluation and reporting;
- revision of the plan.

The most critical elements are the criteria for determining which activities will be inspected and the resources available. In some cases the criteria are established, or partially established, outside of the inspection authority, such as a legal requirement to inspect at a given frequency. This is not common, but it can act as a major constraint. In most cases the inspection authority will adopt an explicit or implicit risk-based approach, focusing on the frequency of inspections where they are most needed to ensure compliance (IMPEL, 1999a). Inspections will be targeted at larger, complex activities or ones with poor compliance histories. The plan is also likely to include routine inspections of a sub-sample of lower risk activities. This provides a basic view of compliance in the sector as well as ensuring that the compliance assessment presence is felt. Assessing the risks of activities can take account of compliance support measures, such as environmental management

systems and levels of self-monitoring, as described in Chapter 3. An example of how this has been applied is given in Case 4.13 for Kazakhstan.

In order to construct such a plan it is, of course, necessary that inspection authorities have the freedom to target inspections where they consider them to be most effective. This is not always the case. In Armenia, for example, political interference in environmental management resulted in a Presidential Decree which limits the State Environmental Inspectorate to one inspection per year for any one activity. This clearly allows operators many opportunities for non-compliance as they will be confident that further inspections cannot take place for a set period (OECD, 2003a). Other examples of inspection frequency in EECCA countries are given in Table 4.1.

The resources available for inspection vary significantly between inspection authorities. Identifying the resources required will reflect the types of inspection planned (are a larger number of shorter inspections or a smaller number of more detailed inspections more beneficial?). The available resources not only include personnel, but also available equipment. This can be critical in some cases. For example, lack of sufficient transport can inhibit inspection activity in some developing and transition countries (see Chapter 7 for information on Ghana).

The available resources will also vary depending upon the nature of the environmental enforcement authority. A separate inspectorate will always work with a given number of inspection staff. However, an integrated authority might need to integrate its inspection plan with other work areas, such as on permitting. Prioritization in this case can take account of priorities of the whole regulatory cycle to optimize compliance.

Plans can be overtaken by events and it is, therefore, beneficial to be explicit in describing priorities, so that if resources decrease or there is an unexpected number of incidents, it is clear what is to be dropped from the work programme. This should be above and beyond a contingency in the plan set aside for inspecting incidents. Chapter 7 provides some further information on how environmental enforcement authorities respond to resource constraints in reassigning their work.

Table 4.1 *Maximum frequency of inspections*

Country	Maximum frequency of inspection
Azerbaijan	Once per month
Georgia	Several times per year
Kyrgyzstan	Twice per year
Moldova	Once per month
The Russian Federation (Novgorod Oblast)	Once per year
Turkmenistan	Twice per year
The Ukraine	At least twice per year

Source: Farmer, 2000

Plans should be fully communicated to all staff and their implementation should be monitored. This is not only necessary to report on the performance of the inspection authority (as the plan will form a public statement of its intentions), it also allows senior management to identify deviations from the plan and act accordingly. Experience from implementation of the plan and problems that arise should then be used to inform the production of the next plan.

There are a number of examples of inspection planning around the world. Case 4.14 presents an example of inspection planning in Flanders. This illustrates the range of issues that are taken account of and the balance given to routine and non-routine inspections. In Poland (Case 4.15) inspection planning involves an interaction between national planning guidance and taking account of regional priorities.

A critical element of the planning is to determine the time required for inspections. Three examples are given for this indicating the number of days that inspections require in Ireland (Case 4.16), the Netherlands (Case 4.17) and Galicia (Case 4.18). The efficiency of inspection activity (and hence increasing resource availability) can be enhanced by inter-institutional cooperation. A concrete example of this is given for the Netherlands (Case 4.19). Case 4.20 also presents an interesting example of the use of pilot studies in a developing country (Vietnam) to determine inspection requirements.

Inspecting other regimes

The inspection process described above is focused on traditional command and control regulation. However, as noted in Chapter 3, there are other regimes where inspections can be appropriate. For example, questions can arise even with market-based instruments such as charges which are designed to be relatively simple (Gawel, 2001).

An important area for compliance monitoring is emissions trading schemes. However, emissions trading poses new challenges to environmental enforcement authorities used to command and control regimes. For example, companies have choices under such a regime – to not emit a pollutant or to purchase allowances to emit. Thus enforcement requires not only a monitoring of emissions, but also of the companies' operation in the trading market. The incentives for non-compliance change also. Consequently, where the marginal costs of buying additional pollution permits are low, the incentive to comply is greater, but non-compliance might be viewed as more attractive when permit costs are higher (Stranlund et al, 2002).

Davies (2005) argues that emissions trading schemes can result in a change of focus on environmental enforcement authorities away from a 'hands on' approach to compliance and enforcement, with a concern not so much for how pollutants are produced as to what emissions have been made.

Under the EU emissions trading scheme the total quantity of emissions is generally checked by third-party verifiers (IETA, 2004). This requires confidence in the role of verifiers (e.g. as they are contracted by operators, the question arises as to their independence), but it also means that the resources of environmental

Case 4.12 *Inspection planning in the EU's Recommendation on minimum criteria for environmental inspections*

The EU's 2001 Recommendation on minimum criteria for environmental inspections (2001/331) provides the following requirements [slightly amended] for inspection planning.

Plans for inspections should be produced on the basis of the following:

- the requirements to be complied with;
- a register of controlled installations within the plan area;
- a general assessment of major environmental issues within the plan area and a general appraisal of the state of compliance by the controlled installations with legal requirements;
- data on and from previous inspection activities, if any.

Plans for inspections should:

- be appropriate to the inspection tasks of the relevant authorities, and should take account of the controlled installations concerned and the risks and environmental impacts of emissions and discharges from them;
- take into account relevant available information in relation to specific sites or types of controlled installations, such as reports by operators of controlled installations made to the authorities, self-monitoring data, environmental audit information and environmental statements, results of previous inspections and reports of environmental quality monitoring.

Each plan for environmental inspections should, as a minimum:

- define the geographical area which it covers;
- cover a defined time period, for example one year;
- include specific provisions for its revision;
- identify the specific sites or types of controlled installations covered;
- prescribe the programmes for routine environmental inspections, taking into account environmental risks; these programmes should include, where appropriate, the frequency of site visits for different types of or specified controlled installations;
- provide for and outline the procedures for non-routine environmental inspections, in such cases in response to complaints, accidents, incidents and occurrences of non-compliance and for the purposes of granting permission;
- provide for coordination between the different inspecting authorities, where relevant.

Case 4.13 *Agreements with industry to reduce the burden of inspection in Kazakhstan*

In July 1999 the Ministry of Natural Resources and Environment of Kazakhstan initiated a framework for voluntary agreements between the Ministry, business and regional authorities (*akimat*). The agreement states that companies in the agreement will benefit from simplified inspection procedures, but in response they have to ensure full compliance with environment requirements, improve internal monitoring and report regularly on emissions to the *akimat*. Companies were subject to a large number of inspections from different organizations, which resulted in significant bureaucratic burdens. However, under the agreement many of these were combined within a single comprehensive inspection, producing a single statement of environmental control. By the end of February 2000, 147 agreements had been signed. Potential benefits include:

- a reduction in the potential for corruption, given that inspectors work as a team in the comprehensive inspection;
- improved dialogue between the inspectors and the company;
- reducing inspection activity may enable enforcement institutions to focus on other priorities;
- bringing together different enforcement authorities enhances cross-disciplinary environmental management;
- the agreements provide a stimulus to review existing procedures and challenge traditional practices.

There are also potential problems:

- initial results showed that the companies most interested are foreign companies;
- there may be problems of consensus between the authorities involved.

Source: Bularga et al, 2005

enforcement authorities are not required. However, it also means that the role of inspection by environmental enforcement authorities needs to be re-examined (Davies, 2005). There is a need for interaction directly with the verifiers. If the authorities are the same as those in other areas of environmental enforcement, then relevant inspection issues would arise during inspection for other regulatory regimes. Environmental enforcement authorities do retain an inspection function for the EU emissions trading scheme. However, the number of dedicated inspectors is low (e.g. the Environmental Agency of England and Wales has three designated for this) and there is much reliance on the quality of the verifiers.

Case 4.14 *Inspection planning in Flanders*

In Flanders an Environment Inspection Plan (EIP) is developed (EIS, 2005). The EIP describes the framework within which the Inspectorate operates, and the options and pre-conditions of the plan. The EIP attempts to cover all inspection activities of the Inspectorate and assesses a budget for expenses and personnel.

The objectives of the EIP relate to different levels:

- At the organization level the plan is a practical, expert, uniform and integral approach to the inspections as its aim.
- The plan provides for far-reaching and, if possible, integrated inspections for those establishments that have a serious environmental impact and/or entail serious safety risks for the surrounding area.
- Managing the volume of work and the workload.

The great diversity of and particularly the very large number of establishments to be inspected make the volume of work very large. Planning requires priorities. In Flanders the list of priorities is classified according to specified criteria:

- How seriously does the environment and/or people suffer if the EIS does not (immediately) carry out this task?
- Are there fixed deadlines, or are these self-imposed?
- Are there sufficient financial resources, (qualified) people and material resources satisfactorily to conduct this task or assignment?
- What type of task or assignment is involved or who is the client?

Time allocation is based on a time registration exercise carried out in 1998. This concluded that an environmental inspector spends an average of 77.5 per cent of their time on the process of 'inspecting and taking measures'. This figure is multiplied by the available full-time employees and the resulting time applied as an absolute upper limit for planning. The rest of the time available is allocated to a number of processes with direct results (the drawing up of an annual plan, the granting of tasks to experts, policy forming and appraisal, the ensuring of the enforcement of environmental health legislation by municipalities and provinces, and cooperation with others, and a number of supportive processes).

Case 4.15 *Inspection planning in Poland*

In Poland the regional (Voivodship) Inspectorates each develop work plans for inspection activity on an annual and quarterly basis (Zareba, 2002). These are developed based on guidance from the Chief Inspector of the national Inspectorate for Environmental Protection. This guidance highlights a number of priorities. However, the regional Inspectorate also has to take account of issues identified in regional environmental policies as well as information from previous inspections, monitoring results and citizen complaints. The plans cover routine inspections and follow-up inspections. They also identify the time left unallocated which can be used for non-routine inspections. It is expected that in the future plans will also need to take account of the targeting of inspections for different types of activities depending upon their proportion within the region.

Case 4.16 *Inspections in Ireland*

Installations regulated under Ireland's Integrated Pollution Control (IPC) regime are inspected at least once per year, with more frequent inspections depending upon the site inspector's judgement of the environmental performance of individual processes. One and a half person-days are allocated in work plans for each such inspection. In addition there are separate site visits for the purpose of sampling, analysis or monitoring and one person-day is allocated for each such inspection. Full audit inspections are carried out less frequently, at approximately three yearly intervals. These take three person-days, on average, and are carried out by two inspectors. The audit is led by an inspector who is not the usual site inspector.

The ratio of inspector time spent on sites to the time spent in the office is determined by the pattern of activities shown in detailed work plans and is, broadly, about 1:4. The time required for unplanned or reactive inspection is regarded as unpredictable and no specific provision for this is made in work plans. Experience has led to the provision in the annual work plans for a total of about 15 person/days to deal with about 1500 complaints.

Case 4.17 *Inspection time in the Netherlands*

Inspections are undertaken by Provincial authorities. An inspector has 1350 work hours available in a year. Approximately 1000 hours will be spent on inspections and the rest on other activities. Roughly 70 per cent of inspections are planned and 30 per cent are unplanned. There are targets for the inspection of large installations that are regulated under the EU Integrated Pollution Prevention and Control (IPPC) Directive. The target is that these sites should be inspected four times a year except for the metal industry (twice a year) and the chemical industry (12 times a year). The assumption is that each inspection should take 12 hours and the policy is that it is acceptable for, for example, two inspections to be carried out on a site which should have four inspections, but with two inspectors taking part in each. Half of the 12 hours allocated for a typical inspection of an installation is spent in the office for preparatory work and for writing a report. The rest of the time is divided between travelling to the site and the actual inspection.

However, these targets are often unrealistic in practice. Thus instead of 48 hours being spent on inspecting an installation that should have four visits a year, the figure is likely to be between 20 and 30 hours.

Case 4.18 *Guidance for the duration of inspection activity in Galicia (Spain)*

In Galicia (Spain), a guidance document has been prepared by the Ministry of Environment on the standard duration of different types of inspection (IRI, 2003). The standard duration (in days) of an inspection according to its type is given in the following table.

First inspection	Preparation	Visit	Reporting	Total
Verification*	1	1	1	3
General				
Small-size installation	1	1	1	3
Medium-size installation	1.5	2	1.5	5
Large-size installation	2	4	2	8
Follow-up inspection	Preparation	Visit	Reporting	Total
Verification*	0.5	0.5	0.5	1.5
General				
Small-size installation	0.5	1	0.5	2
Medium-size installation	1	1	1	3
Large-size installation	1.5	2	1.5	5

(*) Frequently, initially programmed inspections for verification identify serious non-compliance. Then it is necessary to carry out a general inspection at the installation.

Source: IMPEL Review Initiative, 2003

Case 4.19 *Improving the efficiency of inspection in the Netherlands through inter-institutional cooperation*

In the Netherlands there have been a number of measures taken to improve the efficiency of regulation and reduce costs to businesses (see Chapter 1). One area that has been examined is that of inspection (Kroes and Ruessink, 2005). This was prompted by a report that over one year one activity had been subject to inspections at the rate of one per week. A range of institutions are involved in different types of inspection in the Netherlands, so consideration was given to rationalizing their work. The study found that efficiency gains could be made in a number of areas:

- Gains can be made through inter-institutional cooperation, including exchange of information, coordination of activities, reducing duplication, undertaking inspections for other departments.
- Gains are greatest where inspections cover the same areas (e.g. integrating national and regional water inspections resulted in a 50 per cent efficiency gain for authorities and 20–40 per cent efficiency gains for businesses).
- Cooperation brings gains where there is planned coordination and someone takes the lead.
- A single point of contact for businesses helps improve efficiency.

Case 4.20 *Developing inspections in Vietnam through pilot programmes*

In Vietnam a new Law of Environmental Protection was adopted in 1997. This was followed by a trial assessment of inspection activity (Nguyen and Phung, 1998). A Steering Committee for Inspections was established under the environment ministry which established five national inspection teams to assist the Provinces or municipalities' inspection teams. During 1997 the trial resulted in the inspection of 9384 activities. As a result 2175 received written warnings and 2215 received administrative fines (ranging from \$8 to \$1200). The work demonstrated the need for inspections to deliver compliance. The process also raised awareness with other governmental bodies and received media exposure. It also highlighted the need for additional capacity building for inspection.

There are, however, good examples of high compliance rates in emissions trading systems, such as with the sulphur dioxide trading scheme in the US. This benefited from sophisticated continuous monitoring and reporting of emissions data, making fraud extremely difficult to perpetrate and non-compliance easy to detect (Stone and Zaelke, 2005). However, the greater number of activities involved in some other schemes, such as the EU's emissions trading scheme, present a greater challenge. Stone and Zaelke (2005) note that it can be argued that the use of sophisticated monitoring in industrialized countries suggests that effective emissions trading schemes might be difficult to establish in developing and transition countries. However, they also comment that there is little evidence to suggest that they require greater resources than traditional regulation, that other simpler methods of accounting are possible (e.g. mass balance based on fuel use) and schemes have been established in countries ranging from Chile to the Philippines.

Negotiated agreements also require an assessment of compliance. How this is done will depend upon the nature of the agreement. It could, for example, include pollutants that would otherwise be included in permits. Thus some check can be made via traditional inspection. However, even in this case the agreement is likely to be for a sector or whole company, so that site-based information is difficult to interpret in relation to whether the agreement is being met. An agreement might also address issues that are not necessarily covered in inspections (e.g. on raw materials used). In this case self-monitoring is critical and the authorities will need to develop alternative approaches to checking these data, if they have any concern over their quality.

Conclusions

Compliance assessment is the core of successful environmental regulation. It ensures environmental protection and fair play between companies. The challenge that environmental enforcement authorities face is that the issues being regulated are becoming increasingly complex. There are various elements to this. For example, the range of issues to be considered under the EU's IPPC Directive is extensive (see Chapter 2) and new regimes are coming into force (such as on emissions trading). Assessing compliance becomes more difficult. Therefore, there is a need for greater reliance on self-monitoring and for alternative forms of oversight, such as verifiers under the EU emissions trading scheme. However, inspection authorities must have confidence that these processes work to a sufficient quality.

Compliance assessment is resource intensive. Issuing a permit can take time, but once the permit is issued the permitting authority might not concern itself again with the company for years if no changes occur. Monitoring has to take place regularly or continuously – this can be expensive. Inspections are also resource intensive and some activities will require relatively frequent attention. Some of these costs can be met by the companies, such as through self-monitoring and through contracting verifiers. Some inspection authorities also charge for their inspection activities (see Chapter 7). However, this does not mean that there is

unlimited potential for inspection, as companies would quickly complain. Indeed, there are also pressures to reduce costs to businesses for compliance assessment and examples are seen in both monitoring and inspection.

Resources are most restrictive for inspection authorities in some transition and developing countries. Here the need for inspection plans which make the most of the scarce resources is even more important. In these cases it might not be possible to inspect all of the activities of greatest risk, but inspections can be distributed in a way to maximize the compliance assessment 'presence' among businesses and thus stimulate more complaint action.

Monitoring and inspection will identify cases of non-compliance. How environmental authorities respond to this will be addressed in the next chapter. This chapter concludes with four checklists for environmental enforcement authorities regarding monitoring and inspection processes.

Checklist: Monitoring (general)

- 1 Are the monitoring requirements clearly prescribed in the permit conditions?
- 2 Do these monitoring requirements specify the substances to be monitored, the methods to be employed and quality assurance processes?
- 3 Are all of the requirements expressly linked to the assessment of compliance and unnecessary requirements removed?
- 4 Are any consultants employed to undertake monitoring on behalf of companies fully conversant with the requirements and have they the required certification?
- 5 Is the monitoring information adequately collected, collated, analysed and stored by the environmental enforcement authority?
- 6 Are the data that are obtained regularly checked to assess the compliance status?
- 7 Have methods and processes been developed to streamline the various different monitoring requirements that companies might be subject to?

Checklist: Self-monitoring

- 1 Does the self-monitoring system cover all of the important emissions, etc., of the facility?
- 2 Is the equipment that is used and the management of the process reliable?
- 3 Does the system have adequate calibration and quality assurance?
- 4 Are the results of the self-monitoring reported to the environmental enforcement authority according to the required timetable?
- 5 Are the results of the self-monitoring reported in a format consistent with the way that the permit conditions are prescribed?
- 6 How far does the full self-monitoring system provide a picture of overall compliance of the facility?
- 7 Is the facility aware of how to use the results of self-monitoring to assess its own compliance?
- 8 Is the facility aware of how to interpret the results in terms of process operation so that it can tackle any problems that arise?

- 9 Has the environmental enforcement authority adopted systems to simplify the submission of self-monitoring data, such as through electronic or on-line submission?

Checklist: Inspection

- 1 Does the environmental enforcement authority have the powers and expertise to undertake a full range of types of inspections?
- 2 Are there any constraints on inspection (such as legal limits on frequency) and how can the environmental enforcement authority address these?
- 3 Has consideration been given to the advantages and disadvantages of announced and unannounced inspections and how to balance these accordingly?
- 4 Have procedures been put in place to respond to citizen complaints so that important issues are checked, but trivial ones do not unbalance the work of the authority?
- 5 Has the environmental enforcement authority adopted detailed procedures that an inspector must follow in planning an individual inspection?
- 6 Are all of the necessary institutions and people contacted prior to and after an inspection?
- 7 Are the necessary tools, including equipment, available to inspectors?
- 8 If there are major resource problems (e.g. insufficient vehicles) have alternative approaches been considered to assessing compliance and ensuring a compliance presence?
- 9 Following inspections, are reports produced in a clear, succinct and timely manner?

Checklist: Inspection planning as a whole

- 1 Has the environmental enforcement authority undertaken a careful audit of the time and other resources necessary to undertake different types of inspections?
- 2 Has a compliance enforcement strategy been developed which describes the role of inspection in the process as a whole and which can inform the inspection plan?
- 3 Has a careful assessment been made of the compliance assessment priorities for the range of activities being regulated so that inspections can be targeted?
- 4 Is the full range of different types of inspections (from walk-through to sampling) specifically set out in the inspection plan?
- 5 Does the inspection plan match the compliance assessment requirements to the resources available to set out the future number of routine inspections and where these will take place?
- 6 Has a contingency been allocated to account for non-routine inspections, based on past experience?
- 7 Has adequate time been allocated for inspectors to undertake their non-inspection work, such as on corporate issues?

- 8 Does the plan set out its priorities so that, if circumstances force a change, it is clear to staff and stakeholders which inspections might be dropped?
- 9 Where the environmental enforcement authorities rely heavily on third parties (such as verifiers under emissions trading schemes) are procedures in place to ensure the quality of their actions?

Action in Response to Non-compliance

Introduction

Regulations and permits establish the conditions that activities must meet to be in compliance with the law. Monitoring and inspections assist in identifying whether compliance occurs. However, they are not the only means by which to identify non-compliance. For example, the public can identify cases of non-compliance (or suspected non-compliance), such as suspicious emissions or illegally discarded waste. The public can report these instances to an environmental enforcement authority so that it can investigate and take action. In many countries there are also opportunities for the public to take direct legal action against companies (and indeed against an environmental enforcement authority if they consider that it is acting in a negligent manner). It is also possible for an environmental enforcement authority to encourage companies to report on instances of non-compliance themselves.

Non-compliance arises for various reasons. These include:

- Ignorance of the requirements that a business is subject to. This can occur for small activities that do not require permits, but where businesses are unaware of general requirements that apply to them. It can also occur for larger activities where permit conditions are not clear and a condition in the permit is not adequately understood.
- Accidental non-compliance. A business can fully understand its requirements and make every effort to comply, but it unintentionally breaches its conditions, e.g. during a technical problem in the operation of the process.
- Deliberate non-compliance. In this case a business fully understands its requirements, but deliberately breaches them, e.g. by fly-tipping waste rather than paying for its disposal.

The form of non-compliance can vary. Some breaches of permit conditions can be minor with no environmental consequences. For example, an industry might have permit conditions for carbon monoxide with an emission limit value of $50\text{mg}/\text{m}^3$. However, for a brief time it might exceed this by $5\text{mg}/\text{m}^3$. This is non-compliance, but causes no problems. In contrast an industry could emit large quantities of toxic substances in breach of its permit conditions threatening the environment and health of local populations.

Thus non-compliance is a spectrum of reasons and forms. The response to non-compliance should, consequently, reflect this. It should also reflect the attitude of the operator to the non-compliance once identified. This chapter, therefore, examines the different approaches that environmental enforcement authorities can take where non-compliance occurs. Environmental enforcement authorities may need to rely on action to be taken by other bodies, such as the courts, and the chapter will also consider this relationship.

The range of sanctions available

Enforcement is required in order to:

- provide appropriate sanction for a criminal offence;
- ensure that preventative or remedial action is taken to protect the environment;
- secure compliance with a regulatory regime.

Authorities should normally take enforcement action in all cases. The range of sanctions available is outlined below. How these are expressed in practice is considered in the following section.

Informal responses

One response to very minor cases of non-compliance is to take an informal approach through various means of communication with an operator. This is undertaken to understand further the reasons for non-compliance and discuss ways to bring the facility into compliance. For example, an inspector might negotiate a schedule to bring a facility back into compliance, although the environmental enforcement authority needs to be confident that this will occur. This approach is only appropriate where the violation of conditions is small, of no risk to the environment and, possibly, temporary.

Administrative responses

Civil administrative responses are undertaken by the administration – in this case an environmental enforcement authority. They do not involve the courts and, therefore, they can be administered relatively quickly and with less expense. An environmental enforcement authority normally, at a minimum, would issue a formal warning letter requiring the company to come into compliance and indicating that further action could or will be taken.

Monetary penalties or fines are a very commonly used sanction. The law is likely to indicate the maximum fine that can be imposed (and occasionally specify an exact fine – see below), although the environmental enforcement authority should develop guidance on the application of fines, indicating the level to be applied in specific circumstances. There are a number of factors that can be used to calculate the level of fine to be applied. These include:

- The level of cooperation exhibited by the operator in relation to the violation, such as whether it was self-disclosed.
- The gravity of the violation – the actual or potential harm that the violation could cause to the environment and health, based on emission levels, etc.
- The history of non-compliance of the facility.
- Economic benefit – how much economic gain the facility has received by non-compliance.
- Ability to pay – such as the consequences of the survival of the facility and wider social implications.

The environmental enforcement authority might also require the company to undertake remedial works or pay for the cost of restoration of the damage caused. This is related to the issue of civil liability (see below).

Environmental enforcement authorities can also revoke the permit of the facility or shut it down. This can be temporary or, more rarely, permanent. Without a permit the facility (or that part to which the permit applies) is no longer legally able to operate. Such an action is appropriate either when the violation represents a serious threat to the environment and immediate remedial action is not possible, or where the authority has no confidence that compliance can be obtained.

Criminal liability

In many countries criminal law is applied as a last resort in cases of non-compliance. It is used only in cases that are very serious (such as extreme environmental damage and deliberate non-compliance). It can also be used where the range of administrative sanctions are not sufficient to ensure future compliance. This would be the case where the administrative sanction, for example, a fine, is either ignored, or not paid and where non-compliance continues. Examples where a criminal sanction might be appropriate include:

- repeated violations;
- intentional violations;
- operating without a permit;
- falsification of information or records.

The law can define an environmental crime *per se*, and/or it can identify failure to implement administrative sanctions as a criminal offence. In many cases an environmental crime is not concretely defined, although there can be a cross-reference to specific environmental legislation. Milieu and Huglo Lepage (2004) identify a number of examples in Europe:

- In Denmark, Ireland and the UK failure to implement administrative requirements is a criminal offence.
- In France, Spain, Germany, and others, environmental crimes are specified in environmental legislation. In Ireland and the UK the law can provide extensive detail on what is a criminal offence.

- In the Netherlands, Austria, Italy, and others, the law criminalizes conduct that is *likely* to cause damage to the environment (i.e. it does not need to have caused damage).
- In Finland only actions that have resulted in damage are criminal.
- In Finland, Denmark and Sweden the law enshrines criminal liability, but it is very rarely used, as the culture emphasizes negotiation.

The criminal sanctions that can be imposed upon conviction include fines and imprisonment. Criminal sanctions are imposed by courts, unlike administrative sanctions which are imposed by the administration (such as an environmental enforcement authority).

Criminal and administrative sanctions often have similar aims, aiming to punish (usually) and prevent future non-compliance. Milieu and Huglo Lepage (2004) identify an important distinction between countries in the relationship between criminal and administrative sanctions. In some countries administrative sanctions are used to protect the interests of the administration and have no social blame. In others, the two are viewed as having the same general functions. This is important in considering whether sanctions can accumulate. It is usually considered inappropriate to be punished twice for the same offence. However, where administrative and criminal sanctions are viewed as having a different function, then it is possible for an administrative sanction to be applied, followed by a criminal one if required. Milieu and Huglo Lepage (2004) also note that in many cases criminal cases have an affect by causing a negative reputation on those convicted, whereas there is rarely publicity for administrative sanctions. However, there are examples of effective publication of administrative sanctions (see below), so this distinction is not necessarily clear.

Civil liability

A wide range of countries has a civil liability regime whereby individuals or companies that cause environmental damage are financially liable for the damages that they have caused and the costs of restoration. The issue of such liability is important within an overall compliance programme, as it forms an additional tool to assist in ensuring compliance or improved environmental performance. Civil liability may, or may not, involve an environmental enforcement authority. This will depend on the details of the financial assessments that are made and how these relate to the individual functions of the authority in question. There are a number of financial assessments that can be made to determine liability:

- *Specific damages*: these are the directly calculated costs incurred by those that have suffered loss, such as the difference in the market value of land after it has been subject to pollution damage compared to the value beforehand.
- *Substitution cost*: this represents the replacement cost of property that has been subject to damage.
- *Punitive damages*: this represents additional damages awarded to punish the offender.

- *Legally defined damages:* these are specific damages identified in law, which might be calculated for the specific case.
- *Legal costs:* where the costs of legal action are paid by the offender.
- *Adjustments:* the damages might be adjusted to accommodate interest for monies over the time between the offence and the award, etc.

This list is not exhaustive, as non-monetary restitution and other factors can also be taken into account. An interesting issue within civil liability is whether a company is to be considered liable if environmental damage is caused while it remains in compliance, for example, its discharges to water are within permit conditions but, for some reason, harm still results. Some regimes would suggest that being given administrative permission to undertake a discharge limits liability, other regimes differ and permission does not prevent liability. In any case it can be seen that the environmental enforcement authority has to take particular care in ensuring that permit conditions do not allow environmental damage to occur.

An example of a type of liability regime in developed countries is given by the European Union's (EU's) environmental liability Directive (Case 5.1). In Eastern Europe, Caucasus and Central Asia (EECCA) countries the concept of environmental liability has been included in their framework environmental laws. However, much of this practice is based on the Soviet system of 'compensation for damages', which ultimately formed little more than an additional non-compliance charge. Law suits under this system are little used as the methodologies to calculate damages are old, speculative and inaccurate and produce small monetary results. Where changes have been adopted, for example, in the Ukraine, the new systems are complex and difficult for the courts to administer (OECD, 2003a). In Russia a clearer reform took place in 2002 with a new Law on Environmental Protection which changed the system to one where costs are based on the actual costs for the restoration of the environment. Russia introduced a new system of compulsory environmental insurance of hazardous industrial activities. However, this has proved inadequate due to insurance companies having insufficient assets to compensate for damage. Insurance companies have, due to competition, offered unrealistically low premiums and do not expect to pay out on policies. Also in Russia a permit is issued for three years, yet to obtain it companies need insurance for only one year and it is common not to renew the policy. The system is further complicated by the existence of kick-backs to staff in environmental enforcement authorities of a percentage of the premiums for their environmental work in exchange for promoting a particular insurance company. Ultimately, if the courts took the issue seriously and enforced liability, insurance companies would quickly respond with realistic premiums, etc. (OECD, 2003a).

Principles of application

The primary objective must always be to protect the environment. Therefore, when an incident happens where there is a likelihood of serious environmental damage, this should be addressed first. Only then should further enforcement action be taken. A wide range of issues need to be taken into account in considering the appropriate enforcement action. These issues are described below.

Case 5.1 *The EU environmental liability Directive (2004/35)*

This Directive imposes a strict liability obligation on the operator of a list of activities regulated under existing EU environmental laws, to remedy or prevent three types of damage to the environment: damage to protected species and natural habitats, water damage and land damage. It also imposes fault-based liability on all other occupational activities for damage to species and habitats. These liabilities are imposed by means of public, administrative law, rather than private, civil law, meaning that enforcement is confined to actions brought by public authorities, with private individuals and groups limited to requesting action from those authorities. Provisions allowing direct legal action by private parties, for harm in the form of personal injury, property damage or economic loss, which appeared in earlier drafts of the Directive, are expressly excluded, as are any private parties' claims to an interest in the wider environment, except in the form of requests for action by the authorities where enforcement has not occurred.

Liability under the Directive is confined to 'occupational activities', which are defined in terms of any activity carried out in the course of an economic activity, a business or an undertaking, irrespective of its private or public, profit or non-profit character. The Directive imposes liability, not only for remediation when damage has occurred, but also for preventive action where there is an 'imminent threat' of damage, which is defined as a sufficient likelihood that environmental damage will occur in the near future. The principal objective set for remedial action is to return the relevant site or environmental feature to 'baseline condition'; that is defined as the condition at the time of the damage of the natural resources and services that would have existed had the environmental damage not occurred, estimated on the basis of the best information available.

EU Member States may allow the operator not to bear the cost of remedial actions where they can demonstrate that they were not at fault or negligent and that the damage was caused by:

- an emission or event expressly authorized by, and fully in accordance with the conditions of, an authorization granted under national laws which implement the EU legislation listed in the Directive (the compliance or permit defence);
- an emission or activity or any manner of using a product in the course of an activity which the operator demonstrates was not considered likely to cause environmental damage according to the state of scientific and technical knowledge at the time when the emission was released or the activity took place (the state-of-the-art defence).

Nature of the offence – the type and level of enforcement should reflect the effect on the implementation of a regulatory regime, such as operating an activity without a permit. Serious offences should be subject to stronger measures, such as prosecution. However, some non-compliance might interact with public interest issues and these need to be taken into account. If there is more than one offence, then the level of response should reflect the most serious of the offences.

Financial issues – if there are financial benefits arising from the offence (such as non-payment of fees), then enforcement action should be of a level that outweighs the financial benefits obtained, such as prosecution leading to a significant fine.

Impact on the environment and on others – where the offence has had significant impacts on the environment or has adversely affected the public or other businesses, then stronger enforcement action is usually required.

Deterrent effect of the enforcement action – the level of enforcement action should provide a sufficient deterrent to prevent a repeat offence. It is also important that enforcement action deters other potential offenders and, therefore, publicizing enforcement actions is important.

Intent of the offender – offences that are committed deliberately, recklessly or negligently will normally result in stronger enforcement action. However, offences resulting from a genuine accident might require a lower level of response. It is important to note that ignorance of the law should not be allowed as an excuse for changing enforcement action.

Previous compliance history – repeat or multiple offences should result in a stronger enforcement response. As a result it is important that all offences are properly recorded.

Attitude of the offender – the enforcement response should normally be stronger if the offender has refused to accept alternative enforcement action, made no attempt to reduce the effects or potential effects of the offence, has obstructed investigations, impeded the authority's enforcement action, submitted erroneous information or taken insufficient action to prevent a repetition of the offence. In contrast, full cooperation with authorities could result in a less strong enforcement action.

Predictability – if the offence was planned or could readily have been foreseen, then stronger enforcement action is likely.

Financial issues – enforcement action might require considerable resources to take forward. The investment might be disproportionate to the effect that the offence has had on the environment.

It is important that sanctions are imposed in a transparent and consistent way (see Chapter 1). There are also further principles to sanctions that are appropriate. In 2005 the UK initiated a review of penalties for environmental regulation (see Case 5.2). This has resulted in the development of a series of principles for the application of sanctions. These relate to the nature of the sanctions themselves and how a sanctioning regime should operate (Macrory, 2005). These are repeated below.

Principles for any sanctioning regime:

- Sanctions should **change the behaviour** of the offender.
- Sanctions should ensure that there is **no financial benefit** obtained by non-compliance.
- Sanctions should be **responsive** and consider what is appropriate for the particular offender and the particular regulatory issue.
- Sanctions should be **proportionate** to the nature of the offence and harm caused.
- Sanctions should aim to **restore the harm caused** by regulatory non-compliance.
- Sanctions should aim to **deter future non-compliance**.

In order for these principles to be applied effectively and consistently, regulators should operate within a framework with the following characteristics:

- Regulators should **publish an enforcement policy**.
- Regulators should **measure the outcomes** of their enforcement activities and tailor their enforcement effort to improving these outcomes.
- Regulators should always be able to **justify the choice of enforcement actions** and explain why these actions are appropriate.
- Regulators should always **follow up enforcement actions** and ensure that their sanctions are credible to offenders.
- Regulators should **be transparent in what formal enforcement activity has been taken** in order to safeguard all stakeholders.
- Regulators should be **transparent in the methodology for calculating administrative penalties**.

In a number of penalty systems the gravity (seriousness) of the offence is taken into account. This is affected in two general ways:

- *The level of harm* – sensitivity of the environment, levels of pollution, toxicity of the pollution, period over which the exposure occurs, etc.
- *The performance of the offender* – negligent or deliberate non-compliance, level of control over the offence, ability to predict the offence, level of cooperation with authorities, previous non-compliance history and ability to pay.

There are also other views on the appropriateness of different sanctions. For example, Volokh and Marzulla (1996) argued that criminal law should not be used for most environmental offences as ‘we shouldn’t use the criminal law when the underlying behaviour has some social usefulness’. This is so that operators would not receive a ‘stigma’ from conviction. This view is at odds with most views of fairness and justice. It also overplays the idea of ‘social usefulness’, as the aim of most industries is not to be socially useful, but simply to make money for their shareholders.

Macrory (2005) argued that an effective sanctioning regime allows for a flexible and proportionate approach with a broad range of sanctioning options,

where regulators can respond to the needs of individual cases and the nature of the underlying offence. It recognizes that effective sanctions can also aim to restore the harm caused by regulatory non-compliance and take into consideration the needs of victims, offenders and communities affected by it. The interpretation of these principles into different areas of the application of sanctions is discussed below:

Criminal proceedings: The use of criminal prosecution should be maintained to sanction serious regulatory non-compliance where there is evidence of intentional or reckless behaviour or where the actual or potential consequences are so serious that public interest demands a criminal prosecution.

Administrative penalties: There should be greater use of administrative sanctions. Macrory proposed a system where the regulator has discretion to apply Fixed or Variable Monetary Administrative Penalties (administrative fines) but, if contested, the recipient can appeal the matter to an independent administrative tribunal.

Statutory notices: The use of Enforcement and Improvement Notices should be strengthened by ensuring that regulators have mechanisms in place to follow them up. Regulators and firms should be able to agree an Enforceable Undertaking for the company as an alternative to the imposition of a penalty (such as bringing a prosecution). Enforceable Undertakings could also be combined with a Monetary Administrative Penalty.

Restorative justice: Restorative justice could be a useful process to ensure that the needs of victims of regulatory crimes are addressed. Macrory proposes the following options:

- Restorative justice as a pre-court diversion. The regulator could suggest a restorative justice process to the company after gathering all the facts of the case, but before initiating criminal proceedings.
- Restorative justice in lieu of an administrative fine. The regulator could suggest a restorative justice process before imposing an administrative fine.
- Restorative justice as part of criminal proceedings. Judges could recommend a restorative justice process to the firm at various stages of the criminal proceedings such as pre-sentencing or as part of a sentence.

These principles reflect the wider principles for regulatory activity as a whole, as identified in Chapter 1, and interpret them in the context of the application of sanctions. The principles are not country-specific and can be applied in most contexts.

Putting the sanctions into practice

The sanctions described above are widely applied across the world. The use of different types of sanction varies, however. For example, the powers available to environmental enforcement authorities can be similar, but it is their practical application which can vary. Comino and Leadbeter (1998) provided an interesting example from Australia. In both New South Wales and South Australia the environmental enforcement authorities are able to undertake prosecutions for

Case 5.2 Review of regulatory sanctions in the UK

In the UK the 'better regulation' agenda has examined many areas of regulation and this has now been extended to a review of sanctions. The review is the result of a recommendation by the 2005 Hampton Review on effective inspection and enforcement that there should be a comprehensive review of regulatory penalty regimes. The Hampton Review concluded that the existing penalty regime in many areas of regulation fails to provide effective deterrence because:

- the penalties handed down by courts are not seen to reflect either the severity of the offence, or the economic benefit a business has gained from its non-compliance;
- the application of regulators' penalty powers is sometimes slow and can be ineffective in targeting persistent offenders;
- the range of enforcement tools available to many regulators is limited, giving rise to the disproportionate use of criminal sanctions;
- the structure of some regulators, particularly local authorities, makes effective and coordinated action against persistent offenders difficult.

The Hampton Review concluded that the penalty regime should be based on managing the risk of re-offending, and the impact of the offence, with a sliding scale of penalties that is quicker and easier to apply for most breaches with tougher penalties for rogue businesses which persistently break the rules. As a result the Penalties Review was established in 2005. The aim of the review is to bring the penalty system into line with a risk-based, proportionate system. The review has the following terms of reference:

- to articulate a set of principles relevant to the introduction and operation of civil, administrative and criminal sanctions;
- to clarify the relationship between civil penalties, administrative penalties and criminal penalties;
- to identify the areas where the provision of administrative or alternative sanctions may be appropriate, and how, where appropriate, these penalties can be expressed and the limitations in the use of such sanctions;
- to establish mechanisms through which departments and regulators assess the adequacy and effectiveness of their toolkit with options for change.

The specific areas the review is interested in are:

- experience of the current sanctioning regimes;
- criminal sanctions and proceedings;
- intermediate sanctions in between the formal severe option of pursuing a criminal prosecution and the informal sanction of warning letters;
- categorizing regulatory offences;

- decriminalizing some regulatory offences;
- administrative penalties;
- alternative sanctions, such as reputational sanctions or mandatory audits;
- financial penalties;
- venues for hearing cases and appeals relating to regulatory offences.

The Penalties Review will examine if existing sanctions are appropriate, effective and fit for purpose. The review can, therefore, recommend tougher sanctions where appropriate. However, the chair of the review, Professor Richard Macrory, has stated that new powers for regulators to inflict harsher punishments on the worst transgressors will be given only to those who stop 'box ticking' and agree to police business on a risk-based approach.

It is thought that the recommendations are likely to be fairly radical, triggering an overhaul of the sanctions regime for a broad swathe of regulators, covering everything from trading standards and planning controls to investigations of companies and environmental regulations. The status quo does not appear to be an option.

Business has already expressed alarm that this could result in 'rough justice' (*Financial Times*, 4 January 2006). In December 2005 the Government agreed to omit the statutory powers needed to change the enforcement regime from the better regulation bill that it expects to publish in 2006, after the Confederation of British Industry employers' organization warned that allowing regulators to impose instant fines on business would 'circumvent justice and accountability'. However, Professor Macrory suggests that such fears may be exaggerated. He insists his review is 'a much more sophisticated exercise than simply saying "we're going to give regulators even more powers to bash industry"'. That's not the message, though some people may perceive it like that'. Business would have to be given a right to appeal against any regulator-imposed penalties via an independent mechanism, such as the tribunals system. Any reforms would need checks and balances to ensure regulators were not given incentives to punish industry just for the sake of it. Professor Macrory has stated 'rogue businesses who intentionally flout the law for economic gain should be treated as the criminals they are. They pollute the environment, undermine confidence in industry and risk peoples' lives. But we need a far more flexible system of regulatory sanctions in this country – one that will provide better incentives for legitimate businesses to comply with regulations, and one that gives greater acknowledgement to the interests of victims'.

Source: Hampton, 2005

non-compliance with environmental regulations as ‘a last resort’. In practice there have been a number of prosecutions in New South Wales, but authorities in South Australia have been reluctant to prosecute. The authors argued that the deterrent effect has, therefore, been different in the two States.

Also where there are comparable regulatory regimes the type of sanction can vary. For example, under the EU emissions trading scheme there is a fixed financial penalty of €40 per tonne of carbon dioxide emitted above a company’s allocation, which will rise by €100 per tonne for the second phase of the scheme (2008–2012). Under the US trading schemes there are automatic excess emissions penalties. These are automatically significantly higher than the market price for allowances and, therefore, they vary. They have resulted in near 100 per cent compliance (Kruger and Egenhofer, 2005). The EU regime illustrates a case where the level of a fine is set in law.

In the Netherlands it is a principle of legal practice that the financial penalty that can be imposed by authorities for non-compliance should be that which is sufficient to ensure future compliance. It should not be used as a punishment and no account is taken of any economic advantage that might have been gained by non-compliance (Delange, 1996). In contrast, some other countries view fines as a punishment measure (see above) and do take account of monetary benefit from non-compliance.

However, simply imposing a penalty is not necessarily sufficient. Table 5.1 shows the rate of collection of non-compliance fees in the EECCA countries.

Table 5.1 *Collection rate of non-compliance fees for 1998 or early 1999 in ten EECCA countries*

Country	Non-compliance fee collection rate (% of total)
Armenia	22
Belarus	>85
Georgia	22
Kazakhstan	57
Kyrgyzstan	40–60
Moldova	20
Russian Federation	31
Turkmenistan	~50
Ukraine	69
Uzbekistan	75–85

Source: Farmer, 2000

Not only do these vary, but there are examples of very low rates of collection. This demonstrates that sufficient administrative and legal back-up is required to ensure the sanction is effective.

The range of sanctions available in ten European countries is shown in Table 5.2. This shows some variation, but there are many similarities in the administrative and criminal sanction options. Table 5.3 shows how the administrative and criminal sanction options relate to each other in European countries, in particular whether they are cumulative or not. This demonstrates greater variety and reflects the differences in perception of the role of administrative sanctions. In countries with less developed systems, many of the options for sanctions are available. For example, most western Balkan inspectorates have a variety of powers available to them to enforce environmental laws (Dimovski and Glaser, 2002) (Table 5.4). Common elements include the ability to issue closure orders, issue penalties and initiate court action. The differences in powers include:

- whether inspectorates plan or adopt strategic approaches to their enforcement activity;
- the ability to check financial records of companies;
- whether inspectorates set penalties;
- the ability to prosecute or appeal court decisions.

The variation in approaches is illustrated by a range of cases. An example of the use of a basic administrative measure, enforcement notices, is given for the US (Case 5.3). In Singapore (Case 5.4), the Philippines (Case 5.5) and Mexico (Case 5.6) a full range of administrative and criminal sanctions is available, with different levels of sanction available for different cases of non-compliance. A full range of sanctions can also be made available for local enforcement authorities, as is illustrated by the powers of Auckland City in New Zealand (Case 5.7). Having the sanctions in place does not necessarily mean they are used. This could result from political pressure, insufficient capacity of the environmental enforcement authority or could be for other reasons. It can also reflect a desire for a more cooperative approach to tackling non-compliance as is illustrated by the case of China (Case 5.8). There are further problems in achieving an effective use of sanctions. Examples of this include:

- where the courts have undermined the ability of environmental enforcement authorities to use administrative fines, as in Canada (Case 5.9);
- where the institutional arrangements are confusing and it is unclear which should issue a fine, as in Indonesia (Case 5.10).

Self-disclosure

As has been stated above, one issue that environmental enforcement authorities take account of in determining the level of sanctions is the degree of cooperation from the operator of a non-compliant facility. The ultimate cooperation is for the operator to inform the authority that it is non-compliant, rather than waiting

Case 5.3 *Penalty notices for enforcement in the US*

Penalty notices may be issued by designated authorized officers under the environment protection legislation, including local councils, the Waterways Authority, police, as well as the Environmental Protection Agency (EPA). There is discretion over whether to serve a penalty notice. However, any discretion exercised by individual officers must take into account the intention manifested in the environment protection legislation to penalize those breaches which, in the past, may have gone unpunished. Penalty notices are designed primarily to deal with one-off breaches that can be remedied easily. They are not appropriate in situations of an ongoing nature.

A penalty notice is served because an offence apparently has been committed, but payment of the fine does not lead to the recording of a criminal conviction. Non-payment of the fine is not dealt with by criminal sanctions, but is recoverable as a civil debt. On the other hand, if a person elects to have the matter heard in court, proceedings are instituted in the criminal jurisdiction of the Local Court.

There is no specific timeframe in law within which penalty notices have to be issued. However, it must be issued at a time that allows the alleged offender to recall the events so that an informed election can be made to defend the matter in Court.

Case 5.4 *Variation in environmental fines in Singapore*

Singapore has adopted a variety of environment fines under the Environmental Pollution Control Act (Lye Lin Heng, 2003), including:

- a maximum fine for a first conviction of S\$20,000, with a daily fine of S\$1,000 for each day that the offence continues after conviction;
- for a second or subsequent conviction, a maximum fine of S\$50,000 with a daily fine of S\$2000;
- for discharging toxic substances into inland waters, the maximum fine for a first offence is S\$50,000 or imprisonment of up to 12 months, or both fine and imprisonment. Imprisonment for between 1–12 months is mandatory on a subsequent conviction, plus a fine of up to S\$100,000.

Penalties for infringing waste management requirements are under the Environmental Public Health Act and are higher:

- Up to S\$1 million for offences involving pollution by oil.
- Between S\$100,000 and S\$300,000 for failure to meet the requirements of the Hazardous Waste (Control of Export, Import, and Transit) Act.

Case 5.5 Environmental fines in the Philippines

The Philippines Department of Environment and Natural Resources (DENR) revised the payment of administrative fines for certain environmental violations under memorandum circular 2005 003. Fines can be issued on a sliding scale:

- For failing to register toxic chemical substances under Priority Chemical List, Pre Manufactured and Pre Importation Notification and Chemical Control Order; there is a P50,000 fine.
- For companies operating with an expired permit or clearance, the penalty has been set at P40,000.
- For misrepresentation, inaccurate or inconsistent data or information submitted, the fine is P50,000.
- Payment of P50,000 was also set for environmental damages and other forms of environmental degradation, such as spillage, leak, poisoning and fire accidents, among others.

The administrative fines for non-compliance with the conditions of a permit are:

- non-compliance with one or two conditions P10,000;
- non-compliance with three or four conditions P20,000;
- non-compliance with more than four conditions P30,000;
- non-compliance with more than four conditions and other environmental requirements of the DENR P40,000.

However, much larger fines can also be issued. Thus in 2006 Lafayette Philippines, Inc was fined P10.7 million in fines and penalties by the for spilling its mine twice. This was the largest fine yet imposed for violation of the Clean Water Act. The DENR stated that 'The rationale of imposing the maximum amount of fines for this type of violation is solely for the purpose of deterring similar occurrences, which was well within the capability of the respondent to prevent if only it had exercised prudence in the conduct of its business affairs.' Lafayette was also ordered to cease discharging its wastewater to the environment until it fully rehabilitated all its wastewater treatment ponds. Other requirements imposed on the company included the following:

- Environmental Management System or ISO (International Organization for Standardization) 14001 certification.
- Comprehensive Pollution Control Programme.
- Surety bond equivalent to 24 per cent of the total cost of the pollution control programme.
- Detailed description of the interim remedial measure to mitigate pollution.
- Proof of the employment of a Pollution Control Officer duly accredited by the DENR.
- A notarized undertaking to comply with the conditions set in the order.

Case 5.6 *Imposing environmental sanctions in Mexico*

The following administrative sanctions may be imposed when violations of the General Law on Ecological Balance and Environmental Protection (Ley General del Equilibrio Ecológico y la Protección al Ambiente) are detected (Torres, 2000):

- A fine equivalent to 20–20,000 times the minimum daily wage in effect in the Federal District at the time the fine is imposed (the minimum daily wage currently in effect in the Federal District is 37.90 pesos). This may be doubled for repeated violations.
- Temporary or permanent, total or partial closure.
- Administrative arrest for up to 36 hours.
- The Ministry of Environment, Natural Resources and Fisheries (Secretaría de Medio Ambiente, Recursos Naturales y Pesca) can also revoke the permit.

Case 5.7 *Environmental fines and abatement notices in Auckland City, New Zealand*

Local authorities have an important role in issuing sanctions for non-compliance. In Auckland for a breach of resource consent conditions, an environmental infringement may be issued to either the consent holder (property owner) or the contractors carrying out the work. The consent holder is liable for the actions of the contractors, and contractors are liable for breaching conditions of consent. Conditions in resource consents reflect the district plan rules and policies and are in place to avoid adverse effects. Various actions may be taken by the City authority if the conditions of a resource consent are not being met. Depending on the circumstances, these include issuing:

- an instant fine;
- an abatement notice – this is essentially an official warning;
- an enforcement order – court-backed order demanding compliance.

An abatement notice is a notice served by an enforcement officer requiring a person to take action, or to refrain from taking action, in order to comply with the New Zealand Resource Management Act or the terms and conditions of a resource consent. Severe breaches of the district plan or conditions of resource consent can result in prosecution. The penalty imposed by the courts may include heavy fines and/or imprisonment. Where fines are issued they must be paid within 28 days. An on-line payment system is available.

Table 5.2 *Criminal penalties in ten European countries*

Country	Criminal sanction provided for in legislation	Sanctions most commonly applied	Examples	Sanctions rarely applied
Austria	Judicial: <ul style="list-style-type: none"> imprisonment: up to 3 years finest: up to 360 day fines Administrative fines	Fines	60–180 day fines Imprisonment 3–6 months (always probation)	All sanctions except fines and imprisonment
Belgium	Imprisonment and/or fines Additional measures	Fines	Fines between €520 and €26,000	Seizure of waste Ban on exploiting the environment
Denmark	Main rule: fine Sometimes imprisonment for up to 2 years Confiscation of profits	Fine plus confiscation of profits	Average fine in agriculture: €500 Average fine in industry: €2750 Detention rate (maximum 40 days)	Imprisonment Loss of right to carry out activity
Finland	Imprisonment Day fines Petty fines	Day fines	Average 20–30 day fines plus imprisonment for unpaid fines	Imprisonment
Germany	Rule: 3, 5 or 15 years or fines For negligence, up to 3 years or fine	Fines	Fines: €10,600 Imprisonment often suspended	3 or more years imprisonment
Italy	Penal Environmental crimes: prison plus fine Administrative: fine in proportion to seriousness of offence Other: suppression of activity, obligation to pay for environmental damage or restore harm	Administrative sanctions	Prison from 2 months to 2 years and/or fine of €300 to €5000.	Imprisonment plus fines of substantial amounts

Table 5.2 *Criminal penalties in ten European countries (continued)*

Country	Criminal sanction provided for in legislation	Sanctions most commonly applied	Examples	Sanctions rarely applied
Netherlands	Fine Imprisonment Dismissal of certain rights Shut-down of the company Confiscation Absorption of illegal gain Victim compensation Conviction to carry out what has been left undone or restore harm	Fines	Operating small installation without permit: €465 Small water pollution: €465 Illegal application of fertilizer: €698 Severe cases: high fines (maximum €465, 116) plus imprisonment	All sanctions except fines and imprisonment
Portugal	Custodial sentences, commutable into fines	Fines	—	Imprisonment
Spain	Prison maximum of 4 years Fines Special disqualification for profession of post Closure of the company	Fines	—	—
UK	Imprisonment Community penalties Fines	Fines	Fine from £50 to £1 million Prison sentences rare (most often in waste cases)	Imprisonment and community penalties

Source: Faure and Heine, 2000

Table 5.3 *Relationship between administrative and criminal sanctions in 15 European countries*

Country	Aim of administrative measures (repressive/preventive/remedial)	Accumulation of the procedures	Accumulation of the measures	Obligation to refer to prosecutor in cases of potential crime	Obligation to suspend the administrative procedure if criminal proceeding is initiated	Regulator bound by the decision of the criminal proceeding
Austria	Repressive	Not possible	Not possible	Yes	Yes	Yes
Belgium	Mainly preventive and remedial	Possible except when expressly forbidden by the law	Possible except when expressly forbidden by the law	Yes	No	Yes
Denmark	Preventive and remedial	Not possible	Possible	Yes	No	Yes
Finland	Preventive and remedial	Not possible	Possible	Yes	No	Yes
France	Preventive and repressive	Possible	Possible except for pecuniary measures and when expressly forbidden by the law	Yes	No	Yes

Table 5.3 Relationship between administrative and criminal sanctions in 15 European countries (continued)

Country	Aim of administrative measures (repressive/preventative/remedial)	Accumulation of the procedures	Accumulation of the measures	Obligation to refer to prosecutor in cases of potential crime	Obligation to suspend the administrative procedure if criminal proceeding is initiated	Regulator bound by the decision of the criminal proceeding
Germany	Repressive	Not possible	Not possible, but administrative measure can be accumulated to criminal as auxiliary measures	Yes	Yes	Yes
Greece	Repressive and remedial	Not possible	Possible	Yes	Yes	Yes
Ireland	Preventive and remedial	Not possible	Possible	No	No	Yes
Italy	Repressive and remedial	Not possible	Not possible	Yes	Yes	Yes
Luxembourg	Preventive and repressive	Possible	Not possible in practise	Yes	No	Yes
Netherlands	Preventive and repressive	Possible	Possible	Yes	No	Yes
Portugal	Repressive and remedial	Possible	Possible	Yes	Yes	Yes
Spain	Repressive and remedial	Not possible	Not possible	Yes	Yes	Yes
Sweden	Preventive and repressive	Possible	Possible	Yes	No	Yes
UK	Preventive and remedial	Not possible	Not possible	Yes	n/a	Yes

Source: derived from Milieu and Huglo Lepage, 2004

Table 5.4 *Measures available to inspectorates in the western Balkans to enforce environmental legislation*

Issue	Albania	Bosnia	Bulgaria	Croatia	Macedonia	Serbia	Montenegro	Romania
Annual planning of enforcement actions	NA	Not yet	Yes	Yes	No	Yes	Yes	Yes
Enforcement strategies	No	Not yet	No	Yes	No	NA	Yes	Yes
Setting of penalties	Yes	Not yet	Yes	Yes	No	NA	Yes	Yes
Ability to start legal actions	Yes	Not yet	Yes	Yes	Yes	Yes	Yes	Yes
Ability to prosecute	No	NA	No	Yes	Yes	NA	Yes	No
Ability to appeal to court decisions	Yes	NA	Yes	No	Yes	NA	Yes	Yes
Liability protection from the State	No	NA	Yes	Yes	No	NA	Yes	Yes
Conduct site visits unannounced	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Order immediate site closures	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes
Issue penalties and collect fines	Yes	Yes	Yes	NA	Yes	NA	Yes	Yes
Call for police assistance	Yes	NA	Yes	Yes	Yes	NA	Yes	Yes
Check accounting and bookkeeping	No	NA	No	Yes	Yes	NA	No	No
File administrative charges	Yes	NA	Yes	Yes	Yes	NA	Yes	Yes
File criminal charges	Yes	NA	No	No	Yes	Yes	Yes	No

Source: Dimovski and Glaser, 2002

Case 5.8 'Pragmatic' enforcement in China

Local environmental administrations in China are reluctant to take strict action in the face of non-compliance. Staff believe that it is better to bring companies into compliance by developing understanding, providing technical and financial assistance and by negotiating reasonable deadlines for future compliance. This approach has had some success. However, staff are very reluctant to impose the ultimate sanction of closing a facility due to serious non-compliance. This is viewed as risky as it may lead to 'loss of face' by the facility's managers. Some staff even consider that taking such a step would reduce the incentive for compliance in the future (OECD, 2005a; Ma and Ortolano, 2000).

for the authority to discover this. This is 'self-disclosure'. Some self-disclosure can occur automatically. Self-monitoring data can be transmitted 'real-time' to an environmental enforcement authority, so that non-compliance is evident. However, more usually, the operator will discover a compliance problem. They then have a choice of whether to inform the authority or not. In many countries environmental enforcement authorities have adopted policies to encourage self-disclosure through limiting the penalties that could be imposed if self-disclosure occurs. The purpose of such policies is to encourage the identification of situations which could pose environmental risks, rather than establish a system which would encourage behaviour that would hide these risks. A good example of such a policy is given in Case 5.11 for the US.

Citizen enforcement

The public can be important partners in enforcing environmental regulations (see Foulon et al, 2002; Gunningham et al, 1999). The information that they receive, therefore, from permitting, monitoring and inspection, is important. Supply of information to citizens is critical and there are various means of achieving this such as illustrated by online compliance information in the US (Case 5.12). However, most commonly, citizens respond to cases of pollution incidents and similar events that cause local harm or nuisance. Citizens, whether individuals or in the form of non-governmental organizations (NGOs), can be useful in informing environmental enforcement authorities of suspected non-compliance. However, they can also take action themselves, via the courts. First, they can take the operator of the non-compliant activity to court. Second, they can take the environmental enforcement authority to court in response to a belief that it is failing to take responsible action itself. Killmer (2005), in a survey of citizen contributions to enforcement, reached the following conclusions:

- Under certain circumstances excluding civil society from the enforcement process leads to the most effective environmental outcome. This is the case

Case 5.9 *Non-compliance responses in Canada and undermining the effectiveness of fines through a court decision*

Between 1996 and 1997, 701 inspections were carried out under Canadian Environmental Protection Act, and 53 investigations were conducted. When non-compliance occurs, prosecution may occur, but this is usually pursued only in response to the more serious offences. For less serious offences, a written 'warning' may be issued. Inspectors may also issue a 'direction' in emergency situations involving the unlawful release of specified substances. Two directions and 28 warning letters were issued, 5 prosecutions were instituted, 7 convictions were registered (some cases had been started in previous years), and there were 4 acquittals or withdrawn charges. Further details of enforcement action are given below.

Enforcement actions undertaken in Canada under the Canadian Environmental Protection Act and Fisheries Act 36(3) (Source: OECD, 2004b).

<i>Action</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>Total</i>
Compliance letter	22	170	151	141	127	611
Description not available	3	10	50	8	7	78
Inspector's verbal direction	9	10	15	10	7	51
Inspector's verbal warning	1	15	15	61	13	105
Inspector's written direction	1	11	1	16	22	51
Limitation period expired	—	—	—	14	—	14
Ministerial order	—	—	—	—	10	10
No action taken	243	269	462	792	517	2283
Offence notice	—	—	1	—	—	1
Prosecution	1	1	—	2	—	4
Referral to other agency or government	1	—	1	—	—	2
Referred to investigations	48	65	90	212	89	504
Removal order, seizure or ticketed	2	—	1	1	2	6
Unsolved	—	—	—	4	1	5
Written warning	343	502	490	595	254	2184
TOTAL	674	1053	1277	1856	1049	5909

Source: OECD, 2004b with totals recalculated

In 1999 the Canadian Supreme Court issued a decision (Case 65302 British Columbia Ltd) that businesses operating in Canada were able to deduct fines and penalties levied for violating environmental laws from their business income for tax purposes. The Court's decision was based on the fact that the Income Tax Act does not explicitly state that such fines cannot be deducted from business income. Prior to this court decision, Revenue Canada had a policy that did not allow such fines and penalties to be deducted. Subsequent to the Court's decision, a new policy was issued acknowledging that such fines

and penalties can be deducted. The tax deductibility of fines and penalties resulted in a reduction in the effectiveness of Canada's environmental laws in deterring violations. In its reasons for its decision, the Supreme Court of Canada explicitly invited Parliament to address this issue by amending the Income Tax Act. The court wrote that 'Parliament may well be motivated to respond promptly and comprehensively to prohibit clearly and directly the deduction of all fines and penalties'. However, the Government was subsequently reluctant to act (Duff, 2001).

where civil society does not have sufficient resources to participate and exclusion allows the environmental enforcement authority to concentrate its resources on enforcement activity.

- Law suits brought against an environmental regulator will only be effective if the regulator is not bound by a budget constraint. Trying to get a regulator to undertake additional enforcement action may only be effective if it has the resources to do so, otherwise changing its priorities will affect other regulatory functions.
- Private enforcement through market pressure creates a disincentive for companies to disclose information. Civil society takes action based on the information available. Therefore, taking advantage of voluntary disclosure will create a response from companies.
- Public and private enforcement is most likely to be complementary when the regulatory budget is binding and civil society exerts a reasonable level of direct pressure on companies. For example, the regulator can focus its activities on ensuring disclosure so that civil society can respond.

Case 5.10 *Enforcement hampered by uncoordinated responsibilities in Indonesia*

A number of laws (e.g. Government Regulation on Water Pollution Control) are primarily enforced by the Provincial Government, but there is a cross-reference of sanctions under the 1982 Environmental Management Act, which is not the responsibility of the same authorities (Tan, 1998). Similarly other Acts, such as those covering industry and agriculture, also have such cross-referencing. Thus it is unclear which authority should set penalties. Also the relationship between civil, criminal and administrative sanctions is unclear. Different Acts and codes that cross reference each other set various levels of sanctions and it is, therefore, not clear what applies and when. This creates confusion both for the authorities and for those subject to regulation.

Case 5.11 *Reducing penalties for self-disclosure in the US*

In 1995 (revised in 2000) the US Environmental Protection Agency (EPA) introduced a policy on 'incentives for self-policing: discovery, disclosure and correction'. The policy contains nine conditions, and activities that meet all of them are eligible for 100 per cent mitigation of any gravity-based penalties that otherwise could be assessed:

- There should be systematic discovery of the violation through an environmental audit or the implementation of a compliance management system.
- Voluntary discovery of the violation was not detected as a result of a legally required monitoring, sampling or auditing procedure.
- Prompt disclosure in writing to EPA within 21 days of discovery or such shorter time as may be required by law.
- Independent discovery and disclosure before the EPA or another regulator would probably have identified the violation through its own investigation or based on information provided by a third-party.
- Correction and remediation within 60 calendar days, in most cases, from the date of discovery.
- Prevent recurrence of the violation.
- Repeat violations are ineligible, that is, the specific (or closely related) violations have occurred at the same facility within the past three years or those that have occurred as part of a pattern at multiple facilities owned or operated by the same entity within the past five years.
- Certain types of violations are ineligible such as those that result in serious actual harm, those that may have presented an imminent and substantial danger, and those that violate the specific terms of an administrative or judicial order or consent agreement.
- Cooperation by the disclosing business is required.

Civil penalties under the environmental laws generally have two components, an amount assessed based upon the severity or 'gravity' of the offence, and the amount of economic benefit a violator received from non-compliance. No gravity-based penalties will be applied if all of the policy's conditions are met. If all conditions are met except detection of the violation through a systematic discovery process, then gravity-based penalties are reduced by 75 per cent. However, the EPA retains its discretion to collect any economic benefit that may have been realized as a result of non-compliance. The EPA will also make no recommendation for criminal prosecution if all of the applicable conditions under the policy are met.

This policy was developed to prevent self-incrimination and to reward openness about the regulatory behaviour of businesses. However, authorities do need to check on the results of self-disclosure through the process of routine and non-routine inspections described in Chapter 5.

Case 5.12 *Providing public information on enforcement and compliance: The US Enforcement and Compliance History Online website*

The Enforcement and Compliance History Online (ECHO) website provides the public with easy access to extensive information about the environmental compliance records of US Environmental Protection Agency (EPA) regulated facilities. It provides integrated information for the previous three years on penalties, enforcement action, compliance status, monitoring and permits. Since it was launched in November 2002, private citizens, government officials, investors, and staff at regulated companies have asked more than 2.5 million questions about the environmental records of the more than 800,000 facilities that exist in the database.

The information provided in ECHO covers facilities regulated as Clean Air Act stationary sources, as Clean Water Act permitted dischargers (under the National Pollutant Discharge Elimination System), and Resource Conservation and Recovery Act hazardous waste sites. Key elements of the enforcement process contained in ECHO include:

- all monitoring events such as an inspection/evaluation or a self-report;
- the determination of non-compliance;
- Government enforcement action to address non-compliance;
- penalties associated with enforcement actions;
- contextual information about the demographics surrounding the facility.

Data are updated monthly and each facility report is date stamped. The ECHO displays the data for three years from the date that the information was input. The EPA requires more information to be entered into ECHO on larger facilities. Data entry at smaller facilities is required only in some instances. Therefore, the completeness of the data is much higher for larger facilities. Because it is not required, not all States use the ECHO.

Each level of government works together to ensure that information is accurate. Some State and local jurisdictions directly enter data to national databases, while others maintain their own databases and transfer data to the EPA through batch processing. Under both approaches, many steps are taken to ensure that the data are of high quality. Each national database maintains standards and procedures for ensuring data integrity on a day-to-day basis. Through periodic analysis, conference calls and national meetings, database managers at all levels of government work to ensure quality information. For example, various reviews have taken place and during the six-month public comment period after the launch of ECHO less than 1 per cent of the reports were found to have data quality errors. There have also been two random audits. For example, an audit on enforcement data showed an accuracy of 95–97 per cent.

These conclusions are probably reasonable in most circumstances. However, there are circumstances where alternative views are appropriate. For example, in some transition and developing countries the following points might be relevant:

- The engagement of civil society, even with limited budgets, might have a wider benefit as part of a process of developing basic civil society structures and expanding understanding of environmental awareness.
- In these countries some environmental enforcement authorities can be under significant political pressure or be impeded by corruption. In such cases, even though the authorities might have severely limited budgets, taking legal action against the authority could have much wider benefits for making it take its role seriously in the future.

As a result increasing the capacity of civil society in countries such as Russia can be viewed as an important complement to environmental enforcement where there are major capacity problems for environmental enforcement authorities (Wernstedt, 2002).

It is important to note that citizenship enforcement can be impeded by the context in which NGOs operate. This is most obviously seen in some EECCA countries (Farmer, 2000). The Soviet system required the regulation of non-commercial organizations, with registration and geographic limitations on activities. These basic requirements have generally been transferred into the national laws of the EECCA countries. This could lead to a restriction in registration and thus 'recognition' by governments. For example, during 1999 there were a number of meetings in Uzbekistan debating the limitations of the national 'Law on Social Associations'. It was claimed that of the more than 200 NGOs in Uzbekistan, no more than 10 per cent of these operated as *independent* local organizations separate from State and international agencies and some NGOs claimed that there is currently a State policy to link all registered NGOs with national 'quasi-NGOs' to 'normalize their operations' and to 'secure stability and order'. In contrast Kyrgyzstan adopted a new law in 1999 'On Non-Governmental (Non-Commercial) Organisations' which changes the status of NGOs (Farmer and Farmer, 2001). The new law specifically allowed unregistered groups or organizations to carry out non-profit activities.

There are many cases of citizen enforcement around the world. The extent to which this occurs can reflect the general culture of the country, such as whether there is a culture of litigiousness or of consensus building. One example is given here for the Ukraine (Case 5.13). Overall, however, the number of such cases is small compared to the number of enforcement actions taken by environmental enforcement authorities themselves, although they can be critical in some key cases. Analysing the precise nature and effectiveness of such activities is beyond the scope of this book, other than to acknowledge their role in enforcement.

Case 5.13 *Citizen action in the Ukraine*

EcoPravo is a non-governmental organization (NGO) association of environmental lawyers in the Ukraine founded in 1992. It undertakes a range of activities, including education of enforcement officials, public education, networking with environmental lawyers in other Eastern Europe, Caucasus and Central Asia (EECCA) countries and legal activities to increase environmental protection. In 1997 EcoPravo won a case in the High Arbitration Court against a regional government's attempts to open a landfill site which did not meet legal requirements. However, attempts to take forward a case concerning contaminated drinking water in L'viv failed due to the inability of both the local community and the Government to pay for the necessary monitoring and sample analysis to support action against local industry (Farmer, 2000).

The courts

The courts are critical elements of the environmental enforcement process. First, they can impose tougher sanctions than can the administration and they can punish significant cases of non-compliance. Second, decisions made in court can interpret the law. This can either be through a legal challenge to a permitting decision (Chapter 3) or during a case brought for non-compliance. These legal interpretations affect subsequent regulatory decisions (and possibly lead to review of previous decisions). An example is where an environmental enforcement authority has developed guidance in interpreting the law, but the courts decide that this is incorrect.

The courts have a critical role. They are not (or should not) be an arm of government, of the administration or of any other section of society. The judiciary should act as an independent arbiter of the interpretation and implementation of the law. This is especially important in places where there is little public confidence in the government, such that it is perceived as corrupt or unfair. However, in some countries such corruption is within the judicial system. In the context of this chapter, the courts exist to judge environmental offences and, where appropriate, impose punishments. The first consideration, therefore, for an environmental enforcement authority, is whether to prosecute an offender or not.

Deciding to prosecute

The basic prerequisite of any prosecution is that the available evidence establishes a case where the environmental enforcement authority has a good chance of succeeding. Authorities will always consider whether prosecution is in the public interest. Once a decision has been made to deal with an incident through

prosecution, it is the environmental enforcement authority's responsibility to select charges that it can successfully prosecute and which are consistent with the seriousness of the alleged criminal conduct.

Any charges that are brought must adequately reflect the nature and extent of the offence and the supporting evidence so that the court can impose an appropriate penalty. In this respect, the following aspects are important:

- There should be similar charges for similar offences to ensure consistency and confidence.
- Bringing multiple charges should be avoided, for example, where a regulation has been breached in different parts by the same non-compliance behaviour.
- Where more than one authority is potentially involved in prosecution (such as a breach of safety conditions), an environmental enforcement authority should liaise with that authority in formulating charges before proceedings start.

The level of the charge should reflect the seriousness of the offence. Key factors to consider are:

- Situations involving deliberate or negligent acts which did, or could have, caused serious harm to the environment. These situations would be likely to result in more significant penalties.
- Cases where repeated non-compliance has occurred.

Authorities might find that those who have committed non-compliant actions will seek to 'charge bargain' with environmental authorities or legal prosecutors working with them. As a result of these negotiations, a defendant may opt to plead guilty to a smaller number of charges than those initially brought in return for the remaining charges being dropped. Charge bargaining must, however, retain the confidence of the authority to protect the environment. Therefore, it must still result in remaining charges being laid that are appropriate to the non-compliant behaviour of the operator, so that these would still result in an appropriate penalty given the level of the offence committed.

It is, therefore, important for an environmental enforcement authority to develop an enforcement and prosecution policy. This sets out where and under what circumstances it would normally seek to prosecute an offender. Having such a strategy sends a clear message to those whom it regulates and provides a basis for ensuring a consistent approach within the authority itself. An example of such a strategy for the Environment Agency of England and Wales is given in Case 5.14.

Taking forward the prosecution

Once the decision has been made to prosecute, the environmental enforcement authority will, probably, need to engage external legal support and file its case. It will need to ensure that all of its evidence is secure and that relevant staff involved

Case 5.14 Enforcement and Prosecution Policy of the Environment Agency of England and Wales

The current Enforcement and Prosecution Policy of the Environment Agency came into force on 1 November 1998. It was developed following extensive consultation with over 1000 organizations, including trade associations and non-governmental organizations (NGOs). The policy sets out the circumstances when, along with sufficient evidence, the Agency will normally prosecute. In order to implement the policy, the Agency has held an extensive training programme for 3500 of its staff to ensure that the revised policy was applied consistently and effectively across England and Wales. Examples of expected enforcement responses, including prosecution, are:

- Obstruction or impersonation of an Environment Agency Officer – the normal formal enforcement response is prosecution.
- Intentionally, recklessly or wilfully making a false or misleading statement or record – the normal formal enforcement response is prosecution.
- Non-payment of fees to the Environment Agency – the normal formal enforcement response is the maximum available in law.
- Non-payment of a Fixed Penalty Notice or non-acceptance of a Formal Caution – the normal formal enforcement response is prosecution for the original offence.
- Operating without a required Environment Agency permit – with intent the normal formal enforcement response is prosecution; with no intent but where environmental impact is readily predictable, the normal formal enforcement response is prosecution; where there is no intent and environmental impacts are not predicted, a range of responses from warnings to prosecution are appropriate depending on circumstances.
- Non-compliance with a condition in a permit – a range of responses from warnings to prosecution is appropriate depending on circumstances.
- Non-compliance with a Served Notice – the normal formal enforcement response is the maximum available in law.

in the cases are available and adequately trained in giving evidence, etc. Details on some of the aspects of these processes are given by Shelton and Kiss (2005).

If the case is successful, it is important that consideration is given to publicizing that result, to act as a deterrent to others. The range of penalties that can be given by the courts varies across the world. Three examples are given here as an illustration:

- The criminal penalties available in Mexico (Case 5.15).
- Examples of the penalties imposed in three different cases in the US with fines and imprisonment (Case 5.16).
- An overview of the trends in sentencing for environmental crimes in England and Wales (Case 5.17).

Case 5.15 *Criminal penalties available in Mexico*

Prosecutors in Mexico can use criminal sanctions to punish and deter violations of environmental laws (Torres, 2000). A penalty of three to six years imprisonment and a fine equivalent to 1000–20,000 times the daily minimum wage in effect in the Federal District at the time the offence was committed shall apply to the following:

- Those who, without the corresponding authority, carry out any activity with hazardous wastes or material that causes or may cause harm to the public health, the natural resources, fauna or flora or the ecosystems.
- Those who, in violation of the applicable legislation, generate into the atmosphere pollution causing harm to the public health, natural resources, fauna or flora or the ecosystems. This sanction shall also apply to those who authorize or order these activities.
- Those who, in violation of the applicable legislation, generate noise, vibrations or light energy that may cause harm to the public health, natural resources, fauna or flora or the ecosystems.

Appeals against a sentence

The decision of a court in individual cases might not be considered to be correct in the view of an environmental authority. In some countries (and/or under some legislation) such authorities can appeal against a sentence that they feel is unduly lenient. The key issues to consider in deciding to make such an appeal are:

- Appeals should only be brought to establish and maintain adequate standards of punishment for environmental crime or to correct sentences that are so disproportionate to the seriousness of the crime as to lead to a loss of confidence in the administration of criminal justice.
- Where there is a reasonable chance that an appeal would be successful, so that the resources of the environmental authority are not wasted and its authority undermined. For example, in some cases an appeal might only be allowed or be potentially successful if the judge was found to have made a material error and this would need to be demonstrated.
- Appeals should be brought as promptly as possible.

The capacity of the courts

In order for the process of environmental enforcement to work successfully, it is necessary for the judicial system to be effective. The courts must:

- take environmental crime seriously;
- understand the issues to make sensible judgments;
- have sufficient resources to process the cases.

Case 5.16 *Examples of penalties issued in the US*

Ohio Edison Company

The Environmental Protection Agency (EPA), with the States of New York, New Jersey and Connecticut, reached a settlement with Ohio Edison Company, a subsidiary of FirstEnergy Corporation in July 2005. In 2003, the US District Court for the Southern District of Ohio agreed with the Government after a four-week trial that there were violations of the requirements of the Clean Air Act at the W.H. Sammis Station coal-fired power plant in Ohio. The consent decree requires Ohio Edison to spend approximately \$1.1 billion by 2010 to install pollution control equipment and other measures that will reduce emissions of sulphur dioxide and nitrogen oxides by over 212,000 tons per year from the Sammis Station plant and other Ohio Edison and FirstEnergy coal-fired power plants. Ohio Edison was also required to pay a \$8.5 million civil penalty and expend \$25 million for environmental projects, including \$14.4 million in renewable energy development projects, \$10 million in environmentally beneficial projects related to air pollution in New York, New Jersey and Connecticut, and \$215,000 to the National Park Service for an air pollution project in Shenandoah National Park.

Tyler Pipe Company

In March 2005, Tyler Pipe Company, one of the largest manufacturers of iron pipes and castings in the US, pleaded guilty to two felony counts for violations of the Clean Air Act. The company paid a \$4.5 million criminal fine and will undertake an estimated \$11 million in upgrades to the facility to reduce future pollution. The prosecution was due to the illegal construction and operation of a scrap metal furnace in Texas. The company replaced its old plant furnace with a new one. Under the Clean Air Act's prevention of significant deterioration provisions, Tyler Pipe was required to apply to the Texas Commission on Environmental Quality for permission to construct and operate the new furnace using the best available control technology. Instead, Tyler Pipe concealed the construction of the new furnace from the State Commission and connected it to the existing pollution control device, a water scrubber designed and built in the 1960s.

USL City Environmental Inc.

In December 2004 and September 2005, a former vice president of City Environmental Inc., a waste treatment facility in Detroit, Michigan, was sentenced to 27 months imprisonment, three years supervised release, and a \$60,000 fine. Also the former plant manager was previously sentenced to serve 12 months in prison and a \$60,000 fine. Both were prosecuted for Resource Conservation and Recovery Act and Clean Water Act violations, including conspiracy, after discharging untreated and insufficiently treated waste into the Detroit sanitary sewer system and transporting hazardous waste to a landfill not licensed to receive hazardous waste. The defendants were also charged with false sampling, false reporting and tampering with a monitoring device.

Case 5.17 Trends in environmental sentencing in England and Wales

In 2003 the UK Government commissioned a study on variations in environmental sentencing in England and Wales (Dupont and Zakkour, 2003). It examined trends between different types of court, in different regions of the country and over time. The study concluded that there are inconsistencies and disparities between Magistrates and Crown Courts in sentencing practice, mainly in terms of regional disparities. Fines are also well below the maximum possible that Magistrates could impose (£20,000). Other conclusions were:

- The Environment Agency is responsible for 90 per cent of prosecutions.
- There is very little use of custodial sentences (1.2 per cent of cases), with most (68 per cent) resulting in fines and/or costs awarded (70 per cent).
- All other types of sentencing (such as community service orders, conditional/absolute discharges, compensation, etc.) were infrequently used (5 per cent in Crown and 8 per cent in Magistrates Courts).
- Companies were more likely to receive fines than individuals.
- Between 1999 and 2002 the average fine in Magistrates Courts rose from £1979 to £2730. However, in Crown Courts there was a sharp decline in the size of fines from £8000 in 1999/2000 to £4600 in 2001/2002.

The authors noted that environmental offences made up a very small proportion of overall offences and, therefore, there was often a lack of familiarity with the issues and sentencing policies. Further training was, as a result, recommended.

However, in many countries, in many different contexts, there is concern from environmental enforcement authorities that the judicial system is far from effective. A serious environmental offence might result in a small fine, undermining the environmental enforcement process. It is common to hear complaints that judges do not take environmental issues seriously. However, in some cases this is because they do not understand them – both the nature of the environmental harm and the context of the offence in the general programme of environmental protection. In such cases there is a need to ensure that the legal training process includes an understanding of environmental issues. Where judges do understand the issues, but do not take them seriously, then an environmental enforcement authority has a wider political problem to address.

Countries have adopted various educational and other capacity enhancement processes for the judiciary. To support these there are related processes: in August 2002, the United Nations Environment Programme (UNEP) adopted an action

Case 5.18 *The Johannesburg Principles on the Role of Law and Sustainable Development*

The Johannesburg Principles on the Role of Law and Sustainable Development include the following statements (Anon, 2003):

- 'We affirm that an independent Judiciary and judicial process is vital for the implementation, development and enforcement of environmental law, and that members of the Judiciary, as well as those contributing to the judicial process at the national, regional and global levels, are crucial partners for promoting compliance with, and the implementation and enforcement of, international and national environmental law.'
- 'We emphasize that the fragile state of the global environment requires the Judiciary as the guardian of the Rule of Law, to boldly and fearlessly implement and enforce applicable international and national laws, which in the field of environment and sustainable development will assist in alleviating poverty and sustaining an enduring civilization, and ensuring that the present generation will enjoy and improve the quality of life of all peoples, while also ensuring that the inherent rights and interests of succeeding generations are not compromised.'
- 'We express our conviction that the Judiciary, well informed of the rapidly expanding boundaries of environmental law and aware of its role and responsibilities in promoting the implementation, development and enforcement of laws, regulations and international agreements relating to sustainable development, plays a critical role in the enhancement of the public interest in a healthy and secure environment.'
- 'We recognize the importance of ensuring that environmental law and law in the field of sustainable development feature prominently in academic curricula, legal studies and training at all levels, in particular among judges and others engaged in the judicial process.'
- 'We express our conviction that the deficiency in the knowledge, relevant skills and information in regard to environmental law is one of the principal causes that contribute to the lack of effective implementation, development and enforcement of environmental law.'
- 'We are strongly of the view that there is an urgent need to strengthen the capacity of judges, prosecutors, legislators and all persons who play a critical role at national level in the process of implementation, development and enforcement of environmental law, including multilateral environmental agreements (MEAs), especially through the judicial process.'
- 'We recognize that the people most affected by environmental degradation are the poor, and that, therefore, there is an urgent need to strengthen the capacity of the poor and their representatives to defend environmental rights, so as to ensure that the weaker sections of society are not prejudiced by environmental degradation and are enabled to enjoy

their right to live in a social and physical environment that respects and promotes their dignity.’

The statements also proposed that, inter alia, the following should be included in a work programme:

- ‘The improvement of the capacity of those involved in the process of promoting, implementing, developing and enforcing environmental law, such as judges, prosecutors, legislators and others, to carry out their functions on a well-informed basis, equipped with the necessary skills, information and material,
- The improvement in the level of public participation in environmental decision making, access to justice for the settlement of environmental disputes and the defence and enforcement of environmental rights, and public access to relevant information,
- The strengthening of sub-regional, regional and global collaboration for the mutual benefit of all peoples of the world and exchange of information among national Judiciaries with a view to benefiting from each other’s knowledge, experience and expertise,
- The strengthening of environmental law education in schools and universities, including research and analysis as essential to realizing sustainable development,
- The achievement of sustained improvement in compliance with and enforcement and development of environmental law,
- The strengthening of the capacity of organizations and initiatives, including the media, which seek to enable the public to fully engage on a well-informed basis, in focusing attention on issues relating to environmental protection and sustainable development.’

plan (the Johannesburg Principles on the Role of Law and Sustainable Development) to strengthen the development, use and enforcement of environment-related laws. This plan was drawn up by over 100 of the world’s most senior judges. Relevant parts of the statement are included in Case 5.18. The plan emphasized that the key to improving the adoption and implementation of environment-related laws hinges on improving the capacity, training, funding and education of legal experts, particularly in developing nations, as well as granting universal access to public information on the environment and development-related issues and access to the legal system and the courts. UNEP noted that weaknesses in legal systems are particularly acute in many developing countries and EECCA countries where lack of resources, the difficulties of turning international treaties into national laws and lack of awareness, if not apathy, as a result of difficult economic conditions make it harder for cases to reach or succeed in the courts.

Conclusions

For environmental regulation to work, a range of sanctions needs to be available to respond to cases of non-compliance with that regulation. These sanctions aim to compensate, punish and deter. They can be administrative in character, imposed by the environmental enforcement authority itself, or criminal, where cases are taken to court.

Administrative sanctions are the most simple to operate from the point of view of an environmental enforcement authority. Clearly it has much greater control and, with sufficient flexibility, it is able to direct such sanctions in a way that it thinks will have the greatest effect (e.g. as a deterrent). This type of system will only work, however, if the sanctions are sufficiently robust that operators wish to avoid them. In some countries this is not the case and administrative fines are simply another running cost. Here further sanctions, such as permit revocation and plant closure, are another option. It is important, therefore, that the maximum level of penalties available should be reviewed and these should aim to eliminate the financial gain made as a result of the regulatory non-compliance.

Administrative sanctions also place the environmental enforcement authority in the position of 'judge and jury' (although subject to appeal) and it is important for the authority to act in a transparent and fair manner, for example, by publishing detailed guidelines as to why it would impose a particular sanction.

Some cases are too serious merely to be tackled through administrative sanctions and recourse to the courts is appropriate. In some countries this has proved particularly successful. Success can be measured in terms of cases won and sanctions imposed. In this regard it is interesting to contrast the US and UK. Both are relatively successful in cases won, but the level of sanction (fine or imprisonment) is much greater in the US than the UK. For court cases to succeed, the environmental enforcement authority requires its case to be prepared meticulously. It also requires a judiciary that understands environmental law, environmental problems and takes the issue seriously. This is, however, not always the case in many countries. Thus it is beneficial for countries to develop training, etc., for lawyers and judges on these issues and to develop guidelines for sentencing and to concentrate prosecutions in certain areas to particular courts.

Imposing penalties is an important response to cases of non-compliance. However, it is also important for environmental enforcement authorities to work proactively with companies to improve their ability to comply. This is compliance assistance and is the subject of the next chapter. The present chapter concludes with three checklists that can assist an examination of the way that environmental enforcement authorities use sanctions.

Checklist: Sanctions policy

- 1 Does the environmental enforcement authority have sufficient sanctions available to it to take the necessary action in response to non-compliance with environmental regulation?

- 2 Does the environmental enforcement authority have an overall policy on the application of sanctions that it is linked to its general compliance enforcement policy?
- 3 Does the policy set out in a transparent way under what circumstances particular types of sanctions would be applied?
- 4 Is the policy based on identified principles, such as being proportionate and effective?
- 5 Has the policy been developed in consultation with industry and public stakeholders?
- 6 Is the policy clearly communicated to relevant staff (including training where necessary) to ensure that it is applied in a consistent manner across the area of responsibility of the authority?
- 7 Does the environmental enforcement authority have sufficient legal capacity to address the issues of sanctions and the interpretation of law as they arise?

Checklist: Administrative sanctions

- 1 Does the environmental enforcement authority have a clear policy indicating when it would seek to use administrative sanctions?
- 2 Does the policy take account of mitigating issues, such as self-disclosure?
- 3 Are staff fully aware of what sanctions are to be imposed and when?
- 4 Are the administrative sanctions available regularly updated (e.g. size of fine)?
- 5 Is the decision for when different sanctions are imposed made at the right level within the authority?
- 6 Does the environmental enforcement authority review the sanctions it has imposed to determine whether they have been applied in a consistent and proportionate manner?

Checklist: Criminal sanctions

- 1 Does the environmental enforcement authority have a clear policy indicating when it would seek to use criminal sanctions?
- 2 Are staff (e.g. inspectors) fully aware of the needs for gathering and storing evidence to ensure that any case that is brought is of high quality?
- 3 Has the authority established clear procedures for presenting a case to reduce the likelihood of rejection for procedural reasons?
- 4 Does the environmental enforcement authority have sufficient resources available to engage lawyers for the necessary court cases?
- 5 Following the conclusion of cases does the authority publicize the results?
- 6 Has the environmental enforcement authority identified clearly any systematic problems it has in ensuring that environmental regulation is tackled properly in the court system and made this assessment clear to the government, senior legal officials and the public?
- 7 How can the environmental enforcement authority contribute to the training of judges who are already in post to improve their understanding of environmental regulation issues?
- 8 How can the environmental enforcement authority contribute to assisting in the training of lawyers in their early careers?

Compliance Promotion

Introduction

Regulations set the requirements that activities must adhere to and enforcement authorities determine whether these requirements have been complied with. However, the fundamental objective of such authorities is to ensure that the environment and health are protected. Therefore, it is beneficial if authorities take proactive steps to help activities to achieve compliance. Such activity is commonly called ‘compliance promotion’. Concrete compliance promotion actions should form part of the strategies of enforcement authorities. Nonetheless, it is important to note that compliance promotion alone is not sufficient – it needs to be part of an overall strategy that includes enforcement.

Most regulation should be accompanied by some level of supporting interpretive information. For example, many countries provide a guide to completing a permit application alongside the permit application form. This can guide the applicant through the physical process of completing the form, and can also briefly explain why particular information is necessary. Ideally such explanations should not simply refer to other legislation (e.g. ‘this is needed because of a European Commission Directive’), but to what the fundamental purpose (e.g. an environmental objective) is. Of course, the provision of guidance should not be used as an excuse for failure to ensure that legislation/regulation is as clear as is possible.

Compliance promotion is especially important where there might be significant limitations on traditional regulation. This is most obviously the case where there are a large number of activities (such as small pollution sources) for which an enforcement authority would simply not have the resources to undertake regular inspections, for example. Examples can include measures to control discharges of nitrates to water across many small farms and the emission to air of volatile organic compounds from a wide range of different small activities.

Compliance promotion does, however, require a culture of willingness to comply by businesses. If there is a general culture to do nothing unless compelled to do so, then compliance promotion will have a limited effect. Where businesses are eager to comply, then compliance promotion will have significant benefits.

Compliance promotion, if undertaken in a concerted way, can deliver benefits. For example, in the US there is a wide range of web-based compliance assistance tools at national and State level. Stump (2005) undertook a study of the benefit/

cost ratio of the Small Business Stationary Source Technical and Environmental Compliance Assistance Program (SBTCP) in Kentucky, which provides assistance in meeting obligations under the 1990 Clean Air Act. Interestingly, there is concern that the performance of SBTCPs has been focused mainly on outputs rather than outcomes, so Stump developed an outcome-based approach. With this the benefit/cost ratio of the operation of the Kentucky programme was 3:1, with benefits averaging about \$3 million per year. This demonstrates that such compliance assistance programmes can not only bring significant benefits to small businesses, but also that these can outweigh the costs of implementation.

The primary focus of compliance promotion is to provide information to businesses and individuals. However, the nature of the information and the methods used to supply it can vary significantly.

Developing compliance support

Deciding what is the best approach for delivering compliance assistance depends on a number of factors relevant to a particular country or region. The starting point, however, is deciding what it is that the initiative seeks to achieve, that is to say, identifying the objectives and the target audience. The answers to these issues will influence what type of approach is most suitable, the best means of delivery, how it can be funded and how to develop relationships and engage businesses. Designing an initiative which is 'fit for purpose' from the outset provides a higher chance of meeting the objectives. There also needs to be a consideration of what is already in place and how to fit a new initiative into the existing suite of measures.

An effective way of developing an initiative which will appeal to the target audience is to involve them in the design stage. This helps to ensure that the initiative actually meets the needs of the businesses it is targeting. It can also have the added benefit of raising awareness and fostering commitment to the initiative at an early stage. The NetRegs website in the UK (Case 6.5), for example, consulted businesses on the design and content of the site, and piloted sections of the website on one business sector before rolling the model out across other sectors. Throughout the development process, close interaction was maintained with businesses and trade associations to identify specific needs and trial website outputs, etc. The managers of the initiative continued to seek feedback from users and modify it accordingly. The extent to which businesses are willing to participate in the design of an initiative does of course depend on the existing level of engagement of businesses and the presence of existing pathways, such as trades unions or business organizations.

The design of an initiative should also avoid creating barriers to participation. This requires consideration of how the initiative is delivered, how businesses are engaged, how it is funded (such as whether businesses themselves have to contribute), the development of relationships and sharing of best practice, and monitoring and evaluation. Once established, initiatives tend to evolve over time. This should be an iterative process between those delivering a programme and those it intends to benefit.

Another important aspect of delivery is the duration of support. Greater benefits are achieved from longer-term relationships between businesses and a support initiative. This is due to the time taken to develop relationships and trust, to influence behavioural change, and to realize environmental outcomes. The impact of support is often not visible for some years, which of course has implications for monitoring and evaluating the achievements of compliance assistance programmes. It also has implications for funding, given that the duration of funding is often shorter than the time taken to deliver real outcomes.

In developing a compliance promotion initiative, the following questions should, therefore, be addressed:

- What is the identified need (its objectives)? – is there a particular environmental problem that needs to be addressed or non-compliance with certain requirements?
- What is the target audience? – is this problem the result of a certain sector's or region's behaviour, or is it a general business issue?
- What would be the best way of delivering the objectives, and by whom?
- What do businesses actually want or need?
- How can the services be delivered in a way that makes them accessible to the target community?
- Are there already initiatives in place with this objective and audience?
- What budget is available for the initiative, and where can funding be obtained?
- How can the initiative be developed and improved over time?

Responsibilities

There are a number of options for who actually delivers a compliance promotion initiative. The main choices are a public authority or body (such as an environmental enforcement authority), private organization, business or trade association, or a partnership approach involving two or more of these. Deciding what the most appropriate option is will depend on the type of initiative, and the strength of existing relationships with the target audience. Building on existing relationships and utilizing existing communication routes, such as business associations which are already well connected to the business community, can enhance levels of engagement and participation.

Public authorities or bodies tend to be best suited to delivering initiatives which are one-way and information based. The delivery of NetRegs by environmental enforcement authorities, working together, in the UK, for example (Case 6.5), adds credibility to the information being provided. For the more hands-on support initiatives, where the deliverer works directly with businesses over a period of time, the trend appears to be for an independent deliverer, such as a private organization or business association. Trust and confidentiality is an integral aspect of this, given that information shared between a business and deliverer can be sensitive – especially when dealing with environmental compliance. Partnership approaches can be successful, combining the respective expertise and merits of both public and independent organizations.

The way in which the delivery organization is structured can also be significant. Good management structures can help to improve the effectiveness of delivery and facilitate the sharing of best practice between advisors, and between networks of similar initiatives, regionally, nationally and internationally. Irrespective of whether it is a public, private or partnership approach, the lead actors need to have a high level of commitment and drive, in order to push the initiative forward. Expertise is also important for ensuring that the support provided meets the needs of businesses, and that the initiative is seen as credible and worthwhile.

Support can be delivered on a national or regional basis. The most effective initiatives for influencing behavioural change in businesses are to deliver support as close as possible to the target businesses. This has advantages in terms of the accessibility of support, tailoring advice to specific local issues, participation in local business networks and ease of developing relationships in the region. Thus the regional or local structures of an environmental enforcement authority should be utilized where possible to take account of this. However, it should be noted that certain types of initiatives can benefit from the efficiency gains of taking a national approach. This is most likely to be so for national information campaigns and information provision tools, such as websites.

It is also important to note that some support initiatives can take account of issues beyond those of environmental performance, such as being a wider support tool for businesses covering human resources, taxation, etc. Case 6.6 from Australia illustrates this. In such cases the responsibility for the initiative will depend upon the range of issues covered. It can, for example, be with an industry, or similar, ministry. Indeed, the importance attached to business support by government support bodies can result in them leading an environment-only support initiative, as demonstrated by Case 6.4 in Ireland.

Environmental enforcement authorities should seek engagement in a range of compliance support activities. In particular, it is beneficial for an authority to develop a strategic approach to compliance assistance. This should identify the compliance assistance needs, how these can be met and what should be the role of the environmental enforcement authority itself, the role of other bodies and how the environmental enforcement authority interacts with these. Importantly the strategy should identify clear links between compliance assistance and enforcement objectives. An example of such an approach is shown by Environment Canada (Case 6.1).

Funding

There are three main issues associated with funding:

- 1 whether the source of funding is public or private;
- 2 whether businesses pay for the support services that they receive;
- 3 the duration.

These issues are influenced by the type of services being delivered, the stage of development (such as whether it is a pilot, a new initiative or an ongoing initiative),

Case 6.1 *Compliance promotion in Canada*

In 2003 Environment Canada created a new Compliance Assurance Branch. The goals of the branch are to improve the planning of compliance promotion and enforcement efforts and the effectiveness of analysis and reporting of compliance activities. This branch determines priorities and fosters links between enforcement and compliance promotion. It promotes compliance by preparing and distributing guidelines and policies, consulting with industry associations and working groups, and preparing and presenting educational and training materials. Environment Canada and others are working to evaluate and improve the effectiveness of its compliance promotion activities. For example, Ontario is developing indicators that will help determine if its actions are having an impact. A pilot study on cattle access to water, conducted in a watershed in the Ontario region, indicated that compliance promotion and enforcement activities increased compliance by 20 per cent in the study area. It is also developing a database to track and monitor its compliance promotion activities, as it currently does for its enforcement activities.

and the context in which it is being delivered (i.e. the level of engagement of the business community in environmental compliance and performance improvements, availability of finance, etc.).

The source of funding depends on a number of factors:

- the type of services being delivered, in particular whether there is any competitive advantage for businesses who participate;
- who is delivering the initiative;
- the existing level of compliance with environmental legislation (therefore whether there is a need to initiate a significant behavioural change);
- the availability of public funding (e.g. is it only available in certain regions or for certain objectives?);
- the willingness and ability of other organizations to provide funding;
- the willingness and ability of businesses to contribute;
- the stage of development.

Public funding can be viewed as the most appropriate or desirable. However, there are problems with this, including:

- public funding is often only committed in the short term, so that it can be difficult to plan effectively;
- there can be administrative burdens, which can absorb time and resources;
- public funding may have conditions attached, such as the degree of flexibility permitted when setting objectives or actions or the ability to generate income from private sources.

The risk of over-dependence on public funding can also be a problem. Therefore, some initiatives seek alternative funding sources.

Information support

A major area for compliance assistance is the various forms of information support, through a variety of forms of communication. There is a wide range of ways in which information can be provided to businesses subject to regulation (modified from US EPA, 1992). These include:

- *Publications* – brochures, guidance documents, etc., developed for specific types of activities.
- *Websites* – containing different types of supporting information on regulations and how to comply with them.
- *Conferences and meetings* – enabling businesses to hear of new developments and allowing them to question regulators on compliance issues.
- *Telephone support* – allowing businesses easy access to information when they have compliance questions.
- *Technical assistance* – by specific assistance specialists, such as permitting or inspection officers.
- *Media* – providing news of developments, enforcement stories, etc.
- *Trade associations* – acting as a conduit of information to their members.
- *Universities* – support for educational courses can help inform future professionals of compliance issues.
- *Professional journals* – used for articles and announcements on regulatory compliance.

Before identifying the appropriate means of communication, decisions have to be made regarding what message should be communicated. The motivations of businesses to participate and the potential benefits to businesses of an initiative are good starting points for formulating a marketing message. For many businesses the motivation to participate in support programmes is to gain non-environmental benefits, such as cost savings on energy use or reduced risks from non-compliance. Thus the focus of the communication might be to stress such benefits.

The problem of communication is an important one in the use of compliance assistance tools. Where such tools are linked to a regulatory process, for example, if help is given when a permit is applied for, then one might expect to reach 100 per cent of the audience. However, where this is not linked to a regulatory activity (as for general web-based support), then reaching the target audience has to be a key element of the work programme of that initiative.

An important example of support is the cleaner production centres which have been established in a number of countries to encourage improved environmental performance. For example, cleaner production activities in Russia began in 1994. This includes a training programme, investment projects for cleaner production and preparing enterprises for adoption of environmental management systems

(ISO 14001 – International Organization for Standardization – environmental management standard). Over its first ten years of operation in Russia, 1600 engineers from 600 enterprises received training. Analysis of investments found that for every \$1 invested, \$2–5 of economic benefits resulted, as well as improved environmental outcomes (Sapozhnikova, 2005). In 2002 there were 20 cleaner production centres across Eastern Europe, Caucasus and Central Asia (EECCA) countries. However, some have had limited effect. Donor assistance has often focused on the implementation of isolated demonstration projects and few resources are made available for wider dissemination of the results (OECD, 2003a). As a result, there is very limited interest in approaches such as environmental management systems in EECCA countries. This demonstrates the importance of sufficient capacity (funding) to reach the target audience for a compliance assistance tool to be effective.

Further interesting information cases are web-based support tools which contain extensive regulatory information arranged in different ways (by regulation, activity, sector, etc.) to facilitate ease of understanding by businesses. To implement such tools effectively, it is important to note that:

- Significant financial and staff investment is required to establish such tools. Also, significant investment is required to maintain the tools (out-of-date information can be worse than useless because businesses incur unnecessary costs by following incorrect advice).
- A commitment is necessary to finish the job – complete information on half of the regulations affecting industry is of little use.
- It is important to have effective managers for such tools, given their complexity and resource use.
- Involvement with business is necessary at the start and during the entire process – it is useful to set up a tool for business communication that must identify the best mechanisms for communication.
- Simply creating the tool is not enough – there needs to be an effective and ongoing communication strategy to ensure that businesses use and benefit from it.
- Such tools can be supplemented by other activities (such as workshops) which can add significant value.
- The tools can be used by regulators in their wider dealings with industry, ensuring that they are clearly linked to all elements of regulatory activity.

Communication approaches are illustrated by the following cases:

- The US National Environmental Compliance Assistance Clearinghouse and compliance assistance centres which provide a wide range of information supported by various communication approaches (Case 6.2).
- The use of businesses that have good environmental performance to communicate with other businesses in Germany (Case 6.3).
- EnviroCenter in Ireland which combines a web-based information tool with other forms of communication with businesses (Case 6.4).

Case 6.2 *The US National Environmental Compliance Assistance Clearinghouse and compliance assistance centres*

The US Environmental Protection Agency (EPA) works with compliance assistance providers to develop and deliver compliance assistance resources such as websites, compliance guides, fact sheets and training materials (see www.epa.gov/compliance/assistance). One of these is the National Environmental Compliance Assistance Clearinghouse (<http://cfpub.epa.gov/clearinghouse>). It provides a guide to compliance information with quick access to compliance tools, contacts, and planned activities from across the EPA as well as other compliance assistance providers. It also allows the users to interact with the EPA and others through all of the interactive features on the homepage.

The Clearinghouse contains links to public and private compliance materials. The users can find information they are interested in by topic categories located on the homepage or through the search function. The website contains a series of directories, including a range of compliance assistance tools (checklists, electronic reporting, guidance documents, frequently asked questions, etc.) and information arranged by industry and government sectors. The sector information leads the user to compliance assistance centres for that sector.

Each compliance assistance centre delivers information in many forms: websites, telephone assistance lines, fax-back systems, and e-mail discussion groups. For example, the Paint and Coatings Resource Center (PCRC) is maintained by the National Center for Manufacturing Sciences. The PCRC has created an extensive array of information and tools, which includes both unique internal resources, and links to useful information found on the internet. The tools include educational features, reference materials, searchable databases and interactive resources.

- NetRegs in the UK which is a comprehensive support tool for regulatory support to small and medium-sized enterprises (SMEs) (Case 6.5). This has undertaken subsequent development in the light of surveying business needs.
- A range of web-based support tools in Australia combining environment and other forms of business support (Case 6.6).
- Web-based support systems in Japan (Case 6.7), also including other business support requirements.

Networking

Business support networks can also be effective as a tool for compliance promotion. The network approach became popular in Nordic countries, for example, on the

Case 6.3 *Getting companies to assist other companies in Germany*

The Ministry of the Environment of Baden-Württemberg, Germany, organized an information day in 2005 which informed companies of the steps necessary to comply with permitting under the EU's Integrated Pollution Prevention and Control (IPPC) Directive (see Chapter 3). This informed operators of IPPC installations about the basic requirements. Three operators of IPPC installations gave examples of permitting procedures. The operators and representatives of the permitting authorities gave advice as to how permitting procedures could be accelerated and what pre-conditions had to be met on the part of the operators in order to finalize the procedure in a satisfactory manner both for the operator and the permitting authority. Furthermore, a comprehensive paper answering essential questions concerning the permitting procedure for IPPC installations was devised by the Ministry and distributed to the participants.

basis that people tend to do business with people they know and trust. Networking encourages such benefits as the emergence of ideas, sharing of knowledge, benchmarking and increased bargaining power.

There are several ways in which networks can contribute to a successful initiative. Networks can be used to distribute knowledge. They can also be used to ensure a greater engagement of parties, thereby increasing the chances of a sustainable impact. A network may also be created as a starting point for understanding the needs of businesses and to further develop a programme. In addition, the network itself can be part of a support programme, for instance, participation in the programme can put businesses in contact with companies that share their problems/interests, not only in the area of the environment but in other areas as well.

Case 6.4 *An integrated system of compliance assistance in Ireland*

In Ireland 'EnviroCentre' is a free and regularly updated environmental information portal from Enterprise Ireland, designed specifically for Irish industry to enhance environmental awareness, with particular emphasis on small and medium-sized enterprises (SMEs). It contains a wide range of information on environmental regulation in Ireland, provides guidance for different sectors, and information on events. Information from all relevant stakeholders is customized to the needs of Irish industry. Support is also given to SMEs in person through information, advice, networking, site visits and awareness raising; through on-line news, legal guides, case examples, best practice guides; and through financial support for environmental management systems and ecodesign.

Case 6.5 *An extensive web-support tool for assistance to SMEs in the UK*

In the UK 'NetRegs' is a website which aims to help small and medium-sized enterprises (SMEs) in the UK to understand the complex environmental regulations that can affect them (www.netregs.gov.uk). The site provides guidance on how to comply with environmental law as well as advice on good environmental practice. The site comprises four main areas:

- sector-specific guidelines for a large number of different sectors;
- management guidelines covering different aspects of business operation from raw material inputs through to wastes (e.g. on energy efficiency);
- current legislation detailing regulations in all regions of the UK;
- future legislation, including consultations.

The site also provides links to many additional resources from industry, government, literature, etc. In particular it provides links to application forms and guidance. The site is being developed to be personalized so that the user is recognized and, upon a repeat visit, is alerted to any new regulatory issues that might affect their particular activity.

NetRegs has required significant resources to construct. About £25k (€33k) was spent on the very first pilot to test the concept and build a few pages for one sector. Then the initial cost of the main project as funded by Central Government was £3.5 million over three years (about €5 million). However about £1m (€1.5m) of this was for marketing and communications. Writing the content was the most costly element in terms of staff time.

The initiative has been well received by industry. Extensive surveys of users have demonstrated the utility of the initiative. Although it has been difficult to identify quantifiable benefits, there has been continuous growth in the number of unique visitors to the site.

Two examples of networking are provided to illustrate this approach:

- The Green Networks and Growth Groups networking in Denmark (Case 6.8) is an example of bringing businesses together based around environmental management and focusing on information exchange and training.
- The Finnish–Estonian Environmental Networking Prognosis project (Case 6.9) brings businesses together in Finland and Estonia to examine business opportunities based on environmental services.

Case 6.6 *IT tools to help businesses in Australia*

Australia has adopted various approaches to compliance assistance. These include two information technology (IT) tools. The first is a general information tool for businesses which includes information on environmental regulation. The second is a more general environmental information tool which also includes business information.

Australian Government's Business Entry Point (www.business.gov.au)

This site has been developed to provide an accessible information source to a range of government services for businesses. It aims to make it easier for business to find government information, to complete compliance processes and to identify suitable support or assistance programmes. The site covers resources from Commonwealth, State and Territory government agencies and a number of local governments and industry associations. The site has four sub-headings under 'environment', which may have further links:

- hazardous waste;
- waste management: minimizing the hazards and costs of waste disposal;
- environmental impact (of a development or change in a business);
- hazardous materials.

EnviroEd (including Networks and Service Directories)

(www.environment.gov.au/education/aeen/industry.html)

EnviroEd is a national network of environmental education and information programmes, materials and publications for a wide range of interests, including business. There is a specific industry page which is a one-stop shop for useful environmental links, including many forms of compliance assistance:

- stakeholders such as the Plastics and Chemicals Industries Association, and the Water Services Association of Australia;
- Commonwealth Government Initiatives such as the National Packaging Covenant, the WasteWise Construction Program and Eco-efficiency and Cleaner Production, a page providing tools, resources, links and case studies to help companies implement eco-efficiency and cleaner production practices;
- companies and industry associations involved in Environmental Management, including Australia's Environment Industry Directory;
- environmental technologies, including the Australian Cooperative Research Centre for Renewable Energy and the Sustainable Energy Development Authority;
- national legislation;
- networks and service directories, including the Australian Best Practice Environmental Management in Mining Program, the Australian Environmental Impact Assessment Network, the Australian Waste Database and EnviroNet Australia – Solutions to Australian Industry's Environment Protection Challenges.

Case 6.7 Measures for compliance assistance in Japan

There are a number of initiatives which provide some forms of compliance assistance for companies:

Ministry of Environment website (www.env.go.jp): This website offers a wide range of information including the latest regulatory developments (administrative and legislative) and forthcoming developments. It also allows enterprises to undertake administrative procedures on-line where these are addressed at national level.

Environmental Information and Communication Network (www.eic.or.jp): This network was established to distribute environmental information from government bodies and other organizations. It is primarily aimed at public communication. However, it is also a useful source of information for businesses.

The conference for supporting revitalization of SMEs: The conference for supporting the revitalization of small and medium-sized enterprises (SMEs), which has experts and advisors on the revitalization of SMEs, has been established in each Prefecture (region). These conferences are sources of experts providing advice on the direction of SME growth and on issues affecting SMEs. This, naturally, includes environmental regulation.

One-stop shop advice centres: The Japanese Government has established support centres that provide one-stop shop assistance services with funds and non-material areas such as human resources, information, and technologies, in order to meet the diverse needs of companies on each of the national, prefectural and local levels. The support centres integrate and set up networks of local public entities and various existing private support organizations to offer information and advice on policy measures, as well as assisting with business and technological problems of companies in one place. These centres work at three levels:

- **SME/Venture Business Support Centres**: These Centres provide financial and technical assistance and high-level consulting services by experienced experts in management, finance and legal matters. The Centre also supports the Prefectural SME Support Centres and the Regional SME Support Centres as the core of the SME support system in regional blocks.
- **Prefectural SME Support Centres**: These Centres, the core of the system of prefectural governments for support of SMEs under 'the Small and Medium Enterprise Support Law', provide advice, implement projects for evaluating business feasibility, provide experts and information to secure human resources, technology, and information in response to the various needs of those who plan to start up businesses and SMEs. The Prefectural SME Support Centres hold seminars for SMEs to promote knowledge and education concerning energy conservation and with environmental issues such as regulatory compliance.
- **Regional SME Support Centres**. These Centres are established in each broader municipal area of the country to provide local consultation services and various types of information in a way that is familiar and easy to use for those who plan to start up a business and to help small enterprises with issues such as business innovation.

Case 6.8 *Green Networks/Growth Groups, Denmark*

Green Networks/Growth Groups in Denmark are voluntary cooperative initiatives at the regional level between private companies, public authorities and interested third parties that aim to improve the environmental performance of enterprises. A key tool to achieve this is a simplified environmental management system, which the participating companies are expected to implement, and which results in an environmental statement. The first Green Network, whose current membership is about 250, was set up in the Velje region. Networks have also been established in other parts of Denmark. Practical work including training activities is carried out in 'Growth Groups' consisting of 10–15 companies from a single geographical area, their environmental authorities and one or two external experts. An important feature of these Groups is the cooperation between enterprises and environmental authorities, and the active support provided by these authorities.

Case 6.9 *Finnish–Estonian Environmental Networking*

The Finnish–Estonian Environmental Networking Prognosis project is aimed at expanding the environmental businesses of Southern Finland into Estonia in order to create new business opportunities, build more competitive project consortia and target joint projects, also in third markets. The long-term goal is to improve the state of the environment in the Gulf of Finland region. Another aim is to identify key umbrella and expert organizations to form a network of networks. The work within the project is conducted in 'mini-clusters' of businesses that include the following:

- clean energy (including bioenergy and emissions trading);
- waste management and waste-to-energy (including recycling of construction and packaging waste);
- water resources management (including network construction and rehabilitation and rural water supply);

Promoting success and failure

An important area for compliance promotion is the promotion of compliance information by environmental enforcement authorities. As noted in Chapters 4 and 5 information on compliance and resulting sanctions, if appropriate, is made available to the public. However, little of this information becomes widely known. It is, therefore, useful for environmental enforcement authorities to publicize

compliance results. Chapter 5 illustrated some examples of enforcement action which has been promoted.

Examples of good performance should be promoted to help stimulate similar behaviour in others. Examples of enforcement action help to demonstrate to other businesses that non-compliance will be taken seriously. Such approaches are used in many different contexts around the world. Examples in transition or developing economies, including pollutant emissions registers, and performance rating and information disclosure schemes, show that the impacts of such schemes are positive and the costs involved in designing and applying these schemes are not excessively high. Provision of information about enterprises' environmental impacts can be a factor in investment decisions and can lead the public to exert stronger pressures on enterprises for pollution reduction efforts.

Two examples are provided here. The first is the annual performance review in England and Wales (Case 6.10). This examines the good and bad practice of businesses in a range of sectors, not only highlighting good and bad practice, but, at the same time, setting the information in its overall context. The second example is the Green Watch programme in China (Case 6.11). This was developed as a simple-to-understand performance communication tool and it has proved very effective.

Case 6.10 *Annual review of environmental performance in England and Wales*

The Environment Agency publishes an annual 'Spotlight on Business' report. This provides an overview of business performance on environmental issues, with details of how companies compare, including best performers and those with poor compliance. This information is placed in the context of a general assessment of industrial sectors. An example of information in the report can be illustrated by reference to the chemicals sector. This included the following:

'The chemical industry's ability to comply with environmental requirements improved in 2005, with 42 per cent of the sites achieving band A for operator environmental performance compared to 39 per cent in 2004. Some sites improved including: Air Products PLC's Bardon Acetylene Plant in Leicestershire, AP Chemicals Ltd's (now called Chemical UK Ltd) Station Road site in Staffordshire. Once again, no sites were rated a poor E for operator performance... Seven companies were fined large amounts for environmental offences last year, one of these, Robinson Brothers Ltd was the third biggest fine of 2005.' (EA, 2006)

The ratings of A to E are based on the Environment Agency's risk-based regulatory system, Operator Pollution Risk Appraisal (OPRA) (see Chapter 1).

Case 6.11 *Easy communication of compliance to the public – China’s Green Watch Programme*

In 1998 the Chinese State Environmental Protection Agency (SEPA) and the World Bank jointly initiated the Green Watch Programme. It began as a pilot in Zhenjiang City (Jiangsu Province) and Hohhot City (Inner Mongolia). The aim is to provide a simple rating system of environmental compliance and performance. The colour coding is set out in the table below. Note that there are different levels of compliance, thus the system stimulates companies to go beyond strict legal compliance.

Level	Performance criteria
Black	Greatly exceeds pollutant emission standards set by SEPA and causes serious damage
Red	Company efforts do not meet emission standards set by SEPA, or have a record of serious pollution incidents
Yellow	Meets emission standards set by SEPA, but fails to meet local Environmental Protection Bureau (EPB) standards
Blue	Exceeds all emission standards set by SEPA and the local EPB and demonstrates superior environmental management
Green	Meets all requirements for Blue and meets requirements for ISO 14001 (International Organization for Standardization – environmental management standard) and extensive use of clean technology

Following the pilots SEPA (2003) stated that it wanted to expand incentives for compliance. Furthermore, the Green Watch Programme has been expanded to other cities. The Green Watch Programme provides a very simple means of communication with the public. They are able to see the relative performance of different companies, and managers have reacted to take action to an improved level of performance.

Financial incentives

Compliance, or other forms of improved environmental performance, can also be stimulated by a range of other incentives. The most important class of such incentives are financial tools, for example, financial support to help improve performance, the taxation of undesirable activities or tax incentives for desirable activities.

In many cases financial incentives are not directed through an environmental enforcement authority. For example, taxation or tax relief is usually the responsibility

of a finance ministry, or similar (e.g. the landfill tax in the UK which incentivizes waste reduction by businesses). An environmental enforcement authority would be involved in discussions over the nature of the issues to be affected by these financial tools and would include information on these in their compliance promotion activities. However, they would not implement the tools themselves. Similarly, financial assistance is not usually undertaken by an environmental enforcement authority. Such assistance might come directly from a ministry or, more commonly, from an environmental or ecological fund. The fund can be supported in various ways, including the receipt of fees or fines from enforcement activity. It is beneficial if the environmental enforcement authority is involved in discussions on what funding is appropriate, however, this is not always the case.

One type of environmental taxation is natural resource (or pollution) fees. These can be used to incentivize reductions in emissions (including beyond compliance). They have commonly been used in EECCA countries. For example, in Russia activities pay 'ecological fees' for their emissions of pollutants to different media, but in order to stimulate better environmental performance, activities that have been considered to implement Best Available Techniques (BAT) are exempt from ecological fees. Activities also pay 'environmental fines' for non-compliance. However, these have limited effectiveness and for many companies it is more cost-effective to pay these fines rather than invest in corrective action (Sapozhnikova, 2005). This is because the level of the fees is too low. This is a common problem across many EECCA countries (Farmer, 2000). Thus, unless they are reformed, they do not help in compliance promotion.

Economic incentives can be particularly important to motivate SMEs. Although environmental compliance and environmental management have the potential to bring economic benefits to companies (for instance, through resource and energy savings, and business opportunities) many SMEs do not have the resources to invest in these kind of activities and/or they cannot motivate investments as future economic benefits are unclear.

Three examples of these approaches are given:

- In the Netherlands tax incentives are available to companies that invest in improved environmental performance and two examples are given in Case 6.12.
- In Denmark subsidies are available to improve cleaner production (Case 6.13).
- A programme in Hungary (Case 6.14) has been established to provide credit for companies undertaking environmental investment.

Closely related to the economic incentives described above is support for the development and promotion of environmental products and services. This includes initiatives targeted at environmental technology companies, the creation of declarations and certificates which raise the profile of the company and offer increased sales opportunities, and public procurement which favours companies with environmental management systems. These approaches target companies producing products and services to high environmental standards and their main

Case 6.12 Tax Incentives – VAMIL, EIA/MIA, the Netherlands

VAMIL (*willekeurige afschrijving milieu investering*), EIA/MIA (*milieu-investeringsaftrek*) in the Netherlands is a tax incentive by the Ministry of Finance and Department of Environmental Investments at VROM (the Ministry of Environment). VAMIL offers accelerated depreciation on environmental investments from a predetermined list and enables companies to determine the rate of depreciation for a technology on the list. This leads to savings of 3–8 per cent on the investment made. EIA/MIA enables partial deduction of environmental investment from tax. The percentage of the investment that can be deducted is explicitly set out in the Environment List. The objective is to improve environmental performance through the adoption of more environmentally sound investments, for examples, in cleaner technology.

Case 6.13 Environmental Competence Schemes, Denmark

Environmental Competence Schemes were initiated by the Danish Environment Protection Agency (EPA) to promote environmental management in industry, in particular to achieve long-term capacity building. Since the introduction of the schemes in 1998, around 700 enterprises have received direct subsidies from the Government to prepare them to make the transition to an environmental management system. The schemes are part of the wider ‘Cleaner Products Programme’ and the Government’s overall environmental/sustainable development policy goals. The schemes have successfully contributed to raising awareness within companies and have funded employee recruitment and training. The success of the schemes has been their ability to demonstrate the use and benefits of tools such as environmental management systems and life-cycle analysis, with the support of dedicated environmental professionals within the firms involved. The schemes’ simplicity (grant applications are straightforward) and ease of entry (procedures for approving grants are quick and not overly bureaucratic) accounts for their ability to attract businesses.

Case 6.14 A Hungarian credit programme

‘For a Successful Hungary’ is a credit programme for enterprise development, which aims to improve environmental performance by fostering investments promoting infrastructure and technology development. The programme provides loans on preferential terms to companies for environmental investments, and complementary funding in addition to the funding programmes of the National Development Plan. Participants need to make a contribution of at least 25 per cent to the investment. In 2006 other environmental funding programmes were also merged into this programme.

Case 6.15 Sitra – venture capital investment in Finland

Sitra Venture capital investment is an independent public foundation under the supervision of the Finnish Parliament and is part of the Finnish Environmental Programme 2005–2007. The Environmental Programme surveys Finnish small and medium-sized enterprises (SMEs) for useful mini business clusters and identifies potential networks of top companies and system suppliers. The programme is assessing new investment opportunities that would have social and environmental significance and the main aim is to improve business opportunities of SMEs in the environmental area. The future aim of the programme is to create an environmental investment portfolio to enter into international markets by building international cooperation networks with actors in other countries.

activity is focused on strengthening those companies' competitive positions in the market place. Case 6.15 illustrates this type of approach in Finland.

Conclusions

There are various approaches that can be taken to assist or incentivize companies to comply with environmental regulation (beyond the threat of enforcement described in Chapter 5) and to achieve wider environmental improvements. Some of these will be an initiative of an environmental enforcement authority and can be directed by it. In other cases other public or private bodies might initiate and run the activity. However, the environmental enforcement authority should be involved in identifying key objectives, etc., for these initiatives.

While there are many examples of such initiatives around the world, it is important to ensure that any new initiative is developed for the particular context in which it will operate. The cultural context of businesses is critical. In some countries they will be willing to participate and listen, but in other contexts communication is difficult. For this reason any initiative must be clear not only in its objectives, but also in the practicality of its methods.

Compliance assistance and incentives are able to tackle issues which are otherwise beyond the resources of environmental enforcement authorities. Even the best funded authorities can benefit and even where there is confidence in the effectiveness of enforcement capacity, compliance assistance can encourage wider environment performance enhancement of businesses beyond compliance. In countries where resources are limited some forms of compliance assistance can be cost-effective. However, here some basic incentives can be especially effective, such as promoting examples of good practice and enforcement action. Financial incentives can also be highly effective where the costs of cleaner technology are prohibitive in relation to the economic context in which companies operate.

Various forms of assistance and incentives are, therefore, part of the overall 'toolkit' for improving environmental performance. This chapter concludes with a checklist for environmental enforcement authorities regarding the development, use and engagement in these approaches.

Checklist

- 1 Does the compliance and enforcement strategy of the environmental enforcement authority include objectives for compliance assistance?
- 2 Are the compliance problems of businesses clearly identified?
- 3 Are the reasons for compliance problems identified?
- 4 Has the environmental enforcement authority identified the range of compliance assistance tools available and those best able to tackle the compliance problems?
- 5 Where tools have to be developed and/or administered by bodies other than the environmental enforcement authority, has it discussed these in detail with these bodies?
- 6 Has consideration been given to administering compliance assistance tools through existing or new structures and through public or private bodies?
- 7 Has an assessment been made of the level of assistance required to meet a sufficient target audience to make the tool worth developing?
- 8 Have funding options been fully considered, including whether businesses should (and will) contribute towards it?
- 9 Will funds be secured for developing, initiating and sustaining the tool for a sufficient period of time?
- 10 Have businesses been actively engaged in designing the tool to meet their communication needs?
- 11 Are sufficient staff (technical, managerial, etc.) assigned to implement the tool?
- 12 Have systems been put in place to review delivery mechanisms, outcomes and effectiveness and is a process available to modify the tool accordingly?
- 13 Are the tools fully integrated, where appropriate, into communication and other processes of the permitting and enforcement activities of the environmental enforcement authority?

Financing Environmental Enforcement Authorities

Introduction

The previous chapters have demonstrated the wide range of activities that environmental enforcement authorities undertake. These activities require resources. Environmental enforcement authorities, therefore, need adequate financing to deliver their objectives (issues of developing personnel capacity are addressed in Chapter 8).

There is a wide range of approaches to the financing of environmental enforcement authorities and how they tackle the problems of resource limitation. This is the subject of this short chapter. It begins by examining some principles that underpin the funding of environmental enforcement authorities. It then examines the various patterns of funding in different authorities, examining different funding sources. This is further considered by addressing the issue of tackling budget short-falls. Other aspects of financial management, such as budget management and financial auditing, are addressed in the wider management context in Chapter 8, as they should not be separated from wider strategic and specific management issues. The present chapter draws on the recent survey of the financing of environmental enforcement authorities undertaken by Ten Brink and Farmer (2005a).

Principles of financing

There are a number of principles which affect the way that environmental enforcement authorities receive funding and use their resources. These are viewed in different ways across the world.

Polluter and user pays principles

The polluter pays principle (PPP) is used in many countries to assign to the polluter the responsibility for addressing pollution (OECD, 1989, 2003d). The principle has been used to require the polluter to bear the cost of its own measures to prevent and control pollution to the level established in regulation so as to avoid government financing (although subsidies are appropriate in some instances as illustrated

in Chapter 6). However, it has also been argued that the costs of environmental enforcement by public authorities should be covered by the State budgets. As taxes, charges, etc., have been introduced, the principle has evolved towards encompassing all pollution-related expenditure, such as justifying requirements for self-monitoring (Chapter 5).

Some countries interpret PPP only as a responsibility of polluters to pay for pollution prevention measures and impacts that they have on the environment. Others (e.g. Australia, Ireland and the UK) interpret the principle in a way that polluters should also pay for the cost of the regulation that is needed to ensure that the environment is protected. This, therefore, affects approaches to funding.

Several countries also apply the 'user pays principle'. This requires the user of a natural resource to bear the cost of the resources it uses, including the utilization of environmental media for pollution releases.

Principles of full cost recovery and prevention of conflicts of interest

In some countries governments may require that the costs of regulation are fully recovered from those who are regulated and/or from those who directly benefit from regulation. This would include activities such as permitting, monitoring, inspection and enforcement. For example, the UK is one of the most advanced in moving towards full cost recovery in the context of the regulatory framework. It attempts not only to recover the direct cost of permitting, monitoring/laboratory work, inspection, and enforcement, but also examines recovering the cost of dialogue with industry and compliance guidance materials.

However, there are countries that have opted not to impose cost recovery schemes for inspection charges, for example, on the grounds that it is not appropriate to receive the payments from those who are inspected. In this case the principle of prevention of conflict of interest is effectively followed. The Netherlands, for example, considers that permitting and inspection are part of the general costs of administration and these services should, therefore, be rendered to the public, supported by general taxation (derived from the public and business).

In Eastern Europe, Caucasus and Central Asia (EECCA) countries there can be problems with the principle of prevention of conflicts of interest. For example, in Belarus bonuses may be paid to inspectors from revenues collected through fines for non-compliance. In some countries, a greater focus on the implementation of this principle has recently been put under the pressure of International Financing Institutions (e.g. in Ukraine) (OECD, 2004a). Interestingly, some EECCA countries have adopted the restrictions of financial options as a mechanism to tackle corruption. For example, the law on financing sources for governmental authorities of Ukraine requires the salaries of public administration staff to be provided by the State budget. In Armenia, budget discipline has been increased after the Government banned the inspectorate's right to establish extra-budgetary accounts. Conflict of interest is even more clearly seen in China (Chapter 2; OECD 2005a) where local environmental administrations are reliant on the collection of non-compliance fees for their survival and some have sought to impose unjustifiably strict emission limits to ensure this income stream.

Using the full cost recovery principle, the calculation of administrative fees (e.g. for a permit) should be based on the assessment of all costs of providing the service, that is, they should cover the required staff time, capital investment and operational costs (OECD, 1997). Two approaches are used to calculate costings:

- Activity-based costing, where the administrative costs are calculated on a case-by-case basis.
- Assessment of the overall administrative costs of the specific regulatory activity (e.g. permitting) and dividing this between the affected installations, either equally or in some form of banding (by sector, size or complexity).

The former is usually time consuming to administer. It can also lead to concerns over the amount of time that the regulator spends on any individual installation. The approach can be adjusted in different ways, by using, for example, different banding approaches. The calculation of fees in the UK, for example, is distributed according to a risk-based banding approach under the Operator Pollution Risk Appraisal (OPRA) system (see Chapter 1). The approach of having average charges is easier to administer, but there may be concerns that installations requiring less regulatory effort are unfairly treated.

The principles of precaution and prevention are also important not only in directing individual permitting decisions, but also in directing strategic programmes by regulators, such as in compliance promotion (Chapter 6).

The selection, interpretation, and/or extent of application of these principles varies between different countries. The principles of polluter/user pays, full cost recovery, prevention of conflict of interest, are increasingly being implemented. These allow environmental enforcement authorities to link funding and better performance, ensure certainty of funding, and increase accountability and transparency.

Funding sources

Environmental enforcement authorities receive funding from different sources, including the State budget, revenues from fees and services and penalties for non-compliance.

State budgets

The work of environmental enforcement authorities is often considered as a public service. Therefore, the most common funding sources are the State budget, which collects revenue from general taxation. This spreads costs among taxpayers. In industrialized countries this source is relatively predictable, although it is susceptible to changing political priorities. Economic trends can have important consequences, however, especially in developing countries. For example, when the Environmental Protection Agency (EPA) was established in Nigeria in 1991 the Government planned specified start-up funds of \$80 million for the first two years. However, global recession impacted on this and the EPA had to seek bilateral

assistance from donors (Adegoroye, 1994). Governments can also receive revenue from environmental taxes and charges, although sometimes these are received by the environmental enforcement authority.

Environmental taxes and charges

In some cases environmental taxes and charges can be used to support environmental enforcement authorities. These funds are dedicated to the authority, but can be less predictable and may therefore affect the stability of budgets. This revenue can conflict with the principle of prevention of conflict of interest as it links pollution with revenue (more pollution – more revenue). It also brings into question the way the charges are established – whether they aim to stimulate higher environmental performance or maximize funding for environmental enforcement authorities. Fines from non-compliance in general should not be used for funding authorities, not least as they can provide perverse incentives for inspectors to impose such penalties more often and they are not a stable revenue base.

Administrative fees and services

Environmental enforcement authorities can charge fees for services provided, such as permitting or inspection. The fees can be an upfront fee, a permit renewal fee, permit variation fees, annual fees, permit transfer fees and surrender fees. Other services, such as sampling, monitoring and laboratory analyses, can also be charged for.

Recovery of remediation measures, voluntary contributions and other sources

It is common for the costs of action taken by the authorities to remedy environmental damage from activities to be recovered from those responsible; that is to say, these actions are taken at the offender's expense. Environment enforcement authorities can ask for insurance company or bank guarantees in the permit so that, should an offence be committed that the offender does not rectify, the authority can take action by making use of private guaranteed funds (see Chapter 5). If there is no such guarantee, the authority may file a civil suit to recover any costs of remediation.

In some countries voluntary earmarked contributions are also used to finance enforcement activity. These can include grants received from private or public sources, such as bilateral aid, as indicated earlier for Nigeria. These sources often have conditions attached concerning their purposes and management. Such sources are often used for items that may be vital but are less often recognized as such, for example, training. Other resources for authorities can be non-financial, such as training through government exchange programmes.

Patterns in funding and budget allocation

Ten Brink and Farmer (2005b) identified different types of funding patterns (Table 7.1):

- Countries that have all (or almost all) of their revenue provided by government grants, such as Belgium, the Netherlands and the US. This does not exclude the existence of other sources, but the environmental enforcement authority does not benefit from them directly. For example, the US EPA's budget (around \$475 million) comes fully from the Government. Revenues raised from activities (e.g. fines/penalties) must, by law, go to the US Treasury (in 2002, EPA fines and penalties amounted to around \$88 million).
- Countries that receive some of their revenue directly through permit fees or inspection charges, such as the Czech Republic, Denmark, Sweden and the UK.
- Countries for which there are other sources. This group includes Bulgaria and Poland where compliance assurance programmes are supported financially by earmarked environmental funds supporting the purchase of monitoring equipment, etc., but not general operational costs.

Table 7.1 provides some examples of the preparation of funding sources for seven European countries.

Table 7.1 *Funding sources for some environmental enforcement authorities (percentage)*

Sources	Belgium	Denmark	Finland	Ireland	Norway	Poland	UK
Government funds	60.6	80	60	69	91	69	31
Administrative fees	13	20	35	29.5	7	0.50	70
Pollution or natural resource fees	—	—	1	—	—	—	—
Non-compliance fees/fines/penalties	1.4	—	—	—	—	9	0.25
Other	25	—	4	1.3	2	22	—

Source: Ten Brink and Farmer, 2005b

The main financing sources for environmental enforcement agencies in the EECCA region are (OECD, 2004a):

- grants from state budget and regional/local budgets;
- provision of services (e.g. laboratory analysis, or advice and development of applications for permits, in particular calculation of emission limit values);
- budgetary or extra-budgetary environmental funds;
- permit fees.

Some countries have reduced the fees for companies that have obtained certified environmental management systems. Such a reduction does not have a major effect on income streams, and in some cases it seems to be warranted by the reduction

in time input by the regulator. However, in some cases there are no regulator time savings, as there is more paperwork, and the loss of revenue hinders full cost recovery, although it is justified in that it rewards good environmental practice.

Budgets are allocated in various ways. These depend largely on the range of duties and responsibilities that an individual environmental enforcement authority has (see Chapter 2). Most of the budget goes towards salaries, demonstrating the importance of the personnel resource of these institutions. Other budget lines will include offices and equipment.

This variety of approaches is illustrated by the following cases:

- Details of income and budget allocation for the South Australia EPA (Case 7.1) indicating a variety of sources, including fees. Case 7.2 on the same institution discusses the effect of raising fees for budgetary purposes and the limitations of this approach.

Case 7.1 *Income sources and budget allocation for the South Australia Environmental Protection Agency*

In South Australia, the Environmental Protection Agency's (EPA's) sources of funds consist of government monies together with income derived primarily from fees, levies and licences. Fees and charges (in AUS\$) for the reporting period (ending 30 June 2003) comprised:

Fees and licences	4,725,000	42%
Waste levies	6,131,000	54%
Fines and penalties	139,000	1%
Enquiries	275,000	2%
Sale of products and other services	77,000	1%
Total	11,347,000	

The Statement of Financial Performance for the EPA (for the year ending 30 June 2003) showed that expenses were thus allocated:

Budget line	Expenditure (AUS\$)	Share %
Salaries and wages and other employee-related expenses	13,768,000	58
Goods and services	7,669,000	32
Grants and contributions	1,395,000	6
Depreciation and amortization	923,000	4
Other expenses	29,000	0.1
Total expenses from ordinary activities	23,784,000	

Case 7.2 Developing fees in South Australia

In September 2002 the South Australian Government decided to introduce significant reforms to licensing arrangements (South Australia EPA, 2003). These reforms included a doubling of fees phased in over four years to meet the full cost of administering licences including inspections of licensed facilities. In 2005–2006, average annual licence fees were approximately AUS\$2900, although this is distorted by large licensees. Even after the full phase-in, licence fees in South Australia will still be substantially lower than fees charged in New South Wales, Victoria and Western Australia, where average annual fees currently range from about \$4450 to \$15,200 and are set to increase significantly over the next few years.

The EPA is developing a system of accredited licences whereby a licensee who has achieved a high level of environmental performance and can demonstrate an ongoing capacity and commitment to maintaining and improving environmental performance will be able to obtain a 50 per cent reduction in annual licence fees. To obtain an accredited licence an operator will be required to have an environmental management system (including an environmental policy and objectives), an environmental audit and compliance programme approved by the EPA.

- The Irish EPA income and budget allocation, also receiving income from fees and other sources (Case 7.3).
- The Environment Agency of England and Wales income and budget allocation (Case 7.4).
- France, where, although fees are collected, environmental enforcement is entirely from the state budget (Case 7.5).
- Poland, where the budget sources have changed and environment funds play a role (Case 7.6).
- The budgetary sources, allocation and problems of insufficient resources in Ghana (Case 7.7).

Dealing with a budget short-fall

Preparing robust budget proposals is the first step towards protecting the budget. This must show exactly what the objectives are and what resources are required. This, therefore, makes it clear that if there are cuts, certain objectives will not be met, such as key environmental benefits. Budgetary planning is addressed in Chapter 8, as is how funds can be reallocated, because this too is linked to management processes.

Case 7.3 Income sources and budget allocation for the Environmental Protection Agency, Ireland

In Ireland, the Environmental Protection Agency (EPA) receives funding from the following sources as indicated for 2001 and 2002 (EPA, 2003). For Integrated Pollution Control (IPC), €444,863 was derived from the licensing activity and €3,066,166 from inspection and enforcement charges, etc. The relative sources of different incomes streams are given below.

Source	2002		2001	
	EUR	%	EUR	%
Central Government grants	16,920,734	69.2	18,161,400	70.3
Surveys, advisory services and tests	19,813	0.1	52,115	0.2
Income from regional laboratories	1,570,215	6.4	1,403,266	5.4
Licensing activities (Integrated Pollution Control) – fees paid by operators	3,511,029	14.4	3,574,898	13.8
Licensing activities (waste) – fees paid by operators	2,144,786	8.8	1,735,664	6.7
PHARE project income	114,531	0.5	586,471	2.3
Other	183,821	0.8	311,747	1.2
Total	24,464,929	100.0	25,825,561	100.0

Note: PHARE, Poland and Hungary Assistance for Restructuring of their Economies (EU funding for projects in candidate countries).

From its budget, €11 million is allocated for salaries, €7 million is for research and €5.4 million is for IPC regulation. Of these €5.4 million, about €3.9 million is recovered by way of cost recovery charges to operators for permits and for subsequent monitoring and compliance checking. Application fees for permits were set in licensing regulations and have been fixed since 1994. Other annual licence maintenance charges are set by the EPA Board and are subject to appeal, by operators, to that Board. Residual funding of EPA activities is by Government, from general taxation. The allocation of charges for monitoring and compliance checking of IPC processes is decided on a priority basis, between industry sectors, by inspectors, but ultimately the final charges are set by the Board.

Provision is made in law for the Agency to recover regulatory costs through charges to operators in addition to permit application fees. These costs, including salary costs as a daily rate, are calculated using a standardized spreadsheet covering all regulatory activities. It is reviewed annually by inspectors for each installation regulated by the EPA and is linked to a major database holding details of these installations.

In addition, the EPA requires certain operators to maintain or guarantee availability of funds for dealing with environmental liabilities, including consequences of accidents, plant decommissioning and the management of long-term 'residuals', such as contaminated land or waste disposal facilities. The scale of necessary funds is judged by external specialist consultants whose findings are assessed by the EPA and published. Prosecution costs are also recovered, where possible, as are special costs arising, for example, from action taken by the EPA to remedy environmental harm caused by any identifiable party (IMPEL Review Initiative, 2002a).

Case 7.4 Funding sources for the Environment Agency of England and Wales

The Environment Agency's budget in 2005–2006 was £1 billion, an increase from £860 million in 2004–2005. Approximately two-thirds of this came from government funding with the remaining amount raised directly through various charging schemes, including the regulation of business activities. The Agency's functions relating to environmental protection, fisheries and navigation are funded mainly from charges for licences, supplemented by government funds. Expenditure on water resources is funded entirely through charges for water abstraction licences. Flood defence levies are raised on local authorities to fund flood defence activities.

The Agency's sources of income are as follows (House of Commons, 2006) (totals do not always reflect totality of individual items in original sources):

<i>Income streams</i>	<i>1996–1997 (£m)</i>	<i>2001–2002 (£m)</i>	<i>2005–2006 (£m)</i>
Environmental protection	89	113	149
Abstraction licences (water resources)	87	100	118
Fisheries income	13	15	19
Navigation income	4	4	4
Flood defence income	188	248	38
Other income	10	52	20
Total Environment Agency generated income	396	538	349
Defra environment protection grant	120	108	147
Defra flood defence grant	47	54	448
National Assembly of Wales environmental protection grant	0	14	21
National Assembly of Wales flood defence grant	1	1	23
Other grants and contributions	0	0	7
Total Environment Agency Government funding	167	177	647
Balances brought forward	0	–12	31
Total Environment Agency funding	564	703	1027

Note: Defra, Department for Environment, Food and Rural Affairs.

Funds received from charge payers (e.g. permit holders), are 'ring-fenced'. This means that the income raised to regulate one type of permit cannot be used to cross-subsidize the regulation of another type of permit (e.g. income from water discharge consent charges cannot be used to fund activities undertaken in regulating Integrated Pollution Prevention and Control (IPPC) permits). For activities funded through government grants, the Agency has discretion to apply these funds as it deems most appropriate. In most cases reallocation of budgets requires internal approval only. However, reallocation of larger amounts is agreed with the Agency's government sponsors.

Case 7.5 *Funding for environmental enforcement in France*

In France, inspection activities are funded wholly by the State from general taxation, which includes the environmental fees and charges levied on industrial installations (IMPEL Review Initiative, 2002b). Previously, these inspection activities were funded in part, and directly, by these fees and charges. The fees and charges did not cover the full regulatory costs, however, and no attempt was made to match fees and charges to the costs of regulation.

The State levies charges for the issue of new permits and modifications requiring a public inquiry. It also makes an annual subsistence charge. The charge for a permit or modification is typically €2000. Annual subsistence charges are based on plant complexity. A large chemical plant would typically be charged around €30,000 and a small, simple plant €300. The cost of discharge sampling and monitoring required by a permit is borne directly by the relevant operator.

In cases of non-compliance with the conditions of a permit, administrative costs include a requirement for the operator to deposit a sum of money with the DRIRE (Direction Régionale de l'Industrie et de la Recherche) as a guarantee against completion of any plant improvement or remedial work required to secure compliance. This is reimbursed if the operator carries out the necessary works.

The actual costs of DRIRE regulatory activities are reflected primarily by the staff and facilities deployed. The Ministry reviews total national requirements annually, and allocation of available national resources to individual regions is based on the relative level of industrialization of the region. The DRIREs do not maintain records of time spent on individual activities for accounting purposes.

Environmental enforcement authorities can also respond to resource restrictions by seeking sources of additional funding. This is often extremely difficult in the short term, such as in response to an unexpected reduction in government grant support. Senior management can argue for additional funds from government sources, but this is often difficult to achieve. If environmental enforcement authorities are funded only from this source (and if they are legally restricted to this), they will have no choice. In most cases such arguments are limited to seeking improvements in funding for future years.

Where environmental enforcement authorities have greater freedom for budgetary action, then the management of the institution can examine alternative sources of revenue. Various examples of this approach exist:

- In Finland, a strategic decision was taken to raise additional income from permit fees.

Case 7.6 *Changing funding sources in Poland*

In Poland, funds for the Chief Inspectorate for Environmental Protection mainly come from the national budget and the National Environmental Protection Fund. Funds for Voivodeship (regional) Inspectorates for Environmental Protection mainly come from regional budgets, and the Voivodeship Environmental Protection Funds.

The environmental protection funds (National and Voivod funds) contribute around 22 per cent of the Inspectorates' budget, so are very significant although secondary to the regional budget for the national Inspectorate (for Voivodship Inspectorates, the most important sources of financing are regional budgets of approximately 75 per cent; sources coming from regional and national funds are of minor importance – 15 per cent). However, monies from the environment funds are only spent on capital equipment, not routine running costs.

Companies are obliged to bear inspection costs if they are not in compliance with the law. In 2001 (2000 figures in brackets), 3612 (3567) firms were obliged to pay \$1.3 million (\$0.8 million), with collection rates of 92.8 per cent (90.1 per cent) (Panek-Gondek, 2002). Only 20 per cent of the non-compliance fees charged are a source of Inspectorate funding (this is added as a 'special source'). Special sources also consist of environmental studies and surveys conducted for the external client. The budgetary law for 2004 required that 40 per cent of all incomes related to special sources should be transferred to the national budget (in 2003 it was only 5 per cent). This means that the Inspectorate has a smaller amount of funds to spend on its activities.

- Malta recognized that any additional workload for regulators will leave it underfunded unless radical change is made and therefore examined the introduction of permit fees and inspection charges.
- Bulgaria and Poland have both received additional support from their respective extra-budgetary environment funds. In both cases the support is focused on capital investment, not running costs.

Strategic alliances with private sector and non-profit citizens' organizations have potential as a way to lower costs through an improvement of operating effectiveness of public services. In some cases, for instance, outsourcing government functions to commercial operators can reduce costs and improve revenue flows. This can include outsourcing emissions and ambient monitoring. This approach will work only if there is higher confidence in the efficiency of the private sector as a service provider and if appropriate oversight mechanisms are introduced.

The challenge of closing the funding gap lies in appropriately dealing with the problem and ensuring that the key tasks are carried out and that the environmental

Case 7.7 Financing the Ghana Environmental Protection Agency

The overall budget for 2001 was approximately \$400,000 and for 2002 \$655,000. The Environmental Protection Agency (EPA) receives funds from the following sources:

- Central Government funds;
- external funds;
- internally generated income.

External funds are received through various development projects. These included, in 2002:

- Ghana Environmental Assessment Capacity Development Project;
- Capacity Development and Linkages for Environmental Impact Assessment (EIA) in Africa;
- Netherlands Government Climate Change Studies Assistance Programme;
- Integrated Management of the Volta Basin;
- Support project on implementation of Stockholm Convention on Persistent Organic Pollutants;
- support project on ozone depleting substances.

Income is generated from the following activities:

- chemical clearance;
- meat/fish clearance;
- EIA permitting;
- mining exploration;
- small-scale mining permitting;
- tree cutting permitting.

Some income generation is classed as 'charges'. This income is retained by the EPA. Other sources are classed as 'fees'. This income is paid into the National Environment Fund. Monies retained from charges amounted to \$57,319 in 2001 and \$124,780 in 2002. This represents an important part of the total budget of the EPA. However, the budget is still insufficient. One consequence is that staff salaries are low and in 2002 the EPA report a 'record high turn over' of its professional staff for precisely this reason. Lack of resources (combined with their late allocation) is responsible for all of the 'major constraints' identified as affecting the work of the EPA:

- As most of the work of the EPA is field-based, there were constraints by transport problems due to the age of the stock of vehicles; this was considered as a 'major setback' and particularly affected monitoring activities.
- a lack of sufficient computers is a handicap.
- Training is insufficient in some areas, such as on legal issues, thus affecting court action by the EPA.

Source: Ghana EPA, 2002

enforcement authority can fulfil its statutory obligations. Some solutions can be carried out within the same budget year, and others launched now can be useful for future budget years. Examples include:

- preparing robust budget proposals and explaining the benefits of compliance assurance to safeguard against budget cuts during the budget allocation process;
- benchmarking of permit fees, frequency and duration of inspections, etc.;
- carrying out efficiency analysis, such as assessing costs in comparison with the services provided to society, to define where costs can be reduced or services improved;
- targeting high-risk installations and significant violators;
- establishing a hierarchy of tasks within the authority for cases where reallocation of budgets between tasks, or work programme revisions, is necessary;
- designating senior-level managers responsible for prioritization in the case of budget shortfalls and ensuring transparency of their decisions within the organization;
- when cost-effective, outsourcing some tasks;
- encouraging preventative approaches as a means to reduce budget needs, for instance, compliance assistance measures (Chapter 6), promoting self-monitoring by industrial operators, environmental management systems, and information-based instruments;
- encouraging interest from non-governmental organizations (NGOs), mass media, and the general public, and involvement in compliance monitoring and citizens' enforcement (Chapter 5).

Obtaining sustainable financing for inspectorates/environmental protection agencies to ensure required levels of permitting, inspection and enforcement is an ongoing challenge in virtually all countries, especially those which have to deal with new burdens and new challenges.

Conclusions

Environmental enforcement authorities, in general, are able to draw upon a variety of funding sources. However, in individual cases the scope of available sources can be significantly constrained. There are a number of principles which can apply to funding, but these can conflict with each other, at least in theory. How these are expressed in practical terms depends upon the particular traditions of public service in individual countries and practical issues, such as severe government budgetary limitations or a general concern over tackling corruption.

Funding sources are under revision in some countries. This can be driven by changes to the structure of authorities or the imposition of new duties upon them, as well as by new political priorities. Such changes should draw upon international experience, not least to examine effective mechanisms to introduce new approaches (e.g. how to calculate cost recovery approaches).

Environmental enforcement authorities are public bodies. For this reason they need to justify their funding and ensure that the money, which may ultimately be derived from public taxation, is used in an efficient manner to achieve specified outcomes. Where funds are received from businesses through fees, etc., authorities need to be even more certain that their activities are justified, particularly if fees are calculated on a cost recovery basis. Businesses legitimately desire administrative costs to be as low as possible, although they must accept that costs may be high if their activities demand extensive regulatory oversight. Ensuring that the activities of environmental enforcement authorities target their work within effective management processes and, therefore, focus administration in a cost-effective way is the subject of the following chapter.

This chapter concludes with a checklist for environmental enforcement authorities, examining their use of the principles of funding and how budgets are allocated.

Checklist

- 1 Are environmental enforcement authorities guided by particular principles affecting funding (or required to implement them) and are these adequately expressed in the actual funding practices?
- 2 Where environmental enforcement authorities can recover costs, are these fully determined in order to maximize income?
- 3 In any cost recovery practice are the procedures fully transparent and fully explained to those who might be affected?
- 4 Are procedures and auditing in place to ensure that conflicts of interest do not occur?
- 5 Are the budgets fully justified in terms of the strategic priorities of the environmental enforcement authorities (including environmental outcomes) in order to encourage maximum government funding?
- 6 Is the budget justification clear as to the practical consequence of any budget reduction?
- 7 Does the environmental enforcement authority examine alternative sources of funding or alternative approaches to achieving its objectives, such as outsourcing?
- 8 Does the environmental enforcement authority identify upcoming new challenges and burdens and seek funding accordingly?
- 9 Does the environmental enforcement authority make maximum use of any flexibility in allocating its budget to maximize outcomes?
- 10 Does the environmental enforcement authority examine the full range of options available for dealing with budget shortfalls?

Management of Environmental Enforcement Authorities

Introduction

Environmental enforcement authorities have a wide range of responsibilities and tasks (often experiencing rapid change) affecting the economic performance of the many activities that they regulate. They may manage significant budgets and can have sizeable staff numbers. As a result management can be a particular challenge.

Environmental enforcement authorities are public bodies and, together with many other institutions, public and private, require effective management. This chapter is not the place to discuss many aspects of organizational management. Indeed, the subject is one that has, and still does, result in a prolific number of relevant books. Instead this chapter focuses on some selected critical issues and, therefore, begins by outlining the elements of quality management. It then considers some strategic management processes in environmental enforcement authorities. A critical focus will be on performance-related management and indicators to assist this. Financial management is also critical and the chapter continues with a consideration of how environmental enforcement authorities manage their financial resources. The quality of staff is also necessary for an effective organization, so competencies and training issues are briefly examined. Finally, the chapter concludes with the policies that are put in place to ensure the probity of the staff. The effective management of an environmental enforcement authority should be reflected in a structure that delivers the management objectives. Issues relating to structure are addressed in Chapter 2.

Quality management

Environmental enforcement authorities require management that is of high quality. This is briefly examined here by considering the key principles of effective quality management set out by the International Organization for Standardization (ISO 9000 and ISO 9004). These are as follows:

Customer focus

Organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations. This results in increased effectiveness in the use of the organization's resources to enhance customer satisfaction. To deliver this requires research of customer needs and expectations (and communicating these throughout the organization) to ensure that the objectives of the organization are linked to customer needs and expectations.

An important question is who are the customers for environmental enforcement authorities? In effect all stakeholders are customers in various ways – the government, the public and those being regulated. In each case the authority is delivering a service. The government has delegated responsibilities (and resources) to the authority and expects results within the constraints of laws and policies. The public expects the authority to protect its health and environment. The regulated community expects efficiency and accuracy, in particular not being asked to take (potentially costly) action that is unnecessary. Thus an environmental enforcement authority needs to understand what its customers need and deliver this. If not, the authority will, at best, be less than effective, and, at worst, fail to protect the environment and undermine its own position and even its survival.

Leadership

Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives. Good leadership motivates staff towards the organization's goals and focuses their work in a unified way towards these, with a shared system of values and recognizing the contributions of staff to the work of the organization. To deliver effective leadership requires good communication throughout the organization. This communication should include a clear understanding of the vision and goals of the organization. Effective leadership also delivers effective resources to the organization and ensures accountability of their use.

There are leaders in an environmental enforcement authority at different levels. Clearly the head of the authority has significant responsibilities. Senior management must work as a team to focus the work of the organization and contribute to communication. For example, it is important not only to deliver a shared vision of protecting the environment, but also of how this is to be achieved, such as when inspection procedures are changed.

Involvement of people

People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit. It is important that staff are committed and motivated and involving them is critical to achieving this. This includes encouraging creativity and motivating staff members towards continual improvement. In addition staff must be accountable for their actions, and therefore there must be a procedure for assessing performance against

individual goals. This will require that the importance of individuals' and teams' contributions to the organization is effectively communicated. Staff members can then identify for themselves opportunities to tackle problems and constraints on their work. Openness is crucial, not only with senior management, but also through a free exchange of knowledge across the organization.

Environmental enforcement authorities vary significantly in their sizes and structures. Involving staff is particularly challenging in large authorities with widely dispersed locations. There can be a tension, for example, between achieving a shared series of goals and processes and allowing sufficient flexibility to take account of local circumstances. Involving staff is critical in managing these difficulties.

Process approach

A desired result is achieved more efficiently when activities and related resources are managed as a process. A process approach focuses and prioritizes work to deliver more consistent outcomes and more effective use of resources and requires a clear definition of responsibilities for managing activities and how these function in an organization. It also necessitates an assessment of what exactly is required to achieve an outcome and a clear focus on the processes and resources necessary to deliver these, taking account of any risks involved.

Most environmental enforcement authorities consider that they could use more resources to improve their functions. Thus effective processes are needed to target resources towards desired outcomes (taking account of customer needs) and to put in place the processes necessary to ensure that this happens. Performance-based management helps in this regard and is examined in more detail later in this chapter.

System approach to management

Identifying, understanding and managing inter-related processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives. A system approach, integrating the work of an institution, ensures a focus on key organizational processes to achieve consistency, effectiveness and efficiency. This requires a systematic understanding of the organization's processes and a structured approach to management.

Environmental enforcement authorities can be responsible for a wide range of activities, many of which are inter-related. To improve effectiveness, a system approach allows a better assessment of these different activities. It is important for managers to understand fully all of these functions for a system approach to work. Senior managers may be drawn from one part of an authority and it is crucial that they make sure they have an understanding of the other functions and systems.

Continual improvement

Continual improvement of the organization's overall performance should be a permanent objective of the organization and lead to improved efficiency. This has to be an organization-wide philosophy and will involve structures for training staff, focusing resources, examining processes and measuring change.

Customers will always expect environmental enforcement authorities to be better at their functions today than yesterday. Considerable effort has been given to better targeting of work (such as risk-based approaches). However, it is always important to review performance to improve outcomes and listen to customers and staff on how this might be achieved. This can be part of a strategic planning approach as described in more detail later in this chapter.

Factual approach to decision making

Effective decisions are based on the analysis of data and information. This is necessary to make accurate and effective decisions and it provides a foundation for review and analysis. As a result data quality is paramount (including systems for analysis) and systems are required to make data available to those that need it, when they need it.

Environmental enforcement authorities depend upon information – what those being regulated do and what is happening in the environment. They also need an understanding of the changing political and social climate in which they work. Given the data requirements of authorities, many have developed systems for improved data processing and information exchange (such as taking advantage of information technology options) and considerable effort is being given to improving this further. However, the disadvantage is that authorities can have problems managing large quantities of information to the extent that this becomes more important than what is being monitored, a particular problem for more senior managers who are further up the ‘information hierarchy’. Thus a simple information flow needs to be complemented by effective communication with staff to identify critical issues.

Mutually beneficial supplier relationships

An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value. This improves understanding and optimizes resources. It requires good relationships, a sharing of resources, open communication and the establishment of joint processes.

An environmental enforcement authority has suppliers (e.g. for equipment) and relationships with them, such as ensuring good environmental performance, are important. However, there are other ‘suppliers’. In particular, other authorities can contribute to enforcement actions (such as local authorities) and, therefore, they supply a ‘service’. Managing such relationships is vital to ensuring effective environmental protection.

Strategic management approaches

There are a number of issues that need to be addressed in managing an environmental enforcement authority. This section considers a number of these. They can be viewed as forming the following areas of management:

- Strategic – setting the tone for the organization, understanding its goals, planning and leadership.

- Structural – setting the structures and relationships to deliver the strategic objectives.
- Personnel issues – personnel management of the organization within the structure to deliver the objectives.
- Systems – procedures covering a range of issues to ensure personnel operate efficiently within the strategic plan.

In order to establish a strategic approach to the work of an environmental enforcement authority, it is necessary to be clear about the fundamental objectives of the organization. In Chapter 2 it was noted that environmental enforcement authorities have a wide range of responsibilities across the world and, therefore, it is not possible to set out, for example, some particular set of objectives. However, the first stage in setting a strategic approach is to identify the organization's mission, vision and values. These three form a logical, staged process:

- A mission is a statement that sets out what is the reason for the environmental enforcement authority. This is often set out in a law which establishes the organization, or can be 'distilled' from the sometimes verbose language in that law. An example from the US Environmental Protection Agency (EPA) is given in Case 8.1. So, a mission is 'why we are here'.
- A vision sets out the fundamental goals of the organization, based on the mission. This relates to the broad goals, not the small detail (e.g. inspecting 100 landfill sites next year). These can reflect both environmental and other goals, such as interactions with stakeholders. Examples from the Environment Agency of England and Wales and the Minnesota Pollution Control Authority are given in Cases 8.2 and 8.3. So, a vision is 'where do we want to get to?'
- The values set out the fundamental approach of how the organization will operate in order to achieve its vision. Typically this can include a number of elements, such as making science-based decisions, or acting in a consultative way. The values can include a number of the principles that were discussed earlier in Chapter 1. An example from the Department of Risk and Pollution Prevention of the French Ministry of Environment and Sustainable Development is given in Case 8.4. So, the values are 'how do we get there?'

Case 8.1 *The mission of the US Environmental Protection Agency*

The US Environmental Protection Agency's (EPA's) mission statement, like many, is short and punchy:

'The mission of the Environmental Protection Agency is to protect human health and the environment. Since 1970, EPA has been working for a cleaner, healthier environment for the American people.'

Case 8.2 The vision of the Environment Agency of England and Wales

The Environment Agency's vision is a 28-page document setting out its vision across the different areas of the environment for which it has responsibility. It also provides a short summary which is repeated below.

'The Environment Agency's vision is of a rich, healthy and diverse environment for present and future generations. We want people to have peace of mind, knowing that they live in a clean and safe environment, rich in wildlife and natural diversity – one they can enjoy to the full, but feel motivated to care for. Achieving our vision means...

A better quality of life – people will know that they live in a healthier environment, richer in wildlife and natural diversity – an environment they can enjoy and feel motivated to care for.

An enhanced environment for wildlife – wildlife will thrive in urban and rural areas. Habitats will improve for the benefit of all species. Everyone will understand the importance of safeguarding biodiversity.

Cleaner air for everyone – the emission of chemical pollutants into the atmosphere will decline greatly and will be below the level at which they can do significant harm.

Improved and protected inland and coastal waters – our rivers, lakes and waters will be far cleaner. They will sustain diverse and healthy ecosystems, water sports and recreation.

Restored, protected land with healthier soils – our land and soils will be exposed far less to pollutants. They will support a wide range of uses, including production of healthy, nutritious food and other crops without damaging wildlife.

A greener business world – industry and businesses will value the assets of a rich and diverse natural environment. In the process, they will reap the benefits of sustainable business practices, improve competitiveness and value and secure trust in the wider community.

Wiser, sustainable use of natural resources – all organizations and individuals will minimize the waste they produce. They will reuse and recycle materials far more intensively and use energy and materials more efficiently.

Limiting and adapting to climate change – drastic cuts will be made in the emission of 'greenhouse gases' such as carbon dioxide. Society as a whole will be prepared for probable changes in our climate.

Reducing flood risk – flood warnings and sustainable defences will continue to minimize injury, damage and distress from flooding. The role of wetlands in reducing flood risk will be recognized and the environmental benefits from natural floods will be maximized.'

Case 8.3 *The vision of the Minnesota Pollution Control Authority*

The key elements of the Minnesota Pollution Control Authority (MPCA) vision are:

Minnesotans take responsibility to protect our environment. Specific goals include:

- *Minnesotans buy green products and services;*
- *Minnesota businesses produce green products and provide green services by reducing or eliminating the use of environmentally harmful substances;*
- *Minnesotans act on their environmental knowledge to support healthy ecosystems.*

Minnesota's air is clean and clear. Specific goals include:

- *Minnesota's outdoor air quality will meet or improve upon all environmental and human health-related federal and state ambient air quality standards.*
- *Minnesota's outdoor air quality will meet environmental and human health benchmarks for toxic and other air pollutants.*
- *Minnesota reduces its contribution to regional, national and global air pollution.*

Minnesota's land supports desired uses. Specific goals include:

- *conserve resources and prevent land pollution that reduces options for desired land use;*
- *minimize or reduce the release of contaminants to or from the land;*
- *restore contaminated land to productive use.*

Minnesota has clean, sustainable surface and ground water. Specific goals include:

- *Assess the condition of Minnesota's ground water systems;*
- *Prevent or reduce degradation and depletion of ground water;*
- *Assess the chemical, physical and biological integrity of lakes, streams and wetlands to identify if designated uses are being met, and provide information on the condition of waters;*
- *Maintain and enhance the chemical, physical and biological integrity of Minnesota lakes, streams and wetlands so that water quality standards and designated uses are met and degradation is prevented;*
- *Restore the chemical, physical and biological integrity of Minnesota lakes, streams and wetlands that do not support designated uses.*

Excellence in operations. Specific goals include:

- *provide a safe and healthy workplace for all employees, volunteers and visitors;*
- *manage agency operations efficiently and effectively;*
- *achieve excellence through application of world-class tools and best practices.*

These strategic statements of why, where and how are expressed in different ways in different environmental enforcement authorities (not least in their length). They have a number of related purposes which are both internal and external:

- Strategic statements provide a shared foundation for the work of all of those in the organization, from top to bottom. From this each team or individual in the organization can interpret its work programmes to fulfil their contribution to the vision, while being consistent with its values. They can also provide a stimulus for the development of new areas of work necessary to deliver the vision.

Case 8.4 *Values of the Department of Risk and Pollution Prevention, France*

The Department of Risk and Pollution Prevention is part of the French Ministry of Environment and Sustainable Development responsible for overseeing inspection activities. It has identified four values which guide its work:

- **Competence** – the technical, methodological and statutory competence of all of the inspectors is indispensable to the fairness and efficiency of the Inspectorate's actions. The full scope of these competencies cannot be covered individually. They must be covered by the Inspectorate through its organization, through synergies between functional operational departments and cooperation between national, regional and Departmental services.
- **Impartiality** – aware of the importance of the issues at stake for society, the Inspectorate acts in complete independence of judgement, in compliance with regulations and Ministerial instructions. The Inspectorate recommends necessary actions, whatever the social or economic context, whenever the health and safety of its citizens is at stake or the environment threatened.
- **Fairness** – in the interest of the neighbours of classified installations, the operators and all other interested parties, the Inspectorate takes care to ensure fair treatment of its cases, throughout the whole country, by taking aspects such as current urban planning and the sensitivity of the natural environment into account. This approach can result in stricter standards than provided for by general regulations.
- **Transparency** – the Inspectorate has an obligation for transparency in its actions. It must be able to report and explain them to its citizens in a concrete and understandable manner. Via its national and regional supervisory structures, it publishes results, advances and progress still to be accomplished by the operators, while respecting the confidentiality of manufacturing industry.

- They provide an important means of communication to stakeholders (from the government to industry and the public). They provide the broader context for individual regulatory decisions and establish a 'standard' by which the work of the environmental enforcement authority can be judged, thus helping it to remain focused.

Developing these strategic documents requires a clear commitment and leadership from the senior management of an organization. It is essential, however, that they are developed in an inclusive way. Typically organizations will bring staff together in brainstorming events to assist this process. This not only enhances the sense of ownership by the staff of the final product, it also allows the particular ground level experience from different parts of an organization to be fed into the process to groundtruth it. Note, however, that extensive inclusive participation for large organizations would require a significant resource input, not only in staff time for those involved, but also in the organization of the process. It is also important to test the ideas with external stakeholders to ensure that their concerns are addressed. These documents will also require review. This should take place if there is any significant change to the organization (such as having a new statutory function). However, changes are not desirable for their own sake. Stakeholders would, for example, become confused if an organization repeatedly changed its mission and vision, suggesting it did not have a consistent idea of its purpose.

Once an environmental enforcement authority has set its overall strategic vision, it needs to set out more concrete strategic objectives in an active planning document. These can be set out for one or more years ahead and can be a rolling document updated every year. These documents interpret the goals of the vision into actions that individual parts of the organization should take forward and provide a firm basis upon which the organization can be judged externally. This is most notably by a supporting ministry which might link individual planned objectives to the level of financial support. It also includes the public, which would have a different basis for judging the success of the planned actions.

A strategic planning document for the environmental enforcement authority as a whole must balance what the organization would like to achieve with the resources available. Indeed, it should be explicit about what is not possible because of resource limitations (Chapter 7). This is important for both internal and external communication so that expectations are managed. The requirements in this regard for government agencies in the US are illustrated in Case 8.5.

Strategic planning must include both top-down and bottom-up processes. Top-down processes should ensure that the objectives of the vision and values of the organization are fully taken account of, as well as any directions given by the government. A bottom-up process is necessary because of the need to take account of the practical experiences of front-line staff. An important part of a strategic planning document is to identify clearly the obligations on the organization arising from legally binding duties (old and new). These constrain its work significantly – the activities it must undertake. An example of how an environmental enforcement authority has sought to improve its planning process by examining ways to take account of regional and local issues is given in Case 8.6 for the US EPA.

Case 8.5 US Government requirements on management reporting for the Environmental Protection Agency

In the US the 1993 Government Performance and Results Act (GPRA) requires agencies, including the Environmental Protection Agency (EPA), to develop plans for what they intend to accomplish, measure performance, make appropriate informed decisions and communicate information about their performance to Congress and to the public. The GPRA requires agencies to develop: a five-year Strategic Plan, which includes a mission statement and sets out long-term goals and objectives; Annual Performance Plans, which provide annual performance commitments towards achieving the goals and objectives presented in the Strategic Plan; and Annual Performance Reports, which evaluate an agency's progress towards achieving performance commitments. These contain the following elements:

- Planning, to achieve goals and objectives.
- Budgeting, to ensure that resources are available to carry out plans.
- Measuring, to assess progress and link resources actually used to results achieved.
- Reporting, to present progress achieved and impacts on future efforts.

To comply with this the EPA has established procedures that bring together planning, budgeting and accountability into an integrated system.

A range of different analyses can be undertaken in preparing strategic planning documents. These include:

- *Clearly identifying future legal obligations.* It is important, for example, to distinguish what is absolutely required and what needs to be interpreted. Thus there might be a legal obligation to undertake inspections, but, as seen in Chapter 4, their nature and frequency can be open to wide practical interpretation with different consequences for resources.
- *Identifying political priorities.* Governments can press for actions outside of immediate legal obligations, such as focusing on a particular issue because of a pollution incident. Political priorities can also threaten the work of an environmental enforcement authority. Such priorities need to be interpreted in negotiation with the government to ensure that overall work remains consistent with the vision.
- *Identifying environmental priorities.* There can be pressing environmental problems that need to drive the authority's actions beyond its immediate legal obligations. This requires analysing information on the state of the environment and assessments of pressures, such as polluting processes.

Case 8.6 *Actions taken by the US Environmental Protection Agency to improve its planning processes and challenges*

The US Environmental Protection Agency (EPA) has undertaken the following changes to its processes to improve its planning procedures:

- The EPA's 'National Program Manager Guidance' established national priorities that regional offices are expected to carry out over the following three years. In preparing this programme managers had access to information on regional and State issues on a dedicated website allowing ease of consultation.
- The EPA also changed its budgeting procedures to allow for earlier participation for regions, States and tribes.
- The EPA has developed a new automated database (the Annual Commitment System), removing an old, cumbersome paper-based system, to help regions and national programme offices to negotiate regional performance commitments. This allows regional managers to consider their commitments and resource allocation across all programmes at once. It also allows participation by States and tribes, enhancing transparency.
- The EPA develops Regional Plans reflecting regional conditions and problems and State and tribal priorities and identifies strategies and tools for achieving results.
- Many EPA regional offices and States develop 'Performance Partnership Agreements' that reflect the results of joint planning and priority setting discussions.

However, the Government Accountability Office (GAO, 2006) noted that there are still management issues that the EPA needs to address:

- The EPA has a number of ongoing activities to improve enforcement data, but there are long-standing and complex problems. 'It will likely require a number of years and a steady top-level commitment of staff and financial resources to substantially improve the data so that they can be effectively used to target enforcement actions in a consistent and equitable manner.'
- The EPA has taken measures to improve its ability to match its staff and technical capabilities with the needs of individual regions and States, such as a study of its workforce competencies. 'Nonetheless, the agency still needs to determine how to deploy its employees among its strategic goals and geographic locations so that it can most effectively use its resources, including its compliance and enforcement resources.'

- *Clarifying stakeholder views.* This includes considering the major concerns of the public (which could be transmitted through political priorities) and those of industry, etc. The latter could include issues of how the authority works, such as reflecting the better regulation agenda (Chapter 1). It is important, therefore, for the authority to identify the relevant stakeholders and to use effective communication mechanisms to elicit their views.

The collation of this information provides the basis for strategic planning, but further analysis is necessary to interpret these results into a practical plan. A useful start for a strategic planning process is to examine the fundamentals of the organization. There are various possible approaches, for example, a SWOT (strengths, weaknesses, opportunities and threats) analysis, which identifies what the authority can build on, what it needs to change, etc., and helps to identify specific goals.

The result of any analyses should be a series of actions reflecting the status and entire work of the organization. This will begin with a broad statement of objectives in a particular work area (illustrated by Case 8.7 for the Environment Agency of England and Wales and Case 8.8 for New South Wales), followed by a range of specific actions. Units and teams within the organization can also develop more detailed plans reflecting the organization's overall strategic plan, such as a plan for inspections. A number of authorities have some form of management Board with external representation to guide its strategic direction and monitor progress. Case 8.9 describes examples of such Boards from Egypt and South Australia.

Environmental enforcement authorities will be held to account for the specific actions in their strategic documents. It is, therefore, usual for an organization to report on performance against such stated actions. Case 8.10 for the US EPA gives an example of such a report.

In setting out its strategic work plan, an environmental enforcement authority needs to set targets. These are part of a management cycle which enables ongoing improvement in the performance of the organization which, in the case of environmental authorities, includes improved value for money for the funding body, increasing environmental protection and improved cost-effectiveness for industry. For an environmental enforcement authority a target can be set for different areas of activity, such as:

- input targets (e.g. number of hours spent on inspection);
- performance targets (e.g. number of sanctions imposed);
- compliance targets (e.g. number of installations in compliance);
- environmental targets (e.g. pollutant concentrations).

These targets include measures of the efficiency and the effectiveness of the organization. In all cases targets, whichever are chosen, should be SMART:

- Specific – the indicator should address a specific regulatory objective or activity.
- Measurable – it must be measurable, that is quantitative, otherwise it will be difficult to determine trends.

Case 8.7 *Environment Agency of England and Wales Corporate Plan 2005–2008*

The corporate plan acts as a ‘contract’ with the Government and sets out actions and targets for delivering environmental improvements. The corporate plan includes much detail addressing a number of areas, including details of income and expenditure. Some examples are given below.

Limiting and adapting to climate change: ‘We will reduce greenhouse gas emissions through the regulation of major industries and our role as the competent authority in the EU Emissions Trading Scheme. We will develop and agree methods to forecast risks posed by climate change and ensure climate change is factored into all of our decision-making.’

Improving the water environment: ‘We will implement the [EU] Water Framework Directive and use this opportunity to promote new and more integrated approaches to managing the water environment. We have set targets to achieve improved river and bathing water quality standards and will develop strategies to reduce the impacts of diffuse pollution particularly from farming.’

Delivering better regulation: ‘In accordance with our modernising regulation objectives, we will improve the effectiveness of regulation. We aim to reduce significant breaches of permit conditions and will target poor performers and greatest risk by using and extending our compliance assessment, compliance classification and OPRA [Operator Pollution Risk Appraisal] schemes. We will continue our programme for bringing new and existing installations into the Integrated Pollution Prevention and Control (IPPC) regime... We will work with Government to streamline legislation and regulation and reduce unnecessary burdens on business and will deliver a single permitting system for waste and IPPC regulation.’

Improving our efficiency: ‘This Corporate Plan takes forward the Environment Agency’s and Government’s commitments to delivering substantial efficiency improvements (cumulative savings of £165m over the three years of this plan), and to deploying savings to front line activity. These include full implementation of our new financial and human resources management system’.

- Acceptable – it should be acceptable to managers and staff in the organization and, where necessary, to others (e.g. government).
- Realistic – targets must be achievable or the organization will fail.
- Timed – each target or indicator must have time periods integrated into them.

Overall, therefore, these set out measures upon which management can assess the performance of an environmental enforcement authority and how it can be judged externally. Such assessment can also take place in the wider context of

Case 8.8 *Example of organization objectives – corporate planning objectives of the New South Wales Department of Environment and Conservation*

Corporate planning objectives of the New South Wales Department of Environment and Conservation (DEC) include:

- Develop, encourage and focus scientific efforts on key environmental and conservation priorities and engage the whole organization to invest in important science programmes through a comprehensive Science Plan.
- Focus on improving connectedness across the DEC and with external stakeholders by building and refining systems to improve communication, responsiveness and efficiency.
- Adopt multi-disciplinary, cross-divisional and team-based approaches to its work.
- Seek involvement from the community and industry experts in the development and implementation of DEC programmes and policies.
- Implement a single, organization-wide staff performance management and recognition system.
- Improve the flexibility of systems, structures and resourcing to allow it to meet changing business needs.
- Build staff knowledge and capacity to deliver services across the Department.
- Develop and enhance staff skills in financial and project management.
- Integrate and share knowledge and information across the DEC.

Case 8.9 *Boards providing a strategic direction – Egypt and South Australia*

The Egyptian Environmental Affairs Agency was restructured with a new mandate in 1994. It has a wide remit on environmental protection from developing regulations to nature protection and managing polluting activities. An Administrative Council provides strategic input to its work. This has a wide composition including representatives from the Ministries concerned with the environment, non-governmental organizations (NGOs), the State Council, the Public Business Sector, Universities and Scientific Research Centres.

The Environmental Protection Agency (EPA) of South Australia has a Board which is a statutory body. It comprises nine members, appointed by the Governor of South Australia for their practical knowledge and experience to protect South Australia's environment. The Board's statutory role is to provide strategic direction to the EPA. As part of this it undertakes a regular programme of public and stakeholder consultation. This helps the EPA to assess its performance in administering the Environmental Protection Act by identifying important upcoming strategic issues.

Case 8.10 *The US Environmental Protection Agency's Performance and Accountability Report*

The Environmental Protection Agency's (EPA's) Performance and Accountability Report describes to the Congress, the President, and the public the Agency's environmental, programmatic and financial performance over the past fiscal year. It also reports the EPA's progress in addressing management challenges. The report satisfies a number of legislative reporting requirements, including those of the Government Performance and Results Act. The report for 2005 has four sections:

- Management's Discussion and Analysis – presents an overview of the full report, including a summary of the EPA's programmatic and financial performance and a discussion of the EPA's progress in implementing the President's Management Agenda.
- Performance Section – discusses the EPA's performance results under each of its five strategic goals. Results are discussed generally at the strategic goal and objective levels, and in much more detail for each of the EPA's 84 annual performance goals.
- Management Accomplishments and Challenges Section – discusses the EPA's progress in strengthening its management practices to achieve programme results.
- Financial Section – contains information on financial management, the EPA's financial statements and related Independent Auditor's Report, as well as other information on the Agency's financial management.

assessing public bodies. Case 8.11 provides an interesting example of this from the Netherlands, demonstrating that most inspectorates do meet minimum professional standards, but that performance is variable.

Assessing the performance of an environmental enforcement authority

At all levels of management it is necessary to judge performance. More widely, external stakeholders may wish to judge how well an environmental enforcement authority is doing its job. However, this can be easier said than done. For example, the ultimate purpose of such an organization is to protect the environment, yet linking environmental change to enforcement activity can be very difficult (Chapter 1). Conversely, if an authority were to report that it has undertaken a certain number of inspections, this does not indicate their quality or effectiveness.

In order to judge the effectiveness of an environmental enforcement authority it is, therefore, useful to develop a set of complementary indicators relating to

Case 8.11 *Minimum criteria for a professional organization in the Netherlands*

Between 2002 and 2005 all Inspectorates in the Netherlands at local, Provincial and national level undertook a self-evaluation process to determine the extent to which they met a set of minimum criteria for a professional organization. They first undertook an examination in 2003 and committed themselves to meet the criteria by 1 January 2005 when a further evaluation was carried out. The main impetus for undertaking this was opposition from the Inspectorates to a 2001 proposal to reduce their number from about 500 to 50. They argued that numbers were not important, but rather the quality of their work. Hence the need to assess quality. The work was supported by the Government, with similar Inspectorates working together to develop strategies, etc.

The results are presented in Table 8.1. It can be seen that there was significant progress between 2003 and 2005, with many Inspectorates meeting all of the minimum criteria. However, 137 agencies (many at local government level) still did not satisfy 90 per cent of the criteria and attention is currently focused on these. Where it is likely that the criteria will not be met, the Provincial authorities will use their statutory powers to ensure local authorities take the necessary action.

Table 8.1. *The extent to which Inspectorates in the Netherlands met the minimum criteria for professional organizations in 2003 and 2005*

Percentage of minimum criteria met	Numbers (and percentage) of enforcement bodies meeting (total 542)	Numbers (and percentage) of enforcement bodies meeting (total 517)
100	0	170 (32.9%)
90–100	0	210 (40.6%)
80–90	8 (2%)	56 (10.8%)
60–80	122 (22%)	65 (12.6%)
40–60	145 (27%)	8 (1.5%)
20–40	212 (39%)	6 (1.2%)
<20	55 (10%)	2 (0.4%)

Source: Klein, 2005

the work of the organization. These can reflect both the outcomes of its work (e.g. environmental improvements) and the processes that it uses (e.g. inspections undertaken). Both are important and can be used to inform management decisions and allow external parties to form some judgement of the organization's effectiveness.

Indicators can:

- Improve a manager's control of programme implementation by identifying what is being done and how this relates to objectives. This can allow managers to re-direct operations, resources, etc., to neglected areas and they provide a good means of communication with staff and can be used to motivate them.
- In the longer term indicators can be used to change programmes at a strategic level better to target specific outcomes.
- They can be used to argue for additional resources to meet targets, forming an important link in resource negotiations both within the authority and with any sponsoring Ministry.
- They are important in examining the performance of individuals and teams against objectives and so target changes to work programmes.
- They also provide an excellent means of communication with the public, both in highlighting successes and in managing expectations.

Considerable work has been undertaken on compliance and enforcement indicators, both at national and international level. International Network for Environmental Compliance and Enforcement (INECE) (2003), for example, proposed criteria for meaningful environmental compliance and enforcement indicators. These are:

Usefulness

- Policy relevant: usefulness in priority setting, resource allocation and accountability.
- Programme relevant: to goals, objectives and priorities.
- Functional: encourages constructive behaviour.
- Timely: measure can be gathered in time to remain relevant.
- Comprehensive: covers important operational aspects.
- Informative: provides information that various users want and need.

Believability

- Transparent: promotes understanding of the programme.
- Credible: based on data that are complete and accurate.
- Simple: easy to measure and interpret.

Reliability

- Technologically sophisticated: incorporating the latest information technology.
- Feasible: value to programme outweighs cost.

- Measurable: the process of collecting, analysing and publishing the data should be feasible and cost-effective.
- Robust: the measure should produce similar indications in similar circumstances.

Other

- Compatible: enabling data to be linked with other existing information.
- Comparable: allowing for international comparisons.

There are a number of examples of indicator developments taking place in different environmental enforcement authorities. However, Table 8.2 provides some examples developed by INECE (2003) by way of illustration and Case 8.12 illustrates progress in Canada and Argentina in developing indicators and Case 8.13 illustrates how indicators are used by the US EPA.

Case 8.12 *Ongoing development of compliance and enforcement indicators in Canada and Argentina*

Environment Canada undertook studies in 2000 and 2003 on research on environmental performance indicators across the world (Pascoe, 2002). It found that:

- many indicator projects have been completed which could provide information for authorities to use;
- many projects are still in progress;
- several new and innovative performance measures have been developed;
- some agencies have suggested that certain indicators be discarded due to technical difficulties in measurement, overlaps with other indicators, etc;
- there is still no hard evidence that demonstrates whether compliance promotion and/or enforcement yield better results in environmental performance.

Canada is developing indicators (input and output) for a number of industry sectors. This has resulted in a need for new data management systems to measure how these indicators perform, such as tracking individual costs.

A pilot project has been undertaken in Argentina developed by the Fundacion Ambiente y Recursos Naturales in the framework of a World Bank Institute in Latin America initiative. The project involved three levels of government within the Province of Buenos Aires. A large number of indicators were identified relating to air and water quality. However, most related to inputs and outputs, rather than intermediate and final outcomes. At this stage the project has demonstrated the importance of non-governmental organization (NGO) involvement and the need for a range of inter-related indicators to provide an overall assessment.

Table 8.2 *Environmental performance indicator framework*

Examples	Inputs	Outputs from activities	Reach	Intermediate and intermeddiate outcomes	Final (environmental) outcome
<ul style="list-style-type: none"> • Actions taken or intended effects 	<ul style="list-style-type: none"> • More compliance promotion staff hired • More enforcement officers hired • Enhanced training • More extensive technological support 	<ul style="list-style-type: none"> • More compliance promotion campaigns • More inspections • More prosecutions 	<ul style="list-style-type: none"> • All known regulatees • Relevant industry sectors 	<ul style="list-style-type: none"> • Industry better understands how to comply • Industry invests in more environmentally friendly equipment • Improve corporate philosophy 	<ul style="list-style-type: none"> • Reduction in discharges • Reduction in environmental impact • Cleaner air and water
<ul style="list-style-type: none"> • Performance measures 	<ul style="list-style-type: none"> • No. of compliance promotion officers • No. of enforcement officers • Training budget • Investment in information technology (IT) 	<ul style="list-style-type: none"> • No. of compliance promotion campaigns • No. of inspections • No. of prosecutions • Value of fines/penalties 	<ul style="list-style-type: none"> • Investment in 'greener' industrial processes • Compliance rates • Recidivism rate • Concentration of pollutants from effluent pipes 	<ul style="list-style-type: none"> • Ambient concentrations of pollutants in air and water • Environmental effects monitoring (e.g. biomonitoring) 	

Source: INECE, 2003

Case 8.13 *Using indicators in the US Environmental Protection Agency*

Indicators are used in the US Environmental Protection Agency (EPA) for a wide variety of internal management functions. These include:

- Developing regular reports on key outputs from programmes (such as enforcement or pollution reduction) so that performance issues can be examined and programme effectiveness improved.
- They can be used to examine how effective individual teams are within the EPA, allowing a comparison across regional offices, for example. These allow performance issues to be examined and management decisions to be targeted at increasing effectiveness.
- They are also used in a similar way to examine the effectiveness of individual programmes across the EPA.
- They are used to report to key decision makers outside of the EPA.

It is, therefore, important for environmental enforcement authorities to develop performance indicators. These need to be linked to strategic planning documents, in the setting of goals and targets. It is also important that such indicators are accurately monitored and reported upon to assist in strategic management. They also need to be revised as necessary, such as in the light of new responsibilities.

Financial management

Environmental enforcement authorities need effective financial management. Many processes issues, such as those relating to book-keeping, etc., are beyond the scope of this chapter. Instead this section will consider the importance of performance-oriented budgeting and examine how budgets are developed and managed and some of the measures taken to tackle budgetary problems.

The financial position of environmental enforcement authorities varies significantly across the world (Chapter 7). Most would argue that they could always use more resources. However, many authorities in western Europe and North America have significant budgets with which to achieve their objectives. This is usually not the case for many authorities in transition and developing countries, which can be hampered by low staff salaries (affecting recruitment and retention) and operational budgets (a consequence in Ghana, for example, is given later in this chapter in Case 8.21). As a result the efficient management of tight budgets is even more critical.

Performance-oriented budgeting provides a stronger link between resources and performance and has been introduced in some environmental enforcement authorities, for example, in Australia, Canada and the Netherlands. Ten Brink and

Farmer (2005b) indicated that adopting performance-oriented budgeting includes the following changes:

- increased pressure to pursue improvement in programme results;
- greater flexibility of managers on operational decisions and removal of constraints in resource management;
- provision of higher certainty of budget funding.

Such budgeting requires a good understanding of the organization's performance against goals. In particular, performance-oriented budgeting needs to be linked to the strategic planning process described earlier in this chapter and can be linked to compliance performance indicators as one measure of the performance of the organization as a whole and units within it.

Environmental enforcement authorities need to undertake detailed assessments of their activities to determine their budgetary needs. These may include participation in permitting, inspection, administration, advising other staff in any areas of personal expertise, advising on the development of legislation and supporting regulations, training, responding to general queries, presenting or attending seminars, research management, attending meetings on behalf of the organization, and so on. This will vary from country to country, and from institution to institution, depending upon organizational structure and management arrangements. Capital investment generally refers to the purchase of assets that provide services beyond a single accounting period or a single year. These needs are usually assessed and incorporated into budget allocations. These include laboratory equipment, vehicles, offices and computers. In practice, capital investment planning can be undertaken for a number of years ahead (e.g. five years ahead in the Czech Republic), on a rolling multi-annual programme (e.g. in the Netherlands) or annually (e.g. in Poland).

Effective budget planning in environmental enforcement authorities involves a careful projection of future resource requirements for both operational needs and capital investment, identification of 'new burdens' and contingencies for unexpected events, and taking account of specific budgetary constraints. Ten Brink and Farmer (2005b) found that historical data and cost estimating are used for organizational budget planning in many countries, including Australia, Canada and the Netherlands. Alternatively, expected expenditures may be estimated. This approach is generally more accurate, however, it is more time consuming. Many countries use a combination of both approaches. In some countries, cost estimates for compliance assurance are adjusted to the fixed limits of the budget. Significant analysis can be required to determine budgets, including detailed assessments of staff costs for individual areas of work, as shown in Case 8.14 from the Netherlands.

There is also variation across countries regarding the timeframe for budget estimation and planning, with some having short planning horizons and others a more long-term vision, albeit regularly updated to take into account new developments and hence able to identify, quantify and respond to 'new burdens'. Such burdens can derive from new legal obligations (thus are predictable) or arise from emergency situations.

Case 8.14 *Calculating resources for individual inspection activity in the Netherlands*

An inspector has 1350 hours available in a year. Roughly 1000 hours will be spent on inspections and the rest on other activities. Roughly 70 per cent of inspections are planned and 30 per cent are unplanned. There are targets for the inspection of large installations that fall under the EU Integrated Pollution Prevention and Control (IPPC) Directive. The target is that these sites should be inspected four times a year except for the metal industry (twice a year) and the chemical industry (12 times a year).

The assumption is that each inspection should take 12 hours and the Province's policy is that it is acceptable, for example, for two inspections to be carried out on a site which should have four, but with two inspectors taking part in each. Half of the 12 hours allocated for a typical inspection of an installation will be spent in the office for preparatory work and for writing a report. The rest of the time will be divided between travelling to the site and the actual inspection. In practice the targets are ambitious given the amount of staff time available. Instead of 48 hours being spent on inspecting an installation that should have four visits a year, the figure was likely to be between 20 and 30 hours.

The current target for producing a permit is 25 days, but a time-recording system will give an opportunity for looking at the various stages in the development of permits more closely. Administrative prosecutions require a total of 32 hours (12 hours from the Inspection Department and 20 hours from the Enforcement Department).

Environmental enforcement authorities have different levels of influence/discretion in budget planning and approval (Ten Brink and Farmer, 2005b). In some countries, it is simply a budget allocation from their Ministry of Finance; in others, information on needs is provided for the budget process, although the government still decides on the budget. Environmental enforcement authorities may also have revenue raising powers (see Chapter 7) that give them certain autonomy from central budgets. Usually the determination of the budget begins with an internal assessment of future budgetary requirements. Strategic budgeting has limited development in some countries. Among Eastern Europe, Caucasus and Central Asia (EECCA) countries, for example, some countries (e.g. Ukraine and Armenia) have introduced multi-year indicative budgeting, but strategic planning, based on concrete targets has not yet been introduced. In Kyrgyzstan the assessment of human resources required would not have any impact on the budget, since this is simply allocated by the Ministry of Finance. In Armenia the Environment Ministry calculates operational budgets per one staff member on an annual basis. Projection of revenues is based on the information on the collection of pollution charges or monetary penalties in previous years (OECD, 2004a).

Budgets are also constrained by national budgetary issues, so that detailed analyses of the authority's requirements can be overtaken by such limitations. In all cases this is then discussed, amended and potentially approved by the relevant ministry. This occurs either where the authority is part of the ministry or where it is an independent body reporting to the ministry. The regulatory budget then forms part of the overall ministerial budget for approval by the Ministry of Finance, government and Parliament. Case 8.15 describes such a budget approval process in Poland.

The flexibility of making adjustments within the approved budget can vary. In some cases (e.g. in Norway) a total sum is approved and the environmental enforcement authority has the freedom to change expenditure between budget lines as it deems necessary. In others the budget may be approved along specific budget lines, so that external approval is required before the regulator can move funds between budget lines (e.g. in Poland).

Political contexts can have impacts not specific to the environment, such as where governments are elected with sweeping 'cost-cutting' agendas. The Danish EPA, for example, had a lower budget following a change in government in the late 1990s. In contrast, wider political pressure raised the profile of environmental

Case 8.15 *The budgetary procedure for the Inspectorate in Poland*

In Poland, the budgetary procedure is as follows:

- From May of each year the Inspection for Environmental Protection works on the preliminary budget.
- After this the preliminary budget is passed on to the Ministry of Environment for its acceptance.
- By the end of June the Ministry of Environment is obliged to pass on the preliminary budget for the following year, for all environmental public administrations supervised by the Ministry of Environment, to the Ministry of Finance. All preliminary budgets from different public administration institutions are aggregated to form the budget bill.
- By the end of September the budgetary bill should be delivered to Parliament to be discussed.
- By the end of each year the budgetary bill should be passed and accepted/signed by the President.
- Twenty-one days after the acceptance of the budget, the predicted needs should be adjusted to the amount of money allocated for expenditures in the final budget law.
- By the end of October of the following year the Ministry of Finance, together with the Ministry of Environment, can change the allocation of the amount of money allocated previously as 'a reserve for special aims'.

protection within the countries of central and eastern Europe preparing to join the European Union (EU) and raised the status of environmental enforcement authorities within the general budget setting agenda of governments.

The allocation of funds to specific activities depends upon the range of activities undertaken by an authority (such as whether it undertakes permitting and/or inspection). It should also reflect the strategic priorities identified in the strategic planning process described earlier in this chapter. The majority of the budget is spent on staff costs. In a few countries, for example, Ireland and the UK, the staff costs are just below half of the total budget, while in Poland these rise to 82 per cent. Other administrative costs also form large parts of most budgets. Capital expenditure is more variable. In the UK this accounts for 25 per cent of the budget (due to its non-regulatory activities), but it is much lower in Ireland. The levels of expenditure also vary depending on the stage of formation of an environmental enforcement authority. A mature institution will have relatively low and constant capital expenditure where laboratories, vehicles and monitoring equipment are already in place. Growing authorities, such as in developing countries, may well have a much higher share of capital investments, especially if national labour costs are lower.

It is important that environmental enforcement authorities create confidence in stakeholders that their budgets will be managed effectively. Various approaches (Ten Brink and Farmer, 2005b) have been adopted to ensure that this is the case:

- Setting targets to measure financial performance.
- The assignment of authority and responsibility for specific budgetary functions to selected managers.
- Restricting authorizing disbursement of funds, payment of salaries, pensions, creditors and expenses to a limited number of high-level officials.
- The creation of project management disciplines in respect to building programmes and consultancy projects.
- Installing modern computerized financial accounting, payroll and fixed asset register software systems to underpin the internal financial controls.
- Outlining detailed procedures for engaging consultants.
- Regular reviews by the Management Board of periodic and annual financial information, and reports that indicate financial performance against budget.

It is usual for a whole raft of financial management processes to be put in place at different levels of an environmental enforcement authority. This is illustrated by Case 8.16 from the EPA in Ireland, which demonstrates how budgets are allocated and monitored regularly.

In cases of budget deficits there is usually a limited flexibility available to environmental enforcement authorities to address this, given that the major budget (staff salaries) is largely inflexible. One response to a budget deficit can be reallocation of funds between tasks undertaken. This usually focuses work on areas with a strong legal requirement. In Finland, for example, if there is a budget shortfall, the greatest priority is given to the permitting procedure, with inspection and monitoring being secondary. In Belgium, a whole hierarchy of priorities has

Case 8.16 *Financial control of the Environmental Protection Agency, Ireland*

In Ireland the Board of the Environmental Protection Agency (EPA) undertakes the following steps as part of its financial control procedures:

- publishing a Strategy Statement;
- agreeing on a detailed work programme for each year, and monitoring and evaluating progress against the work programme;
- implementing weekly Board meetings to manage and supervise the work of the Agency;
- implementing a Performance Management and Development System for all staff.
- clearly defining management responsibilities;
- maintaining a comprehensive schedule of insurances to protect the Agency's interests;
- establishing and operating procedural regulations and standing orders for conducting the business of the Board;
- ensuring declaration and disclosure of interests;
- reviewing and approving all Agency policies and procedures.

Internal financial controls include:

- a comprehensive budgeting system within an annual budget which is reviewed and approved by the Board;
- the assignment of budgets and budgetary authority and responsibility for specific functions to selected managers;
- restricting authority for authorizing all disbursement of Agency funds, payment of salaries, pensions, creditors, and expenses to Directors and two named Programme Managers;
- regular and ongoing review of all payments by senior management;
- regular reviews by the Board of periodic and annual financial information and reports which indicate financial performance against budget;
- setting targets to measure financial and other performance;
- project management disciplines in respect to building programmes and major consultancy projects;
- modern computerized financial accounting, payroll and fixed asset register software systems to underpin the internal financial controls of the Agency;
- detailed procedures for engaging consultants.

been developed to reallocate tasks most effectively and transparently (Case 8.17). Re-assessment of priorities has to be undertaken by senior management, as staff will seek to emphasize the importance of their own work areas.

Raising the efficiency of the work of an environmental enforcement authority can be important when there are budget constraints. It is important to undertake efficiency analysis to assist in tackling budget problems and ensure effective budget management. Beyond this, Ten Brink and Farmer (2005b) noted a number of ways in which this can be achieved in the short and long term:

- Targeting high-risk installations and significant violators, or the installation where the environmental benefits would be the greatest, as well as using opportunities for task clustering or geographic clustering of inspections.
- Limiting field inspection activities, and accordingly time and resources spent, to only those relative to the inspectorate's objectives.
- Developing standard operating protocols for field inspectors.
- Using to a larger extent multi-media inspections that are generally more efficient than single-medium inspections.
- Seeking synergies with other governmental bodies (health and safety, local government, the police, etc.) so that joint work (e.g. inspections) can be undertaken.

Case 8.17 *Priority setting in Flanders, Belgium*

The Environment Inspection Section (EIS) of the Ministry of the Flemish Community prioritizes its work according to the following criteria:

- How seriously would the environment and/or people suffer if the EIS does not (immediately) carry out a task?
- Are there deadlines imposed or does the EIS itself set the deadline?
- Are there sufficient financial resources, (qualified) people, and material resources to conduct the task satisfactorily?
- What type of task or assignment is involved or who is the client?

As a result the tasks are grouped as follows:

- Highest priority tasks and assignments that must immediately be carried out. Other tasks and assignments are suspended until this task or assignment has been completed.
- Very high priority tasks and assignments that certainly must be carried out within the period set.
- High priority tasks and assignments that must be carried out, although, if necessary, they can be suspended.
- Low priority tasks and assignments that cannot always be carried out.

- Establishing an accessible and constantly updated database of regulatory activity so that staff management can be improved.
- Investing in human capacity and technical skills to improve efficiency.

External auditing is a critical element not only in ensuring greater confidence in budget management but also in ensuring the confidence of industry and public stakeholders. Audits can also be used proactively to demonstrate funding problems and to explore the efficiency of activities and assess the real need for budget increases. Case 8.18 describes the way that audits have been used in Flanders not simply to ensure the accuracy of financial management, but also to improve the quality of those providing a service to the environmental enforcement authority.

Case 8.18 *Using auditing to improve the quality of service providers*

The Environmental Inspection Section (EIS) of the Ministry of Flemish Communities in Belgium outsources significant resources (nearly €2 million per year) for emissions and ambient monitoring. Agreements are concluded with recognized laboratories to undertake this. However, there was some concern about the quality of measures, particularly when they are critical for enforcement actions. Until 2001 the system for certifying air pollution laboratories only required an audit of their procedures and an investigation into the precision of their analyses at the time of their application for certification and not subsequently. In 2001–2002 a series of audits were undertaken (Ministry of Flemish Community, 2002). Undertaking such audits has improved the quality of the services provided.

Delivering effective personnel skills

Environmental enforcement authorities require sufficient personnel of the right competence to meet their objectives. More than this, however, they need to be motivated and effectively managed. The management techniques in an environmental enforcement authority are no different to those of other public bodies and most other organizations. They include goal setting, reporting, motivation, conflict resolution, etc. Each, of course, will be linked to the individual specialized professional tasks of the authority's staff. For typical personnel management techniques the reader is directed elsewhere. Lack of skills and knowledge can be significant impediments to effective working of environmental enforcement authorities. For example, problems of lack of knowledge, absence of on-the-job training and little familiarity with the policies and management of tools developed at national level have been identified as affecting effective environmental enforcement in Armenia (Darbinyan and Ashikyan, 2002).

In undertaking recruitment, setting personnel objectives and establishing training programmes, it is first necessary to identify the key competences necessary for staff to undertake their various tasks. It is, therefore, helpful to undertake a competency audit. This identifies the specific tasks of the individual staff (permitting, inspection, personnel management, etc.) and what skills are necessary to deliver these tasks.

The detailed competences, skills and expected behaviour of environmental enforcement staff depend on the nature of the organization and individual responsibilities. Thus they are many and various. The Environment Agency of England and Wales has set out a detailed plan for the development of its professional staff managers over a three-year period (Table 8.3). This identifies the expected skills and behaviour and is, therefore, worth repeating here as an example of the range that an environmental enforcement authority needs to address and how this should develop in a staged manner.

Before training takes place, it is necessary to undertake some form of training needs analysis. In Canada legal and structural changes resulted in a recognition for improving staff capacity. In the mid-1990s, therefore, a training needs analysis was undertaken (Currie, 1998). This was more than a simple 'gap analysis', but sought to learn from wider experience and to develop the training strategy necessary to address the identified needs. It had the following objectives:

- determine the skill and knowledge sets required for officers to accomplish their jobs;
- determine the skill and knowledge sets that officers have;
- identify gaps between these two areas at national and regional level;
- develop a strategy for addressing these gaps;
- identify training needs common to different positions;
- determine the basic core competencies required by each position;
- relate these core competences to a system of minimum standards;
- research training programmes and standards in other jurisdictions;
- make recommendations regarding general training issues.

Similar issues would be addressed by other authorities undertaking a needs analysis.

All staff will require training. There will clearly be a need for a structured training programme for staff joining an environmental enforcement authority. They might join with a number of technical competences, for example. However, they will need training in the organization's processes. Thus a new inspector might be recruited because they are familiar with the technicalities of the chemical industry. However, if they are to regulate this industry, they will need legal training. Existing staff also require training. Legal obligations change, technical issues change and new systems are put in place (such as relating to information technology). As staff progress and become more responsible in the organization, they will require management training.

There is a wide range of ways to train staff. These include external courses, internal courses, job shadowing, mentoring, etc. There are a large number of books

Table 8.3 *Know-how, abilities and behaviour expected of managers over the first three years of recruitment for the Environment Agency of England and Wales*

Know how	Ability	Behaviour
<i>Phase 1</i>		
<p>Agency objectives, strategies, plans, funding and budgets.</p> <p>Current health and safety issues within own team.</p> <p>Knows own and aware of Agency-wide legislation, including powers, duties and roles.</p> <p>Team management and team working practices.</p> <p>All financial and performance management systems.</p> <p>Key internal and external customers' history and current issues.</p> <p>Professional development plans (PDP) for all direct reports (i.e. those staff that report to the manager).</p>	<p>Implements risk assessments and develops health and safety management plan for own team.</p> <p>Manages own business plan to reflect wider Agency needs and shows effective prioritization.</p> <p>Communicates business priorities and decisions of management team meetings to direct reports.</p> <p>All aspects of financial and performance management carried out.</p> <p>Communicates to outside world issues relating to own area of responsibility.</p> <p>All direct reports are aware of the relevant policies and procedures and are able to implement performance management independently.</p>	<p>Gives feedback to direct reports and welcomes feedback from them to achieve self-awareness of own strengths and weaknesses.</p> <p>Encourages improved team working practices.</p> <p>Promotes improved service delivery.</p> <p>Develops networks with external customers and identifies areas for future partnerships.</p> <p>Promotes health and safety awareness through own behaviour.</p> <p>Promotes self-development through sharing own PDP with direct reports.</p>
<i>Phase 2</i>		
<p>Main issues from own part of Agency and how they relate to wider Agency.</p> <p>Main goals, objectives, needs and values of key stakeholders.</p> <p>Motivation behind goals of other parts of the Agency, including current successes, issues and progress towards goals.</p> <p>Thorough understanding of the development needs of each direct report.</p>	<p>Chairs meetings and can deputize for manager in own management team.</p> <p>Has gained confidence of key stakeholders and developed own network.</p> <p>Works collaboratively with management team colleagues to share resources for common good of team.</p> <p>Fully implements own health and safety plan and contributes to health and</p>	<p>Contributes positively to team working with management team colleagues by helping resolve issues.</p> <p>Adopts a helpful approach to customer. Fair, firm, objective, can explain decisions.</p> <p>Has developed trustworthy relationship with all colleagues and seeks and provides support on an individual basis.</p>

Table 8.3 *Know-how, abilities and behaviour expected of managers over the first three years of recruitment for the Environment Agency of England and Wales (continued)*

Know how	Ability	Behaviour
<p>Thorough knowledge of own work area and all its issues.</p> <p>Awareness of motivation, strengths and weaknesses of management team colleagues.</p>	<p>safety in management team.</p> <p>Can field and answer all difficult questions about own work area.</p> <p>Revises PDPs to meet individual and business needs and establishes own succession plans.</p>	<p>Promotes environmentally friendly working practices within own group through personal example.</p> <p>Ensures own staff work effectively as a team.</p> <p>Seeks out work opportunities to provide members of own team with development that cannot be provided through traditional training.</p>
<i>Phase 3</i>		
<p>Knows how and where to access expertise across the Agency.</p> <p>Thorough understanding of national issues and direction of own part of the Agency.</p> <p>Anticipates issues and influences of external agencies/partners before they react or demand.</p> <p>Knows where to gather relevant intelligence and knows how to influence opinion formers inside and outside the Agency.</p> <p>Understands customer requirements and influences expectations based on what can realistically be delivered.</p> <p>Understands the impact of change and draws up plans that reflect and address change issues.</p>	<p>Deputizes for manager at their management team meetings.</p> <p>Contributes to regional and national groups.</p> <p>Represents Agency view externally on a range of subjects and issues.</p> <p>Can facilitate internal and external groups.</p> <p>Can use business management techniques (SWOT, risk analysis, etc.) in management of own business.</p> <p>Deputizes for management team colleagues so understands basics of their business.</p>	<p>Actively promotes management team decisions and Agency policy despite personal reservations or potential conflict.</p> <p>Selects appropriate communication style/method depending on the audience and the message.</p> <p>Galvanizes and leads opinions with external groups and individuals in own area of expertise.</p> <p>Uses understanding of individuals as basis for influencing and taps into personal motivation and style to persuade.</p> <p>Is known and respected by all staff in own part of Agency.</p> <p>Encourages and persuades other management team colleagues and all other staff to maintain a safe working environment.</p>

examining how each type of training can be undertaken, so there is no purpose in attempting to detail these here. However, it is important to stress that deciding on training approaches needs a balance between different elements, including that it effectively delivers the required skills and is within the available resources. Many environmental enforcement authorities have established relationships to deliver training programmes (especially for induction of new staff) externally and internally (as in Case 8.19 in Abu Dhabi). Some have also adopted dedicated centres or institutes. These are illustrated by two cases. The first is the National Enforcement Training Institute of the US EPA (Case 8.20). This illustrates what a well-resourced large environmental enforcement authority can achieve when committed to training. The second case is from Ghana (Case 8.21), showing that a dedicated training centre is possible even with limited resources, although severe pressures can arise on the ability of the Training School to deliver training.

Case 8.19 *Training in the Environment Agency, Abu Dhabi*

Training undertaken by the Agency covers general areas such as technical training, presentation skills, communication skills, management and leadership. Training takes different forms and places:

- In company – on-the-job training.
- In company – off-the-job training: e.g. in-house training, seminars and workshops.
- External training: courses, conferences or workshops in colleges and universities.
- Secondment: work-based placements and projects with affiliated companies.

Ensuring the probity of staff: Tackling fraud and corruption

Fraud and corruption cover a wide range of malpractice activities, ranging from small misappropriation of resources to large bribes to altering major regulatory decisions. Regulation provides power to officials to make decisions which can generate significant gains or losses to the individuals affected, therefore there is an incentive for corrupt forms of influence (Ogus, 2005). It is very difficult to know how extensive fraud and corruption are within environmental enforcement authorities across the world. Not surprisingly people are reluctant to discuss the issue in surveys or interviews. However, fraud and corruption can be extensive and may be a systemic problem traceable from top government ministers downwards. In other cases it can be more 'petty'. This section examines some of the basic reasons

Case 8.20 *The US Environmental Protection Agency National Enforcement Training Institute*

The Environmental Protection Agency (EPA) National Enforcement Training Institute (NETI) trains Federal, State, local and tribal lawyers, inspectors, civil and criminal investigators, and technical experts in the enforcement of environmental laws. NETI provides a comprehensive and integrated approach to training, in which enforcement and compliance personnel are trained in a range of specialities in order to work together more effectively as a team. NETI:

- delivers training using the most cost-effective methods, sound educational techniques and up-to-date training facilities;
- obtains input from personnel in enforcement bodies on training needs, curriculum development and course delivery;
- develops a curriculum of core competences and specialized skills for all enforcement and compliance personnel, and ensures the training to meet these. To do this it develops an annual course plan and schedule based upon needs and cost-effectiveness;
- recruits, supports and rewards instructors from within and outside the EPA to ensure high quality trainers;
- ensures awareness of and access to training by environmental enforcement personnel at all levels of government through a variety of communications media;
- develops and implements quality standards and evaluation protocols for the courses offered.

Case 8.21 *Training in the Ghana Environmental Protection Agency*

The Environmental Protection Agency (EPA) operates its own EPA Training School. In 2002 ten events were held in the first quarter. However, these dropped to two or three for the remaining quarters of the year due to the fact that the School did not have its own hostel facility. As a result action was taken to acquire land adjacent to the School upon which a hostel could be constructed. The cost of all of this was estimated at US\$600,000, which is required from the Ministry of Environment and Science. The School planned to develop a number of training modules, including:

- risk assessment;
- environmental management;
- environmental impact assessment;
- environmental management plans and life-cycle analysis;
- environmental quality monitoring and control.

Source: Ghana EPA, 2002

for corruption and then details how an environmental enforcement authority can put in place policies and processes to tackle it. The reason why this is examined in a little more detail is that the rest of this book assumes that staff want to do their job (permitting, inspection, etc) well, but it is also necessary to consider those who deliberately do a bad job.

Corruption can be considered as:

dishonest activity in which staff at any level act in a manner that is contrary to the interests of an environment enforcement authority and abuses his/her position of trust in order to achieve some personal gain or advantage for him- or herself or for another person or entity.

Fraud can be considered as:

dishonest activity by staff causing actual or potential financial loss to an environmental enforcement authority, including the theft of monies or other property. This includes the deliberate falsification, concealment, destruction or improper use of documentation used for a normal business purpose or the improper use of other information or position.

Corruption can occur at different levels of administration (Winborne, 2002):

- ‘Grand’ corruption relates mostly to the high level of public officialdom and involves large illegal transactions. The World Bank defines this as a form of ‘state capture’: ‘State capture refers to the actions of individuals, groups, or firms both in the public and private sectors to influence the formation of laws, regulations, decrees, and other government policies to their own advantage as a result of the illicit and non-transparent provision of private benefits to public officials’ (World Bank, 2000). As the environment is often low on the agenda of developing and transition countries, this allows such corruption to be systemic.
- Corruption at the mid-level happens more often and is represented in a wide range of ways: from bribes, gifts, nepotism, etc.
- Petty corruption is practised by public officials who may be grossly underpaid. In the environmental sector this type of corruption occurs mostly during environmental inspections.

Corruption and fraud can affect almost any aspect of the function of an enforcement authority. However, some functions are more likely to be subject to fraud and corruption than others. In general these include the following, with more specific examples given in Table 8.4:

- *financial functions*, including the receipt of cash, revenue collection and payment systems, salaries and allowances, and entertainment expenses;
- *construction, development and planning functions*, ranging from development applications to construction and building activities;

- *regulatory functions*, involving the inspection, regulation or monitoring of facilities and operational practices, including the issue of fines or other sanctions;
- *permitting functions*;
- *demand driven or allocation-based functions* where demand often exceeds supply, including the allocation of services or grants of public funds, or the provision of subsidies and financial assistance;
- *procurement and purchasing functions*, including tendering, contract management and administration;
- *functions* that are remotely based or have minimal supervision.

Reasons for corruption include (Winborne, 2002):

- under-funding of programmes, leading to opportunities for abuse;
- lack of transparency and accountability in decision-making process;
- disproportionate influence of wealthy external interests;
- insufficient laws including those on financial disclosure and lobbying;
- broad authority given to public officials that is not coupled to accountability and oversight;
- laws and regulations that allow for overly broad interpretations, such as on permitting and inspection.

Pellegrini and Gerlagh (2006), for example, noted concern over the potential for corruption in environmental decision making in central and eastern Europe due to the low income levels of staff. The Director General of The World Conservation Union (IUCN) has noted the following measures that need to be taken to reduce corruption in environmental protection (Steiner, 2000):

- ‘Clearly articulate and define the values corruption accords to the environment and natural resources. This can be done through legislation (protected areas, pollution standards etc.), policies (environmental management), and conventions (World Heritage Sites; Ramsar; biodiversity; climate change etc).
- Establish an effective monitoring system that relies on public, private and civil society input. Only by pooling resources, information and exposing corrupt practices through joint initiatives can we close the loopholes. The environment – perhaps more than any other sector – lends itself to such a collaborative effort as NGOs and business have extensive networks, resources and knowledge they can deploy in the absence of adequate public sector funding.
- Develop an effective system of incentives and sanctions to reward compliance. The price of corruption must increase dramatically but at the same time the rewards for clean business transactions must also be raised. Simply banning a corporation from all future tenders for one case of corruption may not be as powerful an incentive as a one year ban after which it can regain access to a market if it has put in place checks and balances to avoid future corruption.’

Ogus (2004) identified further measures that can be taken to reduce the potential for corruption:

Table 8.4 *Examples of fraud and corruption*

Theft of assets, such as:

- equipment;
- consumables or supplies;
- money;
- information.

Unauthorized or illegal use of assets, information or services for private purposes, including:

- computers;
- motor vehicles;
- clerical and other support;
- confidential information;
- office equipment.

Abuse of position and power for personal gain, such as:

- seeking and obtaining bribes or other gifts in exchange for favourable treatment;
- nepotism in staff appointments.

Manipulation and misuse of account payments, such as:

- fictitious employees on the payroll;
- ordering equipment for private and personal use;
- favouring suppliers whose costs are not as competitive as other suppliers.

Falsification of records, including:

- timesheets;
- travel claims;
- purchase orders;
- petty cash vouchers.

Manipulation of computer programs for improper purposes, such as:

- unauthorized approval to pay;
 - diversion of institutional income;
 - writing off debts.
-

- using committees instead of single decision makers (although this might increase resource needs);
- moving officials regularly to avoid building up a client base for corruption;
- removing all regulatory requirements that are not necessary for specified outcomes (such as unnecessary or multiple permits) – this should be part of better regulation, however, it also limits the opportunities for corruption;
- reducing the discretion available to officials (although this can conflict with taking wider integrated approaches to environmental protection).

More specifically, Winborne (2002) identified a series of anti-corruption tools that can be used to address different areas. These are outlined in Table 8.5.

Environmental enforcement authorities adopt various strategies to tackle fraud and corruption. Many are subject to wider government laws and guidelines on this issue, as the problems are not limited to environmental regulation. One of the best examples of a comprehensive strategy against fraud and corruption specifically targeted at environmental enforcement bodies is that of the Department of Environment and Conservation (DEC) in New South Wales, Australia. Given the importance of this issue, the main elements of this Fraud and Corruption Prevention Strategy are outlined below as they can form the basis for developing policies and process to tackle corruption in environmental enforcement authorities in widely different contexts around the world.

The Department of Environment and Conservation's Fraud and Corruption Prevention Strategy (DEC, 2006)

1 Policy and attitude to fraud and corruption

The DEC promotes an organizational culture that does not tolerate any act of fraud or corruption. All staff must be above fraud and corruption. Sanctions will apply to those who are not. In addition, staff must act so they are not perceived to be involved in such activities. Through transparent and accountable decision making, together with open discussion by staff and managers about the risks of fraud and corruption, the DEC seeks to foster an organizational climate which does not tolerate fraud or corruption.

The DEC will deal fairly with all parties in the course of investigating allegations of fraud or corruption. However, if fraud or corruption is proven, the DEC will apply appropriate sanctions. Possible sanctions include suspension without pay, dismissal and loss of accumulated employer superannuation contributions. Matters referred to the Independent Commission Against Corruption (ICAC) or the police may lead to criminal proceedings.

2 Roles and responsibilities

The Director General and the DEC's Executive consider and approve all policies and procedures relating to the control and investigation of fraud and corruption. They have the following responsibilities:

Table 8.5 *Areas vulnerable to corruption and possible measures to tackle the problem*

Level of corruption	Areas vulnerable to corruption	Anti-corruption tools
Grand corruption	<ul style="list-style-type: none"> • Environmental and natural resources policy and regulations development 	<ul style="list-style-type: none"> • Lobbying for reforms: transparency, accountability, citizen empowerment • Watchdog groups • Public oversight • Public–private dialogues • Investigative reporting • Public awareness campaigns
Mid-level corruption	<ul style="list-style-type: none"> • Distribution and designation of environmental/natural resources and territories for particular utilization (including through public procurement) • Permitting and certifications – issuing permits and certificates for different utilization of territories and natural resources, and operating of industrial sites including permits for emissions, discharges and solid wastes • Environmental assessments 	<ul style="list-style-type: none"> • Process reengineering (streamlined procedures – ‘one-stop shops’, transparency with embedded control mechanisms) • Straightforward regulations to minimize discretion and enhance transparency and accountability • Justified reasonable standards and requirements • Watchdog groups • Investigative reporting • Stakeholder groups awareness and education
Petty corruption	<ul style="list-style-type: none"> • Enforcement (inspections and policing) <ul style="list-style-type: none"> – (1) inspections by environmental protection agencies and other related agencies to assess whether established environmental standards are being met, and (2) enforcement via policing violations such as, for example, poaching, illegal logging, emissions, etc. 	<ul style="list-style-type: none"> • Process reengineering (streamlined and transparent procedures with embedded control mechanisms) • Strengthened and more efficient enforcement • Incentive/reward system • Stakeholder groups awareness and education • Independent inspection groups

- establishing and maintaining ethical policies, systems and procedures for all aspects of DEC work;
- ensuring that staffing policies and practices are fair and equitable;
- ensuring that mechanisms for responding to potentially unethical circumstances are appropriate and effective (e.g. grievance and complaint handling systems, assessment and investigation of allegations);
- ensuring that areas of work that are of inherently higher risk in terms of ethics and corruption are identified and that preventive strategies are in place;
- monitoring the ethical health and culture of the DEC and responding to any problems identified.

All reasonable suspicions of fraud or corruption are reported to the Director General who decides what action should be initiated to assess the concerns raised. All fraud and corruption investigation reports are referred back to the Director General who then decides what action is necessary to address the investigation findings.

The Director Corporate Governance (who is the DEC's nominated Protected Disclosures Officer) and staff of the Corporate Governance Branch are responsible for:

- producing fraud and corruption policies, procedures and training proposals;
- liaising with internal and external investigators;
- assuring the quality of investigation processes and reports;
- providing advice to staff affected by internal investigations.

The DEC's Internal Audit Committee is responsible for overseeing the effectiveness of the Department's fraud and corruption control strategies and plans.

Senior managers must ensure that effective fraud and corruption prevention risk management strategies and staff awareness programmes are established in their workplaces.

All DEC managers are responsible for:

- monitoring their workplaces to identify and address situations that are likely to raise ethical dilemmas;
- ensuring that staff are not placed in potentially difficult or compromising situations;
- being available and supportive to staff who require guidance on conflicts of interest and other ethical dilemmas;
- fostering a work environment free of harassment, discrimination, victimization, corruption, maladministration and waste;
- ensuring that staff are aware of the principles contained in the Code of Ethical Conduct and the established systems and procedures for addressing ethical problems;
- supporting and protecting staff who report, in good faith, instances of potentially unethical or corrupt practices;
- ensuring that staff are treated fairly, equitably and in accordance with relevant legislation and policy.

All DEC staff, contractors, consultants and volunteers must act ethically and not engage in, assist or tolerate any fraudulent or corrupt activity. Staff are encouraged to report perceived corrupt practices and will be protected when they do so.

3 Fraud and corruption risk management

An important part of fraud and corruption prevention is to understand where the areas of risk are in relation to the DEC's responsibilities and functions. The DEC systemically assesses its functions and responsibilities to identify all potential risk areas and to develop a risk management plan to control high- and medium-risk issues. Building on this broad risk assessment, a further specific risk assessment of potential fraud and corruption issues is undertaken. A dedicated review of the DEC's fraud and corruption risk assessment occurs every three years (last done in 2005–2006). The DEC's Executive, as well as its Internal Audit Committee, oversees this risk assessment activity.

4 Conflicts of interest

A conflict of interest exists when it is possible that a staff member could be influenced, or perceived to be influenced, by a personal interest when carrying out their duties. The community, the DEC's clients, stakeholders and colleagues expect all DEC decisions to be impartial and not influenced by inappropriate considerations. It is corrupt behaviour knowingly to make a decision influenced by a conflict of interest.

If a conflict of interest exists, could arise or could reasonably be perceived by third parties to exist, the issue should be raised in writing with the relevant manager, who must then inform the Division's Executive member. Employees and their managers have a joint responsibility to avoid or resolve conflicts of interest. To resolve conflicts that arise, or could arise, staff, their managers and Executive members should consider the significance of the conflict and apply one of the following options:

- Where the potential for conflict is minimal or can be eliminated by disclosure or effective supervision, record the details of the situation and take no further action.
- Dispose of the conflicting personal interest (e.g. sell the shares; give up the second job).
- Do not participate in the particular task which may, or may appear to, raise a conflict of interest.
- Consider whether the conflict is significant enough to require transfer, either on a permanent or temporary basis, from the area of work where the conflict exists.

5 Procedures for reporting fraud and corruption

The DEC has developed and published policies and processes to facilitate the reporting of suspicions of corrupt conduct, maladministration, or serious and substantial waste of public money. It sets out:

- procedures for making disclosures to the DEC;
- procedures for making disclosures to appropriate external agencies;
- procedures for dealing with anonymous reports;
- protection for people making protected disclosures from reprisals that might otherwise be inflicted on them because of their disclosures;
- provisions for disclosures to be properly investigated and dealt with.

Members of the public, clients and stakeholders can report suspicions of fraud or corruption by ringing the DEC's Environment Line or by writing to the Director of Corporate Governance. Anonymous reports from members of the public will be treated in accordance with the merits of the issues raised and the adequacy of the information provided.

6 Procedures for fraud and corruption investigation

The DEC's Complaint Handling and Internal Investigation Guidelines provide rigorous and detailed systems and procedures for conducting internal investigations and notifying appropriate external agencies. All the processes and findings of probity investigations that are undertaken are documented by the DEC. These documents are managed and stored securely to protect confidentiality.

The DEC engages specialist external investigation and audit services to investigate probity allegations when the circumstances suggest that it is appropriate to provide an additional level of 'arm's length' independence to establish the facts. The Director General has a statutory duty to report to ICAC any matters that he or she suspects, on reasonable grounds, may involve corrupt conduct, including fraud. The DEC notifies the police in circumstances where criminal offences are suspected. Matters may also be referred to the Crown Solicitor, Director of Public Prosecutions or the Ombudsman. The Director General determines when such referrals occur.

7 Internal audit strategy

The DEC allocates significant resources to its internal audit programme to provide for in-depth auditing of functions and activities considered to be of high risk. The DEC engages external service providers to conduct internal audits. The majority of auditable items are identified as a result of the DEC's agency-wide risk assessment process. Resources are also available to conduct special audits of specific issues that may arise and require urgent examination and assessment.

The DEC's internal audit programme includes items considered to be of high fraud and corruption risk, in particular, focusing on regulatory activities, financial transactions (including cash handling), procurement, and asset security. The DEC's internal audit programme is primarily 'systems based' and, as such, identifies and tests all aspects of the controls applied to address risks in service delivery and procurement systems.

8 Further developments

The results of the DEC's Fraud and Corruption Risk Assessment provided assurance that a high level of fraud and corruption awareness existed across the agency and

that effective controls were in place in most instances to minimize identified threats and weaknesses. An action plan is being implemented to strengthen fraud and corruption controls where this is required. The DEC will also be developing a system for senior managers to periodically report to the Executive on the management and control of those risks identified by the corporate risk assessment and not included in the internal audit programme. This requirement will include specific reporting on the control of fraud and corruption risks.

Once fully implemented, the DEC's Fraud and Corruption Prevention Strategy will be subject to an ongoing process of continuous improvement, monitoring and adjustment to ensure its viability in addressing all current fraud and corruption issues. All required actions, resulting from the fraud and corruption risk assessment, will be reviewed to ensure they have been effectively implemented. Senior management will be required regularly to report on the controls they manage to reduce the possibility of fraud and corruption.

Conclusions

The management of environmental enforcement authorities presents many challenges. This is particularly true if the organizations:

- are new;
- have been subject to significant recent structural change;
- are large and geographically dispersed;
- have responsibilities for a wide range of diverse functions;
- are under severe budget constraints;
- are under significant political pressure;
- are within a culture not conducive to its work, such as no concern for the environment or a culture of systemic corruption;
- are subject to strict governmental management constraints.

Many of the management challenges of environmental enforcement authorities are no different from similar public bodies and the authorities should learn from wider experience in personnel management, financial planning, leadership, etc. However, this chapter has highlighted a number of specific management issues which have focused on quality management, strategic planning, corporate performance assessment, financial issues, staff competences and tackling fraud and corruption. Across the world environmental enforcement authorities have developed a range of approaches to these issues and the cases examined here demonstrate that management approaches in many authorities are examining cutting-edge processes and, therefore, there are potentially a number of lessons that can be learned.

This chapter concludes with seven checklists for environmental enforcement authorities to examine their progress in delivering effective and efficient management systems.

Checklist: Delivering quality management in an environmental enforcement authority

- 1 Has the organization undertaken an audit of quality management principles and has it obtained ISO certification for quality management?
- 2 Are there proper quality checks in place to examine the general management of the organization as well as its individual work areas?
- 3 Are the needs of the organization's external stakeholders clearly identified and, where relevant, the functions of the organization focused on these needs?
- 4 Are the organization's managers able to deliver motivation and empowerment to their staff and is communication with staff effective?
- 5 Does the organization have clear formal and informal processes to ensure the involvement of staff in developing policies, working practices, etc., in a cost-effective and efficient manner?
- 6 Does the organization have policies and systems in place to ensure effective relevant delegation of responsibilities?
- 7 Are there clear monitoring and reporting processes in place for staff linked with processes to improve performance?
- 8 Is good practice in management exchanged between managers?
- 9 Are processes in place to ensure that procedures, etc., are developed to deliver outcomes in the most cost-effective way so that outcomes are maximized within the budget available?
- 10 Are systems carefully reviewed to ensure maximum efficiency and minimum confusion?
- 11 Does the organization seek, through its senior and mid-level leadership, to deliver continual improvements in the way it works?
- 12 Are good information management systems in place to ensure that data are of high quality, effectively stored and transmitted?
- 13 Do staff across the organization, especially in those distributed over a large organization with regional offices, have access to all relevant information?
- 14 Are effective procedures in place with partner organizations to ensure efficient cooperative working systems to deliver the organizations goals?

Checklist: Mission, vision and values of an environmental enforcement authority

- 1 Has the organization identified its shared mission, vision and values through internal discussion and external debate?
- 2 Do these clearly set out what the organization is for, where it is going and how it will get there?
- 3 Are they articulated in a clear and meaningful way that can be understood by individuals and teams across the organization and by external stakeholders?
- 4 Is there a coherent communication strategy to articulate the mission, vision and values internally and externally?
- 5 Have the relevant strategic planning documents and similar planning approaches across the organization been changed to take account of the mission, vision and values?

- 6 Are the mission, vision and values seen to be taken seriously in the day-to-day behaviour of staff?
- 7 Have systems been put in place to monitor progress by the organization in achieving its vision and implementing its shared values?

Checklist: Developing strategic planning documents for an environmental enforcement authority

- 1 Has the organization developed a strategic planning document based on its mission, vision and values?
- 2 Does the strategic planning document set out clear and practical objectives and how these are to be achieved?
- 3 Is the strategic planning document developed in detailed consultation with staff across all of the organization's functions and relevant external stakeholders?
- 4 Are all relevant issues taken account of in development of the strategic planning document, that is environmental priorities, legal and policy priorities, stakeholder expectations and resource opportunities and constraints?
- 5 Does the strategic planning document set out objectives in a way that success and failure can be readily determined?
- 6 Are the strategic objectives of the organization as a whole translated into similar objectives and targets for relevant units within the organization, including individual functions (e.g. inspection) and regional/local offices which are then reflected in individual and team work plans?
- 7 Does the organization have a monitoring process to examine progress on delivering the objectives and does it produce a report on this progress?

Checklist: Compliance performance in an environmental enforcement authority

- 1 Does the organization have measures to monitor its performance and effectiveness?
- 2 Has the organization adopted indicators of its work which are useful, believable and reliable?
- 3 Are the indicators measurable and monitored?
- 4 Are results from performance of the indicators used for re-assessing strategic planning of the organization?
- 5 Are results from performance of the indicators used for re-assessing the work plans of individuals and units in the organization?
- 6 Are results from performance of the indicators reported on to external audiences?

Checklist: Financial planning in an environmental enforcement authority

- 1 Has the organization adopted performance-oriented budgeting?
- 2 Does the organization undertake a detailed analysis of the resources required to undertake its routine and non-routine work?

- 3 Does the organization undertake analyses of likely future 'new burdens' and the resources required to implement these?
- 4 Are such analyses used to determine future budget negotiations with governmental funding sources?
- 5 Are effective systems in place to manage financial spending and reporting on performance?
- 6 Are the budgets of individual units in the organization effectively linked to strategic and unit planning documents?
- 7 Has the organization established procedures for tackling budget deficits when these occur?
- 8 Has the organization undertaken audits and other analyses to determine measures that can be taken to improve efficiency?

Checklist: Staff competency and training in an environmental enforcement authority

- 1 Has the organization undertaken an assessment of the required competences of its personnel necessary to meet its objectives?
- 2 Are the required competences translated into a personnel policy to inform recruitment, training and personal goal setting?
- 3 Do managers fully understand these personnel requirements in order to guide their staff?
- 4 Has the organization identified the relevant training needs for its recruits and existing staff?
- 5 Has the organization examined relevant training approaches (internal and external) that can be used to meet the training needs?
- 6 Does the organization have a structured training process for new staff?
- 7 Are training needs regularly discussed between staff and their managers?
- 8 Are the necessary resources for training identified to deliver cost-effective enhancement of staff competence?

Checklist: Tackling fraud and corruption in an environmental enforcement authority

- 1 Has the organization undertaken a risk analysis of the likely ways in which fraud and corruption could occur during its operations?
- 2 Has the organization identified the relevant ways in which fraud and corruption can be tackled especially in high-risk areas?
- 3 Has the organization developed a transparent strategy to tackle fraud and corruption?
- 4 Has the organization a clear series of policies relating to fraud and corruption so that staff understand exactly what fraud and corruption are and the consequences of acting in a corrupt manner?
- 5 Are fraud and corruption policies clearly communicated to staff and are managers fully aware of their responsibilities in this area, such as removing staff from areas where they might experience conflicts of interest?

- 6 Are procedures in place for staff to communicate their concerns about fraud and corruption without fear for their position, etc?
- 7 Does the organization communicate with relevant external agencies (e.g. the police) to be clear about processes which would involve these agencies when fraud and corruption occur?

Chapter 9

Networking

Introduction

Environmental enforcement authorities do not work in isolation from the actions of their parallel organizations in other countries. Most obviously there are international conventions that each organization is responsible for, such as on the shipment of waste (in Europe authorities are under obligations to implement a wide range of European Union (EU) law common to them all). Also pollution discharged from an activity in one country could affect the environment in another and coordination of activities of the respective authorities could be necessary. Finally, authorities can simply have much to learn from each other, such as in how they are managed, and how they regulate, communicate, etc.

As a result, environmental enforcement authorities have participated in various forms of networking. Some of these have been relatively informal or have been organized under various structures, such as the United Nations Environment Programme (UNEP). This chapter describes the structure and function of six more formally established networks of varying ages. It begins with a description of a global network, followed by regional networks for the EU, North America, Asia, the Eastern Europe, Caucasus and Central Asia (EECCA) countries and North Africa. Each has a different function, but a consideration of the six networks allows some general conclusions to be reached at the end of the chapter.

Networking is also an important process for improving the effectiveness of environmental enforcement within a country. This is addressed in Chapter 2.

The International Network for Environmental Compliance and Enforcement (INECE)

Website: www.inece.org

INECE began in 1989 as a bilateral exchange between the US Environmental Protection Agency (EPA) and the Dutch Environment Ministry (VROM). The network subsequently expanded into a broad partnership of government officials, non-governmental organizations (NGOs) and international organizations from

around the globe. INECE now consists of a network of more than 4000 members from over 150 countries around the world. It has the following stated goals:

- raising awareness of compliance and enforcement;
- developing networks for enforcement cooperation;
- strengthening capacity to implement and enforce environmental requirements.

INECE states that it 'is dedicated to using regulatory and non-regulatory approaches to guide compliance with and enforcement of environmental laws and regulations that promote the sustainable use of natural resources and the protection of ecosystem integrity at the global, regional, and national levels'.

Activities

INECE aims its activities towards government officials and NGO partners active in environmental compliance and enforcement, and international organizations. A wide variety of conferences and materials is addressed to issues of principle, specific problems and regions. In particular it has organized a series of international conferences (most recently in 2005 in Morocco) which have grown in participation allowing individuals from around the world to share experiences. Members have also worked together to develop training and workshop materials and publish comparative country studies.

INECE also facilitates internet information exchange forums which facilitate communication between individuals on the benefits and challenges of environmental enforcement. These are particularly useful given the wide geographic spread of interested participants. Topics covered have included hazardous waste, enforcement indicators, inspectors and public access to information.

Management

Management decisions are made by the Executive Planning Committee (EPC). It agrees upon the goals, activities and multi-year work programme of INECE, reviews and approves products produced under the network, and catalyses and facilitates enforcement and institution building. The EPC consists of more than 30 individuals made up of representations from around the world, mostly from environmental enforcement authorities, but also with the representation of NGOs and international organizations such as UNEP and the World Bank. The EPC has three Chairs which, currently, are from the Ministry Inspectorate of Housing, Spatial Planning, and the Environment (The Netherlands) (VROM), the US EPA and the Law for a Green Planet Institute (Brazil). INECE also maintains a close relationship with regional networks (see following sections), representatives of which attend the EPC.

Day-to-day activity is taken forward by the Secretariat, which was established in May 2001. The Secretariat provides technical, administrative, publication and communications support for the EPC and helps to implement the work programme. It also coordinates support from INECE members. The Secretariat is supported by

a host NGO, as INECE is not a formal international organization. Core staffing is provided by the US EPA and the Inspector General for the Environment in VROM, working under their 1985 bilateral Memorandum of Understanding with additional staff from other countries and international organizations.

Funding

VROM and US EPA, which founded INECE, remain key funders, with additional support from UNEP, the World Bank and the European Commission, as well as Environment Canada and the Organisation for Economic Co-operation and Development (OECD).

The EU Network for the Implementation and Enforcement of Environment Law (IMPEL)

Website: <http://ec.europa.eu/environment/impel>

Development of the network

IMPEL is a network of environmental regulatory authorities from the 25 EU Member States and Norway. It seeks to improve the way that environmental law is practically implemented. Much of its work focuses on the implementation of EU law, but it is not limited to this. Specifically, it:

- considers what environment law means in practical implementation;
- examines how competent authorities can work better to deliver implementation;
- undertakes peer review analyses of individual Member State authorities;
- focuses mutual learning by network members.

IMPEL developed from a number of activities that were taking place at international and Member State level during the late 1980s and early 1990s. Duncan (2000) stated that the network can trace its origin to a UNEP meeting in Paris in 1989. This meeting was held to address the nature of integrated assessments to pollution regulation and, eventually, resulted in the Community adopting the Integrated Pollution Prevention and Control (IPPC) Directive in 1996 (Chapter 3). However, participants at the meeting recognized that developments in pollution control would result in major challenges to practical implementation. Member State authorities would, therefore, benefit from sharing experiences in an 'informal' way.

The potential benefits of Member States working together was further demonstrated by a 1991 survey undertaken by VROM on organizations in each Member State involved in the enforcement of environmental legislation. This demonstrated different procedures for standard setting, permitting, compliance assessment and enforcement. In particular inconsistencies were found between (Slater and James, 1994):

- administrative procedures;
- the extent of permits required;
- technical standards applied;
- charges made for permits;
- public access to information.

The issue of networking was discussed at an informal meeting of the EU's Environment Council (consisting of Member State environment ministers) in 1991 resulting in the UK hosting the first meeting of the network in Chester in 1992. Although the Council stated that it was desirable that the network consist of 'representatives of relevant national authorities and the Commission in the field of enforcement' (HMIP, 1992b), it was not until 1997 that the European Commission formally became a member. The Chester meeting discussed a document prepared by Her Majesty's Inspectorate of Pollution (a predecessor body to the Environment Agency of England and Wales) which considered various regulatory activities and questions that the network might address (HMIP, 1992b). These overwhelmingly focused on national level activities (although they related, in part, to an implementation of Community law also).

During 1993 the 'Chester Network' revised its terms of reference. These aligned the work of the network with the European Community's Fifth Environmental Action Programme, which set out a strategic approach to environmental law and policy during the 1990s, and widened its mandate covering issues relating to the regulation of environmental legislation with a focus on EU law, but also of that of the Member States. The Fifth Environmental Action Programme (OJC 138, 17 May 1993) proposed the creation of a network. It is interesting to note how this is phrased:

an implementation network comprising representatives of relevant national authorities and of the Commission in the field of practical implementation of Community measures. It will be aimed primarily at the exchange of information and experience and at the development of common approaches at the practical level, under the supervision of the Commission. The Network can help to promote consistency in the practical application of Community policy and rules as between the Member States.

This initially follows the earlier Council recommendation for Commission membership. However, it also states that the network should also:

- operate under the supervision of the Commission;
- be focused on the implementation of Community policy (no mention is made of national law).

The role of the Commission would be an issue that would become more important in later years and it was not until 1997 that the Commission agreed to contribute to the costs of the work programme and host the IMPEL Secretariat with a seconded national expert.

At the time of the Chester meeting there was discussion of an ‘inspectorate of inspectorates’ (or ‘audit inspectorate’) to be established at EU level (indeed this also formed part of the early debate on the role of the later European Environment Agency). At the Chester meeting the UK Environment Minister stated (HMIP, 1992a):

What we have in mind for the Audit Inspectorate is a small body to scrutinise the capability of enforcement agencies within Member States to meet their obligations under Community legislation. There is room for debate about its place in the institutional structure. But I must emphasise that it would not involve the Community usurping the role of national Inspectorates. It would put in place a system of quality control which will provide more and better information to the Commission who are charged under the Treaty with responsibility for monitoring the implementation of policy. Far from infringing the principle of subsidiarity, such a body, by creating a mechanism for quality control over national agencies, would enable us to resist pressure from the centre for more direct enforcement.

This statement identifies a number of issues. First, the network was established at a time when there was concern among (some of) the Member States that the Commission might become more actively involved in determining how regulators operate. Second, the network is viewed as consistent with a possible development of an ‘audit inspectorate’. However, such a body was never created (not least due to concerns over the Commission having any enforcement role within Member States) (Sbragia, 1999) and initiatives on quality assessment and quality improvement of national authorities have been taken forward by IMPEL.

Management of the network

IMPEL Plenary meetings are the forum for the agreement of strategic developments, approval of the work programme and final reports from IMPEL projects. Plenary meetings occur twice a year and include all members, that is representatives from all member countries and the European Commission (Schout and Claessens, 1999). Each meeting is chaired both by the authority from the Member State which holds the Council Presidency at that time (which rotates on a six-month basis) and by the Commission (DG Environment). The members also act as focal points in each Member State. IMPEL Plenary meetings are attended by representatives of the regulatory authorities. These individuals often have direct regulatory experience (although not always), but their major role is to coordinate activity within their institutions. For IMPEL projects, staff from authorities that are directly involved in the issues being addressed participate in the meetings and other work.

Between Plenary meetings IMPEL is managed by a ‘Troika’ representing five or six countries selected on a rotating basis. These are charged with representing IMPEL to stakeholders, etc. Management of IMPEL is also supported by a Secretariat located in the offices of DG Environment. The Secretariat is responsible for day-to-day administrative tasks.

Activities

IMPEL's activities focus on the exchange of information and experience on implementation and enforcement of existing EU environmental legislation. This results in outputs aimed at improving implementation in the Member States and comments on EU law itself. Much of the work is now focused around the EU's Recommendation on minimum criteria for environmental inspections (see Chapter 4). Most of the work is undertaken through a project system, whereby individual activities (e.g. a study on problems with a particular EU law) are addressed. The initiation of such projects is agreed by the Plenary, which also formally accepts the final reports. Project activity is normally led by one IMPEL member (which might fund or co-fund the project) and participation might involve a sub-set of members or, occasionally, all members. Projects take place in the context of a multi-annual work programme (currently running from 2007–2010).

IMPEL, therefore, has a highly participatory management structure supported by a small permanent Secretariat. This ensures both a wide consensus for its work and practical implementation. However, it can also result in some delays in taking work forward. This might, however, be viewed as an inevitable result of wide membership organizations. The lack of a hierarchy in IMPEL work means that IMPEL is often very dependent on the initiative of particular members which in turn can result in a problem of focus.

IMPEL has undertaken reviews of the inspectorates and inspection procedures in several Member States, for example, for Spain, France, the Netherlands, Ireland and Belgium. These reviews are undertaken by an expert team from selected other IMPEL members which examine the practices in the host country. The final report makes recommendations for improvement. These recommendations can not only benefit the host country, but also others with similar practices.

IMPEL's outputs are largely in the form of reports on specific issues. Over 40 have been accepted by the Plenary. Some projects have focused on individual EU laws or single Articles, etc., within them. Others have taken wider strategic or technical questions. They are generally welcomed as positive contributions and certainly can help implementation of EU law and have helped capacity building in some Member States.

The scope of the network

At its foundation in 1992 the network agreed that its focus should be on industrial pollution control. However, its activities quickly went further than this, as illustrated by its long-running work on waste shipments. The scope of work largely reflected the nature of the IMPEL members. The extension of IMPEL to include members from the countries that joined the EU in 2004 and 2007 has raised the question of scope. Many regulators in central and eastern Europe also address, to different degrees, nature protection. As a result there is currently consideration being given to the extension of IMPEL's work to include nature protection.

Financing

IMPEL is financed through two sources – the contributions of its members (staff input, e.g. for projects and contributions to consultants, etc., for project support) and by the Commission. At its height the Commission contribution amounted to around €400,000 per year (IMPEL, 2004). The Commission contribution represents around 50 per cent of the total budget, although this is difficult to assess, given the large amount of in-kind support from the Member States. Spending of all funds, including from the Commission, on projects is agreed by all members at the plenary meetings.

The consequences of a major reliance on funding from the Commission became a major point of debate at a meeting of the IMPEL Plenary in Rome in 2003. The Commission stated that the EU Financial Regulation (which came into force at the start of 2003) meant that it would no longer be able to co-finance projects through direct grants, as all distribution of funds greater than €50,000 required tendering. IMPEL members viewed this as ‘very bureaucratic and time consuming’ and ‘several IMPEL members expressed their concerns and stressed that this might affect the smooth operation of the network and its consolidated procedures’ (IMPEL, 2004). A recent review of IMPEL has suggested a different relationship for the Commission on funding to help overcome these problems (de Jong et al, 2005).

The Commission for Environmental Cooperation (CEC)

Website: www.cec.org

The CEC is an international organization created by Canada, Mexico and the US under the North American Agreement on Environmental Cooperation (NAAEC). In this respect it is different from other networks in having a more formal foundation. The aims of the CEC are to address regional environmental concerns, help prevent potential trade and environmental conflicts, and to promote the effective enforcement of environmental law. Note the emphasis on trade in these aims. This is because the CEC is viewed as complementing the environmental provisions of the North American Free Trade Agreement (NAFTA). Specifically the CEC aims to encourage:

- effective enforcement by each Party of its environmental laws and regulations;
- compliance with those laws and regulations;
- technical cooperation between the Parties.

Management

The CEC consists of a Council, a Secretariat and a Joint Public Advisory Committee. The Council consists of cabinet-level or equivalent representatives. It establishes the rules and procedures and meets at least once per year (or more often at the request of any Party) and is chaired in rotation by the Parties. All decisions are made by consensus, unless the Council decides otherwise. Its specific functions are to:

- serve as a forum for the discussion of environmental matters covered by the NAAEC;
- oversee the implementation of and develop recommendations on the further elaboration of the NAAEC;
- oversee the Secretariat;
- address questions and differences that may arise between the Parties regarding the interpretation or application of the NAAEC;
- approve the annual programme and budget of the CEC;
- promote and facilitate cooperation between the Parties with respect to environmental matters.

The issues that the Council can address are specified in the NAAEC. Thus it can develop recommendations, inter alia, on:

- the comparability of techniques and methodologies for data gathering and analysis, data management and electronic data communications on matters covered by the NAAEC;
- pollution prevention techniques and strategies;
- approaches and common indicators for reporting on the state of the environment;
- the use of economic instruments for the pursuit of domestic and internationally agreed environmental objectives;
- scientific research and technology development on environmental matters;
- promotion of public awareness on the environment;
- transboundary and border environmental issues;
- environmental emergency preparedness and response activities;
- environmental matters relating to economic development;
- the environmental implications of goods throughout their life cycles;
- human resource training and development on environmental issues;
- the exchange of environmental scientists and officials;
- approaches to environmental compliance and enforcement;
- ecologically sensitive national accounts;
- ecolabelling;
- public access to information concerning the environment that is held by public authorities of each Party;
- appropriate limits for specific pollutants, taking into account differences in ecosystems.

The Council is also responsible for specific activities relating to NAFTA. These include the following:

- providing assistance in consultations under NAFTA where a Party considers that another Party is derogating from an environmental measure as an encouragement to an investor, so as to avoid any such encouragement;
- contributing to the prevention or resolution of environment-related trade disputes by:
 - seeking to avoid disputes between the Parties,
 - making recommendations to the NAFTA Commission on the avoidance of such disputes,
 - identifying experts able to provide information or technical advice to NAFTA committees, working groups and other NAFTA bodies;
- considering the environmental effects of the NAFTA;
- assisting the Free Trade Commission in environment-related matters.

The Council is also required to:

- consider adverse environmental affects of projects having a transboundary nature;
- encourage the establishment by each Party of appropriate administrative procedures pursuant to its environmental laws to permit another Party to seek the reduction, elimination or mitigation of transboundary pollution on a reciprocal basis;
- develop recommendations on the provision by a Party, on a reciprocal basis, of access to and rights and remedies before its courts and administrative agencies for persons in another Party's territory who have suffered damage or injury caused by pollution originating in its territory.

The Secretariat is led by an Executive Director, chosen by the Council for a three-year term (renewable once), and which rotates between the Parties. The Council Executive Director appoints the Secretariat staff. The Secretariat provides technical, administrative and operational support to the Council and develops the CEC's annual report and reports on any issues that the Council requires.

The Secretariat considers submissions from NGOs or individuals that argue that a Party is failing to enforce its environmental law. The Secretariat then prepares a report on the submission for the Council which will decide on its findings.

Asian Environmental Compliance and Enforcement Network (AECEN)

AECEN is a recently formed network that is in its early stages of development. The decision to establish this network emerged at a regional forum organized by the United States Agency for International Development (USAID) and other

partners in October 2004 held in Bangkok. AECEN aims to promote improved compliance with environmental legal requirements in Asia through regional exchange of innovative policies and practices. Specifically, the objectives of the network are to:

- promote the development and implementation of improved environmental policies, laws, regulations and institutional arrangements;
- strengthen practitioner capacity through specialized training and skills development;
- facilitate the regional sharing of best practices and information on strategies for strengthening compliance and enforcement.

AECEN members are Asian countries and there are two categories of member countries, which are both represented by environmental authorities: Implementing Members and Participating Members. Implementing Members are those that have agreed to:

- develop and implement improved policies and practices through pilot activities;
- designate National Coordinators to coordinate project implementation;
- sign memoranda of understanding and develop annual work plans;
- develop country-based indicators to track performance.

Participating Members include countries that have a demonstrated level of expertise, as well as countries that are at the early stages of implementing environmental requirements.

Activities

The activities are designed to strengthen environmental policies, environmental governance and enforcement and are based on performance indicators. The specific activities identified by AECEN are:

- regional and country workshops to share best practices and lessons learned on priority issues;
- programme assessments and targeted studies to evaluate country and regional challenges and identify priorities;
- country pilot projects that promote development and the adoption of new policies and practices;
- practitioner tools and other resources for application at regional and country levels;
- practitioner capacity building through peer technical exchanges, specialized practitioner trainings and information exchange;
- performance indicators development and tracking to evaluate country performance;
- regional guiding principles on compliance and enforcement and other publications.

Management and funding

AECEN's structure includes an Executive Committee, Secretariat and National Coordinators. Funding of core functions is provided by USAID and the Asian Development Bank.

The Executive Committee is composed of representatives from member countries and sponsoring development agencies. It is responsible for the overall leadership and guidance of AECEN activities. It sets the goals, policies, activities, annual work programme and financial plans of AECEN; reviews and approves work products; and promotes cooperation and institutional building on compliance and enforcement among members of AECEN. The Secretariat is responsible for overall technical, coordination, administration and communications support to AECEN members. The National Coordinators assist in implementing country-based activities and disseminate information.

The Regulatory Environmental Programme Implementation Network (REPIN)

Website: www.oecd.org/document/56/0,2340,en_2649_34339_26502584_1_1_1_1,00.html

REPIN is a network covering the countries of EECCA, that is those of the former Soviet Union (excluding the Baltic States which are members of IMPEL). It was formerly known as NISECEN (New Independent States Environmental Compliance and Enforcement Network). Its aim is to promote dialogue and exchange of experience on environmental enforcement between senior environmental policy makers from environmental ministries and managers/practitioners from environmental enforcement authorities of the member countries.

Activities

The Network holds annual meetings to discuss and agree on the work programme and monitors its implementation. The work programme implementation includes specific analytical, training and dissemination activities. Representatives of the public and industry are invited to the Network meetings as observers and are engaged in relevant activities. The REPIN work also draws from activities of other international networks, such as INECE and IMPEL.

An important activity has been the peer review of environmental enforcement authorities. REPIN developed a document 'Guiding principles for reform of environmental enforcement authorities in transition economies of EECCA'. This was informed by practices in other countries, taking account of the situation of authorities in the EECCA region. These Guiding Principles were finally endorsed at a meeting of UN Economic Commission for Europe (UNECE) environment ministers in Kiev in 2003. This document provides a reference framework for authorities to undertake actions by themselves as well as for the Network to

undertake peer reviews of those authorities and make recommendations for change. The reviews provide descriptive and quantitative information on the institutional and management framework for enforcement and compliance assurance, and assess enforcement strategies, tools and their impacts. The reviews also assess compliance promotion efforts, including the role of the general public and regulated community.

REPIN, through the Environmental Action Plan Task Force, has also undertaken reviews of the system of economic instruments for environmental protection in the EECCA region. This work aims to assist EECCA countries to reform existing instruments, and to introduce new instruments for environmental protection. The work has also included demonstration projects in Armenia and Russia to identify the key elements of reform and to disseminate the lessons learned.

Management

The Secretariat of REPIN is located outside of the area of the network at the OECD headquarters in Paris. Its location developed from the responsibility given to the OECD in taking forward environmental issues in EECCA countries by the UNECE and the development of the OECD's Environmental Action Plan Task Force. The Secretariat provides day-to-day management and is funded by the OECD and bilateral assistance. Agreement on strategic issues, such as the work programme, is made at REPIN meetings by the members.

Maghreb Enforcement Network

The Maghreb Regional Network for Environmental Compliance and Enforcement was launched in December 2005. The idea for a network in North Africa was born at the 7th INECE Conference held in Marrakech, Morocco, in April 2005. The Maghreb regional participants concluded that a regional enforcement network, in partnership with INECE and other international organizations, is necessary for targeted capacity building. In addition, they agreed that the new Network learn from existing networks, with the goal of convergence with EU environmental standards. Participants also agreed upon a work plan and Network guidelines. Eventually the Network might expand geographically in North Africa.

Given the limitations in North Africa, INECE agreed to provide assistance to the Network, specifically:

- following up with conference participants and conducting discussions with capacity building and donor institutions including the Netherlands and US governments, European Commission, the World Bank and others;
- sending an INECE Special Counsel to Morocco to communicate with key stakeholders, identify local needs and interests and begin planning for future activities;
- facilitating Principles of Environmental Enforcement trainings in Jordan and Bahrain that also include participants from Algeria, Egypt and Tunisia;

- communicating with potential partner organizations, and creating a work plan and guidelines to build the new Network;
- evaluating examples of other networks and similar initiatives that are successfully working in North Africa in order to apply lessons learned in the network development process;
- identifying inspectors, prosecutors, judges, policy makers, local government officials, donors and other relevant stakeholders from Maghreb countries for participation in the network.

Conclusions

It can be seen that there are a number of different types of networks of environmental enforcement authorities. This chapter has not sought to describe all such networks (others, such as the Balkan Environmental Compliance and Enforcement Network for Accession, are also well established). Rather it has sought to describe a range of contrasting examples.

Networks have focused on a range of activities. The primary group of activities is focused on exchange of experience. However, networks have also developed 'frameworks' in which such experience can be structured. This includes the general principles developed by INECE and REPIN. IMPEL has an established 'framework' for much of its work, that is the specific obligations of EU law – the detailed implementation of which is of interest to all of its members. Networks also help each other, as has been seen with the support given to REPIN and the Maghreb network.

The types of activities undertaken vary. IMPEL is largely focused around projects led by its members. REPIN is also project focused, but these are coordinated by the Secretariat. INECE activities include forums and conferences, while the CEC has a major role in examining trade-related environmental issues.

To be successful, networks require a full commitment by members (or a sufficient number of them), an active secretariat and adequate funding. To obtain the commitment of the members requires that the network is seen to be of value, that is, it delivers what the members need. Networking for its own sake (a 'talking shop') has little value. The CEC has obvious value (such as on transboundary and trade issues) and the need to ensure compliance with EU law means that IMPEL members have a major interest in examining the issues relating to its implementation. REPIN has also been efficient in identifying the needs in EECCA countries and the commitment from authorities to the network has grown as a result.

The management of networks varies. Some have a 'management board' or 'executive' of some type, while others make strategic decisions in plenary meetings. However, all have a secretariat. This can be relatively small, which requires staff who are active and have good communicative qualities. Personal relations have often been critical in delivering successful outcomes.

The networks cannot operate without funding. In networks such as the CEC and IMPEL, members can be expected to fund their own participation (e.g. in

meetings and in projects) and, indeed, directly to fund individual activities. In other regions the resources of environmental enforcement authorities are often limited and networking might not be a priority for budgets. For example, REPIN budgets are generally derived from outside the network and not only support the Secretariat, but can also support the participation of officials from members at meetings.

For the environmental enforcement authorities themselves, it is important that they identify clearly what they need from a network and communicate this within it. This way the network will remain relevant to the objectives of its members. The authorities should have a focal point staff member for the network to facilitate communication with it (although others can be involved in individual activities). It is important that considerable effort is given to communication within the environmental enforcement authority. The focal point must distribute relevant information from the network, for example, otherwise its value is much diminished. It is also important that they ensure that network supporting activities are fully itemized in budget planning proposals.

In conclusion, networking has been in place in some regions for a number of years and is still growing, both in the number of networks and activities that they undertake. The continued commitment by their members is a demonstration of their continued usefulness.

This chapter concludes with a checklist for environmental enforcement authorities participating in networks (not for the operation of the networks themselves).

Checklist

- 1 Has the environmental enforcement authority a designated person responsible for coordination with the network?
- 2 Is it responsible for part-funding of network activities and, if so, is this fully incorporated in relevant financial planning?
- 3 Are effective mechanisms in place to identify staff members who might most effectively participate in relevant network activities?
- 4 Are effective mechanisms in place to disseminate the results of network activities to those in the environmental enforcement authority who would benefit?

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